

Carola Sachse

Science and Diplomacy

The Max Planck Society
in International Politics (1945–2000)





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The Max Planck Society
in International Politics (1945–2000)

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Foreword

In 2018, when I began my archival research on the activities of the Max Planck Society (MPS) in the field of international politics, the starting point for my investigation was clearly defined as the transition from wartime to the post-war period in 1945. However, through discussions with colleagues, it became apparent that the end point of my investigation needed to shift to a later point in time than I had originally estimated. Rather than concluding with that moment often suggested by typical historical timelines—the transition period of 1989/90, which saw the end of the dual-power world order of the Cold War—it became clear that it would be essential to outline more recent emerging developments, at least to the point where one could understand where the trajectory was heading: directly towards the increasingly accelerated globalization of scientific cooperation that began with the dawn of the new millennium.

Initial doubts about the unstoppable progress of this globalization arose with the travel restrictions and supply shortages during the first two years of the Corona pandemic. However, these concerns were set aside as the lockdowns ultimately proved beneficial to the writing process while working from home. Additionally, the Corona crisis underscored the fundamental importance of international scientific cooperation in the fight against this and future pandemics. The fact that this collaboration did not function smoothly in the battle against the new coronavirus only made it seem more urgent to forge new paths for science diplomacy. Scientific cooperation in this era of globalization has been a key topic in numerous political and scientific forums since the first decade of the 21st century, and indeed, it was the dominant issue at the Tenth International Conference of the European Society for the History of Science in Brussels in the late summer of 2022.

However, since the end of February 2022, during the final phases of writing this book, I found myself in the unenviable role of an amateur war correspondent, trying to catch up with emerging frontlines—not in the Ukrainian conflict zones, but between Western and Russian science organizations. The question kept arising: what does the smoke rising before me signify? Does it herald new science wars, a drastic change in global politics, or just an atavistic interruption of otherwise unstoppable globalization? And what does this mean for the once hopeful concept of science diplomacy, which only recently had promised to save the planet in the Anthropocene?

This study does not make any predictions, certainly not any optimistic ones. Nor can it answer the question of how the Max Planck Society will position itself in the future in the field of international politics. The Society's late and cautiously formulated commitment to science diplomacy in the Federal

Republic of Germany is currently being substantially undermined, particularly by Russia, a nation with whose scientists the MPS had maintained close cooperation, even during the frostiest phases of the Cold War, and which has now been seriously interrupted. Moreover, the relationships carefully built over nearly fifty years between the MPS and Chinese research institutions, colleagues, and collaborators are also now being tested as a result of domestic and foreign policy developments in the People's Republic led by XI Jinping.

As these two important pillars of the MPS's international cooperation are faltering, the changing times have impacted the final phase of my study. Perhaps this work can at least raise awareness of what is at stake: global scientific collaboration, without which the current global crises cannot be managed, let alone resolved. Such collaboration, however, is no longer achievable without a circumspect balance of science and international politics on the part of scientific stakeholders. The primacy of politics over economy and science, which had receded into the background in the three decades following the end of the Cold War, is reasserting itself in a manner that is as ugly as it is undeniable.

This study was conducted within the research program on the "History of the Max Planck Society (1945–2005)" (GMPG, *Geschichte der Max-Planck-Gesellschaft*) at the Max Planck Institute for the History of Science in Berlin. Without the broad multidisciplinary expertise of the more than forty colleagues involved, including intensive discussions both in larger and smaller groups, be it on overarching research questions or my own draft texts, this study would not have been possible. I would like to thank Jürgen Kocka, Carsten Reinhardt, and Jürgen Renn for their repeated reading and comments on early drafts. Over and beyond this, Jaromír Balcar, Florian Schmaltz, Alexander von Schwerin, Alison Kraft, Britta Behm, Birgit Kolboske, Mitchell Ash, Juliane Scholz, and Peter Schöttler were always willing to discuss fundamental questions—such as "What makes the MPS tick?"—as well as tricky details over coffee or in passing, and even to have longer telephone conversations when meeting in person was no longer possible. Juan-Andres Leon and Luisa Bonolis helped me understand international astrophysical and radioastronomical research programs, instruments, and infrastructures to the extent that I could decipher the associated foreign, European, and geopolitical interests, conflicts, and negotiation processes. They provided me with the necessary clarification and references, as did Hanna Worliczek for molecular and cell biology, Gregor Lax for Earth system science, Sascha Topp for neuroscience, and Thomas Steinhauser for materials sciences. The discussions with colleagues, particularly Vanessa Osganian, Annemone Christians, and Helmut Trischler, from the research group "Cooperation and Competition in the Sciences" based at Ludwig Maximilian University in Munich helped to clarify the position of the MPS in the German research system.

I am particularly grateful to the colleagues beyond the GMPG program who provided regional expertise for the case studies on the scientific relations of the MPS with Southeast Europe, Italy, Spain, and the Soviet Union: Susanne Heim,

Wolfgang Schieder, Albert Presas i Puig, and Fabian Lüscher critically reviewed the corresponding chapters.

While working on the case study about the MPS's China program, which is extraordinary in many respects, I repeatedly relied on the insights, guidance, and background information from China experts such as Matthias Schemmel, Anna Lisa Ahlers, Stephanie Christmann-Budian, and Michael Schimmelpfennig. Furthermore, the former and current officers responsible for cooperation with China in the Administrative Headquarters of the MPS—Barbara Spielmann, Angelika Lange-Gao, Sabine Panglung, and especially the former longtime head of the International Relations Unit, Dietmar Nickel—answered my many questions knowledgeably and patiently, even if they did not always agree with my historical interpretation, which was not surprising given the clash of personal experience and archival research. Former and current department and division heads in the Administrative Headquarters, such as Beatrice Fromm, Berthold Neizert, and Felix Kahle, also provided clarification and numerous helpful insights regarding various questions. In particular, I am indebted to Gottfried Plehn from the Communication Department for providing difficult-to-find analog and digital documents.

This study is primarily based on relevant archival holdings at the Max Planck Society (AMPG, Archiv der Max-Planck-Gesellschaft), a considerable proportion of which were digitized during the GMPG program. Over the past five years, Urs Schöpfli, the head of this impressive endeavor, as well as Felix Falko Schäfer, Kristina Langrock, Aron Marquardt, and their numerous IT colleagues, have guided me through the intricacies of these digital data streams, for which I am very grateful. Nevertheless, whenever possible, I sought refuge on the solid ground of the nearby MPS archive, not least because Florian Spillert was always ready to assist me, not only with digital advice but also with analog help when needed. Knowledgeable, resourceful, and tireless, he expertly arranged well-sorted stacks of paper documents around me, was always up for a chat about unique details hidden within them, and thus helped me ward off the inevitable fatigue and occasional boredom that came with hours and hours of reading through the files. Never boring, however, was the search for suitable visual materials, thanks to Susanne Uebele, who guided me through the extensive photo collections of the MPS archive. Michael Weins was particularly helpful in my search for documents corresponding to the Max Planck Society's files within the ministerial collections at the Federal Archives in Koblenz. At the Political Archive of the Federal Foreign Office, I would not have found the relevant material without the precise guidance from Johannes von Boeselager.

As with most of my research over the past two decades, I benefited again from the excellent working conditions at the Max Planck Institute for the History of Science and the professional service provided by its staff in the best library in Berlin and elsewhere. During the final stages of manuscript completion, the student team coordinated by Birgit Kolboske, who was far better acquainted with the intricacies of the style sheet than I, took on many of the time-consuming

and nerve-racking tasks and checks required to reach the final version. Above all, I was supported during this phase by Gisela Hack-Molitor, as editor for the original German version of this book. Her structural suggestions helped minimize the inevitable redundancies before she edited the near-final text with a sympathetic understanding of my stylistic preferences.

In recent years, I was reluctant to allow my weekend countryside community, who followed this project with benevolent interest, to lure me away from my desk and into the vast landscape of the Uckermark region. That has meanwhile changed.

CS

Berlin, February 2023

Editorial Note

It is not only writers and poets who need congenial translators to carry their works beyond their inherent linguistic boundaries. Historical texts on science and politics, like the one presented here, also pose numerous translational challenges, requiring both linguistic precision as well as specialized research efforts. Michael Hacker and Camilla Nielsen have faced these challenges admirably, working under significant time pressure and yet remaining patient throughout the process, including the necessary fine-tuning. For this, I am very grateful to them both. I am also indebted to Camilla R. Nielsen for her support in preparing and finalizing the book manuscript for publication.

Among the challenges were newly defined and analytically useful terms which, like ‘science foreign policy’ vs. ‘foreign science policy,’ are even more cumbersome in English than in German. When in doubt, conceptual precision prevailed over idiomatic elegance. The distinction between the Federal Republic of Germany (FRG) and the German Democratic Republic (GDR), and their respective Western and Eastern German institutions, necessary at least until German reunification in 1990 in the context of foreign and international politics, is not always conducive to reading flow. Some German terms that have entered the language of international politics—such as New *Ostpolitik*, *Deutschlandpolitik*, *Westbindung*, or *Berlin-Junktim*—were retained because of their specific political semantics.

Translating administrative designations for organizational units and levels of hierarchy was not always straightforward. The historically evolved structures they mark differ not only from country to country, but, since the 1980s they have also been repeatedly reformed and renamed within the Max Planck Society (MPS). The administrative terms used here largely follow the currently valid organizational chart of the MPS, which is also available in English.

The names of national, transnational, and supranational institutions and organizations were translated into English where necessary; where available, the official names were taken from their respective English-language websites. Abbreviations generally follow the original-language designation, such as German Research Foundation (DFG, Deutsche Forschungsgemeinschaften). For Chinese and Soviet/Russian institutions, only the internationally known English names, e.g., Chinese Academy of Sciences (CAS), and internationally established Latinized abbreviations, e.g., IKI for the Soviet Institute for Space Research, are used. All abbreviations can be referenced quickly in the appendix directory. In deciding which source references to translate or keep in their original language, the criterion used was the retrievability of archival or digital references.

Following the publication of the original German version of this book, a number of sources and references were updated and minor corrections made.

Russian names are rendered in the usual English spelling. The spelling of Chinese names and places follows Hanju Pinyin. In text, quotes, and footnotes, Chinese surnames are capitalized to avoid confusion. I thank Angelika Lange-Gao for the transliteration.

Unfortunately, the English translation can only occasionally highlight a gender-historical peculiarity: the grotesque extent of gender disparity in the scientific and administrative leadership of the MPS, even in comparison with other international science organizations. The German language allows for a linguistically more succinct distinction between, for example, male and female directors or male and female employees, enabling frequent implicit references. The more cumbersome English distinction is used here only occasionally, when it is explicitly necessary to indicate that women were indeed part of the group being discussed. Indeed, the history of the MPS until well into the 1990s was actually a history of men. In fact, the higher ranks of science and administration, where science foreign policy and foreign science policy were negotiated, were almost exclusively male. In the period from 1948 to 1998, of the 691 Scientific Members who determined the fate of the MPS and its respective institutes, only thirteen were women.¹ Whenever one of these women appeared in the relevant contexts, this has been explicitly noted; thus, this tiny group of women is far more prominently represented in this study than in the historical-social reality of the MPS.

CS

Berlin, December 2024

1 Kolboske, "Hierarchies," 2021, p. 111.

1. Introduction

Recently, the Max Planck Society (MPS) has pledged on its website, “as Germany’s most successful research organization ... to contribute to the Federal Republic’s science diplomacy and to build bridges between societies through its research networks.”¹ With this commitment, which is by no means self-evident from a historical perspective, the MPS is reacting rather late, if not too late, to an international trend that has been underway for about twenty years. This trend is driven by active players from politics and science, including the German Foreign Office (AA, Auswärtiges Amt) and the Federal Ministry of Education and Research (BMBF, Bundesministerium für Bildung und Forschung).² Their aim is to bring together state foreign policy, international politics, and trans-boundary scientific cooperation in a new, productive relationship. The premise of this newly conceived ‘science diplomacy’ is the following: By adopting an approach to further internationalize the sciences that is fitting for our global age and by creating innovative links with international politics, we can address more effectively and pioneer solutions of the global challenges—such as climate change, environmental destruction, resource scarcity, migrations, infectious diseases, and the proliferation of weapons of mass destruction—that have been increasingly pressing since the end of the Cold War.³

1 Die Max-Planck-Gesellschaft. At home in Germany—present throughout the world, <https://www.mpg.de/16942304/max-planck-worldwide>, last accessed on April 17, 2024.

2 Since around the turn of the millennium, the Foreign Office in Germany, initially under the leadership of Joschka Fischer (Green Party), and then Frank-Walter Steinmeier (SPD), worked on a new concept of foreign cultural policy, see Schütte, “*Wetlauf ums Wissen*,” 2008. In the USA, the position of ‘Science and Technology Adviser to the Secretary of State’ was established in 2000, currently held by marine physicist Patricia Gruber, <https://www.state.gov/biographies/patricia-gruber/>, last accessed April 17, 2024. Following the Iraq War, which began in 2003, the term “science diplomacy” rose to become the discursive object of a strategic initiative aimed at counteracting the loss of reputation of U.S. foreign policy, especially in the Muslim world; see the research report by Rungius, Flink, and Degelsegger-Márquez, *State-of-the-Art Report*, 2018, pp. 13–15. In 2009, the British Royal Society hosted a meeting where delegates from twenty countries and five continents discussed “new frontiers in science diplomacy;” the succinctly written “Proceedings” from the meeting published in 2010 have since served as a vademecum for the multinational community of science and politics that has taken up the establishment of science diplomacy as both a field of practice and of research, see The Royal Society, *New Frontiers in Science Diplomacy*, 2010.

3 See Turchetti, “UK government’s environmentalism,” 2018; Turchetti, *Greening the Alliance*, 2019.

Science Diplomacy—A Dispositif in Crisis

In the meantime, a multidisciplinary research network has formed around these initiatives, which were initially active and internationally connected mainly in the United States, the United Kingdom, and a few other European countries. Among others, this network is also supported by the European Union (EU).⁴ Moreover, international scientific societies are attentively observing science diplomacy, not only as a new object for study, but also as a potential professional field of practice.⁵ Understanding this heterogeneous network of scientific and foreign policy practices in ministries, embassies, professional societies, and NGOs, including political analysis, historical research, and philosophical derivations, is not straightforward. They all oscillate around the concept of science diplomacy, interconnect discursively with each other, and mutually reinforce each other in their interactions. Their optimistic message, claiming to show the path to solving the major global crises, is proclaimed on sleek websites, in glossy brochures, in scientific journals, and in the feature sections of quality media outlets. To grasp this ensemble in its societal impact, a term presents itself that is not as fashionable today as it was a few years ago and, as far as I can survey, does not appear in the self-descriptions of this network, though it could hardly be more appropriate: science diplomacy can be understood as a classic *dispositif* (apparatus) in the sense of Michel Foucault, in which discourses, institutions, measures, moral evaluations, and scientific statements interconnect and, in this formation, attempt to strategically respond to urgent crises.⁶

However, this *dispositif*, which has only recently been established, was plunged into a crisis by the Russian attack on Ukraine on February 24, 2022. This was marked by a series of solidarity addresses from large German and other Western science organizations, including the MPS, to Ukrainian scientists. At the same time, scientific cooperation with Russian institutions was in some places suspended indefinitely, and above all from the German side, thus further reducing the chances that this new science diplomacy will ever be able to fulfil its global

4 See, for example, the website of the EU Science Diplomacy Alliance, which was launched in 2021, <https://www.science-diplomacy.eu/about/eu-science-diplomacy-alliance/>, last accessed on Feb. 22, 2022.

5 The Division of History of Science and Technology (DHST) within the International Union of History and Philosophy of Science and Technology (IUHPST) established a Commission on Science, Technology, and Diplomacy (STAND) in 2017: <https://sciencediplomacyhistory.org/>. The American Association for the Advancement of Science (AAAS) opened its Center for Science Diplomacy as early as 2008, and since 2012 it has published the journal *Science & Diplomacy*. See Krige, "Diplomacy," 2014; Turchetti and Lalli, "Envisioning," 2020.

6 Foucault, *Dispositive der Macht*, 1978, pp. 119–121. How difficult it is for the involved actors to self-reflexively locate their own actions—in this case, political-scientific actions—within this *dispositif* is demonstrated by the aforementioned research report (Rungius, Flink, and Degelsegger-Márquez, *State-of-the-Art Report*, 2018) as well as a subsequent article by Rungius and Flink, "Romancing Science for Global Solutions," 2020, both of which deal with the ambiguities of the term and the field it denotes.

promises.⁷ The outcome of this crisis is as uncertain as that of the war and its long-term geopolitical consequences. In any case, Georg Schütte, as one of the most prominent German proponents of science diplomacy—a field that is both new and outdated—already views the return of system competition, along with the risk of a renewed geopolitical influence on international scientific cooperation, as “foreseeable.”

And then it's: Goodbye beloved “science diplomacy”—and welcome “foreign science-realpolitik.”⁸

Historians, as is well known, have limited prognostic expertise, and therefore this study is not suitable for extrapolating the future prospects of this crisis-ridden *dispositif*. Rather, it takes a step back and interrogates the historical material as to how science and diplomacy came to be related to each other after World War II, and why they often came into conflict with each other.

7 Stratmann, Statement by the President, Feb. 22, 2022, <https://www.MPS.de/ukraine/statement-martin-stratmann>; Alliance of Science Organizations, Solidarity with Partners, Feb. 22, 2022, https://www.wissenschaftsrat.de/SharedDocs/Pressemitteilungen/DE/PM_2022/PM_Allianz_Ukraine.html; DFG, DFG Takes Action, March 2, 2022, https://www.dfg.de/service/presse/pressemitteilungen/2022/pressemitteilung_nr_01/index.html. The statements of the Science Academies of the G7 countries and the U.S. National Academies, however, avoid calling for a boycott against Russian scientific institutions: National Academies, We Stand With Our Colleagues, March 3, 2022, <https://www.nationalacademies.org/news/2022/03/we-stand-with-our-colleagues-in-ukraine-say-u-s-national-academies-presidents>; *Joint Statement by the National Academies of the G7 States on Russia's Attack on Ukraine*, The Royal Society of Canada, Académie des sciences France, German National Academy of Sciences Leopoldina, Italian Accademia Nazionale dei Lincei, Science Council of Japan, The Royal Society United Kingdom, National Academy of Sciences United States of America March 2, 2022, <https://royalsociety.org/-/media/news/2022/S7-Statement-on-Ukraine.pdf>. UK Research and Innovation (UKRI) struck a middle ground with its statement from March 27, 2022 and initially reviewed all funding connected to Russian institutions, UKRI's Response, March 27, 2022, <https://www.ukri.org/news/ukris-response-to-the-russian-governments-invasion-of-ukraine/>; all links last accessed on 5/23/2022. See also the interview with Jürgen Renn: Friederike Walch-Nasseri, Jürgen Renn: “An Putins langem Tisch sitzt kein Wissenschaftler, der widerspricht.” *Die Zeit* (April 6, 2022), <https://www.zeit.de/wissen/geschichte/2022-04/juergen-renn-russland-wissenschaft-wladimir-putin>, last accessed on April 22, 2022, as well as the responses to the question ‘Sind die Wissenschaftssanktionen gegen Russland richtig?’ by Anna-Lena Scholz: “Ja! Wissenschaft ist eine geopolitische Macht—und muss auch so handeln” and Stefan Schmitt: “Nein! Wer Wissenschaftler jetzt abstrafte, gefährdet unser aller Zukunft,” in: Schmitt und Scholz, “Wissenschaftssanktionen,” *Die Zeit*, April 8, 2022.

8 Schütte, “Eiszeit,” *FAZ.NET*, 3/3/2022. Schütte was Secretary-General of the Alexander von Humboldt Foundation (AvH) from 2004 to 2009, then State Secretary BMBF, and has been Secretary-General of the Volkswagen Foundation since 2020.

Science and Diplomacy

The title of this study, therefore, breaks down the compound term ‘science diplomacy’ into its two components by adding an *and*—not as a concession to the crisis of this concept, which remained popular until the beginning of the war in February 2022, but as a marker of the approach to the history of science policy chosen here. What follows is thus not about providing historical underpinnings for a current discourse that has been stripped of its future-optimistic certainties. Rather, this study intends to illuminate an as-yet less examined aspect of the relationship between science and politics, which has otherwise been the subject of intense study for a long time: the relationship between international scientific relations and foreign policy at national, bilateral, supra- and international levels. This relationship has a long history, going back at least to the emergence of nation-states, if one does not want to include even older alliances between science and political rule that served the securing and expansion of one’s own territory, the establishment of empires, and also the more peaceful cultivation of relations with neighboring territories of rule.⁹

Only in recent years have transnationally cooperating historians, among others at the Max Planck Institute (MPI) for the History of Science, dealt with aspects of international politics and foreign policy of interest to the history of science in various world regions. Together they have pointed out that the 20th century of extremes (Eric Hobsbawm) and, in particular, the Cold War offered many occasions for strategic linkages of science and foreign policy, which, however, more often served national and alliance political interests than the globally understood well-being of humanity.¹⁰

Such linkages have had many names over the course of the last hundred years, just in Germany alone: foreign cultural policy, world domestic policy, scientific-technical cooperation (STC), Europeanization and internationalization of the sciences, foreign science policy, and finally, science diplomacy. All these names were programmatic, and each name change signaled re-conceptualizations of the relationship between foreign policy and science. This study begins with

9 Particularly, one might think of the history of scientific expeditions, which was closely linked to European colonial policy: Thomas, *Expedition into Empire*, 2015; Hasinoff and Bell, *Anthropology of Expeditions*, 2015; MacLeod, “Discovery,” 2009. Regarding the role of sciences in the formation of nation-states, see Jessen and Vogel, *Wissenschaft und Nation*, 2002.

10 As in the previously cited Commission on Science, Technology, and Diplomacy, STAND, <https://sciencediplomacyhistory.org/>. For the works at the MPI for the History of Science, see, for example: Kraft, Nehring, and Sachse, “The Pugwash Conferences and the Global Cold War,” 2018; Kraft and Sachse, *Science, (Anti-) Communism and Diplomacy*, 2020; Turchetti and Lalli, “Envisioning,” 2020; Lalli, “Crafting Europe,” 2021; Rispoli and Olšáková, “Science and Diplomacy,” 2020. Kraft, “From Dissent,” 2022. Regarding the state of international research on science and diplomatic history, see Adamson and Lalli, “Global Perspectives,” 2021; Rentetzi and Ito, “The Co-Production,” 2021; Kraft, Nehring, and Sachse, “The Pugwash Conferences and the Global Cold War,” 2018.

the territory of the Federal Republic of Germany (FRG), as politically defined by the Allies in the aftermath of World War II, and examines the foreign (science) policy relations originating from there. It focuses on the MPS as a national research organization that is as relevant as it is unusual for the shaping of the relationship between science and diplomacy in the Federal Republic.

*The Max Planck Society—
a Cautious Participant in International Politics*

The question is not whether the MPS was indeed Germany's most successful research organization over all the years, as suggested by the opening citation of this introduction. What is crucial is that it was often seen and contacted as such by political bodies and science institutions abroad, often to the chagrin of other West German research institutions and occasionally the federal government as well. What made this situation problematic was that—despite its increasingly extensive international scientific collaborations—the MPS rarely emerged proactively in any kind of science diplomatic sense. It seems clear that for a long time, the MPS did not perceive itself as an active player in international science diplomacy or the FRG's foreign policy.¹¹

The reasons for this became clear through the conversations I had in the spring of 2018 with long-standing active and former employees and directors of the unit responsible for international relations at the Munich Administrative Headquarters of the MPS.¹² Regardless of whether they were involved in establishing this unit in the early 1970s, joined in the 1980s or 1990s, or continue to hold leadership positions at present, all of them unanimously pointed out a completely different guiding principle for their area of responsibility. Independently, they all emphatically stated the same thing, namely, that the MPS's, every scientific exchange, and all research collaborations originated from the Institutes, then as well as now. They maintained that their unit was simply responding to the wishes and initiatives articulated by the Max Planck Institutes and had tried to help in implementing them. The International Relations Unit always viewed itself as a service facility for the Institutes, embracing the ethos of a postmodern service society. The MPS allegedly refused to let itself be co-opted or instrumentalized by external political actors, such as the federal government. The primary objective was always to establish scientifically meaningful collaborations, regardless of the political situations in the respective

11 For example, despite numerous invitations to its most prominent members, the organization always maintained a distance from the Pugwash Conferences on Science and World Affairs (PCSWA, Pugwash), see Sachse, "The Max Planck Society and Pugwash during the Cold War," 2018.

12 Oral communication from Angelika Lange-Gao to CS on April 7, 2018; Interview Neizert (Sachse) May 10, 2018; Interview Nickel (Sachse) April 12, 2018; Oral communication from Barbara Spielmann to CS on April 12, 2018. The department's scope and designation varied occasionally; in the following, it is referred to as the "International Relations Unit."

target countries, or the corresponding bilateral relations of the Federal Republic. However, in implementing the Institutes' desire for collaboration and cooperation, the unit utilized its specific expertise and, above all, its numerous contacts with other German, foreign, supra- and international science organizations, both domestically and abroad, as well as its contact in federal politics and the German embassies on site.

The term science diplomacy was ultimately adopted because the department did not want to completely disregard the Foreign Science Policy Initiative launched by the German government in 2009. Rather, as Berthold Neizert, the current department head, has stated, they were trying to “embed” their own internationalization strategy “in a certain sense also politically” and to relate at least parts of this strategy “to the context of foreign science policy”—“without, of course, actively shaping or formulating this policy.”¹³

The interplay between international scientific relations and national foreign science policy doesn't naturally harmonize as seamlessly as the concept of science diplomacy might suggest. From its inception in the late 1940s, transitioning from the Kaiser Wilhelm Society (KWS) to the Max Planck Society, a mindful delineation between scientific research and foreign policy has been consistently maintained to prevent any excessive overlap. This study explores the MPS's nuanced approach in managing this balance over the decades. It examines how the MPS has navigated various foreign policy landscapes, and the conflicts it has faced with other participants in West German foreign policy, international politics, and European foreign policy.

Foreign Science Policy and Science Foreign Policy

To more precisely characterize these conflicts and the divergent underlying interests, I propose two somewhat cumbersome terms as an alternative to the ambiguous term science diplomacy: ‘foreign science policy’ (*Außenwissenschaftspolitik*) and ‘science foreign policy’ (*Wissenschaftsaußenpolitik*). Both terms were first proposed in 2006 by Georg Schütte, the former president of the

13 Quotes: Written communication from Berthold Neizert to CS on March 9, 2022. I was unable to determine exactly when the word “Science Diplomacy” appeared on the MPS website from the analog and digital publications available to me. An earlier Mission Statement on international cooperation at this point from 2014 titled “Die Max-Planck-Gesellschaft. Zuhause in Deutschland—präsent in der Welt” neither mentions ‘science diplomacy’ nor ‘foreign science policy’ or for all that matter any other word combination with ‘politics’ or ‘political’: https://web.archive.org/web/20150317103932/http://www.MPS.de/7897212/Zu_Hause_in_Deutschland_de.pdf, last accessed on Aug. 13, 2022. I thank Gottfried Plehn for this hard-to-find digital document. Only the report of the Federal Government on international cooperation in education, science, and research, 2017 to 2018 (Bundesregierung, *Bericht der Bundesregierung*, Nov. 15, 2019) mentions in its brief presentation of the MPS internationalization strategy, “Foreign Science Policy in the sense of a forward-looking Science Diplomacy as added value for Germany as a research site.”

Alexander von Humboldt Foundation (AvH), which positions itself as “a nexus of foreign and science policy” through its worldwide support of “elite scientific performers,” regardless of their nationality or discipline.¹⁴ Since then, these terms, with the former more commonly used than the latter, have often been used interchangeably and frequently mentioned alongside science diplomacy. However, in the context of this study, these two terms are meant to highlight and differentiate the primary interests in promoting international scientific relations. Science foreign policy in the context of the MPS’s Administrative Headquarters, represents the interpretation of international relations policy that primarily serves the intrinsic scientific interests of the Max Planck Institutes and their researchers. By contrast, the term foreign science policy refers to the way federal governments, governments of partner nations, and supranational organizations use the promotion of bilateral or international scientific cooperation to achieve their diverse political goals on foreign, European, and global political scales.¹⁵ Thus, with these two terms, we can better describe the contrasting aspects of the intersection between science and foreign policy within which the MPS has navigated its cooperative relationships.

Universality and Internationality of Science

Before turning our attention to the checkered history of this relationship between science and foreign policy, which in the case of the MPS has been more characterized by deliberate distancing, we shall conceptually delineate the subject of this study. The difficulties associated with this task are already evidenced by an initial attempt made by MPS President Hans Zacher, whose term in office from 1990 to 1996 was not only marked by German reunification, but also by the accelerating processes of Europeanization. His attempt in 1995 to present the “internationality” of the MPS “in hard facts,” as he himself phrased it, was met with “a void.” He capitulated in his structuring and differentiation efforts to the “mass of international cooperations,” the selection, design and handling of which was subject to the “autonomy of the institutes,” which of course had to be respected.¹⁶ The reality of international scientific relations in the institutes was “too diverse, largely too everyday and altogether amorphous.”¹⁷ It was not just the unfortunate lack of statistical information that he lamented. Zacher also missed the categories with which the “two self-evident facts of the nationality

14 Quotes: Schütte, *Wettlauf ums Wissen*, 2008, Foreword, 9 and Strategy of the Alexander von Humboldt Foundation, <https://www.humboldt-foundation.de/entdecken/ueber-die-humboldt-stiftung/strategie-der-alexander-von-humboldt-stiftung>, last accessed on 3/17/2022. For the history of the AvH, see Jansen, *Exzellenz weltweit*, 2004.

15 On synonymous usage see Schütte, *Wettlauf ums Wissen*, 2008, Vorwort, p. 9; Borgwardt, “Wissenschaftsaußenpolitik,” 2009.

16 Protocol of the meeting of the Scientific Council on Feb. 8, 1995, AMPG, II. Abt., Rep. 62, No. 1983, Quotes: fol. 29, 35, 35 verso.

17 Ibid., fol. 29.

and internationality of research” could be structured in their relationship to each other. However, when it came to “research as a social event” and the “rationality” of the international “dimension of researching existence,” as he wrote, a “black hole” opened up even more.¹⁸ Nevertheless, President Zacher decided to present some “fragments” of his thoughts to his (mostly male) colleagues on the Scientific Council of the MPS, i. e., the General Meeting of its scientific members, in order to finally “initiate the discussion about an optimal internationality of research and the Max Planck Society.”¹⁹

His lecture had misleadingly been announced under the title “The Max Planck Society in the Tension Between Nationality and Universality.” However, in his remarks, Zacher was by no means concerned with the “universality” of science.²⁰ He took for granted the obligation of modern science to prove its scientific validity through the universal recognition of its findings, which has been mandatory at least since the European Enlightenment. Epistemological questions associated with this—such as the intersubjective comprehensibility of processes of knowledge production or the translocal verifiability of the instrumental and experimental settings in which knowledge claiming scientific validity was gained—were not an issue here.²¹ It was not the long since taken-for-granted epistemic identity of modern scientificity and universal validity of knowledge that concerned him, but the internationality of the production of scientific knowledge. That this is by no means self-evident was recently demonstrated by a statement from Dmitri Rogosin, the head of the Russian space organization Roskosmos, who warned of a crash of the International Space Station (ISS) over Europe or the USA as a result of the Western economic sanctions against the Russian aggressor.²²

Since the 19th century, and in Germany since the founding of the German Empire, the production of scientific knowledge has increasingly been organized and funded on a national basis. Parallel to this, processes of internationalization of various kinds have nevertheless taken place, which accelerated after World War II and even more so after the end of the Cold War, and which challenged the nationally constituted science systems. Internationality no longer only opened up new horizons of knowledge and material scopes; instead it had become, according to Zacher, primarily “institutional and normative.”²³ Internationality now increasingly determined what had previously been the monopoly of the

18 Ibid., fol. 26 verso.

19 Ibid., fol. 36 verso.

20 Ibid., fol. 24.

21 See Riedel, “Universalität,” 1979; Stichweh, “Genese,” 2003; Stichweh, “Universalität wissenschaftlichen Wissens,” 2005.

22 See *Der Spiegel*, March 12, 2022, <https://www.spiegel.de/wissenschaft/weltall/iss-russische-raumfahrtbehoerde-roskosmos-warnt-vor-absturz-als-folge-von-sanktionen-a-638ecf4c-eed3-49cb-a615-9a9b8dc94e83>, last accessed on March 20, 2022.

23 Protocol of the meeting of the Scientific Council from Feb. 8, 1995, AMPG, II. Abt., Rep. 62, No. 1983, fol. 25.

nation-state, namely the legal, institutional, financial, and infrastructural conditions, possibilities, and boundaries of scientific research. Therefore, it became important to critically observe this situation, which is fraught with ambiguity with regard to the position of the MPS in the newly forming international scientific landscape.

Zacher, given his experience as President, directly contrasted the international nature of research with the national structure of science systems. Under the umbrella term ‘internationality’ he included all scientific collaborations, exchanges, research facilities, policy relationships, agreements, institutions, procedures, and regulations that went beyond the framework of the nation-state.²⁴ This might have been a concept inspired more by international law, as would be expected for a jurist. It had little to do with an emotionally charged notion of internationality as a symbol of a desired cosmopolitan openness. For Zacher, internationality referred instead to a complex set of institutional and normative challenges that were rapidly expanding while at the same time becoming more complex, which needed to be managed both for the benefit of research and the MPS. Therefore, in the following, internationality is used more as a term quoted from sources than as a categorizing concept.

Opportunities and Risks of the Internationalization of Science

Zacher was particularly aware of the critical side effects of the increasing internationalization of scientific research. This was not simply about the multiplication of regulatory entities. He was also concerned about the “*instrumentalization of research*” and of the cooperation of researchers for “primarily or even exclusively political purposes that lie outside the realm of research,” which were dictated by those very national, inter-, and supranational entities that offered to promote international scientific collaboration.²⁵ These were all the purposes that, according to the concept usage outlined above, were to be assigned to foreign science policy. From a Western democratic perspective, such a purpose could be the desire to transfer one’s own concepts of freedom to non-Western partner countries, along with the idea of research freedom. The purpose could also be development and foreign trade policy goals, or perhaps it was primarily to pave the way for bilateral diplomatic relations. The European Union, emerging as an increasingly powerful and financially robust player in supranational scientific funding, was primarily focusing on integration and cohesion policy objectives, in addition to its economic goals. There is another, more functional aspect to consider, which seemed to hold only a historical significance during the mid-1990s when Zacher was grappling with the internationality of research. This aspect, however, is demonstrating its relevance once again: the ability to conduct

24 Ibid., fol. 24–36 verso.

25 Ibid., fol. 27; emphasis in the original.

foreign policy through restricting bi- and multilateral scientific collaborations or by excluding certain countries from international cooperation.²⁶

There were—and still are—national borders and bloc-political alliance systems that tied scientific universalism, long internalized by scientists all over the world and thus also present in the MPS, back to the geopolitical reality of the Cold War. On the other hand, important international organizations, which were newly formed after World War II, linked the hoped-for securing of world peace with the universal validity claim of modern science. The United Nations (UN) founded the United Nations Educational, Scientific and Cultural Organization (UNESCO) in 1945, making it their second specialized agency following the Food and Agricultural Organization (FAO). The Organization for European Economic Co-operation (OEEC) also relied on science in pursuing its goals and was renamed in 1961 as the Organization for Economic Cooperation and Development (OECD). With regards to West Germany's membership, these two organizations, among others internationally, hoped for the support and commitment of the MPS as the most prominent scientific institution in the Federal Republic.

More challenging than dealing with such international organizations, in which equal national representatives exchange ideas and agree or disagree on a common approach in their respective agendas, could be dealing with supranational organizations. This is because these are characterized by the fact that the member states transfer certain sovereign rights, such as those concerning the promotion of science, to the overarching institution, which then acts as a norm-setting and regulatory body alongside and above the nation-states. The classic example of this is the European Community (EC), or since 1992 the European Union (EU), which has expanded its responsibility for science promotion in several stages since the early 1970s—much to the concern of Zacher and some of his predecessors and successors in the presidency of the MPS.

What's at Stake for the MPS: Institutional Autonomy, State Base Funding, and the Harnack Principle

Indeed, the presidents and the leadership within the Administrative Headquarters feared for the unique status of the MPS within the Federal German science system—a status that had emerged in the immediate post-war period. The western occupying powers insisted, in response to the close entanglement of the KWS with the military-industrial complex of the Nazi regime, that the MPS live up to the self-image they had crafted in discussion with British and American military authorities, namely to be exclusively an institution for basic research. In doing this, the MPS aligned itself with the US research policy strategy for Europe, which was dominant in the first post-war decades and aptly labeled as hegemonic by John Krige. This strategy aimed to harness the scientific potential

26 See in this connection the statements on the attack on Ukraine cited in footnote 7.

in the Western European countries. However, the strategy sought to steer it towards areas that neither endangered America's own military and technological leadership over the Western allies nor provided too much potential military benefit to the Eastern opposing power just beyond the Iron Curtain in the heart of Europe, should it ever fall into their hands.²⁷

The prohibitions on research enacted by the victorious powers over their occupied German zones spurred a shift in knowledge orientations within the MPS. As a result, prominent nuclear researchers transitioned from nuclear energy research towards studies in cosmology. Conversely, agricultural research, with its direct applications, continued well into the early 1970s. In the Max Planck Institutes engaged in materials, surfaces, iron, and coal research, the potential applications were and still are, a key focus.²⁸ Ultimately though, the MPS emerged from the reshaping of the West German science system as the organization principally tasked with conducting non-university basic research in the Federal Republic. As such, it was regarded as being uninvolved in military research and was not required to perform academic teaching.²⁹ And, thanks to its predominantly state funding, it maintained and still maintains considerable independence from contract and project research driven by other types of interests.³⁰

The extraordinary autonomy of the MPS, which is exceptional in international comparison and has been successfully maintained to this day, is not merely financial. In terms of personnel selection as well, ranging from secretaries and technical assistants to the scientific and administrative staff, all the way up to the directors of the Max Planck Institutes (MPI) and, last but not least, the selection of its presidents, the MPS has been and remains independent—aside from general labor law regulations—from governmental influence or even final decision-making, unlike current state-funded German universities.³¹ This is particularly the case for their most important task, the appointment of new scientific members. After World War II, the Harnack Principle, named after the founding president of the Kaiser Wilhelm Society (KWS), was no longer

27 Regarding American research policy in Europe, see Krige, *American Hegemony*, 2006. For the self-positioning of KWS/MPS as an institution of basic research in the early post-war years, see Sachse, "Research," 2009.

28 See the studies by Bonolis and Leon, *Astrophysics*, 2023; Schwerin, "Landwirtschaftswissenschaften," 2024; and Steinhauser, "Materialforschung," 2024. For the understanding of basic research in the early years of the MPS, see Sachse, "Grundlagenforschung," 2014.

29 On the dual-use potential of some MPI research, see Schmaltz, "Militärische Forschung," 2024.

30 Trischler, "Ort der Max-Planck-Gesellschaft," 2024. For the proportional financing of the MPS by the federal government and the *Länder* (states), as well as the advantages and disadvantages of this specific financial arrangement throughout the history of the Federal Republic of Germany, see the studies by Balcar, *Instrumentenbau—Patentvermarktung—Ausgründungen*, 2018; Balcar, *Ursprünge der MPS*, 2019; Balcar, *Wandel*, 2020.

31 On the conflicts that were waged within the MPS in the course of the progressive legalization of employment relationships in the Federal Republic, see Scholz, *Partizipation*, 2019; Kolboske, *Chancengleichheit*, 2018.

strictly applied. This principle proposed the idea of building an institute around an exceptional researcher and then granting him (or very rarely: her) complete freedom in every respect.³² Remnants of this principle can still be seen today. Scientific Members continue to be appointed for life. However, since the 1960s, their roles have been reduced primarily to heading a department, holding titles as directors within an MPI. As the size of these MPIs has increased since the 1970s, these directors often share leadership responsibilities with other department heads (though rarely with a female department head). However, within their respective departments, they retain their freedom in making research decisions and continue to hold personnel and financial decision-making authority within the framework of their negotiated positions and financial plans.³³ This unity of scientific and administrative leadership, a legacy of the Harnack Principle, is no longer appreciated by all scientific members as an expansion of autonomy and responsibility. This is particularly true when, as has been increasingly the case since the 1990s, they transition to the MPS from other national science systems where they were spared administrative leadership roles. Perhaps for this reason, some of them view their appointment to an MPI as a reputation-enhancing stage, but no longer as the ultimate pinnacle of their career.³⁴

The Core Identity of the MPS: Basic Research

The focus on basic research served a dual purpose after it facilitated the transition from the KWS to the MPS during the occupation period. Internally, it served as a selection criterion for the closure of older Max Planck Institutes or divisions and the establishment of new ones. The determining factor was not actually the proximity or distance of a research area to industrial use or clinical application. The decisive questions were rather whether the respective area was already adequately covered elsewhere, such as at universities; how it would correspond with the existing institutional and epistemic infrastructure of thematically related MPIs; whether an exceptional research personality could be attracted; and whether, in this combination, outstanding gains in knowledge could be expected at the cutting edge of international research. If these questions could be satisfactorily answered, the substantiation of basic research could be achieved without further detailed philosophical considerations. Consequently, the research field in question could remain in the MPS or be newly admitted.³⁵

32 The Protestant theologian and church historian Adolf von Harnack served as KWS President from 1911 to 1930. On the Harnack Principle, see Laitko, “Harnack-Prinzip,” 2014.

33 For a detailed discussion of the development of governance structures in the MPS, see Balcar, *Wandel*, 2020, pp. 171–243.

34 Some scientific members articulated corresponding observations on the sidelines of advisory board meetings of the GMPG project.

35 Regarding this, see mainly the “Cluster-Studien” that emerged within the framework of the GMPG program: Bonolis and Leon, *Astrophysics*, 2023; Lax, *Wissenschaft*, 2020; and Lax, “Erdsystemwissenschaften,” 2024.

Externally, the reference to basic research served as a code for the elevated position of the MPS within the reconstructing and differentiating West German research system. With this, the MPS particularly distanced itself from the Fraunhofer Society for Applied Research (FhG, Fraunhofer-Gesellschaft), which was founded in 1948, but also from industrially funded or operated research institutions and research institutions that were subordinate to the respective specialist ministries at federal and *Länder* (states) levels and were tasked with department-specific research. It also separated itself from independent institutes that were primarily concerned with contracts within the framework of departmental research announced and funded by the federal ministries.³⁶

When this study uses the term ‘basic research,’ which is part and parcel of any historical examination of the MPS, it serves a dual purpose. Firstly, it refers to how the MPS positions itself and its research within the broader research community and society. Secondly, it addresses how the MPS organizes and categorizes its work internally. However, this usage is not meant to comment on the general validity of distinguishing between basic and applied research or to pass judgment on the specific research area being discussed. The boundary between ‘basic science’ and ‘applied science’ is not fixed, it changes over time. Similarly, how both types of science are valued in society and politics is also subject to change.³⁷ Basic research remained a shifting target within the interplay of science, economy, politics, and society, consistently necessitating the MPS to recalibrate its stance. Particularly in the scientific relations with the Eastern Bloc countries, the unique Federal German understanding of basic research and its institutional embodiment in the MPS were constantly being tested.

The MPS in the Federal Republic's Research System and its Representation Abroad

Within the academic research system of the Federal Republic, the MPS shares responsibility for basic research with the German Research Foundation (DFG, Deutsche Forschungsgemeinschaft). However, the latter does not itself conduct research nor maintain its own research institutes but instead awards grants primarily to university-affiliated applicants, as well as those from Max Planck Institutes and other non-university research institutions, provided the respective projects can sufficiently be classified as basic research, according to the current understanding. Despite complete state funding, the DFG, similar to the MPS, maintains autonomy in the design of application and award procedures, the appointment of selection and assessment committees, its funding decisions, and also its personnel policy, including the appointment of its presidents.³⁸ In

36 See Trischler and Bruch, *Forschung für den Markt*, 1999; Brill, *Von der Blauen Liste*, 2017.

37 Regarding this, see Kaldewey and Schauz, *Basic and Applied Research*, 2018.

38 On the history of the DFG, see the series *Beiträge und Studien zur Geschichte der Deutschen Forschungsgemeinschaft*, particularly the volumes by Orth, *Autonomie und*

the national context, the DFG and MPS rarely interfered with each other due to their very differently structured business areas. Moreover, they were closely interlinked at the leadership level, with representatives from each organization participating in the presidency and senate of the other. On the desk officer level, coordination was streamlined on the short communication line. MPS and DFG were particularly united in defending their substantial institutional autonomy from the responsible federal ministry, as well as in their ongoing efforts to increase the share of basic research in the total expenditures for science and research in the Federal Republic. This also involved pushing for corresponding budget increases and opposing any cutbacks.

In pursuing these interests, they received further support from the Alliance of Science Organizations, which was occasionally (self-)ironically referred to by its high-ranking members and in the press as “holy.” Initially, it was an informal circle in which the presidents of the DFG, the MPS, and the West German Rectors’ Conference (WRK, Westdeutsche Rektorenkonferenz) coordinated as to how they wanted to position themselves on science policy matters in relation to the federal government. The federal government, in turn, increased its commitment to science and research policy—not least in reaction to the “Sputnik shock” triggered in the West by the launch of the first Soviet space satellite in 1957—and swiftly implemented longer standing plans. These included the establishment of the Science Council (Wissenschaftsrat) in 1958; from then on, it was to advise both the federal government and the *Länder*, whose cultural sovereignty also extended to higher education, on scientific policy issues and especially on the allocation of available budgets for science and research. Along with the other two “saints” of the Alliance, the MPS took on the task of nominating 16 of the 39 members of this body; the remaining members were partly appointed and partly delegated by the federal and *Länder* governments. The then MPS President Otto Hahn and his successor Adolf Butenandt, however, saw no need to join the Science Council themselves.³⁹ Nonetheless, they did not refrain from exerting influence on the federal government’s science policy within the informal circle of the Alliance. This circle soon included the chairman of the Science Council, and from the 1970s onwards, leading representatives of other science organizations as well.⁴⁰ In fact, the heads of the Federal Ministry for Scientific Research (BMWF,

Planung, 2011; Wagner, *Notgemeinschaften*, 2021, pg. 333–353 and 447–451. Here the extraordinary autonomy of the DFG vis à vis its government financier becomes clear when compared to its U. S. equivalent, the National Science Foundation (NSF).

39 On the history of the Science Council, see Bartz, *Wissenschaftsrat*, 2007, particularly pages 36 and 42. See also Balcar, *Change*, 2020, pp. 102–105; Orth, *Autonomie und Planung*, 2011, pp. 101–106.

40 Today, the Alliance includes: DFG, MPS, German Rectors’ Conference (HRK), Science Council, AvH, FhG, DAAD, Helmholtz Association (previously: Consortium of Major Research Institutions, Arbeitsgemeinschaft der Großforschungseinrichtungen, AGF), Leibniz Association, and Leopoldina (German Research Foundation, Alliance, https://www.dfg.de/dfg_profil/allianz/index.html, last accessed on Jan. 17, 2022.)

Bundesministerium für wissenschaftliche Forschung), which emerged in 1962 from the Federal Ministry for Nuclear Energy, and its successor ministries, did more than just listen to their official Science Council. They repeatedly sought informal discussions with the presidents of the science organizations united in the “Holy Alliance” during the “fireside chats” within the “circle of presidents.”⁴¹ There, agreements were also reached on the West German stance on European research policy and the procedure for integrating the East German ‘new *Bundesländer*’ into the West German research system.

This system is known for its complexity, encompassing a challenging mixture of institutional diversity, autonomy, interconnectedness, formality, and organized informality, as well as a blend of federal and *Länder* competence. This amalgamation makes it difficult for outsiders to fully understand it. One key component that was missing until 2008 was a national academy of sciences.⁴² Such an institution could have served as a point of contact for foreign research organizations and could have guided them to suitable partners for collaboration. Beginning in the 17th century, regional academies founded in small German countries and acting as scholarly societies joined international associations like the International Council of Scientific Unions (ICSU). However, since the end of the 19th century, they have played only a minor role in Germany’s overall research system and even less in the foreign science policy of federal governments. The well-respected Leopoldina in Halle, which endured both 20th-century German dictatorships and was only promoted to the National Academy of Sciences in 2008, faces a future challenge. It must demonstrate how it will carry out its role as an international representative, not only to the world but also among the other German research organizations.⁴³

41 The history of the Alliance of Science Organizations is currently being researched as part of a sub-project of the DFG research group “Cooperation and Competition in the Sciences” by Helmut Trischler and Vanessa Osganian; the first publications are: Osganian, “Competitive Cooperation,” 2022; Osganian and Trischler, *MPG als wissenschaftspolitische Akteurin*, 2022. The departmental assignments and designations for the federal ministries responsible for research have changed several times: 1955–1957 Ministry for Atomic Affairs; 1957–1962 Ministry for Atomic (Nuclear) Energy and Water Management; 1962–1969 Ministry for Scientific Research (BMwF); 1969–1972 Ministry for Education and Science (BMBW); 1972–1994 Ministry for Research and Technology (BMFT); 1994–1998 Ministry for Education, Science, Research, and Technology (BMBF); from 1998 Ministry for Education and Research (BMBF).

42 Feichtinger and Uhl, *Akademien der Wissenschaften in Zentraleuropa*, 2018; Kocka, *Berliner Akademien der Wissenschaften*, 2002.

43 idw-Informationsdienst Wissenschaft, Nachrichten, Termine, Experten, <https://idw-online.de/de/news269794>, last accessed on March 21, 2021. An impressive list of current international collaborations and networks can be found on the Leopoldina website, International Relations, <https://www.leopoldina.org/international/>, last accessed on March 21, 2022. For the history of the Leopoldina see Gerstengarbe, Thiel and Bruch, *Leopoldina*, 2016.

Until the end of the Cold War and even beyond, the DFG represented the official face of West German science abroad. It was responsible for the field of basic research—both university- and extra-university-based—to establish cooperation and exchange agreements with foreign national science organizations and to provide corresponding financial support for the Federal German side. The problem was that foreign research institutions often preferred to turn directly to the globally known MPS, where the research of interest to them was being conducted. In particular, the so-called working academies, established in the Eastern Bloc countries following the Soviet model and where nationally leading research institutes were gathered, saw in the MPS their exact counterpart, as did research organizations from other countries with a more centrally organized science system. The fact that the possibly ideologically dissonant humanities and social sciences were represented to a lesser extent than the far more dominant natural sciences was considered an additional advantage by the Eastern science academies, especially in comparison to the DFG, which supported these disciplines as well as the natural sciences and wanted to include them in the exchange with the Eastern Bloc countries. The MPS, thanks to its extensive base funding not dependent on DFG grants and valuing its autonomy in its international relations, found this favorable in some respects, but not all. From this ambiguous delineation of competencies between the DFG and MPS in representation to foreign countries, which had to be negotiated again and again, opportunities for action could arise both for the participating organizations and for the foreign science policy of the federal government. But, if the science foreign policy interests of the MPS could not be aligned with the respective foreign science policy priorities of the federal government, conflicts could also arise. Both of these aspects must be considered in further research.

As far as the MPS's science foreign policy activities extended to the hemisphere of the political West, such as when looking for locations for observatories in Southern Europe, Africa or South America and their later bi- or multilateral operations, such clashes of interests were rather rare. In general, collaborations with Western European and North American partner institutions were politically unproblematic.⁴⁴ It was a different story with cross-bloc collaborations with Eastern scientists and the large research infrastructures jointly operated with their institutions, as they could not only make sense given the enormous costs but could also be imperative in terms of research strategy, most notably in astronomical research, space, nuclear or fusion research. Here, whether such cooperations were promoted, tolerated, hindered or prohibited, and how the status of the MPS was represented in relation to the foreign science policy actors at home and abroad, depended on the current geopolitical climate, the federal

44 See Henning, "Auslandsbeziehungen," 1999, p. 109, who points out that cooperation with the USA or the National Science Foundation (NSF) went "smoothly" for the longest time. The same was true with the British Royal Society, as Kraft et al. ("Die MPG in der Welt," 2024, pp. 691–695) show.

government's positioning within it and the maneuvering skill of the MPS and its partner institutions.

The MPS as an Institutional Actor

Now that we have placed the MPS in its foreign science policy context within the Federal Republic, let's look at its internal structures. These were designed to guarantee its institutes the greatest possible autonomy, in line with the Harnack Principle—modified in various charter reforms after 1945—even when shaping their bilateral and multilateral scientific relations with colleagues and research institutions abroad.⁴⁵ This began with the fact that despite its predominantly public funding, the MPS is not organized as a public-law institution or a subordinate authority of a ministry. Instead, it operates as a registered association, independent from government directives, much like the KWS before it, which, however, was funded by a more balanced mix of public and private contributions. As prescribed by association law, the annual General Meeting of all scientific, supporting, and honorary members was the central body, but not necessarily the most important one. This body elected or appointed the proposed members to the Senate, the MPS's ultimate decision-making authority, partly from among themselves and partly including public figures, always including representatives of large companies and banks. Two federal representatives and three *Länder* representatives at the ministerial or state secretary level, primarily from departments responsible for finance and research, participated ex officio in the thrice-yearly Senate meetings. The Senate, in turn, elected the required association officials: the president, who the 1964 charter reform granted extensive directive authority, the vice presidents (including, only in the 21st century, female vice presidents), secretaries, and treasurers, as well as their deputies.⁴⁶

The number of Max Planck Institutes (MPIs), which was around twenty immediately after World War II and around forty by 1960, increased notably in the 1960s, but also in the 1970s and early 1980s to just under sixty. After reunification, this number quickly shot up to the more or less stable count of around eighty-five MPIs that we see today.⁴⁷ These institutes have always been grouped into three blocks divided by discipline: The Humanities Section (GWS, Geisteswissenschaftliche Sektion) forms the smallest block by far, even after its expansion in the 1990s and its renaming in 2004 to the Humanities, Social Sciences, and Human Sciences Section (GSHS, Geistes-, Sozial- und Humanwis-

45 Regarding the charter reforms of 1948, 1950, 1964, and 1972 see Schön, *Grundlagenwissenschaft*, 2015; Balcar, *Ursprünge der MPS*, 2019, 110–116, 143; Balcar, *Wandel*, 2020, pp. 179–243.

46 This condensed representation is primarily based on Balcar, *Ursprünge der MPG*, 2019; Balcar, *Wandel*, 2020, and Balcar, “Die MPG,” 2024, pp. 68–103.

47 The increase in the number of MPIs from 1948 to 1960 was largely due to the reintegration of the Kaiser Wilhelm Institutes (KWIs) in the French occupation zone in 1949 and the KWIs remaining in West Berlin in the 1950s and less so to new foundations.

senschaftliche Sektion). The two other sections are the Chemistry, Physics and Technology Section (CPTS) and the Biology and Medicine Section (BMS), which are similar in size in terms of the number of institutes, scientific members, and employees, with occasional fluctuations. The primary responsibility for the sections is internal opinion formation and coordination on the closure, merger, division, and establishment of new institutes, as well as the selection of new members. It is thus the sections where the substantive development of the MPS is at stake. The sections' draft resolutions are discussed in the Scientific Council, where all scientific members convene, and if agreed upon, are passed on to the Senate as the final decision-making body.

In his duties, the President is supported by the Executive Council, which meets much more frequently than the Senate; its members include the vice-presidents, the section chairpersons, and some additional Senate members, always including representatives of large companies. Above all, the Administrative Headquarters of the MPS, headed by the Secretary-General, assists the President—a structure that has grown from a handful of people in the early post-war years to several hundred employees today. Initially, they were grouped into departments, the number of which has also increased, leading to their consolidation into four divisions initially in the 1960s. The current organizational chart lists two big divisions at the highest administrative level and around a dozen departments, each with several units.⁴⁸ It is only starting at the end of the 20th century that we see a few women in top positions of administration and research.

During the period under investigation, science foreign policy and foreign science policy issues—insofar as they concerned the MPS as a whole and did not remain at the level of the institutes or the scientific members—were discussed in these bodies, most likely in the Senate and in the run-up to its meetings in the Executive Council. Here, representatives from the federal and *Länder* governments and from public life met with the MPS's top management level and representatives of the Scientific Council. They were regularly informed by the president about current developments in international scientific relations and in turn made recommendations.

The International Relations Unit

The day-to-day administration of international relations took place in direct contact between the institutes or individual scientists and the International Relations Unit, which was located in Division I of the Administrative Headquarters responsible for research policy. Here, experiences were collected, more difficult conflicts were mitigated, solutions to problems were developed, contracts were drafted, and necessary coordination between other foreign science policy par-

48 The organizational chart can be accessed on this website: Max Planck Society, Administrative Headquarters, <https://www.MPS.de/karriere/gv>, last accessed on Feb. 2, 2024. I thank Jaromir Balcar for additional information.

ticipants at home and abroad was initiated. Here, the guidelines of its own science foreign policy were conceived and updated, keynote speeches like Zacher's considerations for optimizing the internationality of the MPS were prepared, the corresponding passages for the annual ceremonial speeches of the presidents at the General Meetings and the annual reports of the MPS were preformulated. However, the head of the unit and his staff also carried out—quite in line with their understanding of science foreign policy—exploratory trips to countries such as China, Brazil or Namibia, with which there were still few contacts at the time. The purpose of these trips was to get an impression of the respective research capacities, identify possible partner institutes, establish first contacts with the corresponding administrations abroad and possibly lay the groundwork for subsequent visits by the president or delegation exchanges. In the 1990s, such trips led primarily to Eastern European countries to get an on-the-spot impression of the scientific infrastructural situation after the political upheavals in these countries, to reactivate existing contacts and to establish new ones.

The International Relations Unit closely monitored the critical interface between its own science foreign policy and the federal government's foreign science policy. It was essential not to brusquely offend those responsible for the latter, particularly if the goal was to avoid alienating the main financier and to successfully pursue not only science foreign policy interests but also broader, long-term objectives. In this context, the MPS, embodied by the President, the Secretary-General, and the International Relations Unit acting as an "ideal collective player" urged adherence to the currently applicable rules of foreign science policy. There were instances where individual institutes or scientists, always seeking ways to potentially bypass these constraints on a case-by-case basis, were occasionally reminded of the real-political borders of universality and autonomy in international scientific collaborations. Thus, the International Relations Unit, as well as the MPS as an institutional actor, had variable space for maneuvering. This study will lay out the details of how this space was either expanded or restricted by different foreign or geopolitical situations.

Research and Responsibility

To what extent the MPS acted as an overall entity in another realm, namely the prevention of nuclear war, is a more complex question that recurs in various contexts throughout this study. It was also the paramount task of science diplomacy—or, as it was more precisely termed at the time, in contrast to official state diplomacy: the Track-II diplomacy of scientists and other transnationally connected professional groups—during the Cold War.⁴⁹ The question of whether and how the MPS should engage in this informal diplomatic field carried significant potential for conflict, not only in relation to the federal government and

49 See here Montville, "Track Two Diplomacy," vol. 2, 1991; Diamond and McDonald, *Multi-Track Diplomacy*, 1996.

other foreign (science) policy actors but also within the MPS itself. This involved such contentious issues as the political and social responsibility of scientists, the relationship between scientific and political rationality, the permeability or delineation of the societal subsystems of politics and science, the role of scientists in expert councils or political consultancy, and the relationship between the civic individual and the scientific institution.

Were one to categorize these conflict potentials drawing on the terminology of the new science diplomacy into the three distinct dimensions identified therein, they would mainly concern the use of ‘science for diplomacy,’ i. e., the instrumentalization of research, as MPS President Zacher had termed it, for foreign policy, diplomatic, or even cosmopolitan purposes.⁵⁰ Indeed, most of the conflicts occurred in this realm, where the science foreign policy of the MPS clashed with the foreign policy of the Federal Government, and occasionally with that of partner countries. This even went so far that the MPS practiced science against diplomacy, as in the case of cooperation with Soviet research institutions—a dimension that was not envisaged in the hitherto scarcely questioned harmonious and future-oriented understanding of the new science diplomacy. With the dimension of ‘diplomacy for science’ the MPS faced fewer difficulties and readily used diplomatic assistance from the Foreign Office or the West German embassies wherever it facilitated the realization of desired cooperations. Regarding the third dimension of ‘science in diplomacy,’ meaning the provision or utilization of specialized scientific expertise in preparation for or during diplomatic negotiations in various fields of international politics, problems were generally avoided as long as the consulted experts from the MPS restricted themselves to providing their expert knowledge and did not publicly comment on political decision-making processes. Here, the experts at the MPIs for Law specialized in various branches of international law were especially sought after, but of course also those from the natural science institutes.⁵¹ A thorough examination of the activities of MPS members in the increasingly numerous expert councils and advisory committees of state authorities and federal and *Länder* ministries since the 1960s, and thus their contributions to the growing influence of science in politics, which has been more intensively reflected upon in historical research in the last two decades, would be worthwhile. However, such an examination is beyond the scope of this study.⁵²

50 For the definition of these dimensions, see The Royal Society, *New Frontiers in Science Diplomacy*, 2010.

51 Regarding the MPIs dealing with jurisprudence, which are only occasionally mentioned in this study, see Duve, Kunstreich, and Vogenauer, *Rechtswissenschaft*, 2022.

52 As a commentary from a contemporary perspective: Habermas, “Verwissenschaftlichte Politik,” 1968. For the historical development of scientific policy advice in the Federal Republic, see in particular the works of Rudloff, “Politikberatung,” 2004; Rudloff, *Does Science Matter?*, 2005; Rudloff, “Expertenkommissionen,” 2010, and other contributions in this volume. A longer historical perspective is reflected in the anthology by Collin and Horstmann, *Wissen des Staates*, 2004; Hüntelmann and Schneider, *Jenseits von Humboldt*, 2010.

Indeed, the boundary lines between the provision of scientific knowledge for foreign policy and more in-depth advice, as well as the direct influence on politics legitimized by science, were neither clearly marked nor historically constant. Some of the resulting conflicts in the field of international politics, and not least the question of to what extent the MPS wanted to position itself as a foreign political think tank of the Federal Government, challenged the self-understanding of the MPS and will certainly concern us in the following.⁵³ The answer to how the MPS perceived itself and was perceived by others varies depending on the different historical phases and foreign science policy problem clusters which occurred during the nearly fifty-year Cold War and the recently concluded post-Soviet peace period in Europe.

Period under Investigation

This study cannot, of course, cover such a long period of time in full chronological detail or completely thematically, nor can it analyze it with consistently equal analytical depth. The Cold War era will be examined most closely, starting with the transformation of the KWS into the MPS in the final months of World War II and extending into the first years of German reunification and the development of science in the new *Länder*. In this context, the term Cold War refers to the historical era that ended in 1990/91, characterized by systemic competition between the capitalist, predominantly democratically constituted West, led by the USA, and the socialist countries of the East, governed by state parties, led by the Soviet Union—including all phases of détente and confrontation between these two blocks, as well as the “hot” geostrategic proxy wars in various regions of the world.⁵⁴

Some themes continue to be relevant into the first two decades of the 21st century. Among these is the MPS's conduct in connection with the Europeanization

53 The role of think tanks or intellectual factories in advising governments has so far been examined predominantly from a political science perspective, mainly for the USA, and occasionally explicitly for foreign policy and diplomacy: Kubilay, *Rolle der Think Tanks*, 2013; Stone, “Private Authority,” 2004; Brandstetter, Pias, and Vehlken, “Think-Tank-Denken,” 2010; Braml, *Think Tanks*, 2004; Gellner, *Ideenagenturen*, 1995. Greiner, Müller, and Weber have compiled a large number of historical individual studies on think tanks in the USA and the Soviet Union and their activities on other continents in *Macht und Geist*, 2011.

54 Compare Stöver, *Der Kalte Krieg*, 2007; Greiner, Müller, and Walter, *Heisse Kriege*, 2006. The occasional talk of a “Second Cold War,” whose beginning is dated to around the mid-1970s until the collapse of the Soviet Union, seems to me to focus too much on the West German perspective and overlooks the never-ceased arms race or the simultaneity of disarmament, rearmament, and conversion as well as the frequent coexistence of détente and confrontation, whether in different world regions or in different policy areas. See Gassert, Geiger, and Wentker, *Zweiter Kalte Krieg*, 2011. For diverging understandings, uses of terms, and periodizations of the Cold War, see Nehring, “Review Article,” 2012.

of science and research pushed by the EC/EU. This also encompasses the MPS's efforts to compete in the global "battle for the best minds" and to enhance Germany's reputation as a hub for scientific innovation. Another ongoing theme is the narrow, obstacle-ridden path towards including ecological or Earth system research within the MPS's portfolio—a path which should branch into a new multidisciplinary research cluster only thanks to numerous politically driven institute foundations in Germany's new *Länder*. Lastly, this Earth system research has made concerns for the sustainability of human life on this planet a priority item on the MPS's agenda.⁵⁵

Structure of the Study

This study examines the problem areas outlined here in three chapters, each from a different perspective and with a different emphasis.

It begins with a historical reconstruction of the intricate process through which the MPS shaped its specific understanding of science foreign policy. This spans from its beginnings under Allied occupation to the accelerated expansion of the European Research Area after the end of the Cold War. Essential in this context were, on one hand, the confrontations with Allied reservations stemming from the participation of its predecessor, the KWS, in the Nazi regime and, on the other hand, the engagement with American concepts of scientific (foreign) policy consultancy within a democratic context. The foreign science policy expectations of the respective federal governments towards the MPS, as the most internationally prominent German research organization, also had a significant influence. The process of an increasing Europeanization of research funding that began in the 1970s particularly challenged the MPS in its understanding of itself as an autonomous institution of basic research, albeit one that was fundamentally financed by the state.

The following chapter assembles four case studies, each focusing on unique bilateral scientific relationships of the MPS. Here, the relationship between science foreign policy and foreign science policy is revealed in various historical manifestations. Simultaneously, the historical-analytical suitability of the three or four described dimensions of science diplomacy—science for diplomacy, science against diplomacy, diplomacy for science, science in diplomacy—can be tested. Common to these case studies is that they do not harmoniously fit into the guiding principle of the MPS's Administrative Headquarters and its International Relations Unit, which prioritizes cooperation based on intrinsic scientific motivations, independent of respective intergovernmental relations.

55 Regarding the cluster concept developed as part of the GMPG project, see Reinhardt, "Strukturen der Forschung," 2024. For the resistable rise of the Earth System Research cluster in the MPS, see Lax, *Von der Atmosphärenchemie zur Erforschung des Erdsystems*, 2018; Lax, *Wissenschaft*, 2020.

First, the chapter examines foreign institutes that were either established during the founding period of the KWS or arose in the context of Nazi expansionist policies towards Southeastern Europe. Among these, only the art history institute known as the Bibliotheca Hertziana in Rome was returned to the MPS, after long negotiations following the war. Subsequent country studies on Spain, the Soviet Union, and China explore bilateral scientific relationships of the MPS that were all shaped in specific ways by foreign policy over long periods before the MPS succeeded in “normalizing” them in accordance with its preferred approach to science foreign policy.

The next chapter explores the relationship between the roles of the individual scientist as a civic person and as a member of a scientific institution, and how this relationship has evolved throughout the history of the MPS into the 21st century. Time and again, balancing acts between two incompatible political positions were necessary, and as history progressed, these became increasingly difficult to achieve. On one hand, the MPS’s self-presentation as a politically disinterested institution dedicated to “pure” fundamental research—in distinction from the KWS as its predecessor—had to remain untarnished. On the other hand, it could not ignore the international calls for social and political responsibility in science for the potential consequences of research findings, which had grown more vocal since the atomic bombings of Hiroshima and Nagasaki. These balancing acts began with memoranda against nuclear war and for the recognition of geopolitical realities after the end of World War II. They continued in debates about whether or not to participate in civil society and transnational disarmament initiatives and eventually culminated in lengthy controversies over whether or not the MPS should engage in planet-oriented ecological research.

The way these conflictual developments are presented in all three chapters follows the style of a mostly chronological narrative. Yet, its phasing aligns itself with the dominant societal and political contexts of the time. This implies that the narrative, on the one hand, mirrors the evolving foreign policy paradigms of consecutive federal governments, and on the other hand, reflects the historical-political changes in partner countries. Additionally, it acknowledges the momentum of social movements and internationally coordinated activities of scientists advocating for peace, disarmament, and environmental politics. Despite these variants, the pace of all these histories remains largely dictated by the political timeline of the Cold War and its repercussions.

Research Background

With its historical approach to science policy at the intersection of research and diplomacy, and of science foreign policy and foreign science policy, this study breaks new ground in many respects. This applies, first of all, to the history of the MPS, whose first six decades have currently been the subject of the research program “History of the Max Planck Society” (GMPG, Geschichte der Max-Planck-Gesellschaft) at the MPI for the History of Science. Within the GMPG

program, this study has been developed in continuous exchange with the authors of the other, concurrently published sub-studies, particularly with regard to the structural development of the MPS and some bi- or multilateral research collaborations treated more extensively there.⁵⁶ With regard to the international relations of the MPS, there are some older contributions, but they mostly focus on the first two decades after the end of World War II or on individual countries, occasionally taking into account the context of Federal German foreign policy and international politics.⁵⁷ More recent references to the international relations of the MPS, but also to its (foreign) political engagement in the Federal Republic, can be found in the more biographically-oriented studies of individual prominent MPS scientists; not coincidentally, they focus on several prominent researchers such as Werner Heisenberg, Otto Hahn, Wolfgang Gentner, and Carl Friedrich von Weizsäcker.⁵⁸ A systematic reconstruction of the MPS's science foreign policy in confrontation with the foreign (science) policy of the Federal Republic

56 For the structure of the GMPG program, its employees, and its sub-studies, as well as the publication strategy, see the website: GMPG, Research Program, <https://gmpg.mpiwg-berlin.mpg.de/en/>, last accessed on Feb. 2, 2024. Some directly related topics that were addressed within the GMPG program and are only paraphrased in this study include: Steinhauser, Gutfreund, and Renn, *Turning Points in the History of German-Israeli Scientific Cooperation*, 2017; Ash, *Kontext der Deutschen Vereinigung*, 2020; Ash, *Max-Planck-Gesellschaft*, 2023; for the CNRS see: Kraft et al., "Die MPG in der Welt," 2024, pp. 687–691; for the international view of the MPS as mirrored in the world-leading natural science journals *Nature* and *Science* see *ibid.*, pp. 691–694.

57 Of the eight contributions assembled by Vierhaus and vom Brocke in 1990 in the third part of the volume under the heading "Internationale Wissenschaftsbeziehungen," only two consider the history after 1945: Stamm-Kuhlmann, "Deutsche Forschung," 1990; Nötzold, "Wissenschaftsbeziehungen," 1990. An initial overview is offered by Henning, "Auslandsbeziehungen," 1999. The relationships of the MPS with individual countries are discussed, among others, by: Presas i Puig, "Science on the Periphery," 2005; Presas i Puig, "Deutsche Wissenschaftler," 2006; Presas i Puig, *Scientific and Technological Relations*, 2007; Presas i Puig, "Human Capital," 2017; Nickel, *Rehovot*, 1989; Nickel, "Wolfgang Gentner und die Begründung," 2006; Hoffmann, "50 Jahre," 2015; Deichmann, "Collaborations," 2015; Steinhauser, Gutfreund, and Renn, *Turning Points*, 2017; Heinemann, "La France," 2012; Defrance, "France-Germany," 2019.

58 Particularly worth emphasizing from the extensive international literature on Heisenberg, which primarily deals with his role in the Uranium Club and nuclear research in the "Third Reich," is the comprehensive study of Heisenberg as a public persona of the atomic age by Carson, *Heisenberg in the Atomic Age*, 2010. See also on Hahn and others: Oexle, *Hahn, Heisenberg und die anderen*, 2003; Sime, *Otto Hahn und die Max-Planck-Gesellschaft*, 2004; Walker, "Otto Hahn," 2006; on Gentner: Hoffmann and Schmidt-Rohr, "Wolfgang Gentner," 2006; on Weizsäcker most recently: Hentschel and Hoffmann, *Carl Friedrich von Weizsäcker*, 2014; as well as the biographical-comparative study by Kraus, *Von der Uranspaltung zur Göttinger Erklärung*, 2001. Biographical studies of MPS bioscientists are few and mostly about MPS President Adolf Butenandt: Karlson, *Biochemiker, Hormonforscher, Wissenschaftspolitiker*, 1990; Ebbinghaus and Roth, "Adolf Butenandt als Biochemiker," 2002; Schieder and Trunk, *Adolf Butenandt und die KWG*, 2004.

as well as the Europeanization and globalization processes in the second half of the 20th and the beginning of the 21st century is still outstanding.⁵⁹

The situation is similar for the history of science in the Federal Republic of Germany as a whole. Numerous studies have been produced over the last few decades that deal with the processing of the Nazi past by German scientific institutions. These include the book series resulting from the major research programs on the history of the Kaiser Wilhelm Society and the German Research Foundation, as well as individual publications on the history of German universities, professional societies in various disciplines, and science academies. Although they often cross the epoch boundary of 1945, these studies primarily consider the international relations of these institutions in the post-war years from the perspective of emigration and remigration of scientists persecuted under the Nazis, as well as the further career paths of scientists who remained in Nazi Germany and their hesitant reintegration into the international scientific communities.⁶⁰ However, their integration into West German foreign policy or international politics is less often focused on.⁶¹ The situation is different for science funding institutions like the Alexander von Humboldt Foundation (AvH) or the DAAD, which have international exchange as their primary purpose, or for those that were only founded after 1945.⁶² For example, Helmut Trischler and Rüdiger vom Bruch in their history of the Fraunhofer Society (FhG) dedicate a whole chapter to its internationalization, showing clear parallels with the MPS in terms of temporal progression and regional orientation in interna-

59 This overview does not contain a detailed look at the scattered, partly (auto)biographical literature, anniversary writings of individual MPis, historical reviews in the MPS's publication organs (*MPG-Spiegel; Berichte und Mitteilungen; MPG Forschung*), and similar literature. See Schmaltz, "Literatur," 2024. Important 'in-house' reference works, however, are Henning and Kazemi, *Chronik der KWG/MPS*, 2011, especially the introduction, pp. 1–34; Henning and Kazemi, *Handbuch*, vols. 1 and 2, 2016. Also helpful in many individual questions are the two publications of the 75th and 100th anniversaries of the KWS/MPS: Vierhaus and Brocke, *Forschung im Spannungsfeld von Politik und Gesellschaft*, 1990; Gruss and Rürup, *Denkorte*, 2010.

60 On the KWS: Schieder and Rürup, *Geschichte der KWG, 2000–2007*. On the DFG: Bruch and Herbert, *Beiträge. Geschichte zur DFG, 2006–2018*; Bruch, Herbert, and Wagner, *Studien zur Geschichte der DFG, 2007–2021*. For selected examples regarding the contemporary history of German universities, professional societies, and academies beyond 1945, see Grüttner et al., *Wissenschaftskulturen*, 2010; Hammerstein, *Johann-Wolfgang-Goethe-Universität*, vol. 1 (1989), vol. 2 (2012), vol. 3 (2014); Dörre, *NS-"Euthanasie"*, 2021; Kocka, *Berliner Akademien der Wissenschaften*, 2002; Gerstengarbe, Thiel, and Bruch, *Leopoldina*, 2016; Feichtinger and Uhl, *Akademien der Wissenschaften in Zentraleuropa*, 2018. The recently published history of the Austrian Academy of Sciences provides a comprehensive presentation up to the present: Feichtinger and Mazohl, *Die Österreichische Akademie*, Volumes 1–3, 2022.

61 For the KWG/MPS see especially Schüring, *Vergangenheitspolitik*, 2006; Rürup, *Schicksale*, 2008; for the DFG: Orth, *Vertreibung*, 2018.

62 For the AvH, there is an anniversary publication: Jansen, *Exzellenz weltweit*, 2004. Here (pp.178–185), the relations with the Foreign Office (AA) are described as a harmonious

tional cooperation.⁶³ However, the differences between these two organizations are also clear when it comes to their significance for the foreign (science) policy of the Federal Republic and the associated agreements or conflicts. This is not surprising, given the complementary division and strictly separated institutional responsibilities of the FhG for applied research, primarily in the form of third-party funded contract research, and the MPS for basic research largely funded by the state.

Compared to the available studies on the history of science in the FRG, the social-historical literature dealing with social movements of the 1960s, 1970s, and 1980s is more difficult to navigate.⁶⁴ This literature is relevant to this study because it sometimes explores the participation of scientists in activities against nuclear war, disarmament, and for peace, especially when it looks at the international connections of these movements.⁶⁵ Often, these works refer to the 1957 Göttingen Declaration against the FRG's military's nuclear armament, drafted by leading MPS nuclear researchers. This declaration has become the founding myth of the West German peace movements.⁶⁶ One notable example is the Federation of German Scientists (VDW, Vereinigung Deutscher Wissenschaftler), founded in 1959, with significant but only briefly committed participation by MPS scientists. Like its American and British counterparts, the Federation of American Scientists (FAS) and the British Atomic Scientists Association (ASA), the VDW sought to be a forum for those West German scientists who were ready

sympiosis, highlighting various services for the AA, among other things, in the training of the next generation for diplomatic service; from the AA's perspective, the AvH is "one of the most successful instruments of foreign cultural policy" (185). For the DAAD, there is also a three-volume anniversary publication authorized by it: Deutscher Akademischer Austauschdienst, *Spuren*, Volumes 1–3, 2000. In the study on the Science Council (Bartz, *Wissenschaftsrat*, 2007), international aspects play hardly any role. For the Thyssen Foundation: Hockerts, *Ein Erbe für die Wissenschaft*, 2018.

63 Trischler and Bruch, *Forschung für den Markt*, 1999, pp. 271–290; of interest is also the comparison of the organization and importance of contract research in the four countries FRG, France, the Netherlands, and the USA, cf. *ibid.*, pp. 256–270.

64 In the meantime, however, a volume has appeared that can be consulted: Roth and Rucht, *Die sozialen Bewegungen*, 2008. The most extensive study to date is Reichardt, *Authentizität*, 2014. For a historiographical overview of social movements from a global perspective, cf. Berger and Nehring, *History of Social Movements*, 2017, especially the editors' introduction: pp. 1–35; and the contribution by Nehring, "Peace Movements," 2017.

65 For my study, the following volumes in particular have proven useful: Gassert, Geiger and Wentker, *Zweiter Kalter Krieg*, 2011; Becker-Schaum et al., *Nuklearkrise*, 2012; and with regard to the international networking of disarmament initiatives by scientists, the three-volume classic by Wittner, *Struggle Against the Bomb*, vol. 1 (1993), vol. 2 (1997), vol. 3 (2003). As an introduction to the intersection of science, technology, and social movements, see: Hess et al., "Science, Technology and Social Movements," 2007.

66 Precisely for this reason, authors repeatedly feel challenged to deconstruct this myth, cf. most recently Lorenz, *Protest der Physiker*, 2011. This, as well as the extensive earlier literature, is addressed in chapters 3.2 and 4.1.

to publicly acknowledge the societal impact of their research.⁶⁷ The VDW—and not the MPS, as the British organizers would have preferred—simultaneously served as the organizational affiliation for the West German Pugwash Group. This group was formed in 1959 in response to the call of the Russell-Einstein Manifesto from 1955 and the subsequent Vienna Declaration three years later.⁶⁸ This group subsequently prepared West Germany's participation in the Pugwash Conferences on Science and World Affairs (PCSWA, Pugwash), which would soon belong to the most important informal cross-bloc forums of Track II Diplomacy during the Cold War. However, as will be demonstrated, the MPS distanced itself as much as possible from these conferences.⁶⁹

With these studies, we venture into the vast historiographical literature on “Cold War Science,” an area that has seen a steady growth since the mid-1990s, particularly in international and Anglo-Saxon literature.⁷⁰ Starting from the atomic bomb projects during and after World War II, the focus remains on disciplines relevant to military research. Although these disciplines extended beyond atomic weaponry, radar, and space research, the big nuclear powers,

67 The history of the VDW has so far only been the focus of a study in an anniversary volume authored by its members and rich in material: Albrecht et al., *50 Jahre VDW*, 2009. An independent historical investigation, such as Kemper has presented for the West German group of International Physicians for the Prevention of Nuclear War (IPPNW), is still lacking (Kemper, *Medizin gegen den Kalten Krieg*, 2016).

68 The manifesto can be found, among other places, on the PCSWA website: Pugwash Conferences on Science and World Affairs, Manifesto, <https://pugwash.org/1955/07/09/statement-manifesto/>, last accessed on Aug. 13, 2022. The Vienna Declaration of 1958 is contained in the Bulletin of Atomic Scientists (BAS), among other places: “Vienna Declaration,” 1958.

69 Regarding the history of the PCSWA up to the 1960s, see Evangelista, *Unarmed Forces*, 1999; Kraft, Nehring, and Sachse, “The Pugwash Conferences and the Global Cold War,” 2018; Kraft and Sachse, *Science, (Anti-)Communism and Diplomacy*, 2020; Kraft, *From Dissent*, 2022; regarding the founding of the West German Pugwash group and its activities also up to the 1960s, see Neuneck and Schaaf, *Geschichte der Pugwash-Bewegung*, 2007; Sachse, “The Max Planck Society and Pugwash during the Cold War,” 2018; Kraft, “Confronting,” 2020. On Track II Diplomacy, see Montville, “Track Two Diplomacy,” vol. 2, 1991; Diamond and McDonald, *Multi-Track Diplomacy*, 1996. Track II Diplomacy, which emphasizes informal transnational exchange among cultural elites, such as nuclear scientists, on equal terms and without an official national negotiation mandate, should not be confused with the ‘soft power’ of political values, cultural, scientific, and technical achievements proposed by Joseph Nye in the 1990s, used by individual states—primarily studied in the case of the USA—to enhance their geopolitical influence in certain countries, regions, or globally: Nye, “Soft Power,” 1990; Nye, *Soft Power*, 2004.

70 As an overview: Agar, *Science*, 2012. Also, see the literature reports by Unger, “Cold War Science,” 2006; Nehring, “Review Article,” 2012; Kraft, Nehring, and Sachse, “The Pugwash Conferences and the Global Cold War,” 2018; the handbook article by Forstner, “Kalter Krieg,” 2017. For the intellectual history of the Cold War, see Erickson et al., *Reason*, 2013.

United States and the Soviet Union, continue to be at the heart of this study.⁷¹ However, since the turning point of 1990/91, the historiographical perspective has broadened beyond the military-industrial-scientific complex and its characteristic big science structures. Gradually, it began to encompass the epoch of the Cold War as a whole and its political and cultural imprints in various societies.⁷² In ‘general history’—as it is often referred to as opposed to history of science—global and European approaches experienced a new surge, and Immanuel Wallerstein’s “world-system” saw successive editions. Conversely, in historical research on science, there was an increased focus on cross-border scientific relations and other countries.⁷³ These nations did not necessarily occupy Wallerstein’s periphery, nor did they form the centers of Cold War Science. Among these were the two parts of Germany, whose history of science beyond the afore-mentioned institutional studies is still under-researched.⁷⁴ Moreover, interest expanded beyond the directly military-technologically relevant research fields. After the biological sciences, there was also an increase in focus on the social sciences and their direct relevance to the superpowers’ geostrategic planning or their indirect conceptual interactions with the dominant ways of thinking about the Cold War.⁷⁵

Several years ago, Hunter Heyck and David Kaiser identified three research trends in the more recent phase of historiography of Cold War Science:⁷⁶ 1. Exploration of how scientific styles are becoming transnational; 2. Examination of how relationships between science or scientists and the state are becoming more regionalized and personalized; and 3. Interest in how scientific theories are being turned into practical tools to solve societal issues.

71 Cf. for example, the volume by Oreskes and Krige, *Science and Technology*, 2014. Here, two out of thirteen contributions consider the Soviet Union and China, one addresses American-French relations; the remaining contributions deal with U.S.-American research. As an example of the broad disciplinary spectrum of Cold War Science, see Creager, *Life Atomic*, 2013.

72 The volume by Doel and Söderqvist, *Historiography of Contemporary Science*, 2006, gathers a whole bundle of diverse topics. A broader international spectrum is considered in the volume Krige and Barth, *Global Power Knowledge*, 2006.

73 Wallerstein, *Modern World-System*, vol. 1 (1974), vol. 2 (1980), vol. 3 (1988), vol. 4 (2011); Hobsbawm, *Age of Extremes*, 1994; Ferguson, *War of the World*, 2006; Mazower, *The Dark Continent*, 1998; Judt, *Postwar: A History of Europe Since 1945*, 2005. As an introduction to global history: Eckert and Conrad, “Global History,” 2007. As examples from the history of science, see: Simon and Herran, *Beyond Borders*, 2008; Turchetti, Herran, and Boudia, “Introduction,” 2012; Creager, *Life Atomic*, 2013.

74 With regard to the era of the Cold War, the focus remains predominantly on the subdisciplines of physics related to armaments or on the peace policy engagement of physicists. See, in this context, the volumes by Forstner and Hoffmann, *Physik im Kalten Krieg*, 2013; Forstner and Neuneck, *Physik, Militär und Frieden*, 2018.

75 Compare in this regard Heyck and Kaiser, “Focus: New Perspectives,” 2010; Erickson et al., *Reason*, 2013; Bernhard and Nehring, *Den Kalten Krieg denken*, 2014.

76 Heyck and Kaiser, “Focus: New Perspectives,” 2010.

This study contributes to two of these trends with some of its findings: firstly, it adds to the transnational perspective, examining the bi- and multilateral transfers of scientific styles to other countries and the simultaneous internationalization of scientific manpower in the participating countries. As long as studies, like those conducted by Heyck and Kaiser, consistently position the USA as one end of the transnational exchange and randomly select any other country as the other end, the outcome is predictably two-fold. Transnationalization appears as the Americanization of global science on one hand, and the internationalization of American research staff on the other. This observation can be further elaborated upon by looking, for instance, at the close scientific relationship between the Max Planck Society (MPS) and the Chinese Academy of Sciences (CAS). Secondly, this study chooses the internationally recognized West German research organization as its regional focus, a perspective not often taken in research on the history of science in the latter half of the 20th century. From this viewpoint, the study delves into bilateral scientific relationships in various geographical and political directions. Additionally, the questions explored here naturally bring to the forefront both the individuals and institutions driving science policy, and their range of influence on national, European, bloc political, and international levels. The process of turning scientific concepts into practical tools, identified by Heyck and Kaiser as the third research trend, is only touched upon here as far as it is reflected in the inevitable disputes between applied and basic research within the history of the MPS and its international connections.⁷⁷

An important interpretive reference point for this study, as well as for the historiography of Cold War Science in general, was provided, first and foremost, by the works of John Krige. This begins with his thesis, now elevated to a paradigm, of American hegemony, which underlay the U.S. foreign science policy as a guiding motif in the first post-war decades—not only, but also towards its Western partners.⁷⁸ This thesis, initially developed in 2006 based on American-French scientific relations after World War II, has since been substantiated by Krige with case studies from the U.S.'s bilateral scientific relations with the European Community (EC) as a whole and with individual Western European countries. One example is the attempt by U.S. President Lyndon B. Johnson and his administration to dissuade the Federal Government led by Ludwig Erhard from their nuclear armament ambitions with the promise to alternatively

77 For this, reference may be made to the cluster studies developed within the GMPG program by Topp, "Verhaltens-, neuro-, und kognitionswissenschaftliche Forschung," 2024, and Kraft and Schwerin, "Molekulare Lebenswissenschaften," 2024. In addition, in Germany, the processes of scientification have become a prominent topic in the social sciences and social history; see, for example, Schanetzky, "Aporien der Verwissenschaftlichung," 2010; Raphael, "Verwissenschaftlichung des Sozialen," 2014; Seefried, "Gestaltbarkeit," 2015; Zillien, *Alltag*, 2020. See also the literature review by Link, "Social Sciences in the Cold War," May 15, 2018, <http://www.hsozkult.de/literaturereview/id/forschungsberichte-3095>, last accessed on Aug. 13, 2002.

78 Krige, *American Hegemony*, 2006.

integrate West German science into NASA's advanced space research. However, this offer was not free of charge: The FRG was to contribute more to the costs of both the American troop deployment on West German territory and space research.⁷⁹ Krige's thesis is referred to variously in the following text, even though the extensive and usually complication-free cooperative relationships of the MPIs with American partner institutes and colleagues, despite their undisputed outstanding intrinsic scientific importance, do not stand at the center of this study.⁸⁰

It was a deliberate decision to focus, on the one hand, on the self-positioning of the MPS in relation to West German foreign science policy, and on the other hand, to investigate its scientific relations with several other countries, including both more peripheral states and central and rising players in the international scientific landscape, such as the Soviet Union and China. With this focus, there is a hope to slightly shift the still dominant historiographic central perspective on the USA and not to continuously reify the unquestionable American hegemony in international scientific affairs.⁸¹ Instead, this study adds some facets to the currently dominant picture of international scientific relations during and after the Cold War, thus helping to bring it closer to the complex multinational reality of foreign science policy and the intricacies of science diplomacy.

Source Selection

For this study, I was able to tap into the overflowing abundance of sources from the Archives of the Max Planck Society (AMPG), covering the entire investigation period of the GMPG program up until 2002. Despite rapid progress in digitization and corresponding search functions during the research period, this repository—measurable in kilometers of files—could only be accessed through a more classical top-down search strategy.⁸² Starting from the annual reports of the MPS presidents and the developments in international relations highlighted therein, as well as the discussions documented in the meeting protocols of the MPS Senate, I followed the foreign science policy issues raised through the various levels of institutional decision-making and administration down to the level of the International Relations Unit. Occasionally, the personal papers and

79 Krige, *Sharing Knowledge*, 2016, pp. 79–96. Compare also Doel and Harper, “Prometheus Unleashed,” 2006.

80 See, in particular, the study by Bonolis and Leon, *Astrophysics*, 2023, and the contributions by Kraft et al., “Die MPG in der Welt,” 2024.

81 In my opinion, Krige does exactly this in his otherwise highly impressive encyclopedia entry: Krige, “Diplomacy,” 2014. In this compact yet rich and argument-driven description, he outlines the use of American research capacity as “soft power” in U.S. foreign policy from the atomic bombings at the end of World War II to the increasingly science-critical 1970s, but he forgoes the bi- and multiperspective nature of international science diplomacy.

82 See the introduction to Renn et al., *Die Max-Planck-Gesellschaft*, 2024, pp. 20–21.

documents from the involved protagonists, especially the presidents and respective scientific members, were consulted. Only sporadically and supplementarily were the records of the involved MPIs examined. They would be indispensable for reconstructing bi- or multilateral scientific cooperations at the working level in laboratories, large research facilities, and in the field. However, for the analyses of the associated science foreign policy problems and conflicts with which the Administrative Headquarters and its International Relations Unit were concerned, they were not strictly needed. There is certainly still much material here for future investigations of transnational scientific communication processes: concerning the bi- and multinational transfers of scientific knowledge, the opportunities and risks of transnational cooperation, and not least, the strategies of the MPIs and their scientists in the search and selection of international cooperation partners.

In this study, with its specific questions and the corresponding selection of sources, the focus is primarily on the MPS and its Administrative Headquarters as institutional actor. This main player, of course, interacts with the scientists, particularly the Max Planck directors and department heads, who are responsible for research strategies in the institutes, including international collaborations. Within the context of this study, they emerge from the background and step into the spotlight whenever they seek administrative or foreign scientific policy support from the Administrative Headquarters or its president, or when they actively contribute to discussions concerning the science foreign policy strategies of the MPS as a whole.

In terms of external interaction on matters of foreign science policy, the MPS, our main institutional protagonist, interfaces with the Federal Ministry responsible for research, the Foreign Office, occasionally the Federal German embassies on site, and with the cooperating scientific institutions and administrations abroad. The corresponding ministerial holdings in the Federal Archives (BArch, Bundesarchiv) in Koblenz and the Political Archive of the Foreign Office (PAAA, Politisches Archiv des Auswärtigen Amtes) were systematically consulted, allowing for a more precise outlining of the foreign policy priorities and diplomatic strategies of the state actors, which did not always align with the science foreign policy priorities of the MPS. Unfortunately, this was not possible to accomplish in the same manner for the cooperating institutions abroad—except for the holdings of the PCSWA located in the Cambridge Archive Center (CAC)—due to time and language constraints within the scope of this study. Their interests, positions, and strategies could only be reconstructed to the extent that they were documented and reflected in the holdings of the MPS and the Federal Ministries. The resulting research gaps are evident, and it is to be hoped that they will inspire further studies.

2. International Relationships of the MPS during the Cold War: Changing Historical Constellations

Tracing the Max Planck Society (MPS) as an institutional player in the realm of international politics over some five decades is a complex undertaking. Trying to define its exact position at a given moment is often like chasing a moving target. On the one hand, successive presidents, and the advisory circles they surrounded themselves with, cultivated distinct leadership styles and visions for the MPS's positioning in foreign scientific policy. On the other hand, as administrative routines were established to manage the rapidly increasing regulatory needs from both national and, increasingly, supra- and international bodies, there was less room for individual idiosyncrasies. From the early 1970s onwards, the central administration of international scientific relations gradually expanded, eventually forming its own department within the Administrative Headquarters. This expansion paralleled the development of an administrative guideline strategy that, even in tumultuous times, remained remarkably consistent. Its primary objective was to ensure maximum autonomy and flexibility for the Max Planck Institutes (MPI) in their international research collaborations, free from potential foreign policy constraints. This guideline would be classified as pertaining to science foreign policy, following the terminology laid out earlier, if it were not continually disrupted, especially in relations with Eastern European scientists, by foreign policy-driven interventions from the Federal Government and the governments of partner countries. Thus, representatives of the MPS—its officials, the Administrative Headquarters, and all the MPI directors who fostered scientific contacts abroad—found themselves compelled to engage with the foreign science policy directives set by governments and other players in international science policy, either by adapting to them, negotiating with them, or attempting to modify them in line with their own priorities.

The administrative guideline could also be counteracted within the organization itself, namely whenever individual scientists or groups of MPS researchers tried to leverage “science” for purposes that went beyond the immediate project-related collaboration with foreign colleagues. Here in particular, a leadership-driven change that has been enforced since the mid-1970s can be discerned: Initially, the focus was on a world peace policy responding directly to World War II and the atomic bombings of Hiroshima and Nagasaki. Its scientific justification was claimed by some prominent representatives as a task for the MPS as well as corresponding government consultation at the highest level. This evolved into a commitment to disarmament, peace, environmental, and climate policy

by only a few, often less well-known, MPS scientists whose political activities, from the perspective of MPS's governing bodies, should no longer be identified with their institutional employer. Nevertheless, the moving target of MPS's science foreign policy remained relatively consistent in its direction, aiming at the suppression of the political in science, at least within the MPS.

Even more challenging for the historical reconstruction of this specific science foreign policy are the diverse national, transnational, supra-national, and international contexts relevant to the MPS and its international cooperations. These contexts often overlapped, placing our target in a complex web of interactions and influences. Additionally, these contexts did not obey the same time delineations, making it difficult for the historian to cleanly and clearly periodize this lengthy span. Consideration must be given primarily to the cycles of confrontation and détente in the East-West conflict, the changes in the Federal German government, and the political-cultural changes that were reflected therein. The paradigm shifts in West German foreign policy were not fully synchronized with the caesuras occurring at both the federal and bloc political levels. There were also structural developments that were primarily economically driven at the national and international levels, as well as the political, cultural, and not least scientific-political and organizational processes of Europeanization and globalization, which also followed their own rhythms, sometimes in sync with other developments, sometimes less so. In the first three decades after World War II, the MPS was quite engaged as an actor in foreign science policy, then somewhat reluctant, but always still idiosyncratic in its dealings with all these international and global developments. However, it remained an institution of the national science system, predominantly funded by federal German tax revenues. Its scope of action with regard to science foreign policy was limited mainly by Bonn's foreign policy, and from the mid-1970s increasingly by Brussels' European policy as it extended to foreign or European policy-sensitive fields. Therefore, it seems plausible to organize the following chapter, which should provide an overview of the MPS, along the major caesuras of West German foreign policy during the Cold War.

2.1 How the MPS Asserted Itself in Postwar Germany and Became Established Within the Bloc System

In the field of foreign science policy, neither the Kaiser Wilhelm Society (KWS) nor its successor starting in 1948, the MPS, experienced a "zero hour" at the end of World War II. The same could be observed in many other aspects of West German contemporary history. The international connections of the KWS did not come to a complete halt with the onset of Nazi rule, nor during the wartime



Fig. 1: Wolfgang Gentner (front left), Frédéric Joliot-Curie (front center) und Walther Bothe (front right) 1941 in Paris.

years. The geographical priorities, however, did shift away from the Allied wartime opponents toward the allied, neutral, and occupied countries. Simultaneously, the character of collaboration underwent a transformation. What were once politically egalitarian relationships, perhaps ordered by the principles of scientific seniority, became more controlling forms of cooperation. Depending on the nature of the cross-border relationship, these collaborations ranged all the way to what could be characterized as relationships “based on exploitation.”¹ The expansionist, racist, and anti-Semitic nature of these relationships could not be offset by the individual behavior of KWS scientists towards their foreign colleagues, but it could be softened. A rare example of this is Wolfgang Gentner’s collegial interaction with Frédéric and Irène Joliot-Curie and their staff at the *Institut du Radium* in occupied Paris.²

However, the asymmetrical power relationship could also be ruthlessly exploited. In this regard, among others, the plant breeder Wilhelm Rudorf and his colleagues at the Kaiser Wilhelm Institute (KWI) for Breeding Research stood out. They not only seized the valuable seed banks of Ukrainian research stations as soon as they could lay hands on them, but also had female French biologists,

1 Hachtmann, *Wissenschaftsmanagement*, 2007, pp. 793–807, quote on p. 805.

2 Hoffmann and Schmidt-Rohr, “Wolfgang Gentner,” 2006, pp. 19–20.

imprisoned in Auschwitz, work for them at the Kok-Saghys experimental station at the Rajsko sub-camp.³

The perception by foreign scientists and international media of the KWS/MPS as reflected in such magazines as *Science* or *Nature* was strongly shaped by the early reports of the Hungarian pathologist Miklós Nyiszli and other surviving prisoner doctors. They described how they were forced to assist Josef Mengele in the medical ward of Auschwitz, and they remembered precisely how they had produced, packaged, and sent human specimens from murdered prisoners to Berlin-Dahlem. There, the specimens were eagerly awaited by Mengele's doctoral advisor and the director of the KWI for Anthropology, Human Heredity, and Eugenics, Othmar von Verschuer, along with Karin Magnussen and other members of his research staff.⁴

Negotiating with the Occupying Powers

With the end of the war, the geographical focus of the foreign relations of KWS scientists shifted back to the most important partner countries before the war, which now confronted them as occupying powers. In none of the four occupation zones could the KWI located or translocated there in the last months of the war complain about a lack of attention from foreign colleagues, who visited them as research control officers of the respective military government. However, the experiences of the scientists were different in each of the four zones, even though all of these visitors were initially guided by the idea of scientific restitution.⁵

In the Soviet occupation zone, especially in Berlin, confiscations and even destruction of facilities, instruments, libraries, and records were commonplace. While the physical chemist Peter Adolf Thiessen willingly accepted an invitation to the Soviet Union, others feared being forcibly deported.⁶ Moreover, the Administrative Headquarters, which had been evacuated to Göttingen in the future British occupation zone just in time at the end of February 1945, preferred to write off the few remaining facilities in the Soviet zone and the Soviet sector of the divided city of Berlin. They chose this rather than support the efforts of

3 Heim, *Kalorien*, 2003, pp. 36–49, pp. 172–193. Regarding the forced labor of foreign researchers for and within KWIs as a whole during World War II, see Strebel and Wagner, *Zwangsarbeit*, 2003, esp. pp. 48–65.

4 Nyiszli, *Im Jenseits der Menschlichkeit*, 1992; Massin, “Mengele,” 2003, pp. 236–241. Sachse, “Mengele,” 2020. Regarding the KWI for anthropology, human heredity, and eugenics, see Schmuhl, *Grenzüberschreitungen*, 2005.

5 For the transition from KWS to MPS, see the summary presentation by Balcar, *Ursprünge der MPG*, 2019.

6 Walker, *Die Uranmaschine*, 1990, pp. 222–225. The unique situation in Berlin can be well traced through the history of the KWI for Physical Chemistry and Electrochemistry, today's Fritz-Haber-Institute of the MPS: James et al., *Hundert Jahre*, 2011, pp. 136–158. Regarding Thiessen, see Schmaltz, “Peter Adolf Thiessen and Richard Kuhn,” 2007.

physical chemist Robert Havemann, who faced likely failure in his attempts to rebuild a modified KWS under Soviet supervision in Berlin.⁷

The Administrative Headquarters was no more enthusiastic with the American plan for a German Research University, which was supposed to be a counter-model to the restructuring of the Prussian Academy into a German Academy for Science along Soviet lines, enforced by the Soviets in their sector. This university was meant to gather the remaining Kaiser Wilhelm Institutes in Berlin-Dahlem and transform them into an integrated teaching and research institution for the further education of graduate and postgraduate junior scientists.⁸ This, however, completely contradicted the traditional core identity, specifically the so-called Harnack Principle, named after its founding president, according to which the KWS/MPS should exclusively host ‘pure’ research institutes, built around an outstanding scientific personality.⁹

In contrast, representatives of the British occupying forces began discussions a few days before the unconditional surrender of the German Wehrmacht—specifically, at the headquarters of the Allied forces in Reims. Here, the vanguard of the group of German nuclear scientists, who had been detained by the American Alsos Mission in the last days of April, made a several-day stopover. Before they were transported to their final internment location, the British Farm Hall, the group was to grow to a total of ten persons, including eight KWS scientists, all of whom except Max von Laue had previously been leading members of the German Uranium Project. On the afternoon of May 4, 1945, Otto Hahn, one of the most prominent internees alongside Werner Heisenberg and von Laue, conversed with his British supervisor and later noted in his diary:

7 For a detailed account of the attempts to reestablish a KWS based in Berlin, see Hachtmann, *Wissenschaftsmanagement*, 2007, pp. 1052–1077. Havemann made headway on his dissertation at the KWI for Physical Chemistry and Electrochemistry in 1932/33 and had distinguished himself by denouncing Jewish colleagues. He later joined the resistance group “European Union” and was sentenced to death in 1943; Havemann’s execution was postponed multiple times due to his “war-critical research,” allowing him to survive until the end of the war in Brandenburg-Görden prison. In early July 1945, he was appointed the provisional head of the KWS by the communist-dominated Berlin Magistrate in coordination with the Soviet occupation authorities. In the literature, Havemann is usually controversially depicted. The key sources have been evaluated by Szöllösi-Janze, *Haber*, 1998, pp. 669–673; this is also the basis for Rürup, *Schicksale*, 2008, pp. 97–98. For a different perspective, see Hachtmann, *Wissenschaftsmanagement*, 2007, pp. 1055–1057; James et al., *Hundert Jahre*, 2011, pp. 139–142, 148–151; Balcar, *Ursprünge der MPG*, 2019, pp. 27–36.

8 Sachse, “Research,” 2009, pp. 122–123; Hachtmann, *Wissenschaftsmanagement*, 2007, pp. 1068–1077. The history of the Prussian, then German Academy of Sciences, and later the Academy of Sciences of the GDR, has now been studied in-depth. For the most recent works, see Laitko, “Etablierung der Deutschen Akademie der Wissenschaften,” 2018; Nötzoldt, “Deutsche Akademie der Wissenschaften zu Berlin,” 2018; Meiser, *Deutsche Forschungshochschule*, 2013.

9 Laitko, “Harnack-Prinzip,” 2015.

In the afternoon, I had a long conversation with our Major: Subjects: Mass suggestion (Goebbels); V1 + V2; our position regarding the current situation; concentration camps: Germans must see film, what could happen under the regime in Germany; lampshade, medical guinea pigs; our hope: save science, as far as possible; bombing of Frankfurt.¹⁰

In mid-August 1945, the British-German dialogue on saving German science, especially the KWS—despite its connections with the criminal Nazi regime—was indeed resumed. Meanwhile, eavesdropping on the Germans at Farm Hall revealed the extent of what they did not know about atomic bomb construction, while the Americans had dropped their nuclear bombs on Hiroshima and Nagasaki, forcing Japan to surrender and demonstrating their military might to the Soviets.¹¹ These conversations are detailed in the Farm Hall Protocols, which have been analyzed so far mostly concerning the research goals, results, and political attitudes of the German atomic scientists grouped in the “Uranium Club.”¹² Initially, Charles Darwin, the Director of the National Laboratory for Physics in London, and nuclear physicist Patrick Blackett, an “old friend” of Heisenberg from peacetime and a key figure in British wartime defense research, paid “purely private visits” to Farm Hall. Their impression of the willingness and ability of their German colleagues to cooperate, whom they believed could hardly be dispensed with during the imminent reconstruction, was apparently sufficiently positive.¹³ In any case, Hahn, Heisenberg, and von Laue were brought to London at the beginning of October. At this more official meeting at the Royal Institution with the President of the Royal Academy, Henry Dale, who had chaired the Scientific Advisory Board of the British War Cabinet, and physicists Blackett, George P. Thomson, and William Lawrence Bragg, along with physician Archibald V. Hill, the discussion was not only about the modalities of their return to Germany but also about possible British support for postwar German science.¹⁴ Their resources, like the industry in the British zone, were not to be

10 Hahn Tagebücher, Volume I, May 4, 1945, III. Abt., Rep. 14, No. 6819, see Sime, *Otto Hahn und die Max-Planck-Gesellschaft*, 2004, p. 31.

11 On the decision of the U.S. government to use the atomic bomb in 1945, see, from the extensive research literature, Alperovitz, *Hiroshima*, 1995; Gordin and Ikenberry, *Age of Hiroshima*, 2020.

12 Hoffmann, *Operation Epsilon*, 2023. Otto G. Oexle pointed out the significance of these early discussions for the continuation of the KWS already in 1995 and 2003: Oexle, Hahn, *Heisenberg und die anderen*, 2003; Oexle, *British Roots*, 1995. Hohn and Schimank, *Konflikte*, 1990, pp. 90–98.

13 Quotations from Oexle, *Hahn, Heisenberg und die anderen*, 2003, p. 31.

14 The content of all discussions as well as the subsequent deliberations among the detainees can be found in: Hoffmann, *Operation Epsilon*, 2023, pp. 257–265, 275–322, 339–348. See also Oexle, *Hahn, Heisenberg und die anderen*, 2003, pp. 30–35, which also refers to Hahn’s still-unpublished diary.

dismantled but instead rebuilt and utilized on-site for occupation policy, and in the long term for the “revival of Europe.”¹⁵

The continuation of the Kaiser Wilhelm Society was a building block in this occupation and European political strategy, which had been developed by the British government in the second half of 1945—against the recommendations of their own military, who, similar to their American allies, had indeed initially ordered dismantling and advocated extensive research bans and strict research controls. The “United States of Europe,” which Winston Churchill predicted a year later in his visionary Zurich speech, would need a “spiritually great Germany” just as urgently as a “spiritually great France.”¹⁶

The French allies did not have to be convinced of the sensibility of research in their occupation zone, but of its continuation under the roof of a trizonal KWS. In the French zone, the radium researcher Frédéric Joliot-Curie halted the seizures ordered by military officers in the Kaiser Wilhelm Institutes that had been relocated to Tübingen, Hechingen, and Tailfingen¹⁷ as soon as he arrived on the scene as a civilian representative of the French government. A future “Franco-German cultural area” was to bind Southwestern Germany more closely to France and counteract a renewed national centralization of German top-level research, as represented by the KWS.¹⁸ Over the following three years, the relationships of the life sciences KWIs that had translocated there, with both their occupying power and the German administrations on the municipal and *Länder* level, evolved rather favorably. This was largely thanks to the mediation of Carlo Schmid, a German European with a French family background, constitutional lawyer, and Social Democrat. As a result, the directors of these institutes, the “Tübingen Gentlemen” Adolf Butenandt, Alfred Kühn, Max Hartmann, and Georg Melchers, felt no rush to join either the Kaiser Wilhelm Society, which was reestablished in 1946 initially only in the British Zone, or the renamed and since 1948 bizonal Max Planck Society.¹⁹

From the British perspective, the inclusion of the French was less urgent, as the British wanted to withhold nuclear technology knowledge, including German expertise, from the French as long as possible—in view of the communist tendencies of some of them and despite all European political visions. More important was reaching an understanding with the strongest Western victorious power. But reaching this agreement proved to be difficult.

15 As stated by Churchill in his Zurich university speech on September 19, 1946: James, *Winston S. Churchill*, vol. 7, 1974, pp. 7380–7381. Cited here from Oexle, *Hahn, Heisenberg und die anderen*, 2003, p. 30.

16 Ibid. See also Mark Walker, *Die Uranmaschine*, 1990, p. 227; Balcar, *Ursprünge der MPG*, 2019, pp. 59–60; Brautmeier, *Forschungspolitik in Nordrhein-Westfalen*, 1983.

17 Walker, *Die Uranmaschine*, 1990, pp. 225–227.

18 Hachtmann, *Wissenschaftsmanagement*, 2007, pp. 1097–1099.

19 Lewis, “Kalter Krieg,” 2004.

Similar to the British military, the American occupying authorities would have liked to immediately implement one of the last resolutions of the Allied Control Council, though it had not formally come into force: to dissolve the KWS—which they viewed too indiscriminately as an armament research trust, but entirely justifiably as an important pillar of the Nazi regime—, to thoroughly de-nazify its research institutes and integrate them into the universities. To change the mind of the American military government, considerable argumentative effort was needed. In this process, the conceptual distinction between basic and applied research was repeatedly used by both the British and German sides. By only speaking of basic research as the type of research permissible in Germany, they hoped to banish at least linguistically American fears of renewed German military research.²⁰

Some advocates, including those from American scientific circles, and not least the first emissaries, John D. Rockefeller III, Albert Mann, and David Havighurst, who were exploring the status and conditions of education, science, and research in post-war Germany on behalf of the Rockefeller Foundation, supported Otto Hahn, who had been serving as President of the KWS/MPS in the British Zone since April 1946, and the long-time, politically astute Secretary-General Ernst Telschow. However, their British patron, Colonel Bertie Blount—stationed in Göttingen as the head of the Research Branch of the British military government—proved indispensable. Blount, a chemist, had completed his doctoral thesis in 1931 at the University of Frankfurt, notably with an assessment from the external member and later director of the KWI for Physical Chemistry and Electrochemistry, Karl-Friedrich Bonhoeffer. Conveniently, Blount took up quarters in a few rooms of the Aerodynamic Testing Institute, where the evacuated Headquarters of the KWS/MPS had also found accommodation.²¹ Blount tirelessly mediated between them, his superiors in the military government, the politically responsible individuals, and their scientific advisors in London, but especially his counterparts in the American military government. As the year 1948 began, they were finally able to obtain the consent of the American military governor, General Lucius Clay, for the bi-zonal expansion of the MPS.²²

Only after the founding of the Federal Republic of Germany (FRG) in May 1949, which, as the weakest part of the Western Allies, the French military government had to reluctantly agree to, did the rebellious “Tübingen Gentlemen”

20 Sachse, “Research,” 2009, pp. 124–128; Sachse, “Grundlagenforschung,” 2014, pp. 223–227.

21 For more on Bonhoeffer, see James et al., *Hundert Jahre*, 2011, pp. 150–155 and passim.

22 Sachse, “Research,” 2009, pp. 131–132. Hachtmann, *Wissenschaftsmanagement*, 2007, pp. 1086–1096; in his account of the rescue and restructuring of the KWS/MPS, Hachtmann focuses largely on the person of Telschow and underestimates the interplay between British and German atomic scientists behind the scenes of occupation policy negotiations. Regarding American post-war research policy in Europe and the domestic debates about what kind, if any, research should be permitted on the old continent, see Krige, *American Hegemony*, 2006.

consent to join the now finally nationwide established MPS. They had—supported in turn by French colleagues like the biochemists and occupation officers André Lwoff and Paul Fouché—tried to defend the newly gained independence of their bioscientific institutes from the Göttingen Headquarters until the very end.²³

There were significant resistances that the KWS scientists around Otto Hahn and their British supporters faced, and they came from many sides: the militaries of all victorious powers, American science policy in Europe, French European and science policy, not least also from the cultural federalism that was forming during the founding of the FRG, and even from prominent KWS bioscientists in the southwest of the new Republic. The obstructions show that the continuation of the KWS, which had been planned since a few months after the collapse of the German Reich in Farm Hall and London, was a highly uncertain option.

That these resistances could be overcome within four years points to something else as well: after painstaking examination of the German scientists by the British, a small but prominent British-German network of eminent nuclear scientists—most of them Nobel Prize winners—had re-formed among the Farm Hall internees and their supervisors.²⁴ This group proved resilient, persistent, politically savvy, and influential enough to secure with the KWS/MPS what they saw as an indispensable resource for future research in Europe—a resource that, in proportion to the expected costs, would disproportionately benefit nuclear physics research. The hardening fronts in the beginning Cold War favored them: a Federal Republic science system that was productive as quickly as possible, and whose potential capabilities they were well-informed about thanks to the FIAT, CIOS, and BIOS reports composed by some KWI directors at the direction of the occupying authorities, seemed indispensable to all Western Allies for building the Western European bulwark against world communism.²⁵ The West German designers of this science system, along with their allied overseers, would have been ill-advised to abandon the tried and tested non-university self-administration organization of the KWS/MPS. After all, research institutes gathered under its roof, which, as the scouts from the Rockefeller Foundation had already reported in 1946 and 1947, were still

23 Hachtmann, *Wissenschaftsmanagement*, 2007, pp. 1097–1100, 1143–1147; Lewis, “Kalter Krieg,” 2004.

24 Oexle, *Hahn, Heisenberg und die anderen*, 2003, p. 34, highlights the transnational connections of the ‘Rutherford family’ of former students and colleagues of Ernest Rutherford in Montreal, which included Hahn, Darwin, and Blackett.

25 FIAT: Field Information Agency, Technical; CIOS: Combined Intelligence Objectives Sub-Committee; BIOS: British Intelligence Objectives Sub-Committee. Over 4,000 reports on the status of science, technology, and industry for American and British intelligence services were written from the time of the Normandy landings in 1944 until 1947. More than 12,000 “investigators” were tasked with data collection; a number of German scientists had to deliver reports on their respective fields of research. Werth-Mühl, “CIOS, BIOS, FIAT, JIOA,” 2001.

reasonably functional even under the meager conditions of the first post-war years and were positioning themselves in many places with interesting research ideas for better times ahead.²⁶

(Re-)Integration into International Scientific Communities and International Organizations, including the CERN

The British-American-German network, which during challenging times had successfully managed to reestablish the Kaiser Wilhelm Society as the Max Planck Society at the federal level also proved its worth when it came to quickly reintegrating its scientists into international scientific communities. Importantly, it helped place them in the newly emerging supranational organizations, which were becoming significant as initiators, hosts, or funders of future international large-scale research projects. Even before the Federal Republic was founded, and long before it had regained its foreign policy autonomy, the founding director of UNESCO, British zoologist Julian Huxley, was concerned about the state of German science. Since the Germans could not yet represent themselves, he convened an expert commission whose seven members—all from future NATO countries—were to advise him on German matters. In search of local contacts who could enlighten UNESCO about German research institutions, the British military government recommended that he turn to the German Research Council (DFR, Deutscher Forschungsrat). This short-lived institution had only emerged in March 1949 from a scientific advisory group that the British research control officer Blount had gathered in Göttingen in early 1946. It now included scientists from Göttingen and members of the MPS, as well as others. But Heisenberg, who, like Hahn, had been included in this circle immediately after returning from Farm Hall, served as its chairman until the DFR's merger with the Emergency Association of German Science to form the German Research Foundation (DFG, Deutsche Forschungsgemeinschaft) in 1951, at which point he immediately became a vice-president of the DFG. This ensured the close interlocking of the MPS, as a non-university institution for basic research, with the DFG responsible for the financial support of basic research in general at West German universities and research institutes. This was all the more important as the DFG in the future was to represent this

26 Scouts from the Rockefeller Foundation in 1946 and 1947 visited about a dozen of the roughly 40 KWI existing in the western zones, particularly those previously funded, and concluded that the working and living conditions of the KWS scientists were considerably better than general post-war conditions in Germany. Many of them were also already pursuing noteworthy research approaches under the given conditions. This differed significantly from the lamentations contributed by that portion of the MPI directors to the *Festschrift* for Otto Hahn in 1949, who still perceived the collapse and occupation as an unjust humiliation. See Sachse, "Research," 2009, pp. 116–121.

entire sector of the Federal German science system abroad, including the MPS. However, this did not eliminate conflicts of competences between the DFG and MPS, especially on the international stage; indeed, such conflicts will reappear in various contexts throughout the course of this study.²⁷

As an independent research institution and the successor to the politically corrupted but still internationally renowned KWS, the MPS was early on sought after as a desirable contact when foreign, supra-, and international institutions wanted to learn about West German science. In the fall of 1951, for example, a delegation from the Organisation for European Economic Co-operation (OEEC) consisting of 25 members from several Marshall Plan countries and the USA, who were particularly interested in economically-relevant research, paid a visit to MPS President Hahn.²⁸ In 1951, as soon as the Federal Republic was permitted to act in foreign policy and join UNESCO, the MPS sent Carl Friedrich von Weizsäcker as its first representative to the German UNESCO Commission, which had been prepared by Walter Hallstein before he transferred to the newly founded Foreign Office in 1951 as a state secretary. However, Weizsäcker did not stay long in this commission; as early as 1953, he had himself replaced “at his own request” by Karl-Friedrich Bonhoeffer, who had by then relocated to Göttingen as the director of the newly founded MPI for Physical Chemistry there.²⁹

Thanks to their early collaboration with UNESCO, and thereby in a certain sense politically rehabilitated, the leading nuclear researchers of the MPS were ready for the founding of an international nuclear research center. It was intended to enable European scientists to keep pace with American and Soviet research, something that could not have been financed by individual European nation-states alone. Heisenberg had known about these plans ever since his Danish mentor Niels Bohr had invited him to an informal physicists’ meeting. However, when the formal inquiry from UNESCO arrived at the newly founded DFG as the representative of West German science, its senate was able to nominate its Vice President Heisenberg as the chief negotiator and Wolfgang Gentner as an additional representative in its first meeting. Gentner had also been a member of the Uranium Club and was initially an external member of the Heidelberg MPI for Medical Research before being appointed as the director of the newly founded MPI for Nuclear Physics in 1957. In early 1952, these negotiations culminated in the founding of the European Organization for Nuclear Research (CERN, Conseil Européen de la Recherche Nucléaire) in Geneva. Its new research center promised excellent working conditions for MPS nuclear physicists—at a

27 Stamm-Kuhlmann, “Deutsche Forschung,” 1990, p. 905. For a brief history of DFR, see Orth, *Autonomie und Planung*, 2011, pp. 39–46; Carson and Gubser, “Science Advising,” 2002.

28 Stamm-Kuhlmann, *Deutsche Forschung*, 1990, p. 903.

29 *MPG-Tätigkeitsbericht*, p. 509; *60 Jahre*, 2011, pp. 1–2; Bode, *Auswärtige Kulturverwaltung*, 2014, pp. 305–312. For Bonhoeffer’s move from Berlin to Göttingen, see James et al., *Hundert Jahre*, 2011, p. 151.

time when the Allied research bans were far from being off the table. Moreover, CERN closely connected them with their international scientific community.³⁰

In the following years, the two West German representatives consistently held important positions within CERN's organizational structure. Heisenberg also represented the FRG to CERN and vice versa.³¹ In this role, he soon had to consider how to deal with other countries that applied for membership in the club of twelve European founding states. Such requests, which came in soon after the founding, could only be granted according to the CERN convention with a unanimous vote of the founding members' council. Additionally, the CERN council wanted to limit the group to European members and only began considering new admissions after the first accelerator, the Synchrocyclotron, was operational. At the beginning of 1956, the incumbent Council President Ben Lockspeiser of Great Britain believed the time had come to admit new member states. At the same time, given the fact that so far none of the informal inquiries had been unanimously endorsed, he wanted to simplify the process and introduce a two-thirds majority requirement. In the strictest confidence, he asked his council colleagues, including Heisenberg, to ascertain whether their respective governments would agree to this amendment to the convention. Heisenberg forwarded the letter without comment to the Foreign Office in Bonn and asked for instruction.³² The responsible cultural affairs officer was immediately alarmed:

I may point out that the French side at that time made their consent to admit Spain dependent on the other member states' agreement to admit Eastern Bloc countries.³³

Accordingly, Heisenberg was asked to inform the council president of the Federal German government's rejection.³⁴ There is no evidence that Heisenberg, who had been granted access to European nuclear research by his British colleagues only a few years earlier, made any critical comments with respect to

30 Carson, *Heisenberg in the Atomic Age*, 2010, pp. 210–215; Stamm-Kuhlmann, *Deutsche Forschung*, 1990, pp. 906–908. Regarding the tense relationship between Heisenberg and Gentner and their respective MPIs, see Bonolis and Leon, *Astrophysics*, 2023, pp. 291–296 and passim. For the history of CERN: Hermann et al., *History of CERN*, vol. 1, 1987; Hermann et al., *History of CERN*, vol. 2, 1990; Krige, *History of CERN*, vol. 3, 1996.

31 Heisenberg: 1953/54 Nominating Committee; 1954–57 Chair of the Scientific Policy Committee; 1958–1960 Vice-President of CERN Council. Gentner: 1954–1958 Research Director. See Carson, *Heisenberg in the Atomic Age*, 2010, p. 213.

32 Lockspeiser to Heisenberg, Jan. 10, 1956; Heisenberg to v. Trützschler (AA), Jan. 13, 1956, PA AA B 94-REF. 604/IV5/127.

33 Note by Trützschler (AA, Department 6—Culture), Feb. 6, 1956, PA AA B 94-REF. 604/IV5/127. Founding states were Belgium, Denmark, France, West Germany, Greece, Great Britain and Northern Ireland, Italy, the Netherlands, Norway, Sweden, Switzerland, and Yugoslavia. Countries that expressed interest in joining included, among others, Spain (admitted: 1961–1968, 1983), Austria (1959), Israel (2013), and Japan (not admitted).

34 Trützschler to Heisenberg, 2/24/1956, PA AA B 94-REF. 604/IV5/127.

scientific universalism or the shared European cultural sphere. Heisenberg did not even make any unofficial counterarguments to the government's official anti-communism and political isolation within the bloc.

“Going International” with the Alexander von Humboldt Foundation and Other Organizations

With his government-loyal stance, Heisenberg had previously qualified himself for another key position that needed to be filled in the FRG's early years and that would become significant for shaping the MPS's international relations, up to the present day. In December 1953, the Federal Government re-established the Alexander von Humboldt Foundation (AvH, Alexander von Humboldt-Stiftung), which had already proven itself to be an effective tool of foreign cultural policy in the 1920s and 1930s. Now, the goal was to attract an elite group of young foreign scientists for research stays at West German universities and research institutions, hoping to build long-term international networking for Federal German science. As the Foreign Office looked for a suitable president of international stature, Heisenberg soon came into the view of the cultural affairs department. After ensuring that this additional responsibility would not take up too much of his time, and assuming that he would thereby provide the MPS with privileged access to the funds mainly provided by the federal government for international scientific exchange, he took over the presidency for the next twenty years, until shortly before his death. He was succeeded by Feodor Lynen, the director at the MPI for Biochemistry and Nobel laureate, from 1975 to 1979, and after a ten-year interregnum of physicist Wolfgang Paul, who did not belong to the MPS but was well-known there through collaborations at CERN and German Electron Synchrotron (DESY, Deutsches Elektronen-Synchrotron), the former MPS president, Reimar Lüst, took over this office for another ten years in 1989. Since Heisenberg's time, the supervision of the selection processes has been among the permanent tasks of the responsible department and, since 1971, the responsibility of the International Relations Unit in the MPS's Headquarters.³⁵

The activity and annual reports of the MPS from the first post-war decade contain only rather sparse information about its international contacts, but they still reveal a steady intensification and strengthening of these relationships. For the years 1946 to 1950, no “official international relations” could be reported, but there was a revival of personal relationships from pre-war times and many—unfortunately unquantified—visits to almost all Western European

35 *MPG-Jahrbuch 1955*, p. 16; Carson, *Heisenberg in the Atomic Age*, 2010, pp. 209–210; Bode, *Auswärtige Kulturverwaltung*, 2014, pp. 256–324; Alexander von Humboldt Foundation, *Frühere Präsidenten*, <https://www.humboldt-foundation.de/entdecken/organisation/fruehere-praesidenten>, last accessed Jan. 19, 2019. Interview with Nickel (Sachse,) April 12, 2018.

countries, North America, and Turkey, with corresponding return visits.³⁶ One of the participants was SS man and breeding researcher Rudolf, who was allowed to travel to the USA in 1949 with a scholarship from the Rockefeller Foundation.³⁷ Another was Heisenberg who undertook extensive lecture tours in Great Britain in 1947 and 1948 and traveled to the USA in 1950.³⁸ Two other former members of the Uranium Club, Otto Hahn and Karl Wirtz, followed repeated invitations from the Nuclear Energy Board (JEN, Junta de Energía Nuclear) to Francoist Spain at the same time to advise local colleagues on building their nuclear program. (→ 3.2).³⁹ In 1951, the first official connection to be reestablished was the participation in the high-altitude research station Jungfraujoch in Switzerland.⁴⁰ Meanwhile, the return of the KWI for Art History, the Bibliotheca Hertziana in Rome was not making significant progress. As a result, Planck, Heisenberg, and Telschow sought the intervention of ‘His Holiness Pope Pius XII’ during private audiences in Rome on several occasions. The Hertziana was finally able to reopen under the direction of the MPS in 1954 (→ 3.1). By then, relationships with foreign science organizations had also been “consolidated.” As with personal relationships, they were expected to “expand,” “strengthen,” and “intensify” year by year; invitations to institute directors to lecture abroad and corresponding reciprocal visits steadily increased, although no specific numbers were provided. The year 1955 brought a breakthrough with the state sovereignty of the Federal Republic: with the funds from the Alexander von Humboldt Foundation and thanks to a special grant from the Federal Ministry of the Interior to the MPS for the cultivation of international relations, foreign guest researchers could once again be recruited again for longer periods to collaborate in the institutes.⁴¹

Looking back on this first post-war decade, the strong impression is that the MPS was able to reintegrate surprisingly quickly into international scientific relationships, including emerging inter- and supranational scientific institutions.⁴² Key to this was assistance from the countries of the Western occupying powers, which was by no means selfless, but was granted with a view to the joint reconsolidation of the Western European scientific sphere—a vision of the future that soon made it seem opportune to overlook the Nazi entanglements of the Kaiser Wilhelm Society. At the same time, the personal connections that the well-regarded KWS/MPS scientists had with foreign colleagues became the most valuable, and soon after the war, the most easily reactivated resource. With the

36 KWG/MPS-Tätigkeitsbericht 1951, p. 362.

37 Schüring, *Vergangenheitspolitik*, 2006, p. 330; Sachse, Research, 2009, p. 115.

38 Carson, *Heisenberg in the Atomic Age*, 2010, pp. 206–207.

39 Presas i Puig, *Reflections*, 2008, pp. 19–20.

40 Balsiger und Flückiger, “75 Jahre,” 2007.

41 KWG/MPG-Tätigkeitsbericht 1951, p. 362; KWG/MPG-Tätigkeitsbericht 1952, p. 438; KWG/MPG-Tätigkeitsbericht 1954, p. 509; MPG-Jahrbuch 1955, p. 16.

42 Unfortunately, the available data is not sufficient to quantitatively substantiate this assessment.

aid of these relationships, along with additional government funding stimulated by economic growth and beginning in the early 1950s, the conventional methods of international scientific collaboration employed by the KWS/MPS—such as lecture tours, hosting international guests, and participation in international research stations—became increasingly available.

First, other aspects became more pronounced and new elements were added. One was the necessity to network and coordinate with other Federal German research (funding) institutions on international activities. Key amongst these were the DFG and AvH, and later the German Academic Exchange Service (DAAD, Deutscher Akademischer Austauschdienst) also became important. Secondly, due to the decentralized nature of the West German education and science systems in responsibility of the individual *Länder*, which initially excluded federal subsidies to the MPS based on the Königstein Agreement of 1949, the MPS had to not only navigate dealing with multiple ministries, but also various *Länder* administrations.⁴³ Specifically, the MPS had to engage with two federal ministries: the Foreign Office and the Federal Ministry of the Interior. It's important to note that funding by the Federal Government was later permitted, but it was limited to specific programs and procedures. Starting in 1957, another federal ministry was added to this list, the ministry responsible for research. Initially, this was the Federal Ministry for Atomic Affairs (BMAt, Bundesministerium für Atomfragen), which in 1962 became the Federal Ministry for Scientific Research (BMwF, Bundesministerium für wissenschaftliche Forschung).⁴⁴ Third, the emergence of new supranational institutions had an impact on the MPS. These institutions became important for the MPS as they began to initiate major research facilities and request proposals for international and regional research programs. If the MPS didn't want to rely solely on the DFG to adequately represent its interests, it had to become proactive. This could be achieved either through institutional networking at the executive level by mutually appointing representatives to presidencies and senates, or, when necessary, through appointing its own representatives in these new institutions. These institutional networks at the domestic, inter-, and supranational levels began to gain prominence over the more traditional exchanges of visits and publications with friendly foreign science organizations, which had been the hallmark of scientific internationalism until the 1930s.⁴⁵ These networks indicated a shift

43 Pfuhl, "Königsteiner Staatsabkommen," 1959.

44 Hohn and Schimank, *Konflikte*, 1990, 115–120. Hohn and Schimank describe the long-standing negotiation processes concerning the financing of non-university based research between the German Federal Government, *Länder*, and respective research institutions, which would initially conclude in 1964 with the "Administrative Agreement for the Promotion of Science and Research;" I thank Jaromír Balcar for this information. For the portfolio of the Federal Research Ministry that would be revised several more times, see Chapter 1, FN 41.

45 Schroeder-Gudehus, "Internationale Wissenschaftsbeziehungen," 1990; Schroeder-Gudehus, *Deutsche Wissenschaft*, 1966.

as early as the 1950s towards what MPS President Hans Zacher, four decades later, would suggest revising as the “amorphous internationality” of the MPS.

2.2 Foreign Science Policy in the “CDU-State”

The next period began with the FRG regaining its foreign political sovereignty and rearming in 1955. As it became integrated into the Western alliance system of NATO and the Treaties of Rome, it was also firmly anchored in the Cold War’s block system. This context provided a fixed framework for the Max Planck Society’s external science policy activities. In the “CDU-State”⁴⁶ with its claim of being the “sole representative of the German people” in foreign affairs, this policy was on the one side defined by the Hallstein Doctrine. Formulated in 1955 by Wilhelm Grewe, head of the political department at the Foreign Office (AA, Auswärtiges Amt), and named after the first Secretary of State of this ministry, this doctrine regarded the establishment of diplomatic ties with the German Democratic Republic (GDR) by third countries as a hostile act. In response, the FRG would sever relations with that country.⁴⁷ On the other side, this foreign policy doctrine—which was, in reality, highly impractical and soon controversial—opened up opportunities for a renewed foreign science diplomacy. It occasionally allowed the scientists to operate in areas where the official government foreign policy chose to abstain. Thanks to this ambiguity, international relations of West German scientists were not frozen within the bloc system. Instead, they experienced a further boost, not only towards the West but also, with the de-Stalinization of the Soviet Union, towards the East.

This period, which extended until the early 1970s—approximately until the end of the MPS presidency of Adolf Butenandt (1960–1972)—can be considered the golden age of the MPS’s institutional expansion. Against the backdrop of the “economic miracle,” the number of Max Planck Institutes (MPI) increased from 38 (1955) to 54 (1972); at the same time, the number of employees nearly quadrupled from just over 2,000 to almost 8,000, of which about a quarter were scientists, while the overall budget increased tenfold.⁴⁸ This significant growth in institutes and staff was relevant both from a science foreign policy and foreign science policy perspective: on the one hand, international scientific cooperation during this time multiplied disproportionately. This was due, in part, to the institutional expansion of research areas such as extraterrestrial physics, which inherently relied on big infrastructures (telescopes in the southern hemisphere,

46 This is also the title of a contemporaneous, widely discussed political analysis: Schäfer and Nedelmann, *Der CDU-Staat*, 1967.

47 Kilian, *Hallstein-Doktrin*, 2001; Booz, *Hallsteinzeit*, 1995; Gray, *Germany’s Cold War*, 2003.

48 Balcar, *Wandel*, 2020, pp. 5–6, p. 244.

global networks of measuring stations, orbital installations) that transcended the boundaries of national territory as well as the national science budget. On the other hand, politics discovered science for its foreign policy purposes, whether for improving the image of the Federal Republic in the Western world, or as a vehicle for European integration.

At the same time—thanks to a persistent impulse from American colleagues—within the MPS, the idea of a policy advised by scientific rationality was revived in a circle of intellectually leading MPS members. They wanted to leave behind the past, which was mythologized as a catastrophic incursion of irrationality during the Nazi era, and instead deal with the possibility of a nuclear apocalypse, but not with the ever-present reality of the Holocaust and the war of annihilation.⁴⁹ During the extraordinary expansion of the MPS in the 1960s, there was a unique opportunity in the MPS’s history to institutionally embed concepts of scientific policy consultancy—transcending the usual providing of expert knowledge, which was often sought, especially from scholars at the MPIs for International Law.⁵⁰

Defining Roles within the Federal German Science System: MPS and DFG

The ability of the MPS to partake in the surge of foreign science policy starting in the mid-1950s was primarily due to a new funding avenue. This was an exceptional federal subsidy earmarked for special expenses related to “nurturing international relations,” first documented in the MPS’s annual report in 1955, which then became a stable source of income.⁵¹ The long-anticipated rearmament process had experienced some delays, resulting in the Federal Government accumulating a reserve of over seven billion Deutsche Marks (DM). Public pressure not to hoard these tax revenues—described in an allusion to the “Imperial War Treasure” of 1871 and referred to colloquially as “Julius’ Tower”—eventually persuaded the Federal Government to allocate a portion of these funds. This allocation served to alleviate the backlog of demand for research, providing a much-needed boost to research efforts in West Germany.⁵² Until the 1964 reform of federal government-*Länder* science funding, the MPS benefited from

49 As perhaps the most famous contemporary analysis of what really happened during this flight from reality and responsibility, see Arendt, “The Aftermath of Nazi Rule,” Oct., 1, 1950; <https://www.commentary.org/articles/hannah-arendt/the-aftermath-of-nazi-rulereport-from-germany/>; Mitscherlich and Mitscherlich, *Unfähigkeit*, 1967. For MPS’s politics of the past, see Sachse, Butenandt, 2004; Sachse, “Was bedeutet ‘Entschuldigung’?” 2011; Schmaltz, “Brain Research,” 2022; Schmaltz, “Von der Abwehr,” 2024.

50 Balcar, *Wandel*, 2020, p. 245.

51 *MPG-Jahrbuch* 1955, 16.

52 Hohn and Schimank, *Konflikte*, 1990, pp. 111–115.

an annual allocation of seven to nine million DM; after that, this funding was absorbed into the regular MPS budget, now jointly financed by the Federal Government and the *Länder*. According to federal government-*Länder* agreements preserving the autonomy of the *Länder* in cultural matters, this “special budget” was only allowed to be used for specifically defined expenses. These included “improving working conditions in the institutes,” which essentially meant equipment purchases and construction, while top priorities also included “strengthening international relationships” and “supporting emerging scientists” at home and abroad.⁵³ As a result, research facilities could now be utilized not only at Jungfrauoch, but also at the Zoological Station in Naples and the Biological Station in Lunz, Austria, and there was increased capacity for inviting more international guests to the institutes. In 1959, it was reported that “almost 150 foreign scientists” were hosted; otherwise there is only limited relevant information up into the 1970s.⁵⁴

The nature of the relationships between the MPS and individual countries, as well as their contractual designs, depended on many factors. Under ideal circumstances, there was a clear rule following the dissolution of the DFR and the division of competences between the DFG and the MPS. According to this rule, the DFG was tasked with representing the FRG’s entire scientific community, encompassing both universities and the MPS, on the international stage. It served as the primary liaison with foreign scientific academies, fostering connections between West German and international research entities and funding collaborative programs. In this capacity, it was intended to function as an equivalent to a national academy, which, due to the delayed nation-state formation of Germany and the resulting cultural federalism of the German microstates, was only established when the Federal Government and the *Länder* elevated the Leopoldina in Halle to the status of National Academy in 2008—to the displeasure of all the other German scientific academies.⁵⁵ In contrast, the MPS’s international engagements were meant to be more specific, concentrating on the facilitation, funding, and management of direct partnerships between

53 *MPG-Jahrbuch 1957*, 17–19, quote 19; Hohn and Schimank, *Konflikte*, 1990, pp. 111–115. I thank Jaromír Balcar for clarifying these relationships. For a more detailed breakdown of the federal contributions, see Balcar, *Wandel*, 2020, pp. 65–85.

54 *MPG-Jahrbuch 1959*, 15. Unfortunately, such numerical data can only be found sporadically in the *Tätigkeitsberichte* and *Jahrbücher*, and they are not comparable due to a lack of explanations on how they were collected. Concerning the biological stations, see Löffler, *70 Jahre Biologische Station*, 1976; Partsch, *Die zoologische Station*, 1980; Groeben, Kaasch and Kaasch, *Stätten biologischer Forschung*, 2005.

55 Note dated Feb. 25, 1974, AMPG, II. Abt., Rep. 70, No. 373, fol. 33. In this account of MPS’s foreign relations to date, Nickel even concludes that “the attitude of the Max Planck Society” has led “to the DFG increasingly assuming the role of a national academy.” In fact, this was claimed by the DFG itself and was also pushed by the Foreign Office and the Ministry of Research; see below Chapter 3.3. For the Leopoldina, see Gerstengarbe, Thiel, and Bruch, *Leopoldina*, 2016.

individual MPIs, their scientists or research groups or and their selected partners abroad.

In reality, things often didn't work out as intended. First, foreign partners frequently struggled to understand the jurisdictional intricacies of West Germany. Typically, countries outside of West Germany had national “Research Academies” to which there was no direct counterpart in the five regionally organized West German “Scholarly Societies.” These foreign academies preferred to deal directly with the organization housing the relevant research entities they were looking for.⁵⁶ Particularly for academies in Eastern Bloc countries, which largely wanted to limit collaboration to scientific research institutes they deemed technologically valuable and ideologically neutral, the MPS remained the primary point of contact. Second, while the MPS had designated budget items for its international activities—a fund for foreign guest stays managed by the Administrative Headquarters and budget allocations in institute budgets for participation in major international research institutions, overseas trips, and more—MPS researchers could also apply for funding from the DFG for activities like overseas trips, research stays, conferences, and even research projects, with or without international involvement.

Facing this complexity, the Administrative Headquarters worked diligently—amidst increasing information, coordination, and negotiation demands—to extract the best outcomes for its institutes and the MPS as a whole. They were happy to leave bilateral framework agreements, especially those highly valued as signs of national recognition by Eastern Bloc science organizations and later by post-colonial nations in Asia, Africa, and South America, to the DFG. The MPS saw official delegation visits as less urgent. They perceived set exchange quotas as limitations, always fiercely defending their flexibility to use their limited resources in ways that best fit the actual research needs of the MPIs.⁵⁷

To maximize resources for scientific exchange, the Administrative Headquarters naturally advocated for the MPS scientists to access the most appropriate funding “pots” within the DFG based on thematic and organizational alignment. Additionally, they kept a close eye on the evolving programs of other third-party funders, ready to place grant applications where feasible. For instance, in 1958/59, using DFG funds, the solar observation station in Locarno was established. From then on, the MPI for Aeronomy operated it in partnership with the University of Göttingen.⁵⁸ By 1962/63, construction started of the Ionosphere Station in Namibian Tsumeb, again for the MPI for Aeronomy, started. The goal

56 Göttingen (1751), Munich (1759), Heidelberg (1763), Mainz (1949), Düsseldorf (1970); for a comparison of science academies in Western and Eastern Europe after 1945, see Feichtinger and Uhl, *Akademien der Wissenschaften in Zentraleuropa*, 2018.

57 Note from October 30, 1980, AMPG, II. Abt., Rep. 70, No. 86; in this note, Nickel retrospectively speaks of a principle already established “in the early 1960s for a policy of foreign relations of the MPS not determined by general contracts.”

58 *MPG-Tätigkeitsbericht 1960*, p. 553.

was to continue the work initiated during the International Geophysical Year of 1957/58, leading up to the International Years of the Quiet Sun in 1964/65.⁵⁹

Diplomacy by Other Means: The Case of Israel

When attempting to institutionally shape international scientific collaboration, the goal was not solely about funding. At times, efforts were made towards laying the groundwork for diplomacy through other means. This approach introduced another layer of ambiguity. The roles that the federal government sometimes denied, sometimes granted, or assigned to the MPS were indeed contradictory. In the case of the Soviet Union, the federal government blocked a direct cooperation agreement between the MPS and the Academy of Sciences. This occurred possibly or even precisely because, its own negotiations with the adversary superpower to the east around a government agreement for cultural and techno-economic exchange were stalled due to the contentious Berlin issue. However, during this period without any contracts pending, which would persist until 1970, individual contacts between MPS scientists and Soviet counterparts were maintained. Still, these interactions were always viewed with suspicion by the Foreign Office and the embassy in Moscow (→ 3.3).⁶⁰ In contrast, when it came to Francoist Spain, the federal government was quite pleased during the same period that the MPS, at Spain's request, expanded its contacts primarily in the realm of nuclear physics, which had been established since the early post-war years. An exchange program for young scientists was even established, funded solely by the MPS. This program was agreed upon directly with the Spanish Research Council and wasn't transformed into a "true bilateral treaty" with shared costs until 1980 (→ 3.2).⁶¹ These two contrasting examples of the MPS's role at the intersection of diplomacy and science will be elaborated in detail in the third chapter of this study.

In another well-known case, the federal government tried to push the MPS into the role of a substitute actor in foreign policy. In its historical self-descriptions, the MPS often credits itself for pioneering German-Israeli rapprochement after the Nazi genocide, pointing to its cooperation with the Israeli Weizmann

59 *MPG-Tätigkeitsbericht 1964*, p. 569; Aronova, Baker, and Oreskes, "Big Science and Big Data in Biology," 2010. For observation stations of the MPI for Aeronomy, see Bonolis and Leon, *Astrophysics*, 2023, pp. 158–183.

60 German-Soviet Agreement on Cultural and Technical-Economic Exchange from March 25, 1959: "Die Kabinettsprotokolle der Bundesregierung," online, Approval of the Draft, May 14, 1959, https://www.bundesarchiv.de/cocoon/barch/0/k/k1959k/kap1_2/kap2_18/para3_7.html; Protocol of the meeting at the AA on April 25, 1960, PA AA/B 97-REF. VI 8/VI 10/57; Note from February 25, 1974, AMPG, II. Abt., Rep. 70, No. 373, p. 32 ff.

61 Note from October 30, 1980, AMPG, II. Abt., Rep. 70, No. 86, p. 17 ff.; Interview Nickel (Sachse) April 12, 2018; Presas i Puig, *Scientific and Technological Relations*, 2007, pp. 23–28.

Institute initiated in the early 1960s.⁶² However, as the multi-perspective analysis by Thomas Steinhauser, Hanoch Gutfreund, and Jürgen Renn has shown, the initiative in the late 1950s actually came from scientists and science managers of the Weizmann Institute. Much like the State of Israel since its foundation, the Institute had to constantly fight for its survival and was actively seeking more sponsors.⁶³ The Weizmann scientist, Gerhard Schmidt, between 1956 and 1958, repeatedly contacted Professor Wolfgang Gentner of the University of Freiburg. Gentner had been the research director at CERN since 1954, and in 1958, he became the director at the MPI for Nuclear Physics. While on a research stay at CERN, Amos de Shalit, a nuclear physicist at the Weizmann Institute, and Gentner forged the first Israeli-German cooperation plans in Geneva. At the same time, the Europe-based fundraising experts of the Weizmann Institute, Josef Cohn and Richard Kronstein, managed to present their case directly to Konrad Adenauer through several intermediaries.

The Federal Chancellor, however, found himself in a foreign policy predicament because of the Hallstein Doctrine. On the one hand, the Federal Government was keen on improving its relations with Israel—not least to enhance its international image, especially in the eyes of the USA. While for reasons different than Israel, which had to consider its many Nazi-persecuted citizens, the West German government also hesitated in establishing diplomatic relations. Precisely for that reason, they would have gladly supported scientific relations with significant funding, going beyond the ongoing “reparations payments” and the covert arms supplies, which they carried out in coordination with the USA. This allowed the USA to maintain its embargo against Israel, seen as the aggressor in the Sinai War. On the other hand, the Federal Government, in order to not contradict the Hallstein Doctrine, could not alienate its Arab friends and trade partners. These Arab nations threatened in retaliation to recognize the GDR and shift geopolitical balances in favor of the Soviet Union.

In this dilemma, the ‘private’ organization MPS appeared to offer a solution. The Arab states couldn’t have objected to cooperation agreements between non-state West German and Israeli science organizations. Moreover, avenues for allocating additional federal funds to the MPS had already been paved earlier. Otto Hahn, whom Gentner had managed to motivate by the end of 1959 to visit the Weizmann Institute in Rehovot alongside him and the director of

62 For example, Staab in his introductory statement at the annual press conference on November 24, 1987, Note December 1, 1987, Attachment 3, p. 7, BArch B 196/96345; Henning, “Foreign Relations,” 1999, p. 106; Markl, “Entschuldigung,” 2003, p. 42. Dietmar Nickel had already written, as he stated in a phone call on April 8, 2022, unsuccessfully against this self-presentation: Nickel, *Rehovot*, 1989. The Weizmann Institute was founded in 1934 by Chaim Weizmann as the Daniel-Sieff Research Institute, for multidisciplinary natural science in Palestine.

63 Steinhauser, Gutfreund, and Renn, *Turning Points*, 2017. The following brief account is based on this detailed study as well as on Nickel, *Rehovot*, 1989; and Nickel, “Wolfgang Gentner und die Begründung,” 2006; see Deichmann, “Collaborations,” 2015.

the MPI for Cell Chemistry, Feodor Lynen, to explore cooperation possibilities, was willing to do so in his capacity as MPS's president. However, his soon-to-be successor, Adolf Butenandt, took advice from the longtime administrative head Telschow, who pointed out that the MPS's statutes prohibited such covert official support and transfer payments to third parties. The new MPS leadership, though still advised by Telschow, didn't want to be co-opted to solve the Federal Government's foreign policy issues regarding Israel. As a result, they settled for a scholarship program funded by the MPS itself, amounting to 30,000 DM, to support young MPS scientists' stays in Israel.⁶⁴

Nevertheless, the initial installments of scientific funding that Adenauer had promised to the Israeli Prime Minister David Ben-Gurion during a meeting in New York in 1960 were disbursed. Surprisingly, these were direct payments from the Foreign Office's cultural budget, not through the covert channels that were used for the far more substantial payments for economic development and arms supplies. By 1963, a new approach was suggested: the Minerva Society, established a year earlier to handle other non-statutory financial transactions of the MPS, could offer a politically safe method for transferring West German funds to the Weizmann Institute. A corresponding agreement was struck in 1964, but it was already redundant a year later, for in 1965, Israel and the Federal Republic finally established official diplomatic relations. By then, the secret German-Israeli agreements had become internationally known, as had the sales of arms by West German companies to Egypt. Around the same time, Egypt's leader, Gamal Abdel Nasser, hosted a state reception for his East Berlin counterpart, Walter Ulbricht.⁶⁵ Given the geopolitical and defense-economic entanglements, even a more resolute science diplomatic initiative by the MPS leadership probably wouldn't have upheld the Hallstein Doctrine in the Middle East conflict. However, the Minerva Program and the scientific exchange between the MPS and the Weizmann Institute continue to thrive to this day.

The Europeanization of Big Science

Amidst the backdrop of growing delineation of competencies and an increasing emphasis on cooperation from the late 1950s onwards, as well as the MPS's occasional involvement into West German diplomacy, it became evident that the MPS required leadership that was both domestically and internationally effective and decisive. A full year before the regular presidential transition in 1960, a commission was established. Its purpose was to prepare a comprehensive statutory reform, reflecting the consolidated role of the MPS in both the West German and Western European scientific landscape.⁶⁶ The commission worked

64 Steinhauser, Gutfreund, and Renn, *Turning Points*, 2017, pp. 34–35, p. 40.

65 Ibid., pp. 35–37, pp. 42–44.

66 See Balcar, *Wandel*, 2020, pp. 171–186.

for several years, allowing the new president, Adolf Butenandt, to incorporate his initial experiences into their efforts. These experiences included, from a foreign science policy perspective, a German-Soviet delegation exchange in 1962/63 (→ 3.3), as well as his visit to Spain in 1963 (→ 3.2). During this time, the continued integration of large-scale research into a European context stood out. The Max Planck Institutes involved had to collaborate closely, particularly when utilizing the extensive infrastructure and equipment provided by large-scale European research.

Initially, this affected nuclear physics research, nuclear energy promotion, and fusion research. The establishment of CERN in 1952 had already pointed in this direction. These fields were institutionalized as a shared European task with the foundation of the European Atomic Energy Community (EURATOM) in 1957. It wasn't just the Nuclear Research Center (KfK, Kernforschungszentrum Karlsruhe)—which, to Heisenberg's great disappointment, was located in Karlsruhe and not Munich—and the Jülich Nuclear Research Facility (KFA, Kernforschungsanlage Jülich) that benefited from EURATOM's support, but also the MPI for Plasma Physics. Following a complex negotiation process and a carefully weighted minority participation by EURATOM, it was initially founded in 1960 as the “Institute for Plasma Physics GmbH within the MPS” (IPP). It was then incorporated into the MPS in 1971.⁶⁷

Furthermore, the European Space Research Organization (ESRO) emerged as a research institution, comparable in size to CERN, with respect to its member states and volume of research funding.⁶⁸ Just as with CERN, the objective was to carve a distinct identity for Western European space research that would stand independently, yet collaboratively linked, to both American and Soviet research. In alignment with the BMAt, representatives from West Germany, particularly physicists from the MPS involved in the “Working Group for Extraterrestrial Research,” led the negotiations. This group combined expertise from the MPIs for Aeronomy, for Nuclear Physics, and for Physics and Astrophysics. Notably,

67 On Heisenberg's role in shaping European atomic research, see Carson, *Heisenberg in the Atomic Age*, 2010, pp. 218–255. Except for the IPP, the MPS did not host any large-scale research institutes, which were generally directly led by the federal and state governments or as European collaborations. For the relationship between the MPS and large-scale research, see Balcar, *Wandel*, 2020, pp. 106–162, 248. On the negotiation process that initially led to the founding of the IPP as a GmbH and its further development until its incorporation into the MPS, see Boenke, *Entstehung und Entwicklung*, 1991.

68 Except for Greece and Yugoslavia, the CERN founding states were also gathered at ESRO. Spain was added, which was finally included in CERN in 1961. The costs were initially estimated by Reimar Lüst in his report before the CPTS of the MPS on June 6, 1961 (AMPG, II. Abt., Rep. 66, No. 3047, pp. 39–45, here p. 43) at initially 100 million DM, later 200 million DM annually; of this, the FRG would have to contribute approximately 20 %, plus nationally incurred costs for instrument development at universities and research institutes amounting to at least 15 million DM annually, while the FRG's costs for CERN at the same time amounted to approximately 60 million DM annually. Krige, Russo, and Sebesta, *History of ESA*, vol. 1, 2000.

astrophysicist Reimar Lüst played a key role. As a result of his efforts, his department was elevated to become an Institute for Extraterrestrial Physics within the MPI for Physics and Astrophysics. In addition to leading the institute, Lüst also took on several leadership roles within ESRO, acting “in the interest of the German Federal Republic (sic!),” as Heisenberg and Biermann highlighted in their request to the Chemistry, Physics, and Technology Section (CPTS).⁶⁹

Another initiative launched in 1962 was in line with Butenandt’s own research area of biochemistry. This initiative, the founding of the European Molecular Biology Organisation (EMBO), was driven mainly by British biologists and aimed to emulate the CERN model. From the West German side, Hans Friedrich-Freksa and Alfred Gierer from the MPI for Virus Research took part in its preparation. Meanwhile, behind the scenes, Butenandt laid the groundwork for start-up financing through the Volkswagen (VW) Foundation. Initially, EMBO focused on coordinating research and enhancing collaboration among European molecular biology institutes. This was because, largely due to political differences between France and the UK, the inception of a joint European lab (European Molecular Biology Laboratory, EMBL) was delayed by over a decade.⁷⁰ Butenandt, aligning with the Federal Government’s stance, would have preferred to locate it in Martinsried, near his MPI for Biochemistry. However, representatives of the twelve participating member states feared this could endanger the “establishment of its own identity” and believed the “proximity to Dachau” might be “intolerable” for Israeli scientists. These scientists, alongside their British colleagues, played a significant role in the EMBO. Thus, the decision swayed in favor of the more accessible location of Heidelberg. Here, they anticipated a “greater scientific diversity (especially regarding instrument development)” and, overall, “broader development opportunities” compared to the immediate vicinity of the established MPS science centers in Garching and Martinsried.⁷¹

69 Protocol of the CPTS from May 13/14, 1963, AMPG, II. Abt., Rep. 62, No. 1741, p.161; AMPG, II. Abt, Rep. 66, No. 3047, pp. 39–45: Report by Lüst (“Internationale Zusammenarbeit auf dem Gebiet der Weltraumforschung und die Beteiligung der Max-Planck-Gesellschaft”) before the CPTS on June 6, 1961. Lüst was Technical Director from 1962–1964, Vice President of the ESRO from 1968–1970, and following his presidency of the MPS, was Director-General of the successor organization European Space Agency (ESA) from 1984–1990. Regarding the working group on extraterrestrial research, see Bonolis und Leon, *Astrophysics*, 2023, p. 276.

70 Above all, de Gaulle’s veto against the British entry into the EEC stalled the establishment of EMBL until his resignation in 1969, as per Krige, “Birth,” 2002.

71 Records of the 71st Senate meeting on March 15, 1972, AMPG, II. Abt, Rep. 60, No. 71. SP, fol. 14, pp. 159–160. The reservations against Martinsried were not elaborated in the final records. My thanks go to Alison Kraft for these insights. Kraft, Renn, Sachse, and Schöttler, “Die MPG in der Welt,” 2024, 695–698.

A Foreign Policy Mandate for the President

It became increasingly evident that the foreign science policy tasks facing the new MPS President in the early 1960s were growing more intricate, and these were challenges he had to, and indeed wanted to, address. Unlike his predecessor, Otto Hahn, who in the later years of his tenure and advanced age had often sidestepped political challenges, Butenandt felt a strong need to influence science policy with the authority of his new position. He made this clear to his colleagues during a pivotal special session of the Scientific Council in November 1963. During this session, they discussed the nuances of the new statutes one last time before presenting the finalized draft to the Senate in June 1964. By December 1964, the members of the MPS ratified it in an extraordinary General Meeting.⁷² His statement, which he politely interjected was “not a critique of Otto Hahn,” came across precisely as such. He emphasized that the way things had operated “ten years ago” couldn’t continue:

The Society is now consolidated, and it has secured a specific position. We have evolved to a point where, in all matters of external science policy, the Society has greatly gained in significance.⁷³

In his vision for the role of President, Butenandt sought to shape the position with a clear science policy focus in two main directions. With “external,” he was not just referring to foreign countries, but even more so to the MPG’s federal political external world, namely, the “Federal Government, *Länder*, DFG, the Science Council, and the Rectors’ Conference.” He believed there needed to be a strategy for these interactions, a responsibility that would fall squarely on the President. Internally, there was a pressing need for clarity on the organization’s direction. Butenandt lamented that “no one had ever really given it much thought” in the past. Now, with the establishment of the Science Council in 1957 as the top advisory body to the Federal Government on science policy, the MPS could no longer rely on chance when it came to founding new institutes.⁷⁴ Butenandt wanted a clear mandate for both the internal and external policies of the MPS. As his colleagues debated the implications of such a mandate—whether it would give the President too much power, or if it would actually limit the President’s powers as compared to the previous statutes that hadn’t specified the role of President at all, and how they should approach the

72 Letter from the MPS President to MPS members dated July 31, 1964, AMPG, III. Abt., ZA 116, K 65. For the changes in MPS statutes up to 1972, see Balcar, *Wandel*, 2020, pp. 171–243.

73 Protocol of the special meeting of the Scientific Council on Nov. 1, 1963, AMPG, II. Abt., Rep. 62, No. 1942, fol. 310.

74 Ibid.

issue of power in general—Butenandt was already thinking beyond his own term.⁷⁵ He believed it was the duty of any “future President” to always ponder the question, “What will become of the MPS?” Such contemplation should be so persistent, he remarked, that “they shouldn’t go to sleep any evening without having given it some thought.”⁷⁶ Paragraph 11 of the new statutes eventually provided the president with the mandate he desired, allowing, in Butenandt’s interpretation, for the MPS “to be represented as a vital factor in cultural policy, both domestically and abroad.”⁷⁷

Shortly after, Butenandt was appointed to the Cultural Policy Committee of the Foreign Office.⁷⁸ He accounted for how he executed his science policy mandate, both toward domestic institutions and internationally, in his speeches at the MPS’s general assemblies. These addresses began to be regularly documented in the MPS’s yearbooks.⁷⁹

His first challenges in international science policy he addressed in his inaugural speech at the MPS’s 1963 General Meeting. Both the West and East showered criticism upon the West German science system, including the MPS itself. At the end of 1962, Frederik Seitz, the president of the U. S. National Academy of Science (NAS), labeled this science system as especially resistant to reform compared to its Western European neighbors, thus implying it was scientifically lagging. His biting critique appeared not only in the internationally distributed scientific journal, *Physics Today*, but also as a detailed book publication in German. This prompted the German Research Foundation (DFG) to commission a study on the “Status and Deficits of Research in Germany.” This study, in turn, spurred

75 Butenandt’s strongest adversary was the Director of the MPI for Biology, Georg Melchers, who polemicized against any possible increase in the powers of the presidential office in general, and of President Butenandt in particular: AMPG III/84–2-7353, Melchers/Butenandt correspondence dated April 4, 18, 30, and May 16, 1962.

76 All the preceding quotes: Protocol of the special meeting of the Scientific Council on Nov. 1, 1963, AMPG, II. Abt., Rep. 62, No. 1942, fol. 310.

77 Letter from the MPS President to the MPS members dated July 31, 1964, AMPG, III. Abt., ZA 116, K 65. Paragraph 11 of the new statutes, which defined the rights and duties of the President, stated in section 1 that he “represents” the MPS externally, especially in the “culturally and politically relevant area,” such as making statements, delivering programmatic speeches, responding to actions of government agencies, making contact with domestic and foreign science organizations, etc. In § 11, section 2, it further states that the President “develops the basic principles of science policy”; see Dölle, *Erläuterungen zur Satzung der MPG*, 1965, p. 33.

78 Records of the 48th Senate meeting on June 10, 1964, AMPG, II. Abt., Rep. 60, No. 48. SP, fol. 160–161. Butenandt’s Secretariat to Rohrehe (AA) March 5, 1964; Sattler to Etzdorf March 10, 1964, PA AA B 90-REF. 600/IV1/832, as well as PA AA B 90-REF. 600 IV1/879: In the meeting records of the advisory board, there are no contributions from Butenandt and more refusals than acceptances for the meetings. More active members of the committee founded in 1961 were, on behalf of the MPS, Hellmut Becker and initially also C. F. von Weizsäcker.

79 The *MPG-Jahrbuch 1963* for the first time included the “Ansprache des Präsidenten,” which thereafter appeared regularly in it.

Ludwig Raiser, the current president of the Science Council and former DFG president, to conduct a troubling analysis comparing the West German science system to the American one. In his analysis, Raiser primarily identified the early selectivity of the West German school system, along with the lack of content flexibility and hierarchical structure of universities, as areas in need of reform.⁸⁰

Butenandt saw danger in the waves of criticism and self-criticism. Seitz did not trace the roots of West Germany’s woes to inadequate funding, as Butenandt would have. Instead, Seitz blamed the outdated institutional structures and professorial systems, remnants from the German Empire, which he believed were pushing emerging scientists abroad, especially to the USA. Moreover, while Seitz had primarily been addressing the universities, he hadn’t made this clear. Butenandt addressed these points in his 1963 speech. While acknowledging the educational lag, which the DFG would soon quantify, he emphasized the existing cutting-edge research. He pointed out the work in “specific areas of chemistry,” theoretical and plasma physics, and “virus research, particularly in its relationship with modern genetics”—all of which, not coincidentally, were located within MPIs. He concluded this review with a profoundly “German” reflection:

Shouldn’t we also rejoice that in Germany, there still are natural scientists who don’t merely ask how things behave, but are deeply concerned with the question of ‘why’ they behave in such ways?⁸¹

Butenandt then addressed Seitz’s primary criticism, the “strict hierarchical order” of the federal German “institute operations.” Even here, he conceded issues with the universities due to their typical “turnover positions” for emerging scientists, which prevented the formation of genuine “working communities.” The Max Planck Institutes, however, were different: they might not use the term “so-called ‘teamwork,’” but they would certainly speak of *Gemeinschaften* that, in their internal organization(...) “strive for the common goal.” Here, it wasn’t just a matter of translating a frowned-upon Anglicism; it was a continuation of the discourse on community, a concept that had permeated all German systems of governance over the past six decades. This was seamlessly supplemented by the leadership principle embodied in the “personality of the director” and the “integrative force emanating from him.” For Butenandt, the MPIs proved their worth as “working tools of qualified individuals” when they enabled the “true researcher,” much like an artist, to visualize “the yet unformed” and to “realize its form.” The configuration of such a “working tool,” the new areas it should explore, the methods it should employ, and the personnel it required, could and should be determined solely by the researcher-artist. The MPS had fulfilled its primary duty with the “selection of the individual” and from then on, only had

80 Seitz, “Science on the March,” 1962, pp.28–30. Seitz, *Wissenschaft im Vormarsch*, 1962; Paulus, *Amerikanisierung*, 2010, p. 357; Raiser, *Deutsche Hochschulprobleme*, 1966. Similar to Seitz also Conant, *Probleme*, 1965. See also the comparative review by Vierhaus, the director at the MPI for History since 1968, “Probleme der Universitäten,” 1967.

81 Butenandt, “Ansprache des Präsidenten,” 1963, p. 24.

to “assist the director in the administrative management of his tasks.”⁸² Without any concessions to the changing times, Butenandt championed the Harnack Principle, which, in his view, continued to prove its value, as evidenced by the internationally recognized research achievements of the MPIs.

In the face of potential criticism of this “extreme freedom of task organization”—a freedom that Butenandt himself acknowledged—he tried to deflect by suddenly switching adversaries. The delegation from the Soviet Academy of Sciences, which had visited the MPS among other scientific institutions at the end of 1962, did confirm that outstanding work was being done. However, they simultaneously criticized that some of the work dealt with “outdated” or “purely theoretical problems” that had no connection to “production-related issues” and were therefore hardly “justifiable.”⁸³ Butenandt’s straightforward rebuttal highlighted “the difference in mindset”: “There, the problems are posed from a practical, production-oriented standpoint, while our basic research seeks to expand our knowledge.” And that was the primary mission of the MPS, in the pursuit of which a wealth of practical results might emerge “along the way.”⁸⁴ The freedom that the political opponent attacks, he argued, shouldn’t be questioned; it should be defended—even if it takes the form of the near-absolute authority of an MPI director, which had to be defended against criticism from both the East and the West.

Butenandt’s Intellectual Network and Its Initiatives in Establishing Social Science Institutes

In 1963, what might have sufficed as an argument during a ceremonial address to MPS members no longer held water in the broader educational policy debate. Discussions in the Federal Republic of Germany had gained momentum since the Sputnik shock, triggered by the first satellite launched into space by the Soviet Union in 1957: education, higher education, research—everything was now under scrutiny. For these debates, Butenandt enlisted intellectual allies from a circle of scientists, philosophers, and educators. Some had found common ground in their youth, while others joined them during and after the war years. Several hailed from the MPS or were closely related or friendly with MPS members. Together, they saw themselves both as an elite, humanistically educated, and as liberal social reformers. In various configurations, this group exerted a significant influence on educational and foreign policy debates in West Germany’s public sphere, as well as on the positioning of the MPS in the late

82 All quotes: *Ibid.*, pp. 25–27.

83 *Ibid.*, p. 27; Butenandt quotes here from the impressions of delegation member and metallurgist Ivan Oding, which he, along with his two colleagues Georgy Vinogradov and Nikolay G. Basov, described in the magazine *Sowjetunion heute* (8/8, April 16, 1963, pp. 20–21, quotes: p. 20). For more details, see Chapter 3.3.

84 *Ibid.*, p. 28.

1950s and 1960s. One of the members, and also one of the most notable participants in the educational debates of 1960s West Germany, was the philosopher and educator Georg Picht. In the 1930s, Picht had given readings of Plato to his cousin, Carl Friedrich von Weizsäcker and introduced the young Hellmut Becker to the poems of Stefan George. All three men had enjoyed a classical education as scions of influential families that had been intertwined both culturally, and by marriage, since the time of the German Empire.⁸⁵ During the final years of the war, they reconvened at the *Reichsuniversität Straßburg*. Weizsäcker held the chair for physics there and was occasionally visited by his younger brother Richard while on military leave. Becker, who was injured during the war, returned to his position as an assistant to his former university professor, constitutional lawyer Ernst Rudolf Huber, who had moved from Leipzig to Strasbourg. Picht, born in Strasbourg and deemed unfit for military service, had been studying and teaching in nearby Freiburg. He would accompany his wife, pianist Edith Picht-Axenfeld, to her concerts in Strasbourg. All gathered in the Alsatian capital, including the nanny of the Weizsäcker family and Huber’s Alsatian secretary, Antoinette Mathis, whom Becker would marry shortly before the birth of their first child. Notably, historian Hermann Heimpel, who had been friends with Heisenberg and Weizsäcker since their Leipzig days, and jurist Ludwig Raiser, had also answered the call to Strasbourg.⁸⁶ In the summer of 1944, journalist and soldier Erich Kuby, whose sister-in-law was married to Heisenberg, stopped over in Strasbourg while en route to the Atlantic front in Brest. In his diary, he described this assemblage as a “colony of intellectuals.”

Here in Strasbourg, a plethora of reputable people have gathered, wanting to miss as much as possible from the Third Reich and the war. What bothers me about this circle is its elitist demeanor, and what I can least bear is the risk-free irony directed at the Nazis. These cultural and academic plutocrats wear an invisible sign around their necks: We are the other Germans. Whoever believes themselves to be an ‘other’ German but still sees themselves as a representative of Germans as a whole participates in the delusion that the German leadership—Hitler, Goebbels, Göring, Schacht, Bormann, Heydrich—are not exemplary Germans. But they are.⁸⁷

85 Raulff refers here to the “three *federalist families* of the early Federal Republic” and reconstructs the familial and professional connections of these and other families in detail: Picht’s father Werner Picht led the Higher Education Department of the League of Nations Institute for Intellectual Cooperation in Paris from 1927 to 1933; Weizsäcker’s father Ernst von Weizsäcker was the First State Secretary in the Foreign Office from 1938 to 1943; Becker’s father Carl Heinrich Becker was an orientalist and had advocated for university reforms as Prussian Minister of Culture from 1925 to 1930, Raulff, *Kreis ohne Meister*, 2009, p. 491.

86 Ibid., 464–466, 470–477. Kant and Renn, “Weizsäcker,” 2014, pp. 220–221.

87 Kuby, *Mein Krieg*, 1975, 413. The text was first published under the title “Besinnung” in Kuby’s volume, *Alles im Eimer: Siegt Hitler bei Bonn?*, Stuttgart 1960. I thank Daniel Kuby for further information (written communication from Oct. 11, 2012.)

Due to circumstances after the war, their paths diverged but their friendships proved to be a lifeline. Becker initially settled as a lawyer near Lake Constance. He defended the father of his friend, the former State Secretary in the Foreign Office, Ernst von Weizsäcker, during the Wilhelmstrasse Trial. He was assisted by Weizsäcker's youngest son, Richard, and advised by his former professor, Huber, whom he had in turn supported during his denazification process. Heisenberg wrote a statement that mitigated the severity of Heimpel's denazification trial and facilitated Heimpel attaining a professorship in Göttingen. Raiser first accepted a professorship in Göttingen, later in Tübingen, and, in addition to that, led the German Research Foundation (DFG) until 1955, and subsequently the Science Council. Picht, as he had done briefly in the early 1940s, took over the leadership of the Birklehof boarding school in Hinterzarten. Now, Weizsäcker's war-widowed sister, Adelheid von Eulenburg, originally from East Prussia, also taught there. The university town of Tübingen, to which some of the Berlin-based Kaiser Wilhelm Institutes had already been drawn and to which the *Reichsuniversität Straßburg* had been evacuated in November 1944, became a new meeting point. It was here in 1946 that Becker met the newly appointed law professor, Carlo Schmid. As the Social Democratic state minister in Württemberg-Hohenzollern, Schmid had been instrumental in academically reintegrating the stranded KWI directors, Butenandt and Alfred Kühn, in Tübingen. Schmid later joined the MPS senate in 1951.⁸⁸ The close cultural ties between Butenandt, a merchant's son and graduate of a *Realgymnasium*, and the former Strasbourg intellectuals, now scattered across regions, is evident in the fact that, like Weizsäcker, he sent one of his sons to Picht's Birklehof, where four of the Heimpel children were already getting an education, and supported the school financially for decades.⁸⁹

Whether this interconnected group of intellectuals was genuinely united by the residual influence of Stefan George's poetry or by the intergenerational legacy of the "immortal master," remains a matter of debate. Ulrich Raulff, in his book *Kreis ohne Meister* (Circle Without a Master), seeks to establish this connection, alluding to a sort of conspiratorial undertone. Nonetheless, it's undeniable that they had many personal, familial, and professional connections among themselves and shared certain educational and political ideals. These ideals blended a desire for reform with an awareness of their elite status. Time and again, they convened in forums where they sought to make their ideas politically and institutionally effective. One such platform was the Research Institute

88 Raulff, *Kreis ohne Meister*, 2009, pp. 476–477. Regarding Ernst von Weizsäcker see Conze et al., *Das Amt und die Vergangenheit*, 2012.

89 AMPG, III. Abt., Rep. 84–2, No. 8102, 7456, 7457, 4699: Butenandt's son Eckart (*1937) was at Birklehof from 1952. Butenandt was a member of the Birklehof School Association and utilized his contacts with the pharmaceutical industry and the Rheinländische Stahlwerke (Rhineland Steelworks) for fundraising for the school until the 1980s. Birklehof students also included C. F. v. Weizsäcker's son Ernst Ulrich von Weizsäcker (*1939) as well as four children of Heimpel. Cf. Löwe, *Georg Picht*, 2004, p. 15, p. 17.

of the Protestant Study Community (FEST, Forschungsstätte der Evangelischen Studiengemeinschaft) in Heidelberg, founded in 1957. Directed by Picht, who had since been appointed at the University of Heidelberg, FEST gathered Protestant scholars and intellectuals like Heisenberg, Raiser, radio director Klaus von Bismarck, mathematician and philosopher Günter Howe, and of course, Becker, among others. As a result, it frequently became the breeding ground for propositions and memorandums on nuclear, foreign, energy, and peace policies, often bearing the signatures of MPS scientists—Carl Friedrich von Weizsäcker, for instance, often took a leading role in these efforts.⁹⁰ One notable instance is the Tübingen Memorandum, drafted by figures including Weizsäcker, Picht, and Raiser. Already in 1961, this document called for the recognition of the Oder-Neisse line—the post-war border between Germany and Poland—that continued to be a source of tension in European politics. As discussed in the fourth chapter of this study (→ 4.1), this memorandum would exert a more profound influence on FRG’s foreign policy than the much more renowned Göttingen Declaration. In the latter, eighteen West German nuclear physicists, many from the MPS circle like Hahn, Heisenberg, and Weizsäcker, warned against the nuclear armament of the *Bundeswehr* in 1957.

Another politically attuned forum was the MPS’s Senate Commission for Humanities Affairs, which would later evolve into the Humanities Section (GWS) of the MPS. As early as 1954/55, figures including Weizsäcker, Heisenberg, and Carlo Schmid convened there to discuss, decide upon, and champion the re-establishment of the MPI for History in Göttingen and the appointment of Heimpel to the directorship. Heimpel was the one who drafted the institute’s concept, initially requested as a review.⁹¹ A few years later, in 1959, it was Heimpel, Weizsäcker, and Schmid, externally supported by Picht, who introduced Becker’s proposal for the establishment of an MPI for Educational Research to the MPS committees. After some delays and numerous reviews, the proposal culminated in the founding of an institute that, for the time being, was “supervised by the MPS,” with Hellmut Becker already designated as its director.⁹² Opposition mainly came from the *Länder*, who feared that a centralized Berlin-based educational research institute would threaten their cultural sovereignty. Additionally, there were voices both inside and outside the MPS opposing any form of political consultancy, viewing it as an unwarranted departure from the

90 On the context of the Protestant churches and the FEST see Eisenbart, “Nichtverbreitung von Atomwaffen,” 2009, pp. 289–291; Schüring, *Atomstaat*, 2015, p. 208. Regarding this thought collective, see also Seefried, *Zukünfte*, 2015, pp. 87–95.

91 On the founding of the MPI for History see Schöttler, *Die Ära Heimpel*, 2017, pp. 21–23.

92 Thoms, “Geschichte des Max-Planck-Instituts,” 2016, p. 3; Behm, “Zu den Anfängen der Bildungsforschung,” 2017; Kant and Renn, “Weizsäcker,” 2014, pp. 232–234. That the founding proposal, as Karlson believes, “was independently brought to the MPS by Carlo Schmid, Georg Picht, and Hellmuth [sic!] Becker,” is utterly inconceivable; cf. Karlson, *Biochemiker, Hormonforscher, Wissenschaftspolitiker*, 1990, p. 247.

primacy of basic research.⁹³ By the time the institute officially opened in 1963, Butenandt, in his presidential address to the MPS's General Meeting in June 1964, felt compelled to placate these critics. He also sought to reassure those who felt it was too little too late, especially after Picht had loudly proclaimed the "German educational catastrophe" to a media frenzy earlier that year.⁹⁴ The institute, Butenandt emphasized, would neither "prematurely comment on current issues" nor "determine political decisions." Instead, it would "develop theories and methods for educational research," laying the "scientific foundation for future educational policies," and provide the "materials to ensure decisions are made on the right issues."⁹⁵ To maintain alignment with international educational policy developments while prioritizing foundational research, the institute would collaborate on joint projects with "similar institutions in other countries." It would particularly engage in relevant commissions of UNESCO, the OECD, and the Paris-based *International Institute for Educational Planning*, where Becker was already at the helm.⁹⁶

Becker was pivotal in linking the research of his colleagues' departments — the educational economist Friedrich Edding, the sociologist Dietrich Goldschmidt, and the pedagogue Saul Robinsohn — with emerging educational-policy bodies at both the West German and supranational levels.⁹⁷ In doing so, he crafted a merged research and political advisory institution, which Heisenberg and Butenandt might have envisioned when, during that legendary night in 1943 in German science history, they walked together from a lecture event at the Reich Aviation Ministry through burning Berlin back to their Dahlem villas. Along the way, as they later recalled, they discussed the "pedagogical side of science" and the primary challenges they would face as scientists after the war, notably to exert their "way of thinking... influencing broader circles" and above all, to educate the youth in "rational thinking."⁹⁸

However, there was a distinction: while Butenandt and Heisenberg in 1943 were still engrossed in dreams of Germany's national resurgence fueled by the spirit of science,⁹⁹ the focus now was on scientifically based educational reforms in a European context, the international comparison of educational systems, and by extension, the better tapping of educational potential from which the next generation of scientists could be drawn. Evidently, Becker managed to convince his MPS colleagues of his approach to scientific policy consultancy over the

93 On the founding history of the MPI for Educational Research, see also Balcar, *Wandel*, 2020, pp. 17–21; Behm, *Bildungsforschung*, 2023.

94 Picht, *Bildungskatastrophe*, 1964.

95 *MPG-Jahrbuch* 1964, p. 36.

96 *Ibid.*, pp. 37–38.

97 Thoms, "Geschichte des Max-Planck-Instituts," 2016, pp. 5–8. Regarding Edding, who was also internationally very active, see Geiss, "Bildungsökonom," 2015.

98 Heisenberg, *Der Teil und das Ganze*, 1972, p. 217. Cf. Stoff, "Butenandt in der Nachkriegszeit," 2004, pp. 384–385.

99 Stoff, "Butenandt in der Nachkriegszeit," 2004, pp. 400–402.

ensuing years. In 1971, they elevated the “Becker Institute” to the status of a full-fledged MPI for Educational Research, thus equating it with another new social science establishment — the MPI in Starnberg.¹⁰⁰ The foundation story of the latter is even more intricate than its educational (policy) research counterpart. Unlike the former, the inception of the Starnberg Institute, contrary to popular belief, did not originate from our former Strasbourg circle of intellectuals, even though they would later be responsible for the realization of that institution.¹⁰¹ The impetus instead came from actors and locations beyond the borders of West Germany.

Learning Policy Consultancy from the American Model

The origins of the Starnberg Institute can be traced back to Addis Ababa and Sopot, where in 1965 and 1966 the 15th and 16th Pugwash Conferences on Science and World Affairs (PCSWA) were held. In the wake of the 1955 Russell-Einstein Manifesto, these conferences initially convened around two dozen scientists in Pugwash, a quaint fishing village in Nova Scotia. The majority were renowned nuclear physicists from the key nuclear states: the USA, USSR, and Great Britain. United by the “universal language of science,” their mission was to explore avenues through which they could influence their governments towards averting a nuclear catastrophe. As the years passed, these Pugwash Conferences, held in different global venues, evolved into an esteemed forum for “second-track diplomacy.” Particularly in the 1960s, they served as a complement or precursor to the official disarmament dialogues of the major powers.¹⁰²

While the Pugwash initiative found adherents in West Germany, they perhaps weren’t the most influential figures in the eyes of their prominent and politically influential American and British peers. Eminent members of the Max Planck Society, ranging from personalities like Hahn and Heisenberg to the biophysicist Boris Rajewsky and Butenandt, showed reservations. As explored in depth in this study’s fourth chapter (→ 4.2), they were cautious about venturing into

100 Thoms, *Geschichte des Max-Planck-Instituts*, 2016, pp. 5,7. The later MPS President Lüst recalled this upgrade as another success of that “Mafia” who ensured that Becker was appointed the “proper Max Planck Director” at the moment his friend Weizsäcker moved in as MPI Director in Starnberg: Interview Lüst (Renn and Kant), May 18, 2010.

101 For the history of MPIL, see Laitko, “MPI zur Erforschung,” 2011; Leendertz, *Pragmatische Wende*, 2010; Kant and Renn, “Weizsäcker,” 2014; Seefried, *Zukünfte*, 2015, pp. 324–333; Sachse, “The Max Planck Society and Pugwash during the Cold War,” 2018.

102 For the history of the PCSWA, see Rotblat, *Pugwash*, 1968; Rotblat, *Scientists in the Quest for Peace*, 1972; Kubbig, *Communicators in the Cold War*, 1996; Evangelista, *Unarmed Forces*, 1999; Kraft, Nehring and Sachse, “The Pugwash Conferences and the Global Cold War,” 2018; Kraft and Sachse, *Science, (Anti-)Communism and Diplomacy*, 2020; Kraft, *From Dissent*, 2022. On Track II Diplomacy, see Montville, “Track Two Diplomacy,” 1991; Diamond and McDonald, *Multi-Track Diplomacy*, 1996.

the slippery parquet of informal science diplomacy that bridged the West and East.¹⁰³ Weizsäcker was an exception. Having migrated to a professorship at the University of Hamburg that aligned more closely with his philosophical passions, he had attended a few Pugwash sessions in the late 1950s. However, in subsequent conferences, he passed over his invitations to younger assistants from Hamburg. These young people, while yet to make significant scientific or political marks, found themselves navigating discussions alongside international luminaries, including Nobel laureates and senior government advisors from the US, Soviet Union, and Britain. This was especially notable in the 1965/66 conferences in Addis Ababa and Sopot. Here, amidst discussions themed around “Disarmament and Security,” deliberations centered on the impending Nuclear Non-Proliferation Treaty (NPT). The American delegation, spearheaded by the influential Harvard Professor and Presidential Advisor Henry Kissinger, expressed palpable disappointment at the West German Pugwash team’s performance. Their concern was further exacerbated by the Federal Government’s refusal to endorse the NPT. Yet, a glimmer of opportunity appeared in the autumn of 1966.¹⁰⁴ With the fracture of the CDU-FDP alliance, there emerged a chance to introduce, within West Germany, a scientific policy advisory framework inspired by the American model. The goal was clear: foster a more pragmatic foreign and security policy, especially under the aegis of the forthcoming government coalition with Willy Brandt as the first Social Democratic foreign minister.

The MIT biophysicist, Alexander Rich, who had attended the recent Pugwash Conferences, took the initiative. Two months after the Sopot conference, in November 1966, he approached his professional colleague, Manfred Eigen, at the MPI for Physical Chemistry in Göttingen. He presented Eigen with a list of 25 distinguished U.S. scientists and government advisors who were ready to travel to the Federal Republic to enlighten the Germans about the American approach to giving scientific advice to government’s policy.¹⁰⁵ Although Eigen maintained robust research collaborations with the Israeli Weizmann Institute, he hadn’t been notably active in the context of foreign science policy. Nevertheless, he heeded the call for suggestions regarding potential West German participants. Along with his institute colleague, Friedrich Cramer, Eigen organized a meeting for January 1967 at the MPI for Physics in Munich. Apart from Rich,

103 On the relationship between the MPS and Pugwash, see Sachse, “The Max Planck Society and Pugwash during the Cold War”, 2018; for the West and East German Pugwash groups, see Kraft, “Confronting,” 2020.

104 Schnippenkoetter to Kissinger on May 26, 1966; Memo dated June 27, 1966; Memo by Ramisch (AA) on Sep. 29, 1966, PA AA B 43-REF. 302/II8/UA IIB/90. The disarmament commissioner of the federal government and former embassy councilor in Washington, Schnippenkoetter, and Kissinger had spoken in late April at a conference of the Ditchley Foundation in Ditchley Park (Oxfordshire, UK) about the upcoming Pugwash Conference in Sopot.

105 Rich to Eigen on Nov. 28, 1966, AMPG, II. Abt., Rep. 70, No. 359, pp. 73.

eight other American scientists joined the session.¹⁰⁶ Each of these scholars hailed from East Coast Ivy League universities, and many had served or were currently serving on the Presidential Scientific Advisory Committee (PSAC). The group included luminaries like Henry Kissinger, who advised Presidents Kennedy, Johnson, and later Nixon, and Isidor Rabi. As a nuclear physicist, Rabi participated in numerous advisory committees of U. S., inter-, and supranational nuclear policy entities.¹⁰⁷

Apart from the organizers Eigen and Cramer, MPS attendees included the host Heisenberg, President Butenandt, and his new Secretary-General Friedrich Schneider. Additionally, three other MPS directors from various physical and bioscience disciplines were present.¹⁰⁸ Weizsäcker, who had retained his MPS membership even while serving as a philosophy professor in Hamburg, arrived with his friend Picht. The current president of the Science Council, Hans Leussink, the head of the German Institute for International and Security Affairs (SWP, Stiftung Wissenschaft und Politik) established 1962 in Ebenhausen, Klaus Ritter, and Rudolf Mößbauer, a physicist and Nobel laureate from the Munich Technical University, who was not a member of the MPS, were all invited. Linking the meeting to the Federal Government was Kurt Birrenbach. Since 1957, he had represented the CDU/CSU party in the Foreign Affairs Committee of the *Bundestag*. He played a pivotal role in initiating diplomatic relations with Israel and, as a member of the *Atlantik-Brücke* (Atlantic Bridge), a non-partisan network of German and American leaders, advised Adenauer’s successors, Ludwig Erhard and Georg Kiesinger, on matters related to America.¹⁰⁹

The primary concern was to explore the possibility of scientists influencing certain political decisions and how to create a functional scientific consultancy system for the federal government. Yet, at the “request of the Americans,” the topic of FRG’s “unsatisfactory participation in the Pugwash Conferences” was also to be addressed.¹¹⁰

For two days, discussions revolved around the significant differences in the political and science systems of both countries. This began with the comparatively weaker constitutional position of the federal chancellor relative to the

106 On Eigen, see interview with Frühwald and Eigen (Frieß and Fickers) dated Sep. 23, 1994. Obituary: Pecht and Jovin, Eigen, 2019.

107 Report on the meeting with representatives of American science and science policy in Munich on Jan. 20/21, 1967 (hereafter cited as “Report Jan. 20/21, 1967”), BArch N 1225/110. The list of participants also included: Paul Doty (Harvard University), Carl Kaysen (Institute for Advanced Studies, Princeton), Don K. Price (Harvard University), Edward Purcell (Harvard University), Eugene Skolnikoff (MIT), Charles Townes (MIT).

108 The other directors were Feodor Lynen (MPI for Cell Chemistry), Arnulf Schlüter (IPP), and Otto Westphal (MPI for Immunobiology), Report Jan. 20/21, 1967, participant list, BArch N 1225/110.

109 Atlantik-Brücke, <https://www.atlantik-bruecke.org/geschichte-der-atlantik-bruecke/>. See also Leendertz, “Ein gescheitertes Experiment,” 2014, p. 244.

110 Verbatim transcript Jan. 20/21, 1967, AMPG, II. Abt., Rep. 70, No. 359, fol. 26; Report Jan. 20/21, 1967, BArch N 1225/110.

federal ministries and the *Länder* ministries of education and cultural affairs.¹¹¹ Many of these ministries had established their own narrowly defined advisory committees. Because of their ample numbers and limited scope, these committees didn't stand out as prominently as the distinguished Presidential Scientific Advisory Committee (PSAC) at the helm of the Western superpower. Depending on the issue at hand, the PSAC could engage additional specialized expert groups and draw from a pool of over a thousand dedicated scientists committed to their national duty. This extensive advisory activity was consolidated, coordinated, and made "directly accessible to the President" by the PSAC. Moreover, this twenty-member elite body dealt with "matters of public life" and "state issues," preparing decisions using "methods provided by science." In contrast, advisory activities in the Federal Republic focused on educational, scientific, and research policy questions in a narrow sense or on specific research tasks commissioned by individual government agencies. The deficit in scientific policy consultancy in the Federal Republic was a mutual failing. Federal German scientists were seen as lacking a "sense of political responsibility" and a "personal commitment" to political matters, qualities that have been "traditions in the USA since the times of Jefferson and Franklin." From the government side, such an engagement wasn't promoted either. On the contrary, "uncomfortable" statements like the Göttingen Declaration of 1957 or the Tübingen Memorandum of 1961 were not welcomed as "serious contributions to political life" but resisted as "unwanted interventions."¹¹²

More than any structural differences in political constitution, legal status, funding, and (self-)administration of universities and research institutions, contrasting historical experiences of scientists during and immediately after World War II defined their relationship to state politics. It was the successful collaboration between politics and science in the Manhattan Project that laid the foundation for the PSAC, influencing its direction well into the 1970s, regardless of individual members' stances on nuclear armament and their government's military strategies during the Cold War.¹¹³ Conversely, it was the collaboration between science and politics during the Nazi regime from which West German scientists had to distance themselves if they wished to restore their own credibility not just for themselves, but also within international scientific communi-

111 Verbatim transcript, Jan. 20/21, 1967, AMPG, II. Abt., Rep. 70, No. 359, pp. 26, and report Jan. 20/21, 1967, BArch N 1225/110. The following is a condensed version of these sometimes very nuanced, sometimes redundant discussions.

112 Report Jan. 20/21, 1967, pp. 2–3, BArch N 1225/110.

113 The PSAC was established in 1951 as the 'Scientific Advisory Committee' (SAC) by President Truman. Eisenhower upgraded it to the PSAC in response to the Sputnik shock of 1957 and relocated it directly to the White House. Kennedy renamed it the 'Office of Science and Technology' (OST) in 1961. It was disbanded by Nixon in 1973 but reinstated by Ford in 1976 as the 'Office of Science and Technology Policy' (OSTP). Its successive heads (as of 2021, the mathematician Eric Lander) hold cabinet rank and are commonly referred to as the President's 'Science Adviser'. See Wang, *Sputnik's Shadow*, 2008.

ties. Instead of accounting for their specific involvement in Nazi crimes, they preferred to speak of the abuse of science by politics, which had to be prevented in the future. From then on, in West Germany, apolitical science was largely seen as good science. Those who dedicated all their time and intellectual resources to it could comfortably situate themselves in an ivory tower, deflecting accusations of being out of touch — a critique that prominent West German politicians often levied against scientists who ventured into political commentary.¹¹⁴ This gap between scientific research and politics, which had widened due to the “political circumstances since 1933,” now needed bridging.¹¹⁵

The (Un-)American Founding of the Starnberg Institute

The proposal that emerged was to recommend to the Federal Government the creation of an “advisory committee” inspired by the American example. However, in the proposed role and duties for the German version, Weizsäcker’s past frustrations with his political forays were glaringly evident. This was especially true in relation to the Association of German Scientists (VDW), which had been formed in 1959 in the wake of the Göttingen Declaration. It was established in a manner similar to the Federation of American Scientists (FAS) with the primary purpose of publicly championing the social responsibilities of the scientific community (→ 4.1, 4.2). The envisioned committee would serve a dual purpose. Firstly, it would act as a conduit, collecting “studies and recommendations from other scientific bodies, such as the VDW,” ensuring that these were duly processed. This suggested an intent not necessarily to censor, but perhaps to adapt these findings to a more politically digestible format. Secondly, the committee would be a reassuring presence for scientists. Those who felt a personal responsibility to voice their opinions on pressing scientific or political matters would be assured that their contributions were being taken forward with expertise and due consideration. In essence, the committee was to be tasked with both evaluation and facilitation, navigating the often-challenging waters between science and politics. All the while, it would operate under the purview of the “Scientific Advisor to the Federal Chancellor.”¹¹⁶ For the German attendees, there was a clear frontrunner for this sensitive intermediary role, even if his name hadn’t yet been formally submitted: Carl Friedrich von Weizsäcker. To begin with, it would fall to Weizsäcker, assisted by Schneider, Birrenbach, and Eigen, to collate and convey the outcomes of these discussions to the Federal Chancellor and other significant members of the government and *Bundestag*.¹¹⁷

114 See below Chapter 4.1.

115 Report Jan. 20/21, 1967, p. 1, BArch N 1225/110.

116 Ibid.

117 Ibid.; Leendertz, “Ein gescheitertes Experiment,” 2014, p. 244, note 8.

Despite the ambitious plans and Birrenbach's appeal to the Federal Chancellery, neither the Grand Coalition of CDU and SPD nor the subsequent social-liberal coalition took any decisive action. Instead, the Federal Ministry for Scientific Research (BMwF), led by Gerhard Stoltenberg and advised by Picht, preempted them by establishing its own Advisory Committee on Research Policy (BAF, Beratender Ausschuss für Forschungspolitik). Chaired by Ludwig Raiser, the committee included notable members like Weizsäcker, Heisenberg, Butenandt, Lüst, and Konrad Zweigert from the MPI for Comparative and International Private Law. However, within this setup, they were primarily consulted for their specific academic expertise rather than for the broad scientific worldview as they had desired and interpreted from the American experience.¹¹⁸ Rumors might have spread even within the West-German governmental circles that the PSAC had peaked in influence during Eisenhower's presidency and steadily lost clout with the subsequent Kennedy administration, especially after the signing of the Limited Test Ban Treaty (LTBT) in 1963. Disbanded by Nixon in 1973, Gerald Ford, however, reinstated it in 1976.¹¹⁹

However, the American coaches could claim one, albeit fleeting, success. After an eight-year absence from Pugwash, Weizsäcker traveled to a meeting of the Pugwash Study Group on European Security in Mariánské Lázně, Czechoslovakia, in May 1967. (→ 4.2). Officially, as a West German "Pugwashite", he conveyed the VDW's strong support for the NPT. But, wearing another hat as an unofficial special envoy of the Federal Foreign Minister, he also explained the primarily economic reservations of the Federal Government, which was concerned about West German atomic energy industry. Should these concerns be addressed through appropriate treaty arrangements, he conveyed on Brandt's behalf to the assembled Pugwashites, the FRG's accession to the NPT would be conceivable, which did indeed happen after the government transition in 1969. Despite this positive experience, which Weizsäcker detailed in a report to the Foreign Office, neither he nor his MPS colleagues were motivated to engage more intensively in the informal diplomacy of the Pugwash Conferences in the future.¹²⁰

118 Leendertz, "Ein gescheitertes Experiment," 2014, pp. 244–245. Kant and Renn, "Weizsäcker," 2014, p. 236. For a general overview of BAF, see Rudloff, "Verwissenschaftlichung," 2004, pp. 232–239. On Heisenberg's ideas on policy advice, see Carson, "New Models," 1999, pp. 148–153, p. 165, p. 168.

119 Rubinson, "Crucified on a Cross," 2011, pp. 317–318.

120 See Weizsäcker, *Bericht Pugwash-Tagung*, 1984; Weizsäcker, *Der bedrohte Friede*, 1983, 458. Wirtz from KfK, a student of Heisenberg, and his colleague Wolf Häfele, the project leader of the Fast Breeder Reactor Kalkar, also contributed to the VDW statement: VDW Communiqué from the Executive Board and Working Committee of the VDW May 2, 1967, PA AA B 43-REF. 302/II8/UA IIB/209. On June 16, 1967, Weizsäcker reported to an AA employee about the Pugwash Symposium and agreed to continue explaining the "official German position on disarmament and arms control issues," which "coincided with his personal opinion," at Pugwash meetings (Record of the meeting with Weizsäcker June 19, 1967, PA AA B 43-REF. 302/II8/ UA IIB/209). In fact, Weizsäcker did not

Weizsäcker spoke on his own behalf with Kissinger, who had also traveled to Marienbad as a Pugwashite, about a Plan B for the—actually impending—scenario where the PSAC model couldn’t be realized in the Federal Republic: the model of the RAND Corporation, essentially an independent think tank.¹²¹ Whatever the specifics of their discussion might have been—it is documented that from that point on, they shared a lasting friendship. Kissinger was enthusiastic in supporting the concept for a Max Planck Institute, which Weizsäcker developed over the subsequent months.¹²²

Weizsäcker found wholehearted backing from the top figures at MPS. Both Heisenberg and Butenandt had consistently held onto their vision, birthed in the post-war era: to introduce themselves and the MPS as champions of “rational thought,” offering guidance in national politics.¹²³ They had always lamented letting Weizsäcker accept a philosophical professorship, especially if they couldn’t keep him in Munich.¹²⁴ They missed the scientist-turned-philosopher and his adeptness in diplomacy. He had brilliantly applied the intricate principles of nuclear uncertainty to politics and showed great adaptability—evident from his shifting stance on the Göttingen Declaration in 1957/58, his measured involvement in the VDW, and his discreet approach to the Pugwash Conferences (→ 4.1, 4.2).¹²⁵ They even toyed with the idea of Weizsäcker potentially succeeding

participate in another symposium until 1976, namely the Symposium on Problems of Military-Oriented Technologies in Developing Countries in Feldafing, Bavaria, and then in the grand 27th PCSWA in Munich in 1977, organized by the West German Pugwash Group to mark their 25th anniversary. Until 1985, he took part in three more smaller workshops. See Pugwash Conferences on Science and World Affairs: Participants and meetings, 1957–2007, <https://pugwash.org/history/resources/>, last accessed on Sep. 15, 2021; Eisenbart, *Nichtverbreitung von Atomwaffen*, 2009, pp. 292–293. See also Sachse, *MPS und die Pugwash Conferences*, 2016, pp. 32–33; Sachse, “The Max Planck Society and Pugwash during the Cold War, 2018,” pp. 197–199.

121 Abella, *Soldiers of Reason*, 2009; Brandstetter, Pias, and Vehlken, “Think-Tank-Denken,” 2010.

122 Gottstein, “Die VDW,” 2009, 373. Sachse, *MPS und die Pugwash Conferences*, 2016, po.33.

123 Carson, “New Models,” 1999, pp. 144–145 describes how Heisenberg, after the failure of the DFR, tried to convince every new federal government of the necessity of a scientific advisory circle at the highest government level and even considered becoming the Bavarian Minister of Culture in 1964 as the successor to Theodor Maunz, who had to resign due to his now problematic Nazi past.

124 Butenandt to Heisenberg on Dec. 13, 1956 and Heisenberg’s reply on Dec. 14, 1956, AMPG, III. Abt., ZA 116, K 7: Butenandt tried with Heisenberg’s support but in vain, to have the philosophical faculty of the University of Munich appoint Weizsäcker to ward off his call to Hamburg. Heisenberg still hoped that Weizsäcker would come to Munich and wanted to offer him the position of deputy director at his MPI for Physics in that case, Heisenberg to Hahn on Jan. 16, 1957, AMPG, II. Abt., Rep. 111, No. 243.

125 On Weizsäcker’s political role in and for the MPS see Sachse, *MPS und die Pugwash Conferences*, 2016, pp. 15–20, pp. 29–33. Kant and Renn, “Weizsäcker,” 2014. On Weizsäcker’s concept of ambivalence see Laitko, “Das Ambivalenzkonzept,” 2014.

Butenandt as the next MPS president.¹²⁶ After nearly a decade as a professor in Hamburg, being the leading intellectual force behind the turbulent VDW—a body caught between its traditionally conservative academic members and its younger, more rebellious staff aligned with student protests—Weizsäcker was eager to get back to deeply focused and thoughtful work.¹²⁷ He was passionate about examining the prerequisites for a “federative world state”—in his eyes, the sole sustainable model for lasting world peace. And what better place to pursue this than in his own Max Planck Institute?¹²⁸

However, even this Plan B underwent a decidedly un-American twist as it progressed through the committees of the MPS.¹²⁹ The institute that emerged from the two-year controversies of 1969/70, eventually christened the MPI for the Study of Living Conditions in the Scientific-Technical World (MPIL, Max-Planck-Institut zur Erforschung der Lebensbedingungen in der wissenschaftlich-technischen Welt), was tailored strictly to Weizsäcker’s directorial role, following the Harnack Principle. Politically, it bore no resemblance to the PSAC, its members appointed by the U.S. president, and its chairperson serving as a personal advisor of the president. At best, its expansive scope of global issues mirrored the RAND Corporation. The range spanned topics from global food security, population control, societal impacts of biological research, structural challenges of highly industrialized societies, the “conceptual horizon” of modern military strategy, to the future structure of Europe and the institutions needed for “global peace.” Yet, the intent was not to dissect these vast themes into manageable projects, as commissioned research for governmental or supranational entities, and to then distill them into science-based policy recommendations. Instead, the focus was on exploring topics chosen for their “direct practical relevance” using “abstract foundational sciences like game theory and system theory.” The aim was to foster “responsible and comprehensive reflection” and to equip science with the capability to “examine its own impact using its own methods.” In this spirit, the institute was to conduct basic research, befitting of an MPI’s role.¹³⁰ Some of these thematic clusters had already been touched upon

126 Leendertz, “Ein gescheitertes Experiment,” 2014, p. 250.

127 Bieber, VDW, 2009.

128 Weizsäcker, *Der bedrohte Friede*, 1983, p.208. See also Sachse, *MPS und die Pugwash Conferences*, 2016, p. 20. Among others, Einstein, Szilard, Pauling, Sakharov, Russell, Churchill, Gandhi, Nehru, Martin Luther King, and Camus are attributed to the World Federalist Movement (WFM), founded in 1947, see Wittner, *Struggle Against the Bomb*, vol. 2, 1997, p. 465. For the debate on this in the *Bulletin of the Atomic Scientists* (BAS) see Slaney, “Eugene Rabinowitch,” 2012, pp. 125–128.

129 For more details, see Sachse, *MPS und die Pugwash Conferences*, 2016.

130 All quotes, “Vorschlag zur Gründung eines MPI zur Erforschung der Lebensbedingungen der wissenschaftlich-technischen Welt,” Nov. 1, 1967, AMPG, II. Abt., Rep. 9, No. 13, fol. 207–216. The text was mainly composed by Weizsäcker; co-signatories were Wolfgang Bargmann, Klaus v. Bismarck, Hermann Heimpel, Walter Gerlach, and Heisenberg.

in Weizsäcker-led research center at the VDW in Hamburg. However, now the plan was to delve deeper, within adequately resourced projects.

Weizsäcker envisioned his role as synthesizing the outcomes produced by various workgroups, aspiring to formulate a blueprint for a “*Weltinnenpolitik*” (World Domestic Policy).¹³¹ To counteract doubts about the feasibility of such a program, he pointed to potential collaborations with international partner institutions. Among those he mentioned were the RAND Corporation, notable centers at Harvard University, especially Kissinger’s Center for International Affairs, and pertinent European institutes in cities such as London, Paris, Stockholm, and Prague, as well as domestic institutions. This proposal, naturally, had the endorsement of figures like Heisenberg, Weizsäcker’s colleague from their Strasbourg days, Heimpel, his companion from Farm Hall, Walter Gerlach, co-signatory of the Tübingen Manifesto, Klaus von Bismarck, and the physician Wolfgang Bargmann. Bargmann had played a significant role in the founding of the University of Bremen, subsequently served on the MPS Senate for a few years, and was actively involved in the VDW.¹³²

Nevertheless, the objections to this foundational plan, particularly those raised by business representatives in the MPS’s administration and senate, were vigorous. The contention was that such political consultancy did not belong within the MPS. Furthermore, the highlighted challenges could only be addressed through advancements in medicine, science, and technology, not by verbose theorizing. These objections compelled Weizsäcker to make concessions, which he did in consultation with a specially appointed advisory group. This eleven-member committee, in addition to Weizsäcker and the president of the MPS, included four MPI directors who had attended the German-American meeting in Munich in early 1967.¹³³ Within this group, consensus was also reached on the demands for international experts—a relatively simple task when compared to addressing the persistent reservations of the business representatives in the MPS Executive Council. These representatives feared the establishment of what they perceived as a completely unfitting and ideologically charged research direction for the MPS. Aside from Kissinger, all five who were consulted as international reviewers promptly sent overwhelmingly positive opinions, although their remarks were

131 On the significance of this term, created by Weizsäcker in 1963, see Bartosch, *Weltinnenpolitik*, 1995.

132 “Vorschlag zur Gründung eines MPI zur Erforschung der Lebensbedingungen der wissenschaftlich-technischen Welt” from Nov. 1, 1967, AMPG, II. Abt., Rep. 9, No. 13, fol. 207–216. For the historical classification of the institute concept, see Seefried, “Ohne Atomkraft leben?” 2014, pp. 391–398.

133 Members of the advisory circle: Coing, Eigen, Gentner, Gierer, Heimpel, Heisenberg, Lotz, Schlögl, Schlüter, Weizsäcker, Westphal; Chair: Butenandt. For the internal resistance mainly from Wurster and Winnacker and further negotiations up to the founding resolution, see Leendertz, “Ein gescheitertes Experiment,” 2014, 245–249. Regarding the controversial advisory function of the Starnberg Institute, see also Kant and Renn, “Weizsäcker,” 2014.

notably short from today's perspective. Only Emmanuel Mesthene, who led a similar program on Technology and Society at Harvard and was not personally acquainted with Weizsäcker, delved deeply into Weizsäcker's program and the feasibility of his concept.¹³⁴

Having honed their arguments through consultations with the advisory group and bolstered by international expert opinions, Butenandt and Weizsäcker entered the final showdown at the Humanities Section (GWS) on February 11, 1969. The task for the GWS was to decide whether they would actually integrate the new institute, which the Senate had already fundamentally endorsed in November 1968, and appoint Weizsäcker as its director. After several hours of debate, both the president and the petitioner emerged victorious. In March 1969, the Scientific Council and Senate of the MPS endorsed this decision.¹³⁵

The Mission: A Scientific Understanding of the World

The narratives of the founding of the Becker Institute and the Starnberg Institute are crucial to understanding the foreign science policy of the MPS during the extended 1960s for several reasons. First, they demonstrate that its leadership did not merely capitalize on this "formative phase" of the MPS, as aptly termed by Jaromír Balcar, to significantly expand its core natural (and legal) scientific research agendas.¹³⁶ Instead, the MPS positioned itself in both educational and foreign policy realms, maintaining a critical distance from the Bonn government's policies. Beyond the expert advice sought by political decision-makers, the MPS asserted its authority to voice its scientific perspectives in the political arena.

Secondly, in these founding initiatives, a network of individuals sprang into action. Undoubtedly, its core consisted of prominent MPS members like Heisenberg and Weizsäcker. Still, it extended to all scientific sections of the MPS and beyond its institutional boundaries, reaching into foreign policy, educational policy, and church circles. Notably, it could rely on the active support of Butenandt, who had been serving as the MPS's president since 1960. These actors shared a vision of a special bond between politics and science. Their conception

134 The other reviewers were: Raymond Aron (École Pratique des Hautes Études, Paris), J. B. Adams (United Kingdom Atomic Energy Authority, Harwell), C. J. F. Böttcher (Raad van Advies voor het Wetenschapsbeleid, 's-Gravenhage), Alastaire Buchan (Institute for Strategic Studies, London). See Butenandt to Buchan and all other reviewers from Feb. 8; Reviews Aron Feb. 12; Buchan Feb. 15; Kissinger Feb. 21; Böttcher Feb. 28; Adams Feb. 28; Mesthene March 6, 1968, AMPG, II. Abt., Rep. 66, No. 2359, fol. 327–341, 326, 297–298, 289, 287–288, 285–286, 279–281.

135 Protocol of the GWS from Feb. 11, 1969, AMPG, II. Abt., Rep. 62, No. 1424, pp. 3–42. Protocol of the 62nd Senate meeting from March 7, 1969, AMPG, II. Abt., Rep. 60, No. 62. SP, fol. 19.

136 Balcar, *Wandel*, 2020, pp. 244–247.

wasn't content with the responsibility of scientists for the societal repercussions of their research, a topic debated on both sides of the Atlantic since the atomic bombings of Hiroshima and Nagasaki. Instead, these West German actors pursued a scientific understanding of the world. They wanted to substantiate this understanding by “foundational research,” as Weizsäcker put it, using the MPS's capabilities and then act as its appointed heralds in the political realm.

Thirdly, with the establishment of these two institutes, the MPS for the first time formalized its claim to such a “foundational research” policy consultancy role, a claim that KWS heavyweights Heisenberg and Butenandt had already articulated as the Third Reich was collapsing. More specifically, this claim was now internalized by the MPS in the form of research institutes focused on social and foreign policy. This was because all previous attempts made in collaboration with colleagues outside the MPS and at the national level had either failed or produced undesirable outcomes: first the DFR, then the extra-parliamentary atomic and foreign policy interventions from Göttingen and Tübingen, and finally the VDW. Against this backdrop of experience, President Butenandt, who had a political bent, hoped that these institutes would essentially serve as two advisory departments. He expected them to counsel him in matters of educational and foreign science policy, while also exerting an influence on the politics and society of the Federal Republic. With this, he felt that both he and the MPS were well-positioned in a time when science and politics, as many were advocating, should enter into a new, more productive relationship.¹³⁷

Ultimately, however, especially with the Starnberg Institute, and compared to the PSAC, certain idiosyncrasies became apparent during the foundation process. These made effective scientific policy advice based on the American model highly unlikely from the outset, even after the socio-liberal shift of power in Bonn in 1969. For one, a “pure” research institute within the Max Planck Society, which valued its scientific autonomy, didn't remotely have the political status of a body directly appointed and recognized by the government. Moreover, C. F. von Weizsäcker, the main architect of the research concept and the future director of the institute, wasn't primarily interested in providing the government with scientifically grounded decision-making aids or strategies for specific challenges. Instead, in line with the MPS's emphasis on basic research, he aimed to deepen a philosophical-physical understanding of the world, which at best could describe the potential conditions for a distant global peace. The Starnberg Institute remained an idealistic venture at the top, while at its core, thematically, methodologically, and politically diverse research groups worked alongside and against each other, but rarely cooperatively. Nevertheless, as will

137 The *MPG-Tätigkeitsbericht* for the years 1970 and 1971 explicitly emphasized once more that the institute was in full accordance with “the Federal Government's research planning” as outlined in the “Bundesbericht Forschung IV” (Federal Research Report IV) which had declared research on peacekeeping and educational reform as priorities. *MPG-Tätigkeitsbericht* 1972, p. 534. See also Kant and Renn, “Weizsäcker,” 2014, p. 234.

be shown in the fourth chapter of this study (→ 4.2, 4.3), one or more of these groups would play a role in international peace politics.

2.3 Science and Technology in the Socio-Liberal Decade of Détente

The beginning of the socio-liberal decade of West Germany's détente policy during the Cold War is commonly dated as 1969. This was when the newly elected government, led by Willy Brandt, embarked on the preparation of the Eastern Treaties. These were signed just a year later, first with the Soviet Union and Poland, then in 1971/72 with the GDR, and finally in 1973 with Czechoslovakia. This treaty policy, which has gone down in the history of international relations as the "*Neue Ostpolitik*" (new Eastern policy) could only be implemented after the transition from the Grand Coalition to the socio-liberal coalition.¹³⁸ However, given the policy's swift successes, it had long been conceptually prepared, both in terms of ideas and through informal diplomatic channels. The intellectual circle intertwined with the MPS and centered around C. F. von Weizsäcker played a part in this, whether it was in the diplomatic preparation of West Germany's accession to the Non-Proliferation Treaty (NPT) — which was signed by the Brandt administration just four weeks after taking office — or as early as 1961, through the Tübingen Memorandum. This memorandum had initiated public debate over the recognition of existing borders, including the Oder-Neisse line. At the time, this was so politically controversial that it had to be translated by Social Democrats Egon Bahr and Brandt in 1963 into the more diplomatically palatable yet still controversial phrase "change through rapprochement" before these early recommendations were enshrined ten years later as an integral part of the Eastern Treaties.¹³⁹ "Change through rapprochement" remained the motto of a new foreign policy started by Brandt as Foreign Minister since 1966/67. His Free Democratic successors in office, Walter Scheel and Hans-Dietrich Genscher, continued this approach, emphasizing scientific-technical cooperation while occasionally relying on the MPS.

The détente policy continued multilaterally within the framework of the Conference on Security and Cooperation in Europe (CSCE), which was convened in 1973 at the urging of Eastern Bloc states. In 1975, the Final Act of Helsinki was agreed upon, scheduling further follow-up conferences. By 1994, this evolved into

138 Speicher, *The Berlin Origins*, 1999; Fink and Schaefer, *Ostpolitik*, 2009.

139 Egon Bahr coined the term in a lecture on July 15, 1963 at the Evangelische Akademie Tutzing. Bahr, "Wandel durch Annäherung. Ein Diskussionsbeitrag in Tutzing 1963," Egon Bahr Collection. Archive of Social Democracy of the Friedrich-Ebert-Foundation online. For Brandt's foreign policy, see the studies in Rother, *Brandts Außenpolitik*, 2014.

the establishment of the Organization for Security and Cooperation in Europe (OSCE). However, the decade of détente policy came to an early end several years before the fall of the socio-liberal coalition due to a renewed acceleration of the never-ending arms race. From 1977, the Soviet Union began deploying newly developed SS-20 intermediate-range missiles in Europe. In response, NATO coupled the announcement to deploy Pershing-II intermediate-range missiles and cruise missiles in Europe with a call to resume arms control negotiations between the superpowers. The West German government, led by Helmut Schmidt since 1974, agreed to this NATO Double-Track Decision at the end of 1979—and this in spite of significant civil society resistance. Parts of the MPS staff and, more broadly, large segments of the SPD membership participated in these protests, thus pushing their party to the brink of a major internal crisis.¹⁴⁰

Further contradictions characterized this decade: In 1972, the Club of Rome sparked widespread discussions in scientific forums and public media with its study on the global “Limits to Growth,” primarily focusing on the prosperity risks induced mainly by the West.¹⁴¹ At the same time, incentives for economic growth were sought, especially in the face of the economic stagnation that followed the 1973 oil crisis. Some saw the expansion of nuclear energy as the solution to all growth crises, while others viewed it as an irresponsible risk for the future—this conflict also resonated within the MPS. Willy Brandt had not only advocated for “daring more democracy” in domestic politics. During his chancellorship, the so-called *Tendenzwende* (trend reversal) with the *Radikalerlass* (Radicals’ Decree) and occupational bans against presumed “enemies of the constitution” in public service was initiated, putting an entire generation of students under the scrutiny of the German Domestic Intelligence Services. Many from this generation participated in the new social movements, ranging from the anti-nuclear power and women’s movements to the environmental and peace movements. Some, however, harbored sympathies for the “armed struggle” of the Baader-Meinhof Group and the Red Army Faction (RAF), with a few even joining their ranks.¹⁴²

During these tumultuous times, the MPS, under the leadership of the internationally experienced astrophysicist Reimar Lüst as its new president (1972–1984), retreated from its just-commenced venture into scientific policy consultancy. Instead, it refocused on the MPS’s core business of science foreign policy. Guided by the seasoned administrative lawyers and science administrators Friedrich Schneider (1966–1976) and Dietrich Ranft (1976–1987) as Secretaries-General, the Administrative Headquarters focused on facilitating and ensuring the politically smooth and frictionless handling of scientific collaborations between their researchers and foreign partners. However, this approach occasionally brought

140 See Hansen, *Abschied*, 2016.

141 Meadows, Meadows, Randers, and Behrens, *The Limits to Growth*, 1972.

142 For a brief overview of the long social-liberal decade, see Borowsky, “Tendenzwende,” 1998.

the MPS into conflict with official foreign policy. At the same time, the attention of MPS scientists, as well as ministry-level research policymakers—especially concerning the establishment of elaborate infrastructures—turned towards European collaboration. This shift was influenced by the prevailing trend towards larger and more expensive research instruments. This trend met with the global and prolonged economic “stagflation,” a period characterized by low economic growth coupled with rising inflation rates and increasing unemployment numbers, which strained state coffers.

Brandt's New Foreign Policy

The concept of change through a political rapprochement of the blocs, like the Tübingen Memorandum, was based on the ongoing irrevocable fact of Germany's division, the loss of the eastern territories, and a militarily secured Soviet sphere of influence. This was proved by the Western allies' acceptance of the Berlin wall's construction in 1961.¹⁴³ The suppression of the “Prague Spring” by the also accepted invasion of the Warsaw Pact troops into Czechoslovakia in the summer of 1968 reaffirmed this fact. However, Brandt and Bahr also regarded the increasing dependence of the Soviet Union and its satellite states on Western technology, not militarily but in the civilian sector, as equally important. The goal here was to build trust through scientific, technical, and economic cooperation, negotiate political concessions, and initiate societal transformation processes. As long as in a CDU-led grand coalition treaties recognizing the existing eastern borders would not be considered, Brandt, as the Social Democratic head of the Foreign Office, focused on scientific and technical cooperation as the third “pillar” of his new foreign policy, alongside classical diplomacy and economic cooperation. In his speech at the opening of the International Radio Exhibition in Berlin in 1967, he presented his new approach and also referred to international developments in which it was essential to participate:

The rapid progress of science and technology, the dimensions of modern natural and engineering research that go beyond national borders, and the growing realization of the political significance of research and technology have made the foreign policy assessment of the scientific and technical development status of one's own country and other countries, the observation of the science policies of other countries, and international cooperation in the scientific and technical field a new area of diplomacy and international relations. More and more countries are using the instrument of scientific and technical cooperation to achieve political objectives.¹⁴⁴

143 Wilke, “Vom Mauerbau,” July 13, 2020.

144 Circular to all German diplomatic and consular posts dated Jan. 29, 1968, p. 1, PA AA BAV 243-TELA/2234. Paraphrase of Brandt's speech on Aug. 25, 1967, PA AA BAV 243-TELA/2234.

Brandt's plea for scientific and technical cooperation wasn't merely a nod to the international audience gathered that late summer at the foot of Berlin's radio tower to celebrate the new media. It also served as a public reprimand of the cultural policy department of his own ministry. Instead of the requested new concept for foreign cultural policy, which he wished to develop alongside classical diplomacy and foreign trade relations as the "third pillar" of his foreign policy, the ministry had presented him with questionable outdated ideas: the promotion of the German language and the portrayal of German cultural superiority with a "reliance on those of German descent."¹⁴⁵ In response, a reform commission was established in 1968, which began formulating an "inter-state" or "international societal policy" that, according to Brandt's visions, must have an "increasingly scientific and technical emphasis" and should incorporate "all politically effective forces and societal formations," including science organizations.¹⁴⁶

As a result of this reprimand and the observation that other countries—both the superpowers and the smaller Western partners—had recently signed corresponding bilateral agreements both among themselves and across blocs, the Foreign Office administration concluded that a long-overdue revision of its foreign science policy principles was necessary. A circular letter to the Federal German embassies stated that international scientific and technical cooperation could no longer be carried out "privately" by industry, universities, and science organizations. It also indicated that one could not forgo bilateral agreements in favor of participating in large supranational organizations such as CERN, IAEA, OECD, ESRO, and ELDO. Unfortunately, European integration had not progressed to the point where one could solely entrust the European Communities with scientific and technical relations to third countries. Instead, it was recognized that due to their "influence on economy and defense," research and technology had become "primary political factors." Furthermore, international cooperation in this field needed to be viewed "significantly more politically." The European deficits allowed ample room for bilateral agreements, which, like scientific and technical exchanges as a whole, were "not just technically" of interest.¹⁴⁷

The scientific and technical factor is of great importance to German foreign policy because the specific position of the Federal Republic of Germany in public world opinion and in the interplay of political forces in Europe points to such means of foreign policy that are less problematic than some measures of classical diplomacy.¹⁴⁸

145 Objectives of Foreign Cultural Work-Priorities dated Feb. 27, 1967, PA AA B 90-REF. 600/IV1/663, cited here after Bode, *Auswärtige Kulturverwaltung*, 2014, p. 607. Bode offers a detailed reconstruction of the disputes between the new Foreign Minister and his cultural administration; see *ibid.*, pp. 604–618.

146 All quotes according to Bode, *Auswärtige Kulturverwaltung*, 2014, p. 614. The interim report of the Reform Commission quoted here is printed in the *Bulletin/Presse- und Informationsamt der Bundesregierung*, Aug. 21, 1969.

147 Circular to all German diplomatic and consular posts dated Jan. 29, 1968, pp. 2–5, PA AA BAV 243-TELA/2234.

148 *Ibid.*, pp. 5–6.

Consequently, the Federal German embassies were instructed to provide detailed reports on the research organization, funding policies, and bilateral agreements related to scientific and technical cooperation of their respective host countries. They were tasked with identifying which local research institutions West German institutes could meaningfully collaborate with. Special attention was to be given to areas like nuclear energy, space exploration, oceanography, data processing, and the application of scientific findings to industry and administration.¹⁴⁹ These priority areas were more aligned with “applied research,” as they should be promoted under the label of “scientific and technical development.” In the Eastern target countries, this was referred to as the “scientific and technical revolution.” However, the MPS, committed to basic research, was also to play a role in this new foreign policy. However, this role was not as a consulting entity for foreign policy realism and scientific worldview, as the former Strasbourg-based war colony of intellectuals—now expanded and partially housed within the MPS—had once envisioned.

Detente-Oriented Foreign Science Policy and Its Contradictory Demands on the MPS

After Brandt’s election as Federal Chancellor on October 21, 1969, his successor in the Foreign Office, Walter Scheel, adopted his foreign policy program and appointed Ralf Dahrendorf as State Secretary. The responsibilities of the sociology professor from Konstanz¹⁵⁰—who, like Scheel, belonged to the FDP, but by his own admission was utterly devoted to Willy Brandt—included drafting a “comprehensive plan for foreign cultural policy.” Dahrendorf presented this plan in the summer of 1970, just in time before, frustrated by the tribulations of ministerial-administrative daily life, he departed for Brussels to assume responsibility for external trade as a member of the European Commission.¹⁵¹ Dahrendorf’s plan was based on an “expanded concept of culture,” which drew heavily from the ideas of Georg Simmel and Alfred Weber, and on the idea that a broadly defined “international cultural, scientific, and societal policy” should not be “primarily or even exclusively the business of governments,” but rather should be supported by a variety of non-governmental organizations and individuals.¹⁵²

Such non-governmental bi- and multilateral relations had been described by the West German political scientist Karl Kaiser in 1969 as manifestations of a

149 Ibid., p. 7.

150 Dahrendorf, *Über Grenzen*, 2003, p. 121. Cited here after Bode, *Auswärtige Kulturverwaltung*, 2014, p. 616.

151 Bode, *Auswärtige Kulturverwaltung*, 2014, p. 617.

152 Cited according to *ibid.*, pp. 620–622.

transnational politics that had been expanding since the late 1950s.¹⁵³ The question of evaluating these relations, and determining the feasibility of a unified state foreign policy in the face of sprawling transnational connections among various influential groups and organizations, posed a theoretical conundrum for modern political science.¹⁵⁴ On a practical level, this issue was grappled with, on the one hand, by the ministry officials of the Foreign Office, who wanted to defend their competencies against other ministries now also increasingly operating in the realm of foreign policy. On the other hand, the West German embassies complained about the observed or presumed lack of foreign policy acumen of some of their traveling compatriots from the fields of economy, science, and culture, who disregarded diplomatic norms and undermined on-site foreign policy strategies. Matthias Bode, who has analyzed the cultural administration of the Foreign Office from a constitutional and administrative law perspective until the early 1970s, concludes that Dahrendorf had left the department out in the rain with a concept for foreign cultural policy that was both “avant-garde” and “utterly non-compatible” with administrative norms.¹⁵⁵

At the federal ministries responsible for research, there was an enthusiastic effort under the non-partisan leadership of Hans Leussink. He was succeeded in 1972 first by Klaus von Dohnanyi (SPD) and then by Horst Ehmke (SPD). They all were committed to implementing Brandt’s directives to expand scientific and technical cooperation.¹⁵⁶ The collaborations spanned all directions—from North and South America to Eastern Europe, the Near and Far East, and as far as Australia. A compilation from the end of 1976 listed over three dozen bilateral scientific and technical framework agreements at both the governmental and departmental levels. All but four of these had been concluded after 1970, with more still under negotiation. “Quite an impressive track record,” remarked the responsible department head, especially since, last but not least, an agreement with the GDR was also in preparation.¹⁵⁷ In addition to these, there were more than two dozen individual agreements on bilateral research and development cooperation that specified the framework agreements in more detail. Frequent contract partners included the Jülich Nuclear Research Facility (KFA) and the Society for Nuclear Research (GfK, Gesellschaft für Kernforschung) as the legal

153 Kaiser, “Transnationale Politik,” 1969.

154 Keohane and Nye, “Transgovernmental,” 1974; Keohane and Nye, *Transnational Relations*, 1971.

155 Bode, *Auswärtige Kulturverwaltung*, 2014, p. 625. Regarding the “Gastspiel Dahrendorf” at MPIL, see Leendertz, *Pragmatische Wende*, 2010, pp. 29–44.

156 Leussink headed the BMBW from December 1969 to March 1972; he was succeeded by Dohnanyi in the BMBW until May 1974; in December 1972, the ministry was split into BMBW and BMFT, with the latter under the leadership of Horst Ehmke henceforth responsible for research and international scientific-technical cooperation; the two ministries were reunited in 1994; see chapter 1, FN 41.

157 Compilation of government and departmental agreements from Nov. 15, 1976 (agreements excluding EC countries) and Dec. 8, 1976 (EC countries), BAArch B 196/20357.

entity of the Karlsruhe Nuclear Research Center (KfK). The MPS is mentioned only once here, in collaboration with the Comisión Nacional de Astronomía, preparing the German-Spanish Astronomical Center on Calar Alto.¹⁵⁸

However, this does not mean that the MPS wasn't involved in the international scientific collaborations boosted by the Federal Government. It wasn't spared from the issues of defining foreign policy competencies, setting guidelines, and handling administration. On the contrary, particularly in its collaboration with the two now hostile communist powers of the USSR and the People's Republic of China (PRC), the MPS found itself playing two opposing roles. In the case of the Soviet Union, Brandt's New *Ostpolitik* put an end to the contract-less era in the "wild East" with the agreement signed in September 1970 between the German Research Foundation (DFG) and the Academy of Sciences of the Soviet Union (AS-SU). Instead of independently establishing and maintaining contacts in the Soviet Union, most collaborations with Soviet research institutions, the stays of MPS scientists there, and the invitations to Soviet colleagues had to be channeled through the selection processes and administration of the DFG. However, this did not in any way reduce the political unpredictability on the Soviet side. If anything, these uncertainties grew as the negotiations became more official (→ 3.3).¹⁵⁹

In the new Western policy towards China, in which the Federal Republic of Germany participated from the outset, the MPS assumed a significant and long-term mediating role. While the diplomatic ties to China, established in the fall of 1972, were no longer hindered by the Hallstein Doctrine from the West German perspective, the Chinese counterpart — the One-China policy — initially blocked the initiation of contractual scientific foreign relations with the FRG. Since the DFG had long-established contractual exchange relations with the Academia Sinica in Taiwan, Beijing refused to accept this "contaminated" contract partner. By the mid-1970s, the Federal Government urgently requested the MPS to administer almost the entire scientific exchange program with PR China, funded with additional federal resources, in place of the DFG. This meant that universities across essentially all disciplines, as well as other research institutions, were to be included, provided the Chinese side accepted them (→ 3.4).¹⁶⁰

158 Compilation of individual agreements from Nov. 15, 1976 (agreements excluding EC countries), BArch B 196/20357. Regarding the Calar Alto Observatory, see Bonolis and Leon, *Astrophysics*, 2023, pp. 372–414.

159 Memo Nickel dated 15.7.1971, AMPG, II. Div., Rep. 70, No. 374, fol. 109; memo Nickel dated Feb. 25, 1974, AMPG, II. Div., Rep. 70, No. 373, fol. 34–35; Nickel (Sachse) interview on April 12, 2018.

160 Kühner, *Chinesische Akademie der Wissenschaften*, 1986; Harnisch, "Zehn Jahre Kooperation," 1984; "Sonderteil: 20 Jahre Zusammenarbeit," 1994.

The European Science Landscape Through the Eyes of Two MPS Presidents

The years of reorientation in West German foreign policy, from 1966/67 to the early 1970s, domestically coincided with sweeping educational reforms and an extraordinary expansion of the higher education system. During this period, the MPS also recalibrated its position within the West German scientific framework. Within the MPS, following the statutory reform of 1964, further structural reforms were on the agenda. The newly appointed Secretary-General Schneider in 1966 pursued these reforms with the aim of more swiftly winding down scientifically less productive institutes and being more flexible in responding to new scientific developments.¹⁶¹ These new trends often required elaborate large-scale instruments like satellites or telescopes and demanded—as acknowledged by President Butenandt and even more so by his successor Reimar Lüst—a much larger scientific realm than any of the numerous European nation-states could individually provide; none of them could compete with the major scientific powers represented by the USA and the USSR.

At the MPS's celebratory assembly in June 1971, Butenandt, for the last time in his presidential capacity, presented his reflections on foreign science policy, which were similar to those of the previous year.¹⁶² He dedicated only a brief paragraph to the relationship with the Soviet Union, which, with the treaty between the DFG and the Soviet Academy of Sciences, was poised for a “new beginning.” He did not touch on relationships with Eastern and non-European countries at all. Even the USA was mentioned only briefly as a scientific policy benchmark. Instead, Butenandt focused entirely on what he perceived as the deficient “European collaboration.” CERN demonstrated the fruitful outcomes that research extending beyond national boundaries could yield, and molecular biology, through EMBO, seemed on a similarly promising path. Notably, the MPS had proactively followed the recommendations of the OECD by funding symposiums and training programs for budding scientists in the realm of brain and behavioral research “from its private funds” for three years. However, the establishment of a European Research Council proposed by the British side was not progressing. Such a council was essential for defining research priorities and agreeing upon cooperations and divisions of labor at a continental Western European scale, mirroring the USA. The limited research funding available in all countries should be pooled and deployed purposefully rather than being fragmented “into small and smallest parts,” as was happening currently, because “European research policy... is still driven in 19 capitals.”¹⁶³ By this, he referred

161 Regarding these reforms, which were gnawing away at the core science organizational identity of the MPS, i. e., the Harnack Principle, see Balcar, *Wandel*, 2020, pp. 186–243.

162 *MPG-Jahrbuch* 1970, pp. 40–42.

163 *MPG-Jahrbuch* 1971, pp. 39–42.

to the 18 member states of the Council of Europe at that time and Israel as an observer, not only the EC members.

Butenandt's wrath, legendary since the 1965 budget negotiations, was directed in this speech against a Europe of national "small gardens" that still hadn't recognized the signs of the times: The establishment of a (Western) European scientific realm that could rival, in size, planning, interconnection, and infrastructure, those of the USA and the Soviet Union, was overdue in his opinion.¹⁶⁴ As recently as 1964, Butenandt had elevated his demands for sufficient research funding and necessary educational reforms to the Federal German government with a national vision that "youth should have confidence in the opportunities that Germany offers and get to work in their homeland" instead of migrating to the USA.¹⁶⁵ With his vehement indictment in 1971, asserting that a Europe as a "community of scientists," as Chancellor Brandt had announced, was still too far off, he underwent a remarkable transition from a German to a European patriot of science.¹⁶⁶

The following summer, Butenandt handed over this agenda to his successor, Reimar Lüst, who, though somewhat less patriotic, was a thoroughly pragmatic European. In the 1960s, as Coordinating Secretary, Lüst played a pivotal role in establishing the ESRO, the second major European research organization following CERN. He then shuttled between Paris and Garching for several years in his capacity as its scientific director. His Institute for Extraterrestrial Physics in Garching depended on cooperation with all Western space centers for its space experiments, especially the U.S. National Aeronautics and Space Administration (NASA). However, it also maintained regular cooperative ties with the Soviet Union. Lüst himself, who began his studies in a makeshift camp university while interned as a prisoner of war in Texas, pursued postdoctoral positions and guest professorships at U.S. hotspots for space research after studying under Weizsäcker in Göttingen. He was familiar with the Western rocket launch sites, whether in Cape Canaveral, Kourou, or Woomera. Moreover, as the president of the Science Council, a body established in 1957 that advises federal and *Länder* governments on issues of higher education and research institutions, he traveled to the Soviet Union several times, most recently in 1970.¹⁶⁷ In short, for the space physicist Lüst, international scientific collaborations were both obviously indispensable and self-evident.¹⁶⁸

The administrative and coordination effort associated with new European projects, which Lüst had learned to assess, should indeed be worthwhile. This

164 In 1965, "Butenandts Zorn" (Butenandt's Wrath), as Rudolf Walter Leonhardt called it in *Die Zeit*, was directed against the inadequate research funding by the federal government: Leonhardt, "Butenandts Zorn," *Die Zeit*, Aug. 20, 1965.

165 *MPG-Jahrbuch* 1964, p. 38.

166 *MPG-Jahrbuch* 1971, p. 42.

167 The chairs of the Science Council typically serve for three years, Lüst from 1969 to 1972; see Bartz, *Wissenschaftsrat*, 2007.

168 Conversation Lüst (Nolte), 2008.

pragmatic approach, which largely forwent European visions beyond science policy, he made clear in his inaugural speech in 1972. New European institutional foundations should only be pursued in the future where the expenses for investments, ongoing costs, or personnel were so high that they could no longer be borne by a single country. On the other hand, the “joint utilization of already existing institutes” and the exchange of scientists “between existing institutions of European countries should be significantly intensified.”¹⁶⁹ As a model, he mentioned the High Field Magnet Laboratory in Grenoble, which the MPI for Solid State Research could use to a quarter of its capacity.¹⁷⁰ Accordingly, further discussions were first to be held with the French *Centre national de recherche scientifique* (CNRS) in the field of astronomy, as well as the British Research Council and similar institutions in other countries. In fact, in the Senate Committee for Research Policy and Research Planning (SAFPP, Senatsausschuss für Forschungspolitik und Forschungsplanung), which Lüst newly established as a presidential advisory body, he appointed the leading representatives of these two most important European scientific institutions, thus directly involving them in MPS’s planning.¹⁷¹ Additionally, the scholarship funds of the MPS, which had primarily been allocated for guest visits to and from the USA, were to be redirected to promote more intra-European exchanges. Thus, rather than creating new bureaucratic structures, Lüst’s vision, as subtly hinted at in his conclusion, could help foster a “European Scientific Community” in the vein of the American model.¹⁷²

[...] not anchored in international agreements, not by establishing institutions funded across borders, but through the deepening of organic collaborations on mutual endeavors.¹⁷³

Programmatic announcements were not just empty words. The shift towards Europe indeed influenced the invitations to international guests. While the number of American visitors increased from 190 in 1974 to 237 in 1980, their percentage of all international guests (757 in 1974; 1,271 in 1980) dropped from 25 % to just under 19 %.¹⁷⁴ It wasn’t merely the positive momentum from Europe that fostered this change. Disturbing declarations from the U. S. also played a part, which the President and his Secretary-General verified firsthand during a

169 *MPG-Jahrbuch* 1972, p. 54.

170 Protocol of the 71st Senate meeting on March 15, 1972, AMPG, II. Div., Rep. 60, No. 71. SP, fol. 12–13; this contract with the CNRS was negotiated and signed during Butenandt’s term in June 1971; the MPS participated—supported by the VW Foundation—in the costs of the laboratory’s expansion.

171 1st Meeting of SAFPP May 15, 1973, AMPG, II. Div., Rep. 60, No. 197. For a detailed discussion of SAFPP, see Balcar, “Nach dem Boom,” 2023.

172 Protocol of the 73rd Senate Meeting on Nov. 29, 1972, AMPG, II. Div., Rep. 60, No. 73. SP, fol. 11–12.

173 *MPG-Jahrbuch* 1972, p. 54.

174 StatistikThoms, DA GMPG, Privataarchiv Sachse, ID 601104.



Fig. 2: European Incoherent Scatter Facility in the Auroral Zone (EISCAT), formally opened by King Carl XVI Gustaf of Sweden on Aug. 26, 1981 in Kiruna.

1973 trip. Even though funding for “basic research” in the U. S. hadn’t collapsed as drastically “as we had perceived from a distance,” the research policy mood had decidedly shifted in favor of “relevant research.” Graduates were no longer finding the positions they had hoped for, and the number of student applications, even at top universities, had significantly decreased.¹⁷⁵ At Lüst’s own and the other MPIs for physical research, graduates increasingly faced challenges finding paid postdoctoral positions in significant U.S. laboratories. These institutes found themselves having to fund what had traditionally been and still was a mandatory career-building stint.¹⁷⁶ Yet this solution wasn’t always feasible. Within the MPS, there was growing awareness of younger German scientists’ dwindling interest in long-term research stays abroad and their decreasing willingness to undertake foreign research without a secured position at home.¹⁷⁷ Building both the mindset and infrastructure of a European scientific landscape

175 Protocol of the 75th Senate meeting on June 28, 1973, AMPG, II. Abt., Rep. 60, No. 75. SP, fol. 12–14. Regarding the development of the job market for physicists in the USA and the at times esoteric diversions of young academic talent, see Kevles, *The Physicists*, 1995.

176 “Kurzer Bericht über die Arbeiten des Instituts für Astrophysik im Jahre 1972,” AMPG, II. Abt., Rep. 66, No. 3068, pp. 42.

177 Protocol of the 88th Senate meeting on Nov. 18, 1977, AMPG, II. Abt., Rep. 60, No. 88. SP, pp. 12; *MPG-Jahrbuch* 1979, pp. 115–117.

became imperative. One such incentive for young researchers was the Otto Hahn Prize. More importantly, the planning for additional bilateral and multilateral major European research facilities was underway. For instance, the European Incoherent Scatter Facility in the Auroral Zone (EISCAT) was established in 1975 by the MPS and several European science organizations. Operating in the northern polar region, it still runs several research radars today to explore the composition of the lower atmosphere and the interactions between Earth and the sun.¹⁷⁸

Administering European Research: The MPS's International Relations Unit

Lüst's pragmatic approach focused on fostering direct bi- or multilateral scientific collaborations within labs, institutes, and major research facilities. Here, as in the administration of the MPS in general and supported by the SAFP, he relied on maximum flexibility. This was essential to navigate the diminished financial capabilities and to maintain some leeway in decision-making. He was therefore well able to do without advice on educational policy or world philosophy in international cooperation, as was implied in the foundation of the two MPIs for colleagues Becker and Weizsäcker. Instead, what he needed was a research-focused competent administration that could support scientists in both initiating and administratively implementing their collaboration needs. In fact, as part of the MPS administrative reform in 1971, a unit for "Domestic and Foreign Relations" had already been established within Division I, which was led by Edmund Marsch and responsible for planning, organizational bodies, and public relations.¹⁷⁹ This unit was led by Dietmar Nickel, who was also responsible for planning, governing bodies, and committees. However, over the subsequent years, the international relations services expanded considerably, and by 1974, these were managed by at least two additional dedicated officers.¹⁸⁰ From this time on, the numbers of domestic and foreign visiting scientists were regularly recorded, categorized by country of origin, although, regrettably, not

178 *MPG-Jahrbuch* 1976, 71–72; *MPG-Jahrbuch* 1978, 100; *MPG-Jahrbuch* 1979, 117. The MPS ended its membership in 2006, Germany as a whole in 2011; see EISCAT-CAWSES-Copernicus, EISCAT, <https://web.archive.org/web/20130529154836/http://eiscat.de/>, last accessed on Jan. 17, 2022.

179 Organizational charts AMPG 1971–2002, DA GMPG, Privataarchiv Sachse, ID 600020.

180 Organizational plans from Jan. 11, 1971, June 1, 1971, Jan. 1974, organizational charts AMPG 1971–2002, DA GMPG, ID 600020, Privataarchiv Sachse. Since 1974, "Auslandsbeziehungen" also appeared in the name of Department I. The officers were Mr. Halterhoff (from 1971 onwards) and Ms. Peter (from 1974 onwards). Later, regional experts were added for the China program. For details on the organizational development of the International Foreign Relations Office: Interview Nickel (Sachse) April 12, 2018.

distinguished by gender.¹⁸¹ There was also a noticeable increase in status reports and strategy papers concerning MPS's international relations.

In an early 1974 strategy paper, Nickel outlined the "three levels" of MPS's scientific cooperation: 1) membership in international organizations such as the European Science Foundation (ESF), the European Science Research Councils (ESRC), and the International Institute for Applied Systems Analysis (IIASA), 2) direct cooperation between MPIs and foreign institutions, which was Lüst's preference, and 3) long-term contractual agreements with foreign entities. Up until that point, such agreements only existed with Spain's CSIC (Consejo Superior de Investigaciones Científicas) and Israel's Weizmann Institute, while formal agreements with France's CNRS was limited to the jointly operated High-Field Magnet Laboratory in Grenoble.

There remained, Nickel wrote, valid reasons to exercise caution with long-term contract agreements, particularly those that stipulated exchange quotas. Apart from the general primacy of the DFG as the representative of Federal German science abroad and the greater effectiveness of direct institute-level collaborations, a third significant reason was the need for "flexibility in the use of funds for international cooperation." However, Nickel recommended reassessing these priorities. Firstly, the Eastern European science academies, now showing increased interest in scientific exchanges following the lead of their Soviet 'big brother,' often insisted on "formally documented agreements." This was also the case for many "developing countries." Secondly, MPS was to avoid becoming further entangled as a "subordinate executor for the DFG," as had happened in the case of the Soviet Union. Instead, by establishing "independent contracts," MPS was to aim to "regain full autonomy in its actions."¹⁸²

Initially, no formal contracts came into existence. The MPS seemed content with more informal contacts with the academies in Bulgaria, Romania, and Poland.¹⁸³ Judging by the number of visiting scientists from these countries, this approach was more successful than the contractual agreements managed by the DFG with the much larger Soviet Academy. From 1974 to 1980, the number of guest scientists from Eastern European countries, including the Soviet Union, almost doubled from 68 to 129. Overall, they constituted between eight and ten percent of all international guests (1974: 757; 1980: 1,271). Among them, Poles (1974: 27; 1980: 79) made up the largest group from Eastern Europe, ranging between 50 and 60 percent. From 1974 to 1980, their absolute number of 386 was surpassed only by U. S. and British groups. Hungary was second in Eastern

181 Max-Planck-Gesellschaft, *Zahlenspiegel* 1974 and subsequent volumes.

182 Memo Nickel dated Feb. 25, 1974, AMPG, II. Abt., Rep. 70, No. 373, fol. 37.

183 With the President of the Bulgarian Academy of Sciences, who was a guest in the MPS in 1973, Lüst "agreed that scientific cooperation between our countries in areas of interest to both organizations should be enhanced through direct contacts between the institutes," protocol of the 75th Senate meeting on June 28, 1973, AMPG, II. Abt., Rep. 60, No. 75. SP, fol.14.

Europe, sending 102 guests. During the same period, around 50 guests each came from Bulgaria, Czechoslovakia, and the USSR, and 29 from Romania.¹⁸⁴

Preserving, if not fully, at least the greatest possible operational capability was also the guiding principle of the International Relations Unit in shaping relations with Western countries, especially within Europe. The establishment of the European Science Foundation (ESF) was imminent. Following the OECD's recommendations, it was run by an EC commission and aimed to promote "basic research" in the European Community. In late 1972, due to his skepticism towards EC bureaucracy, Lüst stated to the Senate that they did not "intend to support this initiative," aligning with the views of the DFG and the Federal Government.¹⁸⁵ However, despite initial reluctance from FRG, the project gained momentum. A few months later, they had to hop on the moving train to steer it in the right direction. According to Nickel, this was only moderately successful as his first draft for the ESF's statute was, to his regret, "significantly diluted" during subsequent negotiations.¹⁸⁶

Initially, the goal was to ensure that the planned ESF would not be limited to EC states but would include other important European partners. This was deemed essential, among other reasons, to free it from the administrative control of the Brussels Commission and place the responsibility with the science organizations of the participating countries. This approach was intended to accommodate the "unique circumstances of basic research, meaning the extensive autonomy and decentralization of individual projects."¹⁸⁷ Furthermore, the selection of focus areas, particularly in astronomical research, had to be controlled. Finally, it had to be ensured that the first expert groups formed in 1975 were reliably staffed. This was achieved with Heinz Maier-Leibnitz, the external scientific member of the MPI for Nuclear Physics, who led the Astronomy expert group, and with Wolfgang Gentner. This time, Gentner served not as a nuclear physicist but as the "pioneer of archaeometry," heading the archaeological sciences expert group.¹⁸⁸ EC Commissioner Dahrendorf, who had since transitioned to the Department of Research, Science, and Education, assured that the Commission would refrain from taking control of the planning for the ESF. Instead, he would support its autonomous development from within the realm of organized science, espe-

184 *MPG-Jahrbuch 1973*, 19. Statistik Thoms, DA GMPG, Privatarchiv Sachse, ID 601104. The statistics do not list any guests from East Germany for the entire period; it is not clear whether there were actually none or whether they were counted as Germans.

185 Protocol of the 73rd Senate meeting on Nov. 29, 1972, AMPG, II. Abt., Rep. 60, No. 73. SP, fol. 12.

186 Interview Nickel (Sachse) April 12, 2018 (quote). See also the protocol of the 74th Senate Meeting on March 9, 1973, AMPG, II. Abt., Rep. 60, No. 74.SP, fol. 15–16; Protocol of the 75th Senate Meeting on June. 28, 1973, AMPG, II. Abt., Rep. 60, No. 75.SP, S. 15–18; Protocol of the 76th Senate Meeting on Nov. 23, 1973, AMPG, II. Abt., Rep. 60, No. 76. SP, fol. 106–108.

187 *MPG-Jahrbuch 1973*, p. 18.

188 Wagner, *Wolfgang Gentner*, 2006. Gentner, "Forschungsmethoden," 1977.

cially where it extended beyond the boundaries of the community. Nevertheless, Dahrendorf hinted at future financial “contributions from the European Communities.”¹⁸⁹ The fact that this guarantor of scientific self-organization in Western Europe later took on the chairmanship for Social Sciences himself was positively noted by MPS Secretary-General Schneider in his report on the first annual meeting of the ESF in 1975. Schneider himself had been appointed Secretary-General of the ESF.¹⁹⁰

With the European shift in the MPS’s international relations on one hand and the rise of international scientific and technical collaboration stemming from the reformed foreign cultural policy of the social-liberal federal governments on the other, the scope of responsibilities for the Administrative Headquarters, particularly the unit responsible for international relations, expanded significantly. All these developments needed monitoring to discern what opportunities and risks they held for optimal scientific collaboration between Max Planck Institutes and potential foreign partner institutions. Whenever new supranational, bi- or multinational institutions of scientific support emerged, it was crucial to influence them, ensuring that the public funds they provided were managed with minimal political stipulations by the science organizations of the participating countries, and that the interests of MPS researchers were sufficiently taken into account. In essence, the goal was to maximize both national and supranational research funding opportunities for international scientific collaborations in alignment with the research interests represented within the MPS. Policy consultancy came into play only insofar as efforts were made to influence the relevant Federal ministries or European institutions, either in the MPS’s own interest or in the broader interest of basic research.

Policy Consultancy in the Storeroom of the MPS

Policy consultancy in the broader sense, as the scientific exploration of global political issues, so envisioned by Butenandt and the intellectual circle he relied upon during the foundation of the Weizsäcker Institute, was no longer on the new president’s and his Administrative Headquarters’ agenda. However, it had not entirely disappeared from the MPS; instead, it had been relegated to Starnberg. From there, Weizsäcker, who had advocated for foreign policy realism in West Germany’s relations with the Eastern Bloc and for the Federal Republic’s accession to the NPT early on, maintained regular contact with lead-

189 Protocol of the 75th Senate meeting on June 28, 1973, AMPG, II. Abt., Rep. 60, No. 75. SP, fol. 15–18; the quotes are from Lüst’s speech.

190 Protocol of the 79th Senate meeting on Nov. 22, 1974, AMPG, II. Abt., Rep. 60, No. 79.SP, fol. 125; Protocol of the 81st Senate Meeting on June 19, 1975, AMPG, II. Abt., Rep. 60, No. 81.SP, fol. 16; Protocol of the 82nd Senate meeting on Nov. 21, 1975, AMPG, II. Abt., Rep. 60, No. 82.SP, fol. 155.

ing politicians of the social-liberal Federal Government, whose détente policy he felt aligned with.¹⁹¹ The scientific foundation for this was the study titled *Kriegsfolgen und Kriegsverhütung* (Consequences of War and War Prevention), edited by Weizsäcker and published at the end of 1971, primarily developed at the research center of VDW in Hamburg. Its main contributors, notably international law expert Horst Afheldt and physicist and political scientist Philipp Sonntag, had moved to Starnberg with Weizsäcker.¹⁹² This approximately 700-page work (→ 4.3) contained, on one hand, multidisciplinary model analyses of the potential impacts of nuclear weapon explosions in West Germany and, on the other hand, systems-analytical descriptions of the prevailing military deterrence strategies of the time, along with alternative military strategic considerations for peacekeeping. Weizsäcker used the distribution of this study in March 1972 to underscore his personal conclusions in a covering letter to leading Bonn politicians, succinctly stating:

Therefore, I am personally resolute and without any hesitation in favor of ratifying the (Eastern) treaties at this very moment.¹⁹³

However, in a manner very reminiscent of Max Weber, he shifted from the realm of the politician back to the professor's lectern noting that "the arguments of our study should be considered and discussed independently from current foreign policy decisions." Among the recipients of this policy recommendation, derived with academic rigor, were Federal Chancellor Brandt (SPD), opposition leader Rainer Barzel (CDU), and Scheel, Minister for Foreign Affairs (FDP).¹⁹⁴ At least Scheel responded in detail, expressing his "satisfaction" to Weizsäcker that "your reflections on the multifaceted topic of 'War and War Prevention'—though originally unintended, as you mentioned—have come to affirm the *Ostpolitik* of the Federal Government."¹⁹⁵ From this courteous reply by Scheel, one could deduce that the Starnberg Institute had achieved its foreign policy mission even before it truly commenced its work. For Scheel, Brandt, and Egon Bahr, the Social Democrat architect of the Eastern Treaties, however, Weizsäcker remained a highly esteemed personal contact and correspondent throughout the changes in office.

191 See his correspondences with Bahr (AMPG, III. Abt., Rep. 111, No.15, 16, 17), Brandt (AMPG, III. Abt., Rep. 111, No. 236), Gaus (AMPG, III. Abt., Rep. 111, No. 65); Bahr to Weizsäcker on Nov. 29, 1979, AMPG, III. Abt., Rep. 111, No.17; Weizsäcker to Butenandt on Nov. 14, 1977, AMPG, III Abt., Rep. 84–2, No. 6289, fol. 6.

192 Weizsäcker, *Kriegsfolgen und Kriegsverhütung*, 1971. Other authors were Utz-Peter Reich, Hellmuth Roth, Erwin Rahner, Alexander Pfau, Klaus Rajewski, and Hans A. Künkel.

193 Weizsäcker to Brandt on March 21, 1972, AMPG, III. Abt., Rep. 111, No. 236; Weizsäcker to Barzel on March 21, 1972, AMPG, III. Abt., Rep. 111, No. 15; Weizsäcker to Scheel on 1972, PA AA B 43-REF. 302/II8/UA IIB/209.

194 Ibid.

195 Scheel to Weizsäcker (undated carbon copy), PA AA B 43-REF. 302/II8/UA IIB/209.

The efforts to firmly establish scientific policy advice in Starnberg were increasingly overlooked over the years. It began with Klaus Gottstein, a student of Heisenberg, who, upon his teacher's recommendation, was appointed as a scientific member at the MPI for Physics shortly after his habilitation in 1961.¹⁹⁶ In 1971, Gottstein took a three-year leave to serve as a Science Attaché at the Federal German Embassy in Washington. This decision carried the high hopes of multiple stakeholders. At that time, Hans Leussink, a non-partisan engineering scientist, led the Federal Ministry of Education and Science (BMBW). In line with Chancellor Brandt's vision, he aimed to meld science and foreign policy by positioning active scientists in West German embassies.¹⁹⁷ Furthermore, Butenandt and Heisenberg saw the dispatch of an MPS representative to Washington as a twofold opportunity: to better represent MPS's interests on-site and to retransfer the American expertise in scientific policy consultancy. Gottstein appeared to be the ideal candidate for both parties. Having researched in Bristol, Berkeley, and CERN, he hoped to utilize the positive experiences, especially those of physicists, in international scientific collaborations to prevent nuclear war and promote peace. During his summer vacation in 1962, he penned down his thoughts about creating "some kind of scientific community... possessing a certain extraterritoriality... like the Vatican." After having his secretary type it out, he sent it to Weizsäcker. However, the author of the Göttingen Declaration soon clarified to him how "unrealistic that would be" and expressed his apprehensions about the "recommendations the scientists would then come up with." Instead, he suggested that the younger colleague involve himself in the VDW.¹⁹⁸ Gottstein quickly joined the executive committee of the VDW, where he encountered Leussink, a member of the VDW's advisory board.¹⁹⁹ Contrary to what Gottstein expected when the inquiry from Bonn arrived, Heisenberg found him quite dispensable in Munich. After all, Gottstein had groomed his doctoral student, Norbert Schmitz, as a suitable deputy. Schmitz had been appointed as a scientific member in 1969 and was quickly proving himself as a department head in his superior's absence. Meanwhile, Gottstein's leave from the MPI for Physics extended beyond his Washington tenure, with a short interval, until his retirement in 1992.²⁰⁰

196 Protocol of the 40th session of the Senate on Dec. 6, 1961, AMPG, II. Abt., Rep. 60, No. 40. SP, fol. 229–230.

197 With the dispatch of science attachés, the Federal Republic was not alone in the early 1970s. In Washington, twenty embassies maintained 'science offices', in Bonn there were 10, in London, Paris, and Tokyo 14 or 15 science attachés were accredited respectively. See Greenwood, "Scientist-Diplomat," 1971, 15; Greenwood, "Science Attaché," 1971.

198 Interview Gottstein (Sachse) Nov. 11, 2011, pp. 27–28.

199 Bieber, *VDW*, 2009, p. 139.

200 Gottstein, "Danksagung," 1992, p. 56; Gottstein, "Words of Appreciation," May 5, 2009, pp. 3–5, Privataarchiv of Klaus Gottstein. After the dissolution of the MPIL, Gottstein initially returned to the MPI Physics, but later his research post for questions at the

Much like the non-partisan engineering scientist Leussink, who had already stepped down from his role as Federal Minister in early 1972, physicist Gottstein also found it challenging during a period where interdisciplinarity was a popular topic of discussion and scientific expertise was more sought after in politics than ever. Simultaneously, however, professional, institutional, and functional differentiation was relentlessly progressing.²⁰¹ Gottstein remained an outsider: first, as a diplomatic novice in the most significant of all Federal German embassies; then, upon his return, as a natural scientist in peace and conflict research—a field that was rapidly institutionalized, mainly under Social Democratic governance, and dominated by social scientists;²⁰² and most certainly as an experimental particle physicist who, after a three-year diplomatic sabbatical, didn't seek to reintegrate into the scientific community. Eventually, in a Max Planck Society that under the leadership of its new president, Lüst, was continuously promoting the internationalization and Europeanization of research but wanted less and less to perceive itself as a player in foreign policy, Gottstein found himself marginalized.

While in Washington, Gottstein had discussed with Weizsäcker and Kissinger how his future role back home would unfold. He was to assist Weizsäcker as his “closest associate,” especially since Ehmke, the new Federal Research Minister, had just offered Weizsäcker the chairmanship of the forthcoming Advisory Committee on Research and Technology (BAFT, Beratender Ausschuss für Forschung und Technologie).²⁰³ While this committee couldn't quite match a Presidential Scientific Advisory Board, it did position the scientific policy advice under the guidance of Weizsäcker, the leading intellect of the MPS, within the Federal Government's research ministry. Upon returning from the U.S. in 1974, to his surprise, Gottstein found himself not alongside Weizsäcker on the building's upper floor with a view of Lake Starnberg, but rather in the basement

intersection of politics and science was first made independent and then also spatially outsourced, see Sachse, *MPS und die Pugwash Conferences*, 2016, p. 38.

201 Leussink had—“worn out by failure,” as *Der Spiegel* knew—offered his resignation even before Christmas 1971: “Rückgriff,” Jan. 30, 1972.

202 Significant foundations included the SWP in Ebenhausen, founded as early as 1962, the German Association for Peace and Conflict Research initiated by Federal President Heinemann in 1970, the Hessian Foundation for Peace and Conflict Research also founded that same year, and the Institute for Peace Research and Security Policy at the University of Hamburg established in 1971. C.F. v. Weizsäcker was intended as the founding director of the latter before he returned to the MPS, cf. Neuneck, “Weizsäcker, Hamburg und das IFSH,” 2012. The foundations of the 1970s coincidentally took place in Social Democratic-governed federal states or on the initiative of leading Social Democrats. Regarding the history of peace and conflict research in West Germany, cf. Hauswedell, *Friedenswissenschaften*, 1997, pp. 49–65. Hauswedell points out that institutionalized West German peace research had little connection to the natural sciences: *ibid.*, p. 65 and *passim*. For more literature references, also cf. Nehring, “Friedensforschung,” 2011.

203 Interview with Gottstein (Sachse) on Nov. 11, 2011, p. 16.



Fig. 3: Seat of the MPI for the Study of the Living Conditions of the Scientific and Technical World in Starnberg.

of the villa. Weizsäcker had left the allocation of rooms to the democratically elected institute council, which sought to counter social hierarchies and had already assigned the most sought-after offices primarily to the lesser-paid doctoral candidates.²⁰⁴ Nonetheless, Gottstein made the most of his situation in the basement of MPIL, acting as a perpetual guest and embracing roles like a secretary, event manager, and networker until the institute's dissolution.

In the early 1970s, the scientific advisory system within the federal ministries was evidently still in its experimental phase.²⁰⁵ Ehmke, for instance, wasn't satisfied with the advisory circle initially appointed by his predecessor, Leussink. This group included MPS President Lüst, the sociologist and philosopher Jürgen Habermas (who had been appointed co-director at the Starnberg Institute in 1971), and Hans-Joachim Queisser from the MPI for Solid State Research. Ehmke disbanded this group at the start of 1974. He envisioned a high-level advisory group, similar in spirit to a "council of wise men" or "council of

204 Ibid., pp. 16–17. On Weizsäcker's leadership style, cf. Sonntag, "Kritische Masse," 2014; Sachse, *MPS und die Pugwash Conferences*, 2016, p. 25, p. 35.

205 Notice 11/71 "Neuordnung des Beratungswesens beim Bundesministerium für Bildung und Wissenschaft (BMBW)" (Reorganization of the advisory system at the Federal Ministry of Education and Science) from September 1971, BArch B 138/25723.

elders,” that would focus on forecasting and development.²⁰⁶ “Rather than the existing democratic approach,” he favored a “strong man” to chair, someone who would be “challenging,” “independent,” and “resolute.” Together with this individual, Ehmke intended to decide on the committee’s additional composition.²⁰⁷ Ultimately, besides chairman Weizsäcker, the seventeen-member committee comprised Alfred Gierer from the MPI for Virus Research and once again Queisser, representing the MPS. Seven others hailed from universities and non-university research, two each from large industries and trade unions, and one each from the media and municipal politics.²⁰⁸ Gottstein wasn’t one of them. Instead, as Weizsäcker noted, the MPS provided Gottstein “as a staff member for the committee.”²⁰⁹

Before the BAFT even had a chance to convene, Chancellor Brandt resigned, and his successor, Helmut Schmidt, dismissed Ehmke. However, the new Minister of Research, Hans Matthöfer, shared Ehmke’s need for consultation. Primarily, he hoped for a critical evaluation of prognostic analyses, some of which were to be developed internally within his ministry, while others externally. Moreover, he presented the new committee with a lengthy list of potential advisory topics that his ministry had compiled. These topics included questions concerning the relevance of basic research, criteria for choosing the “right” new programs and their “correct sizing,” dealing with the public, the significance of social science accompaniments to BMFT programs, the ongoing development of major research institutions, the balance between state and industrial support for research and development, among other matters.²¹⁰ During the committee’s initial meetings, the list of topics expanded significantly. It now included contributions from committee members, studies from the Swiss Prognos AG, and analyses from other ministries. A critical voice from the sister ministry, the BMBW, pointedly remarked on the overwhelming amount of documentation. This critic suggested that this sheer volume would prevent any substantive, result-oriented discussion, and further noted that the BMFT should take the initiative to “consolidate and

206 Member directory of the Advisory Committee for Education and Science Policy (BABW, Beratender Ausschuss für Bildungs- und Wissenschaftspolitik) from Dec. 1, 1971, BArch B 138/25723.

207 These are the notes from the BMBW, which critically and not without sarcasm followed the corresponding efforts of the now independent departments for research and technology in the BMFT: Memos from Feb. 5, 1974 and Feb. 28, 1974, BArch B 138/25723.

208 Member list from Sep. 10, 1974, BArch B 138/25724. The activities of the BAFT are extensively documented in BArch B 138/25724 to BArch B 138/25729.

209 Protocol of the constitutive meeting of the BAFT on Oct. 24, 1974, p.4, BArch B 138/25724.

210 Possible consultation topics of the BAFT from today’s perspective as of May 2, 1974; of the 2nd BAFT meeting on Dec. 7, 1974; Memo from Leitersdorf (BMBW) “Zur Leistungsfähigkeit vorliegenden Prognosematerials” (On the performance of the available forecast material) dated Jan. 25, 1975; Memo Schroeter “Prognoseaktivitäten des BMFT,” no date, BArch B 138/25724.

prepare a comprehensive summary for discussion,” instead of shirking from this task by resorting to the “intensive operation of Xerox machines.”²¹¹

Gottstein, as the committee’s secretary, was fully occupied with organizing its sessions. Over its three-year term, the committee convened sixteen times, established several subcommittees, held retreats, and visited major research facilities.²¹² Towards the end, some core topics emerged, and by mid-1976, the BAFT released its recommendations. Some of these recommendations were so measured that they barely raised any eyebrows: for instance, basic research, even more so than research and technology as a whole, would require consistent funding, which must steadily and moderately increase.²¹³ Likewise, there was a recommendation for the explicit maintenance of major operational research facilities. They should focus on applied research in areas of significant public interest and ensure a meaningful intertwining of basic and applied research, leaving technical developments to industrial research.²¹⁴ More contentious were the recommendations concerning the transfer of “adapted technologies for developing countries.” This was an initiative initially introduced by Alfred Gierer as a plea for “modest technologies.” He did not envision these exclusively for “Third World” countries, but as a strategy for a global shift from large-scale technologies to resource-conserving, needs-oriented, locally-driven, and participatory technologies to enhance the quality of life for people worldwide.²¹⁵ However, the BAFT limited its recommendations to “developing countries,” suggesting that it’s often more beneficial in these countries to give support with simpler, robust, and labor-intensive technologies tailored to local conditions. These might not necessarily come from a “high-tech country like the Federal Republic of Germany,” but perhaps from less developed countries like China or Yugoslavia. Nonetheless, the diverse scientific expertise of the FRG, similar to other highly developed nations, remains crucial in guiding project selection, the development and testing of adapted technologies, and training local experts.²¹⁶

Throughout the three years from 1974 to 1977, the issue most intensely debated and politically contentious, which challenged Weizsäcker’s very own expertise, found the BAFT lacking: the question of how to assess the risks of nuclear power plants and the direction energy policy should take. Instead of

211 Memo Beckerhoff (BMBW) dated Nov. 29, 1974, BArch B 138/25724.

212 According to his own statement (Interview Gottstein [Sachse] Nov. 11, 2011, p.10), Gottstein was the one who did the “homework.”

213 BMFT press release from June 10, 1976, BArch B 138/25728.

214 Appendix 2 to the protocol of the 13th BAFT meeting on Dec. 10, 1976, BArch B 138/25728.

215 Gierer: “Vorschlag ‘Bescheidene Technologien,’” submitted for the constituting BAFT meeting on Sept. 23, 1974, BArch B 138/25724.

216 Appendix 1 to the protocol of the 13th BAFT meeting on Dec. 10, 1976, BArch B 138/25728. To what extent the BAFT went beyond the current state of discussion in Federal German development policy at the time with its recommendations would have to be checked; in any case, the recommendations still seem quite relevant even forty years later.

providing a clear assessment, the committee initially retreated with a list of further audit mandates to the BMFT and concluded its term in 1977 with a recommendation that essentially admitted its own inadequacy: one of the highest constitutional bodies — the Federal Government, the Federal President, or the Federal Council — should “commission a small group of prominent scientists” to produce “a generally understandable report on the dangers of nuclear energy” within a few months. The authoritative judgment of the expertise gathered there would finally “contribute to objectifying the public discussion.” Chancellor Schmidt, to whom Weizsäcker had written personally, rejected this request to avoid raising any doubts about the “justifiability” of the Federal Government’s already decided policy.²¹⁷ For by that point, nuclear physicists and heads of relevant research institutions, Reimar Lüst (MPS), Karl Heinz Beckurts (KFA), and Heinz Maier-Leibnitz (DFG) had already affirmed this policy in an open letter to members of parliament in time for the parliamentary debate on fundamental issues of nuclear energy use in December 1975.²¹⁸ Instead, Chancellor Schmidt suggested that Weizsäcker himself convene such a commission and present an objective report. Without an authoritative mandate, Weizsäcker, in turn, considered this a waste of time, but promised to continue expressing his personal opinion on the matter.²¹⁹

During his tenure, Federal Research Minister Matthöfer, who personally attended most of the meetings, expressed disappointment in his committee. Reflecting on this later, Gottstein acknowledged that the committee had merely “reacted to governmental concerns” without proactively or predictively taking initiative.²²⁰ Nonetheless, Matthöfer found it both “amusing” and “enlightening” to witness his department heads being put on the spot by independent

217 Protocol of the 6th BAFT meeting on Oct. 14, 1975, BArch B 138/25727. Memo Coester dated March 31, 1977, BArch B 138/25729; Protocol of the 15th BAFT meeting on June 16, 1977 and memo from Weizsäcker on the proposal for a commission report on the objectification of nuclear energy July 18, 1977, BArch B 138/25729 (quotations). Cf. also Seefried, “Ohne Atomkraft leben?” 2014, pp. 398–403. Based on the BMFT files on the BAFT, she emphasizes that a paper, which Weizsäcker initially wrote for the BAFT but then published in a three-part series “Ohne Atomkraft leben?” in the *Zeit* on June 27, July 4, and July 11, 1975, thus found its way into government policy, as the cabinet in its “Grundlinien und Eckwerte für die Fortschreitung des Energieprogramms” (Basic principles and benchmarks for updating the energy program) then assumed reduced growth rates for energy demand and gave higher priority to the importance of energy-saving use.

218 Lüst to colleagues on Nov. 18, 1975 and attachment “Open letter to the members of the German *Bundestag*,” AMPG, III. Abt., ZA 116, K 65. Cf. Altenburg, *Kernenergie und Politikberatung*, 2010, p. 66.

219 Memo from Weizsäcker on the proposal for a commission report on the objectification of the nuclear energy debate dated July 18, 1977, BArch B 138/25729.

220 Memo Coester dated March 31, 1977, sheet 3, BArch B 138/25729. Lecture Gottstein “Politikberatung als Aufgabe und Ziel am Beispiel des Beratenden Ausschusses für Forschung und Technologie” (Policy consultancy as a task and goal following the example of the Advisory Committee for Research and Technology) under the chairmanship of C. F. v. Weizsäcker on June 23, 2007, pp. 3–4 (quotation), Privatarchiv of Gottstein.



Fig. 4: Colloquium on the occasion of Klaus Gottstein being awarded emeritus status on Dec. 5, 1991: “The Role of Science in Politics and the Role of Politics in Science,” from left to right: Karin Gottstein jun., Carl Friedrich von Weizsäcker, Gottstein, Hans Zacher (MPS President) and Hans-Peter Dürr.

scientists.²²¹ Given this assessment, it’s not surprising that neither the minister nor his officials seriously considered continuing this advisory committee or appointing a new one.

Gottstein’s talents as a conference organizer were nonetheless valued by the ministerial side. In the summer of 1977, he had already demonstrated them when he organized, on behalf of the West German Pugwash Group, the 27th Pugwash Conference on Science and World Affairs (PCSWA) in Munich. This conference, funded by the BMFT, attracted over 200 participants, including a few women, from 47 countries (→ 4.3).²²² Right after this, in preparation for the 1979 World Science and Technology Conference planned in Vienna by the United Nations—which was set to discuss technology transfer to developing countries at the international level—the BMFT commissioned Gottstein. His task was to solicit contributions from West German institutions and personalities, preparing a “specific input” for the country report of the FRG.²²³ The following year,

221 Interview with Gottstein (Sachse) on Nov. 11, 2011, p. 12.

222 Cf. Gottstein, “Erinnerungen an Pugwash,” 2007, pp. 40–41. Sachse, *MPS und die Pugwash Conferences*, 2016, p. 26.

223 Contract between BMFT and Gottstein from Nov. 9, 1977, AMPG, II. Abt., Rep. 9, No. 20, pp. 205.

commissioned by the Foreign Office, he led the West German delegation in the preparations for the Scientific Forum of the CSCE. This forum, proposed by then Federal Minister for Foreign Affairs Scheel, had been included in the Final Act of Helsinki and was scheduled to take place in Hamburg in 1980. Subsequently, Gottstein served as its Executive Secretary.²²⁴

For all these and other foreign and science policy activities, Gottstein sought and received permission from his president. Lüst also designated him the Pugwash representative of the MPS and entrusted him with this and other realms of informal science diplomacy, showing little further interest himself. While Gottstein regularly and thoroughly reported, he would at best receive a polite acknowledgment in return from the presidential office.²²⁵ If the MPS president wanted to influence the West German negotiation position ahead of such international conferences, he would approach State Secretary Haunschild, who represented the BMFT in the MPS Senate for many years. Or he would coordinate with his presidential colleagues in what was often referred to as the 'Holy Alliance' of science organizations. This alliance, established in the 1950s, saw major West German science organizations regularly convening to together assert their science (foreign) policy agendas vis-à-vis the federal and *Länder* governments.²²⁶ This non-relationship between the MPS president and his delegate for Pugwash and similar international networks was a continuation of the distance that Lüst's predecessors in this office had already cultivated towards informal scientific diplomacy during the Cold War. Even within the Starnberg Institute, Gottstein's efforts in foreign science policy aimed at moderating the Cold War were given little recognition. The alternative military strategies, developed following the War Consequences Study by Afheldt and his team to reduce the risk of the Cold War escalating into a hot war on European soil, didn't fare any better. In both cases, internal critics—like the working groups on science research or on development policy—who often found themselves under the scrutiny of the media, the industry representatives in the Senate, and an increasing number of MPS members—were in agreement with their external opponents: policy consultancy and military research were, in their view, not basic research and therefore didn't belong in the MPS. They also made it clear to their Institute Director Weizsäcker, who certainly supported Afheldt's and

224 Gottstein, *KSZE*, 1981. Annual report 1980 of the Gottstein Research Center in the Institute for Physics at the MPI for Physics and Astrophysics, AMPG, IX. Abt., Rep. 5, No. 633, p. 3.

225 Gottstein to Lüst on May 24, 1978, AMPG, III. Abt., ZA 116, K 24.

226 Lüst did not mention Gottstein on these occasions in such a pronounced manner that it would have been recorded in the protocol, Protocol of the 86th Senate meeting on March 11, 197, AMPG, II. Abt., Rep. 60, No. 86.SP, pp. 99–100; Protocol of the 90th Senate meeting on June 15, 1978, AMPG, II. Abt., Rep. 60, No. 90.SP, pp. 82, 84–85. Regarding the formation of the 'Holy Alliance' and the role of the MPS in it, see Balcar, *Wandel*, 2020, 102–105; Osganian and Trischler, *MPG als wissenschaftspolitische Akteurin*, 2022.

Gottstein's works, that they wanted nothing to do with such politically and even militarily tinged activities within their own institution.

This tension was highlighted during a visit to Starnberg by Walter Scheel in July 1976, a visit that had been meticulously prepared for months by his Federal Presidential Office. The presidential staff had succinctly summarized the extensive Institute reports that Weizsäcker had sent them a few weeks earlier and had thoroughly briefed their boss about the structure of the institute, its working groups, and their research focuses. The minute-by-minute itinerary had been coordinated with the Bavarian State Chancellery and the MPS Administrative Headquarters and was formally adhered to. However, what followed after the welcoming speeches of the Bavarian State Secretary Mathilde Berghofer-Weichert, MPS Vice-President Konrad Zweigert, and Institute Directors Weizsäcker and Habermas, was deemed "disappointing" from the perspective of the accompanying officials.²²⁷

It began with Rainer Döbert and Gertrud Nunner-Winkler being unwilling to convey their findings on the development of moral consciousness in adolescents "in plain language," thereby provoking "strong reactions from the Federal President."²²⁸ The mood brightened during the discussion on "development and underdevelopment" with Folker Fröbel, Jürgen Heinrichs, and Otto Kreye. Their results, presented "in understandable form," were deemed supportive of the policies championed by the Federal President in his former role as Federal Minister for Development Aid.²²⁹

The last and most important agenda item, for which the most time had been reserved by agreement, was a discussion moderated by Weizsäcker on ethical foundations and limits in science. The Federal President intended to use this as preparation for a speech he was scheduled to give two months later before the General Meeting of the Görres Society. Joining the discussion alongside Habermas were, among others, the "finalists" Gernot Böhme, Wolfgang van den Daele, and Rainer Hohlfeld. Their thesis on the increasing purpose-orientation or "finalization" of contemporary sciences had stirred controversy, especially among those who were unwilling to have the "freedom of the sciences" challenged.²³⁰ Only because Scheel's advisors arrived at the institute a few hours before him, noticing that "the group was not prepared for the discussion at all," were greater embarrassments narrowly avoided. The points "the young

227 Memo Dr. Wemmer from July 19, 1976 and program for the visit of Mr. Federal President to the Max Planck Institute in Starnberg on July 16, 1976, BACh B 122/17858, pp. 52–54, pp. 57–58.

228 Memo Dr. Wemmer from July 19, 1976, BACh B 122/17858, pp. 52–54. Cf. Döbert and Nunner-Winkler, *Adoleszenzkrise*, 1975.

229 Memo Dr. Wemmer from July 19, 1976, BACh B 122/17858, pp. 52–54. Cf. Conversation Lüst (Nolte), 2008, pp. 195–198.

230 Böhme, Daele and Krohn, *Finalisierung*, 1973. Böhme et al., *Gesellschaftliche Orientierung*, 1978; Leendertz, "Finalisierung der Wissenschaft," 2013; Krohn, "Der harte Kern," 2014.



Fig. 5: Visit of Federal President Walter Scheel to the MPI for the Study of Living Conditions of the Scientific and Technical World in Starnberg on July 16, 1976. From left to right: Scheel, Konrad Zweigert (Vice-president of the MPS), Carl Friedrich von Weizsäcker, Jürgen Habermas.

scientists” noted down in the brief remaining time, and subsequently introduced into the discussion, were hardly original: the Hippocratic Oath as a moral self-limitation of medical practice was something the husband of Dr. Mildred Scheel, founder of the German Cancer Aid, didn’t need to be reminded of. As for the 1975 Memorandum in which over a hundred molecular biologists agreed upon certain ethical rules for experimental genetics during a conference in Asilomar, California, Scheel had already been informed about this by his ministerial staff.²³¹

Weizsäcker salvaged the situation by emphasizing, where possible, the need for the personal morality of the scientist to be supported by the public and politics. Furthermore, he highlighted the “differences between self-restraint possibilities” in nuclear research, which is “politically driven,” and that of biologists, who can impose limits on themselves as no one compels them to “produce further findings.” Time was short, and perhaps also lacking was the foresightful awareness that Federal Research Ministers Ehmke and Matthöfer

231 All quotes, memo by Dr. Wemmer from July 19, 1976, BArch B 122/17858, fol. 52. See also Chadarevian, “Asilomar,” 2005.

had expected from their BAFT chairman, to further discuss this already then discernible problematic distinction and potential external influences on future molecular biological research.²³²

Carl Friedrich von Weizsäcker: The Last Mandarin of the MPS

The disappointing overall impression that the Federal President and his advisers took away from their visit to Starnberg did not permanently damage Weizsäcker's reputation in the circles of the social-liberal government. In the spring of 1979, as the decline of the Starnberg Institute continued, Willy Brandt, as the chairman of the SPD, and his colleague Hans-Dietrich Genscher of the FDP, proposed Weizsäcker as a candidate for the upcoming federal presidential election. The social-liberal coalition was in a tricky position: they had lost their majority in the Federal Assembly, and Scheel was unwilling to run against the CDU/CSU's candidate, Karl Carstens. With the respected non-partisan intellectual, they hoped to turn the tide, especially since some CDU-aligned members had confidentially indicated they would vote for Weizsäcker. As he explained in his letter to Brandt published in the *Süddeutsche Zeitung* the day before the election set for May 23, 1979, Weizsäcker would have sacrificed his firm decision to dedicate the last years of his working life solely to the "philosophical penetration of the natural sciences" for the office of the Federal President. However, he was only willing to do so if the presidential position, which he would only lead in "non-partisan" fashion, would be "clearly offered to him by a majority of those entitled to vote." Even though he felt he could not decline to "bring his knowledge into the office of the Federal President" in light of the "serious crises of the world and therefore of our nation" expected "for the 1980s," he was not willing to stand as a mere figurehead candidate in a precarious election.²³³ Social Democrat Annemarie Renger stepped in, becoming the first ever female candidate in the history of the federal presidential elections. She lost by a larger margin than expected, as she didn't even secure all of the Social Democratic votes.²³⁴ In his reply, Brandt, considering the broad support he sensed for Weizsäcker's candidacy, regretted "that perhaps together we missed an opportunity that might not present itself to the Federal Republic again anytime soon." He, too, anticipated "serious challenges for the 1980s" and believed that "all reason and all inventiveness" would

232 All quotes, memo by Dr. Wemmer from July 19, 1976 regarding Scheel's visit to Starnberg and his conversation notes from July 16, 1976, BAArch B 122/17858, fol. 54.

233 Draft letter from Weizsäcker on May 21, 1979, AMPG, III. Abt., Rep. 111, No. 243. Weizsäcker does not want to be a "nominee for the sake of numbers." *Süddeutsche Zeitung*, May 22, 1979, pp. 1–2.

234 See Wikipedia entry: Wahl des deutschen Bundespräsidenten 1979. https://de.wikipedia.org/wiki/Wahl_des_deutschen_Bundespr%C3%A4sidenten_1979, last accessed March 10, 2019.

be needed to meet them. Only through closer cooperation between politics and science could they avoid being overwhelmed by the problems ahead.²³⁵

Whether and in what manner the Max Planck Society would engage in a future collaboration between foreign policy and science was less clear in the last years of the social-liberal era than at its beginning. Around 1980, at the MPI for Educational Research, the policy-relevant research areas of educational economics and educational law were phased out with the near-simultaneous retirements of three of its four directors—Hellmut Becker, Friedrich Edding, and Dietrich Goldschmidt. Under the leadership of the newly appointed director, Paul Baltes, the focus was shifted to developmental psychology questions understood as basic research and looking at the entire human life cycle in a societal context.²³⁶

The scientific policy consultancy, which the founding circle of the MPI for the Study of Living Conditions in the Scientific-Technological World (MPIIL) in Starnberg had intended to solidify with that institute, could never firmly establish itself without contention. Amidst the ‘tendency shift’ in internal politics, these efforts increasingly came under pressure within the MPS and were scaled back during the ongoing structural reforms in the second half of the 1970s. The Starnberg Institute was dissolved, after all attempts to find an adequate successor for the emeritus Carl Friedrich von Weizsäcker had failed, especially with Dahrendorf’s unexpected refusal, and also when Habermas, as the second director, in 1981 amidst impending labor law disputes with the remaining staff of the Weizsäcker department, resigned and relinquished his director’s post. However, that decision was intensely disputed in the media.²³⁷ All that remained were the small research groups around Gottstein, who, being an MPS member, could not be dismissed, and Afheldt, who could not be let go for employment law reasons. Both group leaders, as will be discussed more in depth in the fourth chapter (→ 4.3, 4.4), remained active beyond their impending retirement in trans- and international military strategic, disarmament policy, developmental, and environmental policy expert circles and NGOs. However, within the MPS, they continued to be generously funded but were swiftly marginalized institutionally.²³⁸

In 1980, Carl Friedrich von Weizsäcker’s departure marked the exit of the last scientist who could be seen as the embodiment of the Max Planck Society’s vision of itself as a corporate force in both science and politics. He was also among the final few whom a significant portion of an increasingly skeptical West

235 Brandt to Weizsäcker on May 30, 1979, AMPG, III. Abt., Rep. 111, No. 243.

236 Thoms, “Geschichte des Max-Planck-Instituts,” 2016, pp. 9–11. On the development of MPIB in the context of the *Tendenzwende* see Behm, *Bildungsforschung*, 2023. This thematic shift is much better reflected in the English name “MPI for Human Development”, which was introduced later, than in the German name “MPI für Bildungsforschung” that still finds use today.

237 Leendertz, *Pragmatische Wende*, 2010, 29–49.

238 Afheldt, “Kalter Krieg,” 2009, 307, note 11. See also Sachse, *MPS und die Pugwash Conferences*, 2016, 37–38.

German public trusted to speak on matters of foreign affairs, peace, and energy “on behalf of science,” and whose insights they took seriously. In contrast, the beefed-up and streamlined International Relations Unit within the Administrative Headquarters shifted its focus to its primary role: fostering and overseeing bi- and multilateral scientific collaborations, ideally at the hands-on, operational levels of labs and large research facilities. Beyond its commitment to European science funding initiatives and its special engagement in China, the MPS largely kept a low profile in foreign politics.

How Political Can a MPS Scientist Be? Dürr Versus Lüst

The individual scientific members remained, as did the scientific and non-scientific staff. In various ways, some of them engaged in domestic and foreign political conflicts, especially those in which they felt challenged as scientists or as members of West Germany’s most prominent science organization. In 1973, for instance, Otto Creutzfeldt, the director at the MPI for Biophysical Chemistry in Göttingen and a brain physiologist, along with “about 100 junior and senior staff members from university clinics and Max Planck Institutes,” penned an open letter to the Syrian President protesting against the “inhumane conditions” to which Israeli prisoners of war from the Six-Day War and the Yom Kippur War were “subjected in concentration camps in Syria.”²³⁹ In 1974, he collaborated with the German P.E.N. Centre to collect signatures against the “increasing demonization of Israel in the UN and now also in UNESCO.”²⁴⁰ The latter had denied Israel’s cooperation due to its archaeological excavations in Jerusalem, which were opposed by Arab nations. Not all stances taken in these initiatives aligned as closely with government views or garnered as much consensus within the MPS as the longstanding solidarity with Israel, rooted in scientific collaboration since the late 1950s.

President Lüst of the MPS needed to experience this firsthand. He not only accompanied the Federal Chancellor on several official trips abroad, acting in a capacity that could be likened to “an unofficial Foreign Minister of German Science,” but in 1975 he also wanted to support him as a scientific expert in

239 German draft letter from Dec. 12, 1973, AMPG, III. Abt., Rep. 84/2, No. 1070, fol. 2–3; Letter to the President of the Syrian Republic on Dec. 12, 1973, AMPG, III. Abt., Rep. 84/2, No. 1070, fol. 4; Creutzfeldt to Butenandt on Dec. 14, 1973, AMPG, III. Abt., Rep. 84/2, No. 1070, fol. 1. I thank Sascha Topp for this and the following source reference.

240 Creutzfeldt to Butenandt on Nov. 28, 1974, AMPG, III. Abt., Rep. 84/2, No. 1070, fol. 5. Embassy Counselor Lahav (Israeli Embassy in Bonn) to Creutzfeldt Nov. 28, 1974. UNESCO had denied Israel—unlike the USA and Canada—accession to its European Region; since the Asian and Middle Eastern Regions in turn refused to admit Israel, but affiliation to a region was a prerequisite for inclusion in regional UNESCO actions, Israel no longer had an organizational-institutional basis in UNESCO.

his nuclear energy policy.²⁴¹ Together with his fellow physicists, Beckurts, the Chairman of the Board of the KFA, and Maier-Leibnitz, the president of the DFG, Lüst co-authored the aforementioned open letter supporting the Federal government's plan to expand nuclear power plants further. While these three highly distinguished proponents of nuclear energy addressed their appeal to the members of the German *Bundestag* as "scientists and citizens," doing so on neutral letterhead, they did advocate for their cause within their respective science organizations and managed to gather over 600 signatures.²⁴² Ironically, at Lüst's own MPI for Physics and Astrophysics, department heads Norbert Schmitz and Hans-Peter Dürr sharply criticized the open letter. Their criticism was not directed at the possible blurring by the MPS President between his official position and his political stance as a citizen. Instead, their criticism targeted the nuclear physicist for being too "generous" in overlooking the dangers of nuclear energy.²⁴³

Even more so, for Dürr, this signature campaign served as a double revelation. On the one hand, he felt challenged by the open letter's assertion that "in the coming decades, an increase in energy consumption can be expected, the extent of which is linked to the growth of the national economy."²⁴⁴ In subsequent years, he remained preoccupied with the question of calculating the necessary

241 Lüst did not contradict this attribution by his interviewer Nolte: Conversation Lüst (Nolte), 2008, 195.

242 "Open letter to the members of the *Bundestag*"; cover letter Lüst to colleagues on Nov. 18, 1975, AMPG, III. Abt., ZA 116, K 65; Altenburg, *Kernenergie*, 2010, 66.

243 Dürr to Lüst on Dec. 3, 1975, AMPG, III. Abt., ZA 116, K 65; here Dürr referred to a corresponding letter from Schmitz to Lüst and agreed with his arguments without elaborating on them. In an interview conducted by Rainer Braun and Hans-Joachim Bieber with him on July 29, 2008, Dürr remembered the dispute exactly the opposite way: He had pointed out to the three authors that they had not signed the letter as private individuals, but as representatives of their institutions and had asked him in turn to sign as an MPI Director, which he refused to do. See Interview Dürr (Braun and Bieber), 2009, 347–350. In fact, they had drafted the open letter as "citizens and scientists" and asked their colleagues to sign the letter in the same manner; moreover, Dürr only remembered the letter's co-author Beckurts as "Beck"—so much for the caprices of the memory of contemporary witnesses. Hans-Peter Dürr (1929–2014) had obtained his doctorate under Edward Teller in Berkeley in 1956 and, during a visit by the West German Atomic Minister Franz Josef Strauß to Teller, was persuaded to return to Germany to collaborate with Heisenberg, cf. Conversation Dürr (Devillard), 2013, pp. 93–97. Heisenberg viewed him as "the colleague with the strongest theoretical talent since 1945," and, despite rather subdued assessments, pushed through his election as a scientific member in 1963: Protocol of the commission meeting on May 14, 1963 (fol. 274–275); Request from the CPTS on May 15, 1963 (fol. 278, quote); Excerpt from the Protocol of the Senate meeting on May 15, 1963 (fol. 278–280); Assessments (fol. 208–210), AMPG, II. Abt., Rep. 66, No. 3048.

244 "Open Letter to the Members of the *Bundestag*," AMPG, III. Abt., ZA 116, K 65; the question mark next to the quoted sentence was the only marginal note that Dürr added to Lüst et al.'s draft letter.

energy requirements and the potential constraints on consumption to levels that would be globally and sustainably acceptable. This led him to delve deeper into understanding ecological interconnections and alternative approaches, where he sought to intertwine life philosophy and quantum theory considerations.²⁴⁵ On the other hand, after the death of his highly revered teacher Heisenberg, who was his primary interlocutor in the field of theoretical physics but also a steadfast defender of civil nuclear energy utilization, nothing prevented Dürr from publicly expressing his growing criticism of the federal government's nuclear energy policy. Moreover, he began to critique the Western consumer culture at large. His initial "critical thoughts on the nuclear energy debate," composed in response to Lüst's open letter and frequently cited over the years—to Lüst's dismay, especially given their lasting political impact—appeared as a two-part article in the *Frankfurter Rundschau* in the fall of 1977.²⁴⁶ Increasingly, Dürr became involved in transnational peace and environmental initiatives by scientists, as well as in civil society NGOs pursuing similar objectives. They eagerly invoked the nuclear physicist and director of the Werner Heisenberg Institute of the MPS, invited him as a captivating speaker to their panels, and elected him to their executive boards. As one of his collaborators, Francesco Calogero, the Secretary-General of the Pugwash Conferences, commendably noted in 1990, Dürr was "a world-known theoretical physicist essentially working full-time for many years on global projects connected with ecology, development, and conversion."²⁴⁷

Within the MPS, however, these activities were critically commented upon. During a session of the Intersectional Committee in the fall of 1980, Lüst and Dürr clashed over the role of the scientist in public.²⁴⁸ Otto Westphal, the committee chair from the MPI for Immunobiology, reported that there were frequent requests for the MPS to "comment on pressing science policy issues." President Lüst attempted to limit such interventions to areas in which the MPS had "demonstrable absolute expertise." His Secretary-General, Dietrich Ranfft, articulated it even more pointedly, stating:

245 Dürr, "Immer mehr," *Frankfurter Rundschau*, Sep. 27, 1977; Dürr, "Sicherung des Weltfriedens," *Frankfurter Rundschau*, Sep. 28, 1977, Presseauschnittssammlung, KWG/MPS DÜRR Hans Peter, Personalien bis 1991, GVMPG. At the beginning of the 1980s, Dürr led the "Seminar Sanfte Energie für München" (SESAM,) cf. Beisel, "Kreissäge," 1983; Dürr, "Personal Energy Budget," 1994.

246 Dürr, "Immer mehr," 1977; Dürr, "Sicherung des Weltfriedens," 1977. Dürr to Lüst on March 18, 1980, AMPG, III. Abt., ZA 116, K 65. Interview Dürr (Reif), 2008, pp. 45–46.

247 Calogero to Yasushi Akashi on May 29, 1990, AMPG, III. Abt., ZA 116, K 58. A good insight into Dürr's tireless commitment and his public influence is provided by the collected magazine clippings in: Presseauschnittssammlung, K KWG/MPS DÜRR Hans Peter, Personalien bis 1991, GVMPG.

248 The Intersectional Committee consisted of the chairpersons and two additional representatives from each of the three scientific sections of the MPS; it was established in 1970 by the Scientific Council, i. e., the General Meeting of MPS members, to increase the influence of members on the decision-making processes of the Administrative Headquarters, cf. Balcar, *Wandel*, 2020, 222 and passim.

[...] that the responsibility of the scientist is of a different nature than that of the citizen; to prevent any misuse, the scientist's statements must absolutely correspond to the truth and not merely reflect opinions.²⁴⁹

Dürr, on the other hand, did not wish to see “such strict boundaries.” Firmly in the tradition of Heisenberg and Butenandt, with whom he felt a close affinity, he insisted on the distinct nobility of scientific thinking and the unique societal responsibility of a scientist trained in that tradition.²⁵⁰ According to Dürr, the “ability to recognize and judge, which the scientist acquired through his work beyond his own specialized field, should be integrated into the public discussion on general issues.”²⁵¹

Lüst regarded this approach as so misguided that two years later, in his address to the General Meeting of the MPS, he even cautioned his colleagues against “arguing as scientists in a field for which they themselves are not competent or not sufficiently competent, or in which their statements are actually more socio-political without making this clear.”²⁵² Dürr, to whom this warning was primarily directed, albeit without being named explicitly, was not particularly impressed by it. He either couldn't or wouldn't play the game that Carl Friedrich von Weizsäcker still masterfully managed, namely, to cleanly distinguish between his roles as a scientist and as a citizen—even when this was conceptually challenging and frequently complicated by the staged conversations with Weizsäcker in the lead role of the senior scientist engaging on equal terms with an elder statesman. In the public arena, the effort to differentiate between roles as a scientist and as a citizen was mostly an exercise in futility. Whenever a member of the MPS publicly expressed opinions on politically pertinent matters, they were portrayed in the media as representatives of the organization, leveraging the esteemed reputation of the eminent West German research institution to amplify their statements.

This controversy marked the beginning of a profound rift between the physicist Dürr, who was engaged in nuclear, peace, and environmental policy, and his president and former institute colleague Lüst. It simultaneously signifies a crossroads where the self-conception of the MPS as an institutional actor in the relationship between science and politics definitively departed from the understanding of the scientist as a *homo politicus* identical to oneself, whose rational way of thinking enabled them to penetrate the problems of both spheres

249 Protocol of the session of the Intersectoral Committee of the Scientific Council of the MPS on Nov. 4, 1980, AMPG, II. Abt., Rep. 1, No. 281, fol. 256.

250 Cf. the relationship between Dürr and Heisenberg: Conversation Dürr (Devillard), 2013, pp. 89–92, pp. 96–97 and regarding Dürr and Butenandt: Dürr to Butenandt March 16, 1983, AMPG, III. Abt., ZA 116, K 7.

251 Protocol of the meeting of the Intersectoral Committee of the Scientific Council of the MPS on Nov. 4, 1980, AMPG, II. Abt., Rep. 1, No. 281, fol. 256.

252 *MPG-Jahrbuch* 1982, pp. 21–22.

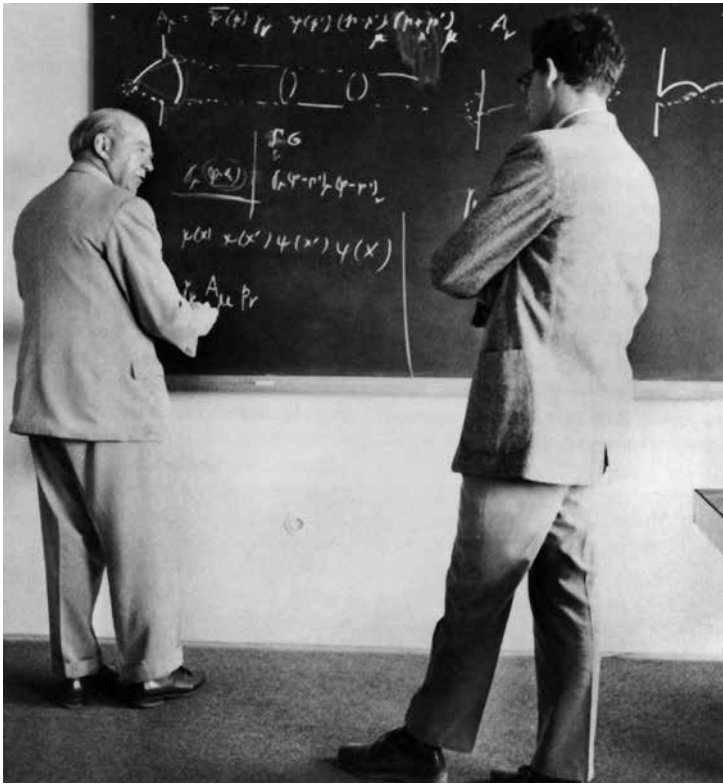


Fig. 6: Werner Heisenberg and Hans-Peter Dürr at the MPI for Physics, early 1960s.

equally. The two protagonists of this controversy were not far apart in terms of age, but they belonged to two successive generational modes of thought. The younger Dürr (b. 1929), who had experienced the end of the war as a young flak helper, felt called as a theoretical physicist to contemplate the world as a whole and to develop solutions for existential problems based on the rationality of natural science. In this pursuit, he saw himself—whether rightfully or not—in a tradition of thought with his deceased or emeritus teachers Heisenberg and Weizsäcker, and in fundamental agreement with the esteemed former president Butenandt. The older Lust (b. 1923) had volunteered for wartime service as an early high school graduate and narrowly escaped his sinking submarine in 1943 as an engineer, only to spend the last two years of the war in American captivity. Unlike almost any other prominent MPS scientist of his era, he epitomized what Ariane Leendertz has termed in a different context the “pragmatic turn,” which involved a departure from holistic, tendentially ideological theoretical approaches, an acknowledgment of the limitations and fragmentation of possible

knowledge, and the ambition to experimentally expand this knowledge using all available means—in Lüst’s case, the large-scale technological space research.²⁵³

Lüst, as a European science manager, was the right person at the right time, towards the end of the 1970s, to reconfigure the MPI for Educational Research and to close the Starnberg Institute within the MPS. With these actions he echoed what had been set in motion by the social-liberal domestic policy at the beginning of the decade: the domestic bolstering of the New *Ostpolitik* through a deliberate distancing from socio-critical endeavors that could have been denounced by the opposition as “left-socialist,” “sympathetic to communism,” or even “communist-infiltrated.”²⁵⁴ It might be unsettling that the new leadership of the MPS was nudging a scientific worldview and political understanding out of the intellectual realm of the MPS just when the social-liberal *Ostpolitik* was implementing what, a decade earlier, prominent representatives of the MPS had advocated as a finally realistic foreign policy, grounded in such a scientific worldview. The ‘tendency shift’ phrase that had become part of political journalism no later than the fall of Chancellor Brandt in 1974, having been borrowed from the business journalism vocabulary, perhaps provided the broader societal context for this transformation.²⁵⁵

However, as Lüst’s controversial intervention in favor of Schmidt’s nuclear energy policy had demonstrated, there was also a need for clarification about the manner, role, and function, as well as the appropriate context, in which MPS scientists should address (geo)political issues. Unlike the times of the Göttingen Declaration, there were no automatically authorized spokespersons anymore who, like Hahn, Heisenberg, and Weizsäcker—after consultations among themselves—could freely voice their opinions and be recognized as representatives of the MPS, even if they didn’t explicitly speak in its name. Even though during the negotiations concerning the MPS’s statutory reform of the 1960s, the political mandate of the president, as demanded by Butenandt, was supported. At the same time, however, it was limited to questions of science policy in a narrower sense. Additionally, complex problem situations resisted unambiguous analysis.

253 Leendertz, *Pragmatische Wende*, 2010, pp. 8–11. As ego-documents of the two protagonists exemplarily confronted here, see conversation with Dürr (Devillard), 2013; conversation with Lüst (Nolte), 2008. Comparing these age-related MPS physicists, who had similar career paths including long stays in U.S.-American labs in the 1950s and were both internationally networked, albeit in partially different physical communities, once again demonstrates the at best high aggregated significance of a generation model, which is, however, used by Balcar more confidently for analyzing the structure of MPS members, Balcar, *Wandel*, 2020, pp. 24–33.

254 Borowsky succinctly formulated this in “Tendenzwende,” 1998.

255 On the term trend of “Tendenzwende,” see Hoeres, “Von der “Tendenzwende,”” 2013. According to Google Books Ngram Viewer, the use of the term “Tendenzwende” (trend reversal) rose sharply from 1970 and peaked in 1978: Google Books Ngram Viewer, *Tendenzwende*, https://books.google.com/ngrams/graph?content=Tendenzwende&year_start=1800&year_end=2019&corpus=31&smoothing=3&direct_url=t1%3B%2CTendenzwende%3B%2Cc0#t1%3B%2CTendenzwende%3B%2Cc1, last accessed on July 30, 2022.

In the 1950s, with or without expertise in nuclear physics, it was easy to agree that the then-conceivable nuclear war had to be prevented at all costs. At the beginning of the following decade, the Tübingen Memorandum could still depict and demand foreign policy realism as a manifestation of scientific truth. By now, it was clearly apparent that different but equally scientifically justifiable answers—or approximations thereof—were appropriate for more complex questions. These included issues like the feasibility of limited nuclear conflicts, the risks of nuclear fallout, the safety of nuclear power plants, the finite nature of resource consumption, or the fragility of regional and global ecosystems.

Moreover, the realization that science can serve many interests experienced a resurgence, not least in the wake of the early 1980s when the re-examination of Nazi-era science and, in particular, medical atrocities received substantial media attention. Critique of science was back in vogue, and the fact that it extended into the circles of the West German government troubled MPS President Lüst during his final years in office:

The fact that, during hearings in the political arena, politicians and government officials here and there almost officially employ the two categories of “scientist” and “critical scientist,” goes beyond a matter of style. Not only does this deny the critical stance of one group—public perception must be such that scientists are seen as capable of providing nothing other than biased and interest-bound statements from the outset.²⁵⁶

This was perilous at a time when public funds were scarcer than before, while the financial demands, especially of large-scale scientific research, continued to grow. Meanwhile, the European Community (EC) was preparing to pursue European policy objectives using new instruments of science funding that weren’t necessarily aligned with the specific interests of MPS scientists engaged in self-defined European research cooperations. For Lüst and the Administrative Headquarters, safeguarding the autonomy of the science system and, therein, the autonomy of the MPS within the national and now supranational framework of the EC, without giving up on new sources of funding, became more crucial than ever. Against this backdrop, it may have seemed even more advisable to, in turn, respect the autonomy of the political system and no longer present oneself as a political mentor to the nation, but rather to base one’s arguments on the inherent value of scientific knowledge acquisition and, particularly, basic research conducted within the MPS, beyond the confines of political and financial restrictions. This strategy of argumentation would not go unchallenged for long in the subsequent years.

256 *MPG-Jahrbuch 1982*, p. 21.

2.4 From the End of Détente to the Collapse of the Soviet Empire

In 1985, in the midst of the final act of the Cold War, Jürgen Habermas declared the era of “New Complexity.”²⁵⁷ Indeed, even more than three decades later, it remains challenging to concisely define the 1980s and early 1990s or to reduce them to a manageable set of characteristics. The beginning of this period can be distinctly marked by the late 1970s deployment of a new generation of nuclear medium-range missiles on both sides of the Iron Curtain, particularly within its intra-German segment—still governed by the logic of mutually assured destruction. The end is equally clearly demarcated by the collapse of the Soviet Empire in 1989/90. Notably, Ronald Reagan’s 1983 launch of the Strategic Defense Initiative (SDI) stands as a significant event. With this, he definitively broke away from the logic of military balance and sought to militarize space, which the internationally interconnected ‘extraterrestrials’ within the MPS considered their scientific free zone.²⁵⁸ Instead of driving the Soviet Union to complete bankruptcy with a similar program, Reagan’s newly-installed adversary, Mikhail Gorbachev, responded from the mid-1980s onwards with a surprising initiative for nuclear disarmament, expedited by the Chernobyl disaster and ultimately proving remarkably successful.²⁵⁹ However, which diverse geopolitical, economic, scientific-technical, social, and cultural developments, largely manifesting on a global scale, causally linked these three defining points, remains an open question for historiography.²⁶⁰ Similarly difficult to assess is the significance of the “new” transnationally operating social movements. These movements, with their varied and interconnected peace-oriented, feminist, and environmental goals, countered the renewed escalation of bloc confrontation and grew increasingly immune to the existing worn-out anti-communist projections.²⁶¹

257 Habermas, “Unübersichtlichkeit,” 1985. Regarding Habermas’ resignation, see Leendertz, *Pragmatische Wende*, 2010, pp. 44–49.

258 An initial analysis of the strategic change in direction was undertaken promptly by Heisenberg’s son Wolfgang, who worked at the SWP in Ebenhausen: Heisenberg, “Strategische Verteidigungsinitiative,” 1986. Fitzgerald, *Way Out There*, 2001.

259 Arndt, *Politik und Gesellschaft nach Tschernobyl*, 2016; Radkau, “Dreißig Jahre,” April 1, 2016, <https://zeitgeschichte-online.de/kommentar/dreissig-jahre-tschernobyl>. Last accessed on June 16, 2024.

260 In my opinion, Axel Schildt exaggerates the picture of a Federal Republic basking in comfortable stagnation and little influenced by global developments: Schildt, “Jahrzehnt,” 2012. Also, focusing only on West German perspectives are the articles in the issue of *Aus Politik und Zeitgeschichte* from Nov. 6, 2015, where further literature references can be found.

261 There is now, alongside the sociological literature, a growing historiographical body of work on the branching movements arising in the wake of 1968. In contrast to the classic labor movement of the 19th century and the simultaneous women’s movement perceived

The British historian Ian Kershaw, in his 2018 work on the history of Europe since 1950, ultimately attributes the end of the Cold War and the “momentous changes that were shaking the foundations of the eastern half of the continent” to the momentous appearance of Gorbachev.²⁶² On the Western side, he observes, much like Habermas, a multitude of concurrent, intersecting, and counteracting trends, all woven into the fabric of the postmodern spirit: these include deindustrialization and its repercussions on labor markets and social structures, computerization and the media saturation of mass culture, the “decline in a sense of society as a collective concern and responsibility,” privatization and individualization, tendencies towards greater gender equality, sexual liberation, the decline of social democracy, and the rise of environmentally oriented parties.²⁶³ The fact that most of these trends intensified rather than emerged anew in the 1980s, and that they extend well into the 21st century, does not make their historical interpretation any easier.

The geopolitical events and societal shifts of these years impacted the MPS both as a social entity of scientifically active and politically more or less engaged individuals, as well as its international relations and its positioning within the scientific framework, whether on a national, European, or international level. The fourth chapter of this study portrays how individual MPS scientists—and some of their still-few female colleagues²⁶⁴—became political figures within these transnational peace and environmental movements, and the resulting conflicts they encountered within the MPS. The focus of this chapter lies initially on the MPS as an institutional actor striving to position itself within the new societal complexity on one hand, and the dramatically shifting geopolitical landscape on the other. The renewed military arms build-up of the blocs starting in the late 1970s and the disarmament negotiations that began in the mid-1980s were connected to scientific research in a way that challenged the MPS’s self-perception as a haven for basic research that was to remain as apolitical as possible. Additionally, the MPS fretted over its operational basis which it had successfully negotiated in the specific post-war West German context and managed to defend even through the lean 1970s: sufficient state funding, that

as “old” from the feminist perspective of the 1970s and 1980s, they were understood and described as “new” by their actors as well as by contemporary media and social sciences. For the Federal Republic, see Reichardt, *Authentizität*, 2014; Ferree, *Varieties of Feminism*, 2012. For a German-French comparison of the women’s movement, see Schulz, *Frauenbewegung*, 2002. From a global historical perspective with a focus on anti-nuclear weapons movements, see Wittner, *Struggle Against the Bomb*, vol. 3, 2003.

262 Kershaw, *Roller-Coaster Europe*, 2018, p.337 Cf. Judt, *Postwar*, 2005, pp. 682–695.

263 Kershaw, *Roller-Coaster*, 2018, p. 341.

264 Between 1979 and 1992, only two women, the sociologist Renate Mayntz (MPI for the Study of Societies) and the biologist Christiane Nüsslein-Volhard (MPI for Developmental Biology), were appointed as scientific members; between 1948 and 1979, a total of six women were appointed as scientific members and two more as external scientific members—on average two women per decade. See Kolboske, *Chancengleichheit*, 2018, pp. 131–136.

was to be used in a largely self-determined way. This specific mode of funding was subject to ever-new criticism of science debates on one hand and, on the other, more acutely since the 1982 government change, foreign science policy priorities of the Federal Government.

The MPS in Relation to Politics and the Public

Established in the post-war era, the internationally exceptional autonomy of MPS scientists in selecting and exploring their research domains wasn't without its dissenting voices over the years. This became evident as early as the 1970s. In 1975, Chancellor Helmut Schmidt, during his inaugural address to the MPS's assembly, called attention to science's "obligation to deliver" (*Bringschuld*) scientific knowledge for politicians. He further clarified that scientists should present their questions and findings to the public in an understandable manner while highlighting their societal repercussions.²⁶⁵ The notion of science's "obligation to deliver" continued to resurface whenever the subject of science's relationship with politics and the public was addressed. In his keynote speech in 1982, MPS President Lüst confronted the again-present debt collector with the counterargument that politicians had the "obligation to seek out" and "seriously engage with scientists," rather than continually demanding so-called "scientific assessments" for everything and anything." This troubling practice had been established in recent years, serving as he understood it only to discredit both science and politics. Science, he emphasized, could at best assist in "clarifying facts, recognizing misdevelopments, and offering alternatives," but it couldn't provide "patent remedies."²⁶⁶ Chancellor Schmidt, who this time, against customary protocol, had secured the concluding remarks as the festival speaker, wasn't content to leave it at that.²⁶⁷ Instead, he once again reminded MPS scientists of their responsibility for the societal consequences of their research, which they couldn't simply pass on to politicians:

I would like to return to the concept of the 'obligation to deliver' and—under the perspective of this responsibility toward society—expand upon it: I would like to

265 Schmidt, "Forschungspolitik," 1975. The *Bringschuld* passage is not included in the printed excerpts but is often cited later, see e.g., Conversation between Hartmut Graß and Helmut Schmidt, June 1, 1995, p. 7, who mistakenly attribute this passage in their conversation to a speech Schmidt gave at the Deutscher Historikertag. Schmidt did not speak at the Deutscher Historikertag in 1975, but in 1978, without referring to the *Bringschuld*: Schmidt, "Auftrag und Verpflichtung," 1978.

266 Lüst, "Wechselwirkungen," 1982, pp. 57–58.

267 Already in 1975, as Federal Chancellor, he wanted to respond to the previous speakers and therefore speak last, but he could not enforce the change in protocol before the start of the event: Conversation Lüst (Nolte), 2008, p. 196. The report given by the MPS press spokesman Robert Gerwin, "Forschungspolitik," 1975, on the General Meeting documents the usual order of speakers, with the MPS president speaking last.



Fig. 7: Federal Chancellor Helmut Schmidt giving an address at the MPS General Meeting on May 14, 1982 in Bonn.

appeal to researchers and scientists not to shy away from the effort required to gain an organized overview.²⁶⁸

Given the limitations of science, which by no means could “solve all the problems of individuals and humanity,” Lüst, instead, advised for the “modesty” of the scientist “in the dialogue between science and politics”—with the exception of budget negotiations. Despite the repeated appeals from the then-Chancellor Schmidt to at least consider the “social commitment of research” in planning and prioritization, and to be “aware that others are generating what you have available in terms of resources,”²⁶⁹ Lüst rejected “utility aspects” in setting priorities “even in times of financial scarcity.” In “cutting-edge research,” only the question of “where significant breakthroughs” could be achieved should determine whether the funds flow into microelectronics, pure mathematics, or his particularly resource-intensive specialty, space research. Here, Lüst, like every MPS president before him, upheld the autonomy of science. In political dialogue, however, the scientist should “restrain himself in the awareness of his limitations:”

²⁶⁸ Schmidt, “Moral,” 1982, p. 60.

²⁶⁹ Schmidt, “Forschungspolitik,” 1975, p. 9. Similarly, in 1982: Schmidt, “Moral,” 1982.

Then we can confidently give the same answer to the question of why we do research as you, Mr. Chancellor, do when sailing, namely: ‘because it brings me joy.’ Yes, it still brings joy to conduct research within the Max Planck Society.²⁷⁰

Even the Chancellor didn’t let Lüst get away with this witty Hanseatic joke. He countered what he found to be his previous speaker’s “disarming honesty” with an explanation of the subtle social distinctions in the relationship between “hobby and profession.” His hobby, sailing, indeed brought him enjoyment, but in his profession, that wasn’t always the case. Moreover, it couldn’t be expected that “a female factory worker or an assembly line worker in an automobile factory or a steelworker” could turn their profession into a hobby. It was precisely this privilege of scientists, for whom in most cases, hobby and profession converged, that obligated them to take responsibility for the “potential consequences of their actions:”

How are we laypeople supposed to gain this overview if you, the privileged in this field, the researchers and scientists, do not possess a comprehensive view? Worse yet, if you, the scientists and researchers, don’t even want this overview because your actions and thinking are concentrated on specialization and excellence in your own field? If you refuse to offer or convey the comprehensive view to others?²⁷¹

The contentious friendship that had united Lüst and Schmidt, ever since the latter had mocked the overly splendid chain of office donned by the MPS President during his inaugural visit as Chancellor to the MPS in 1975, could withstand such confrontations, especially as Lüst had partially settled his personal obligation to deliver with the open letter in support of nuclear energy expansion in the same year.²⁷² Schmidt, the former artillery commander from World War II, found a congenial conversation partner in the former naval lieutenant Lüst. Together, they could discuss how “the process of scientific progress can be made comprehensible and bearable for the people of our time” and how to address “scientific skepticism” and “fears of the future,” which found political expression in movements like the “Republic of Free Wendland” and the revived Easter marches against military and by now also civilian use of nuclear power.²⁷³ Already during the Chancellor’s trip to the USA in 1976, Schmidt had been

270 *MPG-Jahrbuch* 1982, p. 22.

271 Schmidt, “Moral,” 1982, p. 61.

272 Regarding the personal friendship of the couples Helmut and Loki Schmidt as well as Lüst and Nina Grunenberg, see Lehberger, *Die Schmidts*, 2018, pp. 229–230. The photo is from the MPS ceremonial gathering in 1982; however, Lüst recalled this or a similar scene in connection with the 1975 ceremony, see Conversation Lüst (Nolte), Aug. 12, 2008, p. 196.

273 Lüst, “Wechselwirkungen,” 1982, pp. 57–58. Already in his speech to the General Meeting of the MPS in 1975, Schmidt had urged “science” to take the “popular resistance to the actually inevitable expansion of nuclear energy” seriously and to make “their work comprehensible and, as far as possible, understandable.”



Fig. 8: Helmut Schmidt and Reimar Lüst at the MPS General Meeting on May 14, 1982 in Bonn.

extensively briefed about the MPS by his travel companion Lüst and expressed his willingness to contribute more deeply once he had stepped down from his current position.

A few months after the open and candid speech ceremony, the time had come. In the fall of 1982, Schmidt resigned after a vote of no confidence by the *Bundestag*. Later that same evening, Lüst wanted to express his condolences to the Chancellor's wife, whom he felt "connected to" due to her background as a biologist.²⁷⁴ However, at that time, Loki Schmidt was on a botanical expedition in Brazil, so he found the husband himself on the line, who reminded him of their conversation on the plane over the Atlantic. Lüst understood the hint and promptly asked for his approval to propose him as a senator to the MPS. To maintain party balance, Lüst also consulted the then Mayor of Berlin, Richard von Weizsäcker (CDU), and both were elected to the Senate "on one ticket" in 1983.²⁷⁵ From then on, Schmidt primarily injected life, if not politicization, into the discussions. In return, Schmidt invited Lüst, who became an honorary member of the Senate after his tenure as MPS President in 1984, to his "Friday Society" which he established in 1985. They would gather mostly in Schmidt's

274 Conversation Lüst (Nolte), Aug. 12, 2008, p. 197.

275 *Ibid.*, pp. 195–198. Between 1975 and 1979, Loki Schmidt had undertaken several expeditions with Wolfgang Wickler, Konrad Lorenz's successor at the MPI for Behavioral Physiology, and his research team: Wickler, *Reisen*, 2014.



Fig. 9: Reimar Lüst with his wife and colleague Rhea Lüst (right) and Loki Schmidt at the MPS General Meeting on May 14, 1982 in Bonn.

private house in Hamburg during the winter months, to discuss lectures by their members and occasionally invited guests on a broad range of political, cultural, and scientific topics. After his years as head of the ESA, Lüst also regularly presented there.²⁷⁶

If Schmidt, who was in agreement with Lüst in his disdain for the “excessively inflated phenomenon of so-called expertise and the constant creation of new so-called expert advisory boards,”²⁷⁷ had hoped that in the MPS Senate he would be informed and enlightened about societal contexts, risks, and opportunities of the latest research directions in a knowledgeable and responsible manner and be able to engage in discussions about their selection, he was often disappointed. There were primarily four science-policy topics that occupied him, as well as other politicians in the Senate—such as the SPD’s Federal Managing Director Peter Glotz or the State Secretary in the BMFT Hans-Hilger Haunschild, whose responsibility included the budget negotiations between the Federal Government and the MPS—in the mid-1980s: 1. the costly fusion research as conducted in the European collaboration at the MPI for Plasma Physics (IPP) in Garching; 2. the no less costly space projects of extraterrestrial physical research conducted at

276 Schmidt, *Erkundungen*, 1999; Schmidt, *Vertiefungen*, 2010.

277 Schmidt, “Moral,” 1982, p. 61.

several MPIs; 3. the, by contrast, neglected ecological research; and 4. the public animal protection debate, which was unanimously perceived in the Senate as a threat to science and whose “emotional pressure,” according to Senator and co-publisher of the *Frankfurter Allgemeine Zeitung*, Joachim Fest, could hardly be alleviated through “objective clarification” but at most with “self-criticism.”²⁷⁸ Regarding the animal protection debate, the best that could be hoped for—as envisioned by the new MPS President, chemist, and director at the MPI for Medical Research, Heinz Staab—was to glean insights for the nascent societal discussion about genetic technology. Potentially, proactive press efforts could perhaps preempt a repeated surge of emotions.²⁷⁹

The potential dangers lay precisely in the blend of these four, soon to be five, topics. For they brought once again the crucial parameters of publicly funded research within the MPS to the forefront of discussion: How could research budgets be safeguarded in the face of scarce public funds? How could political interference and public influence in research planning be averted? How could ethically and morally motivated yet “science-contravening regulations” be prevented, which Staab warned would “harm everyone [...] and question the stability of the Federal Republic of Germany, whose foundations encompass the development of science, technology, and the economy?”²⁸⁰ Staab may have been reaching too far with the invocation of a national apocalypse, as neither animal rights activists, environmental activists, nor critics of genetic technology would have been capable in 1985 of shaking the science system or destabilizing the Federal Republic, which, since the autumn of 1982, had settled into stagnation under the Christian-Liberal Federal Government led by Helmut Kohl.²⁸¹ On the other hand, Staab’s scope was not broad enough.²⁸² For none of these contentious issues could be confined and resolved within the borders of West Germany; rather, they concerned transnational social movements with global aims and inter- or multinational organized research programs.

278 Protocol of the 110th Senate meeting on March 8, 1985, AMPG, II. Abt., Rep. 60, No. 110. SP, fol. 236. (Paraphrase of the speeches given by Fest and Hans-Joachim Maier from the Central Committee of German Catholics). A concise historical overview of the new animal protection movement is provided by Roscher, “Tierschutz- und Tierrechtsbewegung,” 2012. For the debate within the MPS see: Scholz, “Tierversuche,” 2024.

279 Protocol of the 110th Senate meeting on March 8, 1985, AMPG, II. Abt., Rep. 60, No. 110. SP, fol. 229: Staab announced here a Ringberg Symposium specifically for the press on issues of biotechnology for May 1985: Max-Planck-Gesellschaft, *Gentechnologie*, 1985.

280 Protocol of the 110th Senate meeting on March 8, 1985, AMPG, II. Abt., Rep. 60, No. 110. SP, fol. 229.

281 In this respect, I would follow Schildt, “Das Letzte Jahrzehnt,” 2012.

282 Perhaps this is no coincidence given Staab’s career, which primarily took place in Heidelberg and was not associated with longer studies or research stays abroad, see Husung, Heinz A. Staab, <https://www.mpg.de/8235381/heinz-staab>. Last accessed on June 15, 2024. However, he was actively involved in the Minerva program and in scientific exchange with Israel, see Staab and Sela, *Heinz A. Staab und Michael Sela*, 1995.

Imagine a War Without the MPS Involved

At least two of these programs, fusion research and space projects, were also directly linked to positioning MPS research in that—at the time not yet recognizable as final—stage of the Cold War, which would remain a dystopia known as “Star Wars” for the time being, but which would nonetheless influence inter- and supranational research policies. Two years after the launch of the SDI program in March 1983, which, as anticipated by critics, yielded no quick results and for which the American Congress, contrary to plans, had already begun to reduce funding, the U.S. government pondered how to involve its European allies in SDI research, primarily with respect to sharing the costs.²⁸³ Chancellor Kohl was certainly inclined, for the sake of German-American friendship as well as for the benefit of West German companies, to establish a cooperation agreement. The Foreign Office—still under the leadership of Hans-Dietrich Genscher—analyzed the conditions in preparation for an expert trip by ministry officials and business representatives for discussions at the Pentagon since the spring of 1985, but remained skeptical.²⁸⁴ Above all, they feared the destabilization of the balance of power and thus the endangerment of German security in the heart of Europe. For Germany would not be protected at any time by an operational defense shield in space, but would remain the primary target and operational area for all nuclear short- and medium-range weapons and even more so for conventional arsenals on both sides of the Iron Curtain—especially if the Americans relocated those SDI research efforts to the Federal Republic and Western Europe, which could no longer be reconciled with the Anti-Ballistic Missiles Treaty (ABM Treaty).²⁸⁵ Given the stringent secrecy regulations for militarily relevant research and other

283 On the American SDI debate, see the early analysis by Kubbig, *SDI-Debatte*, 1988; Fitzgerald, *Way Out There*, 2001; Freedman and Michaels, *The Evolution*, 2019, pp. 517–525. On German space policy: Reinke, *Geschichte der deutschen Raumfahrtspolitik*, 2004.

284 The differences between the Federal Chancellery and the Foreign Office or between Kohl and Genscher were even considered by *Der Spiegel* as a “stress test” for the Christian-liberal coalition; “SDI,” *Der Spiegel*, Sep. 29, 1985. See also the article by the disarmament spokesman of the CDU parliamentary group Todenhöfer, “Westen und die Abrüstung,” 1985; as well as the critical text analysis by Hofstetter from Aug. 1, 1985, PA AA B 43-ZA/130084. Throughout the entire summer, a list of questions was developed that the Teltschik Team, named after Kohl’s advisor and which dealt with SDI in the Federal Chancellery, was to work through during their trip to the USA in the autumn of 1985. On Aug. 15–16, 1985, they held a preparatory SDI workshop in Euskirchen with industry representatives who were to travel to the USA, see the reports on the Euskirchen preparatory discussion by von Stülpnagel from Aug. 16, 1985, and other documents in PA AA B43-ZA/163068. Regarding the Teltschik Team see also Reinke, *Geschichte der deutschen Raumfahrtspolitik*, 2004, pp. 275–278.

285 A careful analysis of the strategic and political significance of SDI for the USA and its consequences for Europe from a contemporary perspective is provided by Wolfgang Heisenberg, “Strategische Verteidigungsinitiative,” 1986.

protectionist unilateral moves by the powerful American partner in economic competition, the Foreign Office furthermore assessed the transfer of knowledge from the USA to the Federal Republic, the potential scientific-technical spin-off, and the chances of success for West German companies to be rather limited. While the latter indeed wished for support from the Federal Government in safeguarding their competitive opportunities in the American market in an economically liberal manner, they desired a free hand in taking on American contracts without diplomatic conditions and foreign policy considerations.²⁸⁶

Apart from the German Aerospace Center (DFVLR, Deutsche Forschungs- und Versuchsanstalt für Luft- und Raumfahrt) and a few institutes of the Fraunhofer Society, the Foreign Office had not involved any further science organizations in its preparations.²⁸⁷ Nevertheless, the Social Democratic opposition member of the *Bundestag*, Glotz, had reason in June 1985 to inquire in the Senate about the possible involvement of the MPS in future SDI research programs and in what manner the MPS President had advised the Chief of the Federal Chancellery, Wolfgang Schäuble (CDU).²⁸⁸ Staab rejected any SDI cooperation intentions; he and his colleagues Klaus Pinkau, who had been heading the MPI for Plasma Physics (IPP) since 1981, and Karl-Ludwig Kompa from the MPI for Quantum Optics had only participated in discussions at the Federal Chancellery for their own information, and were neither asked for advice nor for MPS involvement. Rather, he referred to his statement from the day before in the press conference on the occasion of the annual MPS General Meeting:

For us, a significant element of our Max Planck Society is the free scientific information [...] [and] the independence and autonomy of our scientific problem-definition [...], any form of research restricted by secrecy clauses is not acceptable.²⁸⁹

286 Statement of the Federal Government on the Strategic Defense Initiative (SDI) of the U.S. President from March 27, 1985; draft and further versions of a status report on SDI from May 14, 1985, July 9, 1985, and Aug. 19, 1985; preparatory documents for the expert talks in the USA ("Anmerkungen zur derzeitigen Situation"; "Hintergrund und Ziel der Gespräche"), PA AA B43-ZA/163068. Internationally awarded SDI contracts are listed in Reiss, *Strategic Defense Initiative*, 1992, p. 135.

287 Appendix 2: List of participants, n.d. (approx. spring 1985), PA AA B43-ZA/163068.

288 Protocol of the 111th session of the Senate from June 13, 1985, AMPG, II. Abt., Rep. 60, No. 111.SP, fol. 96; Memo Haunschild June 18, 1985, BAArch B 196/156212. On the history of the IPP see Boenke, "Institut für Plasmaphysik," 1990; Boenke, *Entstehung und Entwicklung*, 1991.

289 Protocol of the 111th session of the Senate from June 13, 1985, AMPG, II. Abt., Rep. 60, No. 111.SP, fol. 250. According to Lüst (Interview Lüst [Renn and Kant] May 18, 2010, pp. 14–15, 19–20), Heisenberg and Biermann had already insisted in 1957/58 to the Foreign Intelligence Service of Germany (BND) that they present their first research findings on fusion research at conferences in Venice and Geneva—to the astonishment of the arriving American and Soviet colleagues who were subject to their countries' secrecy regulations and could not report on their progress. In 1976, after interventions by the American government and the Federal government, laser research, which was considered

Far more concerned were Staab as MPS President and Lüst as ESA Director about the fact that “the protectionist stance [of the USA, CS] in relation to economy and defense” would now also cause “difficulties in terms of scientific exchange,” and that scientists with security clearance might be prevented from leaving the USA.²⁹⁰ As they reported, they had already approached the President of the National Academy of Sciences (NAS), Frank Press, and several American university presidents, who did indeed temper their concerns but did not completely dispel them. Queisser from the MPI for Solid State Research even expected—unnecessarily in hindsight—problems with upcoming recalls of German colleagues, whose funding in the USA was “so extensive and so active” that “we might possibly suffer from it.”²⁹¹

While Glotz certainly supported the categorical rejection of MPS involvement in SDI and would have preferred to keep the Federal Republic entirely out of it, Schmidt continued to advocate, in the logic of the arms race—and thus on a sideline position in his party that was seeking a new orientation since the missile crisis—for pushing the boundaries of the ABM Treaty, which did not entirely exclude research and development for missile defense.²⁹² However, both were disappointed in their desire to be better informed about the scientific-technical realities behind the SDI visions and to receive a scientific assessment of the US government’s plans. This is because Staab, who by no means wanted to see the MPS drawn into debates about the ABM Treaty, rejected any scientific advice on SDI issues to the government and opposition on the part of the MPS:

We, as a science organization, cannot do this based on what is accessible to us, and we are not competent political advisors in this area.²⁹³

While he personally had “doubts about the feasibility of SDI,” he would not “express an opinion on it as President of the MPS.”²⁹⁴ Glotz, while understanding

to be too “close to weaponry” in connection with plasma research, was separated from the IPP to avoid any secrecy requirements from the outset. The Laser Research Group then became the MPI for Quantum Optics in 1981. For a historiographical assessment of secrecy regimes in university and non-university research or science production under market conditions, see Dennis, *Secrecy*, 2006. See also Oreskes and Krige, *Science and Technology*, 2014; Krige, *Sharing Knowledge*, 2016.

290 Protocol of the 111th session of the Senate from June 13, 1985, AMPG, II. Abt., Rep. 60, No. 111.SP, fol. 250.

291 Ibid., fol. 252. In fact, these concerns did not materialize in the mentioned appointments of Volker Dose to the MPI for Plasma Physics and Reinhard Genzel to the MPI for Physics and Astrophysics.

292 Ibid., pp. 252–253. On the crisis of the SPD in the aftermath of the rearmament dispute, see Hansen, *Abschied*, 2016, pp. 153–238; Kubbig, *Communicators in the Cold War*, 1996; Freedman and Michaels, *The Evolution*, 2019, pp. 429–439.

293 Protocol of the 111th Senate Meeting on June 13, 1985, AMPG, II. Abt., Rep. 60, No. 111. SP, fol. 253.

294 Ibid., fol. 254.

the MPS's restraint, nevertheless commented critically, noting that "American scientists often articulate their opinions more clearly than the Germans."²⁹⁵

However, there were indeed knowledgeable colleagues in the MPS: Afheldt in Starnberg was primarily focused on alternative defense strategies against conventional military attacks on the intra-European front. However, he also followed the international SDI debate; yet the international law expert and defense strategist was not considered a basic researcher, nor was he a scientific member of the MPS, and therefore not on equal footing with the senators. On the other hand, Gottstein, as an MPS member, a trained nuclear physicist, and knowledgeable about the USA, would have been more suited protocol-wise and professionally in the Senate. But, despite his research center having worked not only on arms control for years but also on "political, strategic, operational, economic, and psychological aspects of the SDI project," he was deemed hardly competent.²⁹⁶ Lastly, two years earlier, at that time regarding the NATO-Double Track decision, he had, in response to the Administrative Headquarters' request, found himself unable to publicly report on it in the *MPG-Spiegel*.²⁹⁷

Another MPS member, however, would have been both competent and willing to inform the Senators: Hans-Peter Dürr had long made public statements in which he conceded that there were "no prerequisites from a scientific standpoint that suggest a possible realization" of the SDI program.²⁹⁸ But it was specifically Dürr for whom they did not want to provide a forum in the Senate. Rather, the former and current Presidents once again denied the competence of this colleague whom they saw as overly committed:

Mr. Lüst found it unhelpful that scientists from Max Planck Institutes—claiming expertise—publicly expressed opinions on these questions. According to the President's opinion as well, this should be countered. The issue of such public statements had been

295 Ibid., fol. 97.

296 Gottstein Research Center in the MPS, "Jahresbericht 1986/87", pp. 29–68 (Quote: 29), AMPG, IX. Abt., Rep. 5, No. 377.

297 Marsch to Lempert (MPI Bildungsforschung) on Sep. 14, 1983, AMPG, II. Abt., Rep. 1, No. 625, fol. 49–50. However, Gottstein did publish an article on this topic a few months later in *Bild der Wissenschaft*, which culminated in the appeal to replace the threat of mutual destruction with a yet-to-be-invented "new method of international political confrontation" that would be "less risky," Gottstein, "Nachrüstung," 1984.

298 Article "Nur Traumtänzeri." Interview with elementary particle physicist Prof. Dr. Dürr about "SDI," in: *Tageszeitung* on April 19, 1985; similarly in *Frankfurter Neue Presse* on April 25, 1985, *Deutsche Volkszeitung* on April 26, 1985, *Deutsches Allgemeines Sonntagsblatt* on June 2, 1985, *Süddeutsche Zeitung* on June 15, 1985, *Allgemeine Zeitung Mainz* on June 21, 1985, etc., see GVMPG, press clipping collection, KWG/MPS DÜRR Hans Peter, Personal matters until 1991. He presented his considerations in more detail in a lecture as part of the public lecture series "Wissenschaft und Friedenssicherung" at the Ludwig Maximilian University Munich in the summer semester 1985: Dürr, *Star-Wars-Konzept SDI*, 1985.

discussed several times in the Senate: he—Staab—had also spoken about it with the involved party [referring to Dürr, CS].²⁹⁹

Of course, Dürr was not to be silenced on foreign and defense policy matters by his President, nor did MPS Senator Glotz, in his role as SPD Federal Managing Director, refrain from using the opinionated MPS scientist who had by now become a media star, when it came to opposing the government's SDI policy in the coming months and formulating an independent disarmament policy. On the contrary, he promptly invited Dürr as the sole physicist to a workshop discussion on SDI at the Erich Ollenhauer House in Bonn, where SPD members of the European Parliament, together with their European faction colleagues including a few women, wanted to find a common line on SDI and the impending civil European accompanying program EUREKA.³⁰⁰ Dürr's invitation to the expert hearing of the Foreign Affairs and Defense Committees of the *Bundestag* followed shortly thereafter.³⁰¹

While MPS member Dürr was unstoppable in his public agitation against SDI (→ 4.3), the attempt by IPP employee and high-frequency physicist Eckehart Speth to address SDI again, this time in the relevant Chemistry, Physics and Technology Section (CPTS) of the MPS, was stopped in its tracks. At the end of 1985, Speth had requested the convening of a section committee that should "acquire the necessary expertise and competence" on the "SDI issue" and, if necessary, prepare a statement to be forwarded to the Federal Government through the MPS President. He justified his request on the one hand with the fear that the funds that the Federal Government might direct into SDI research would then be "lost elsewhere." On the other hand, the public rightfully expected "their most outstanding scientists to address the complex technical and physical questions, acquire the necessary competence, and provide a clear statement from a technical-physical perspective."³⁰² He saw himself as a scientist, the CPTS as a center of competence, and the MPS as an institution in that obligation that

299 Protocol of the 111th Senate Meeting on June 13, 1985, AMPG, II. Abt., Rep. 60, No. 111. SP, fol. 96–97.

300 Glotz to Dürr on July 9, 1985, AMPG, III. Abt., ZA 116, K 7; the "Europäisches Werkstattgespräch der SPD zur Weltraumrüstung" took place on Sep. 30/Oct. 1, 1985. Internal report from Oct. 3, 1985 on the event, PA AA B 43-ZA/130084. The author, VLR Daerr, came to the conclusion that "all the panel participants (experts, questioners, moderators) were opponents of SDI without exception, and they often did not justify this position rationally but addressed emotions in a rather one-sidedly composed audience (scientists, media representatives, peace movement) with missionary zeal."

301 Stercken (Chairman of the Foreign Affairs Committee) to Dürr on Nov. 8, 1985, Dürr to Stercken on Nov. 27, 1985, AMPG, III. Abt., ZA 116, K 7. The joint hearing of the two *Bundestag* committees took place on Dec. 9/10, 1985: Stenographic protocol of the meetings of the Foreign Affairs Committee (57th and 58th meeting) and the Defense Committee (80th and 81st meeting) on Dec. 9 and 10, 1985 (uncorrected and unauthorized version in AMPG, III. Abt., ZA 116, K 7).

302 Protocol of the CPTS on Jan. 29, 1986, AMPG, II. Abt. Rep. 62, No. 1807, fol. 25.

Helmut Schmidt, as Chancellor, had urged.³⁰³ IPP Director Pinkau dutifully forwarded the request, but with concerned annotations, to Fritz Peter Schäfer, the CPTS chairman from the MPI for Biophysical Chemistry. He considered the financial justification to be “downright dangerous;” the MPS should not position itself as the “judge of state projects” in its own interest. Regarding scientific competence, the CPTS would need both technical and political expertise from external sources. The latter could perhaps be obtained by involving “a senior official from the Foreign Office and the Ministry of Defense.”³⁰⁴

A direct and official interaction between government and science on such a sensitive topic was the last thing that, in the view of the MPS leadership, should be allowed to happen within the hallowed halls of basic research. And so, called upon by Schäfer, Staab hastened to emphasize his position at the meeting of the CPTS in January 1986.³⁰⁵ In light of around 1,400 foreign guest researchers and scholarship holders annually, “research restricted by security clauses” or even the division into workgroups with specific communication and publication bans would be unacceptable, and thus participation in SDI research programs was ruled out.³⁰⁶ Thanks to this compelling argument, Staab had been able to spare himself, in discussions with politicians so far, “from addressing the foreign and defense policy component of the project.” He dismissed the concern that future federal SDI research funds could be lost to “general research funding” and thus to the MPS, given the corresponding assurances from the Federal Government, as “of little relevance.” The “obligation of science to deliver” might indeed exist, but it was by no means to be fulfilled by the MPS, but “rather to be counted among the tasks of a National Academy of Sciences”—but too bad that there was no such institution in the Federal Republic.³⁰⁷

Not all section members wanted to escape the matter so easily and still felt “obliged to provide information and enlightenment to the general public,” but also to individual and institutional self-enlightenment.³⁰⁸ In the end, however, choosing to remain conveniently uninformed would prevail:

Critics of an official MPS statement on SDI, on the other hand, pointed particularly to the complexity of the issue and raised concerns that a sufficiently widespread range of expertise from the section could be brought into this commission. Furthermore, it

303 This was Speth’s oral explanation of his motion during the CPTS meeting, Protocol of the CPTS on Jan. 29, 1986, AMPG, II. Abt. Rep. 62, No. 1807, fol. 6 verso.

304 Pinkau to Schäfer on Dec. 18, 1985, Protocol of the CPTS on Jan. 29, 1986, AMPG, II. Abt. Rep. 62, No. 1807, fol. 29–30.

305 Schäfer to Staab on Jan. 3, 1986, AMPG, II. Abt., Rep. 1, No. 625, fol. 2. See also Staab, *Grundlagenforschung*, 1985, p. 22.

306 Protocol of the CPTS from Jan. 29, 1986, AMPG, II. Abt. Rep. 62, No. 1807, fol. 7 recto; protocol of the 111th Senate meeting from June 13, 1985, AMPG, II. Abt., Rep. 60, No. 111. SP, fol. 96.

307 Protocol of the CPTS from Jan. 29, 1986, AMPG, II. Abt. Rep. 62, No. 1807, fol. 7 recto.

308 Ibid.

was doubted whether the members of a section commission would even have access to all necessary information.³⁰⁹

With six votes and no opposing votes, but with an equal number (6) of abstentions, the CPTS decided not to continue discussing SDI and to reject Speth's proposal. With the withdrawal of the basic researchers into a self-imposed "ignorance" of foreign and defense policy, they may have—however half-heartedly—shaken off the societal obligation that would have at least demanded from the MPS scientists a systematic and organized understanding or perspective on the subject. Thanks to the asserted refusal to participate in secret research they could nevertheless wash their hands in innocence.³¹⁰

"Star Wars"—Collateral Effects on Research

Research funding remained a sensitive issue; Staab knew this very well—despite his apparent trust in the assurances of the Federal Government. The battle against the increasing project funding from state donors at the expense of freely usable base funding, and thus the autonomous research planning of the MPS, was to become the hallmark of his presidency. And here 'Star Wars' caught up with the MPS again. If there were two research areas in the MPS that, due to the exorbitant costs, should have been handled not only with European partners but ideally in an international consortium with the two superpowers, they were fusion research and physical-extraterrestrial research projects. However, one could not calculate without the hostile hosts, the USA, and the Soviet Union.

U.S. President Reagan was not content with the visionary SDI program of 1983; rather, he pushed a technically more manageable NASA program, timed for the 500th anniversary of the Columbian discovery of America: from 1992, a permanently manned space station named "Freedom" was to circuit the Earth. In fact, the first component did not reach its orbit until 1998; since then, the International Space Station (ISS), as it has been less programmatically referred to since 1994, circuits us as a major orbital construction site. However, it took the turning point of 1989/90 for the project—relaunched in 1993 by U.S. President Clinton-led project, now including Russia and under a new name—to progress internationally. In 1984, the Soviets, who had almost continuously had a station in space since 1971 with their Saljut program, declined Reagan's invitation to jointly promote his civilian 'Freedom' project, as a protest against his military SDI plans.

309 Ibid., pp. 7 verso.

310 The records of the governing bodies of the MPS, viewed for this study, indeed provide no evidence of SDI research contracts for individual MPIs or MPS research groups, or participation in SDI research projects. This preliminary finding would need to be verified by a more detailed analysis of the relevant institute files. Schmaltz, "Militärische Forschung," 2024.

In the mid-1980s, Chancellor Kohl was willing to support the American friends and invest more in manned space flight in conjunction with ESA. He wanted to use the funds that would be freed up in the coming years for reactor development—mainly Fast Breeder and High-Temperature Reactors. Scientists from other disciplines, including the humanities, social sciences, and life sciences, hoped in vain that the saved money would finally be allocated to them. Instead, the Federal Government provided a total of four and a half billion Deutsche Marks in 1985 for the next ten years for both the construction of a European Columbus module for the American space station and the development of more powerful European Ariane rockets. Not only did the Federal Cabinet hesitate to approve Kohl's costly plans, but space scientists, including the Director at the MPI for Extraterrestrial Physics and the acting Chairman of the German Physical Society (DPG, Deutsche Physikalische Gesellschaft), Joachim Trümper, also expressed doubts about the meaningfulness of manned space travel, as it would unnecessarily increase the cost of space experiments due to higher safety precautions for humans on board.³¹¹ Finally, even the presidents of the West German research organizations warned against diverting funds into manned space travel that were urgently needed for basic research.³¹² The criticism did not subside even after Federal Research Minister Heinz Riesenhuber, referring to the eminent political importance of this space program, had ensured that at least half of the costs would be additionally charged to the BMFT budget.³¹³ The ad-hoc committee "Space Research and Space Technology," appointed by the BMFT and headed by IPP Chief Pinkau, also recommended, rather than sending humans into space, to instead "investigate to what extent automatons and robots in space could open new paths."³¹⁴

As an MPS member and experimental astronomical physicist, Lüst would have certainly agreed with his colleague, but as ESA chief, he was now on the other side and had to defend manned space flight precisely because of its power and media-political symbolism in foreign and domestic policy.³¹⁵ The conflict led to an "outburst from Lüst against Gerwin" at the Senate meeting in June

311 In 1987, the DPG adopted a critical "Memorandum zur Materialforschung mit bemannter Raumfahrt," (Memorandum on Material Research with Manned Spaceflight): Interview Trümper (Trischler) March 18, 2010, 10. Similarly, interview Pinkau (Trischler) March 9, 2010, p. 10.

312 Robert Gerwin reports on a "Letter from the Presidents to the Chancellor and the responsible Ministers:" Gerwin, *Fuß im All*, 1985; Hoaf, "Orbitale Kosten," *Die Zeit*, Jan. 25, 1985; "Schmerzgrenze," *Der Spiegel*, March 23, 1986; Ruttley, Robinson, and Gerstenmaier, "The International Space Station," 2017; Radkau and Hahn, *Aufstieg und Fall*, 2013; Oetzel, *Zukunft*, 1999.

313 Protocol of the 110th Senate meeting on March 8, 1985, AMPG, II. Abt., Rep. 60, No. 110. SP, fol. 232–234: Haunschild tried with this reference to calm the critics in the Senate. See also Hoaf, "Orbitale Kosten," *Die Zeit*, Jan. 25, 1985.

314 Gerwin, "Fuß im All," 1985.

315 Conversation Lüst (Nolte), 2008, pp. 203–204.

1985, as State Secretary Haunschild noted in surprise.³¹⁶ The MPS spokesman Robert Gerwin had critically commented on this funding policy decision of the Federal Government under the headline “The Foot in Space—A Horse’s Foot” in the MPS’s most important publication, the *MPG-Spiegel*. This would not only lead to the “total stagnation in all other areas [of research, CS],” but also put “the reputation of science” at risk:

It is the “style” in which the discussion about the space station is taking place, confirming those citizens who see science as a genuine element of coping with the future but who also fear the supposed or actual attitude of science to do everything that is feasible, to see the environment only as a “thing” and to deal with it accordingly.³¹⁷

When the President’s speech before the Scientific Council was briefly summarized in the following edition of the *MPG-Spiegel*, and the costs of the space program he denounced were mentioned in the same paragraph with the negative effects of the current animal protection debate on “the freedom and efficiency of research,”³¹⁸ Lüst saw red: “This connection is strong stuff.”³¹⁹ Although the MPS president, whose cautiously critical stance on Bonn’s decisions Gerwin had paraphrased discreetly in the following edition of the *MPG-Spiegel*, had to insist that the financing of space travel did not come at the expense of basic research.³²⁰ But the press spokesman must not attribute to him statements “according to which the feared restriction of basic research by financially expensive space projects would have a similarly negative effect as the hindrance of research by restrictive animal protection legislation.”³²¹ Lüst’s nerves were obviously raw in the face of increasing criticism of science and tight federal coffers: he wanted to protect “the scientists [...] who actively participated in the space station” from similarly “emotional” public aversions as against the—in fact steadily increasing—animal experiments.³²²

Pinkau, who, as chairman of the IPP’s directorate, was responsible for fusion research in the MPS, was also aware of how important the public image of his costly research direction and political support for his institute were, which, unlike other Max Planck Institutes, was funded ninety percent by the Federal

316 Note by Haunschild from June 18, 1985 about the MPS Senate meeting on June 13, 1986, BArch B 196/156212.

317 Gerwin, “Fuß im All,” 1985.

318 Note HOMEER (= Horst Meermann), “Wissenschaftlicher Rat. Hans F. Zacher neuer Vorsitzender,” (Scientific Council. Hans F. Zacher new chairman), *MPG-Spiegel* 2 (1985), p. 10.

319 Protocol of the 111th Senate meeting on June 13, 1985, AMPG, II. Abt., Rep. 60, No. 111. SP, pp. 249.

320 Gerwin, “Aus dem Senat,” 1985, p. 8.

321 Protocol of the 111th Senate meeting on June 13, 1985, AMPG, II. Abt., Rep. 60, No. 111. SP, fol. 95.

322 Ibid., fol. 249.



Fig. 10: Visit of Federal President Karl Carstens to the IPP in November 1983; from left to right: Klaus Pinkau, Reimar Lüst, Karl Carstens and Veronica Carstens

Government. He did not hesitate when Senator Glotz wanted to be informed in the summer of 1985 about “the future tasks” that the IPP would undertake “in the context of European fusion research” and what they would cost.³²³

Fusion Research and the Beginning of the End of the Cold War

The next Senate meeting, where Pinkau was scheduled to report on the state of fusion research, was set for November 22, 1985. It was unforeseeable that just two days prior, Reagan and Gorbachev would meet in Geneva—the first summit between the superpowers since the definitive end of the *détente* phase in 1979. In Geneva, no concrete disarmament steps were agreed upon; for that to happen, Reagan would have had to give up the SDI program first and foremost. However, both parties agreed to resume dialogue and at least had a prearranged administrative-level exchange agreement in the areas of science, education, and culture. This was more than the thousands of journalists waiting in Geneva had dared to hope for. Due to the news blackout imposed by both

323 Ibid., pp. 91. Regarding the founding and financing of the IPP see Balcar, *Wandel*, 2020, pp. 112–120.

main protagonists, they had to make do with scant reports until the end of the final late-night discussion round on November 20. Yet, contrary to expectations, they were still able to receive a joint declaration from the two presidents.³²⁴ It was this declaration that Pinkau distributed at the Senate table on November 22, before he opened his lecture with the headline news that Gorbachev and Reagan intended to give their “special attention” to international cooperation in the field of nuclear fusion in the future.³²⁵

Pinkau was likely less surprised than the press in Geneva or the MPS senators in Munich. For one, fusion research had been favored since the 1970s by both the Soviet side and the International Agency for Atomic Energy (IAEA) as a prime candidate for cross-bloc cooperation in nuclear research.³²⁶ Secondly, just two months earlier in Moscow, Pinkau had discussed the plan for a fusion reactor with the Vice-President of the Academy of Sciences, Evgeny Velikhov, who would soon join Gorbachev’s Geneva delegation. This International Tokamak Reactor (INTOR) was something the Soviet Union wanted to participate in, in order, as Pinkau suspected, to “assure themselves of the European lead,” especially since “they are not as advanced in experimental fusion research as we are.”³²⁷

If INTOR doesn’t happen, the Russians have said, we will build the reactor ourselves based on the findings obtained in Garching and at JET [Joint European Torus].³²⁸

In response to Senator Schmidt’s question on why Gorbachev and Reagan had specifically chosen fusion research as a project for cross-bloc cooperation and what purposes they were pursuing, Pinkau elaborated:

The Russians have two goals (Selikov [sic] is pursuing this): he has been saying for 4 years that fusion is suitable for a major international effort because the technology is still far from economic and military application, but also because of the project’s structure—large apparatuses, high costs.³²⁹

324 A vivid impression of the summit from the perspective of the waiting journalists is provided by the ARD “*Weltspiegel extra*,” which also mentions the exchange agreement: <https://www.youtube.com/watch?v=UKTNHP3xfXM>, last accessed March 10, 2019. Regarding the background of this agreement, see McCray, “ITER’s Fusion,” 2010, pp. 290–295. I am grateful to Juan-Andres Leon and Fabian Lüscher for further references regarding European fusion research.

325 Protocol of the 112th Senate meeting on Nov. 22, 1985, AMPG, II. Abt., Rep. 60, No. 112. SP, fol. 254.

326 For more details, refer to Lüscher, *Nuklearer Internationalismus*, 2021, pp. 235–242.

327 Protocol of the 112th Senate meeting on Nov. 22, 1985, AMPG, II. Abt., Rep. 60, No. 112. SP, fol. 257. The official expansion of the IAEA’s INTOR acronym is: International Tokamak Reactor.

328 Protocol of the 112th Senate meeting on Nov. 22, 1985, AMPG, II. Abt., Rep. 60, No. 112. SP, fol. 257.

329 Ibid, fol. 257. Here, the name is incorrectly rendered as Selikov; the intended name is Evgeny Velikhov. This piece of information is entirely missing in the final records.

The U.S., on the other hand, had been pulled into a maelstrom by Gorbachev's initiative, as he had already solicited European cooperation during his Paris visit in October 1985.³³⁰ Precisely what made fusion research so interesting for Soviet diplomacy—that for an as yet unforeseeable period one would have “all possibilities to be examined with a view to later application,” just as the Garching fusion researchers intended to continue doing, thanks to long-term and adequate funding from the BMFT—had recently deterred the Americans.³³¹ With their, as Pinkau found, “unfortunate approach to discussion” of the “end-product economy,” arguing that fusion research was only worthwhile if it “provides an immediate solution to energy problems,” they lacked the long-term perspective.³³²

State Secretary Haunschild also had a low estimation of the Americans' willingness to cooperate; due to speculations about the creation of a “tamed hydrogen bomb,” they would “certainly be reluctant to make their scientific-technical knowledge available to the USSR.” He had received an inquiry from the State Department addressed to all European research institutions just four days before the Geneva Summit, asking to “immediately inform whether they would participate in global cooperation.” Since the responsible Commission in Brussels could not coordinate a response among the European partners in fusion research—rooted in the EURATOM Treaty since 1957 and increasingly operated transnationally since the 1960s—on such short notice, they had to give a delaying response.³³³ Pinkau vehemently rejected “the comparison with the tamed hydrogen bomb” due to entirely different operating principles: “The bomb explodes,” whereas fusion stops “when we pull the plug.”³³⁴ He also warned against relying on slowing down the cooperation agreement by the United States. Although the State Department couldn't coordinate with European partners due to the time crunch, attention and vigilance were now required to ensure that everything fell into place. Specifically, it was crucial to ensure that fusion research, conducted in partnership with European entities, was appropriately

330 Ibid, fol. 255.

331 Ibid, fol. 8.

332 Stenographic notes of the 112th Senate meeting on Nov. 22, 1985, AMPG, II. Abt., Rep. 60, No. 112, fol. 257–2.

333 Protocol of the 112th Senate meeting on Nov. 22, 1985, AMPG, II. Abt., Rep. 60, No. 112. SP, fol. 255–256.

334 Ibid., fol. 256–257. Incidentally, Haunschild insisted on a correction of the stenographic notes from this Senate meeting. He did not want it recorded that he spoke of the “tamed hydrogen bomb” or mentioned that the USA might have withheld corresponding knowledge from the USSR. Additionally, he did not want the State Department to be named as the sender of the request in advance of the Geneva meeting; Staab to the senators of the MPS Dec. 23, 1985; MR Zelle to Gutjahr-Löser (MPG) Jan. 7, 1986; Gutjahr-Löser to Zelle Jan. 14, 1986, with excerpts from the stenographic recordings; Materials for the Senate meeting June 2, 1986, BArch B196/156214. The corrected paragraph should now read: “Presumably, the USA approached international cooperation [...] with a certain caution, not least because of the need to prevent the spread of sensitive nuclear knowledge.”

represented in collaborations with the two superpowers, while not risking its downfall in case the extended cooperation politically failed amidst unpredictable American-Soviet summit diplomacy.³³⁵

And indeed, things had to move quickly now, given the ambitious plans: After a three-year preparatory phase, the research project *International Thermo-nuclear Experimental Reactor* (ITER) launched in 1988 under the auspices of the IAEA and with the participation of the EC, USSR, USA, and Japan. Against competing sites in Livermore, California, and at the IAEA in Vienna, the Europeans were able to establish the IPP in Garching as the location for the working group that would develop the ITER concept. At least until the ITER group moved to Cadarache in southern France, albeit remaining on European soil.³³⁶ Since 2006, an expanded international consortium led by the EU has been building the ITER reactor in neighboring Saint-Paul-lès-Durance, with which the IPP continues to work closely to this day.³³⁷

Whether institutes or scientists from the MPS participated in SDI research cannot be conclusively clarified here.³³⁸ However, fusion research at the IPP certainly benefitted from it, albeit in an indirect way, as summarized succinctly by Lüst during the Senate meeting in November 1985 with regard to the Geneva summit:

The United States would have welcomed initiating a joint program and had originally proposed space research. This was rejected by the Russians due to SDI. The Russians then suggested collaborating on fusion research.³³⁹

Colleagues in Garching, along with their European counterparts, seized the opportunity presented by this unique political moment. Even the ESA, led by Lüst since 1984 and considered NASA's second choice, experienced a resurgence

335 Regarding the successful negotiation strategy of the European research consortium led by Italian physicist Donato Palumbo, see McCray, "ITER's Fusion," 2010, which particularly emphasizes the role of the French partners.

336 Speaking notes for the BMFT for the MPS Senate meeting Nov. 19, 1987, BAArch B 196/156219.

337 ITER, What Is ITER?, <http://www.iter.org/proj/inafewlines>; Max-Planck-Institut für Plasmaphysik, ITER-Teilnahme, <https://www.ipp.mpg.de/9018/iter>, last accessed on April 17, 2019.

338 Dietrich Lemke from the MPI for Astronomy (MPIA) points to an indirect collaboration with SDI: From 1978 to 1985, MBB, in cooperation with the MPIA and financed by the BMFT, developed an infrared telescope (German Infrared Laboratory, GIRL) that was to be transported to Spacelab with NASA's Space Shuttle. After the flight costs, especially due to the crewing of the Space Shuttle, became increasingly expensive, the BMFT discontinued the project, into which almost 50 million DM had already flowed. MBB, however, benefited from the technology developed together earlier and sold a GIRL-like device to the SDI program later. See Lemke, *Himmel über Heidelberg*, 2011, pp. 96–98. I thank Juan-Andres Leon for this information.

339 Protocol of the 112th Senate meeting on Nov. 22, 1985, AMPG, II Abt., Rep. 60, No. 112. SP, fol. 256.

following years of crisis, with budget increases of five percent annually.³⁴⁰ From the perspective of the MPS's president, who was concerned about funding for basic research, the situation looked different.

Where Will the Money Come From: Project Grants or Base Funding?

Ever since Adenauer's time, the governing bodies of the MPS had received project funding from the Federal Government, particularly through its Ministry of Atomic Energy, with mixed feelings.³⁴¹ On the one hand, they welcomed the additional research funds; on the other, they feared the "close entanglement of research with economic and state-political issues," as well as European policy objectives, and a loss of autonomy and flexibility in pursuing new avenues of basic research.³⁴² The sentiment was similarly ambivalent toward European project funding established with the ESF in the early 1970s, only to then engage heavily in it. This was especially true for the EUREKA research initiative, launched in Paris in 1985 as a European response to America's SDI program. Its goal was to develop civilian, non-classified high technology in multilateral Western European project consortia, mainly in the fields of microelectronics, materials research, information and production technology, and then also environmental research.³⁴³ With its programmatic market and technology orientation, this initiative contradicted and still contradicts the carefully maintained profile of the MPS as an institution of basic research. Nonetheless, Max Planck Institutes have been participating in EUREKA projects from the beginning: As early as 1986, the MPI for Chemistry was involved in the EUROTRAC project, focusing on the *Experiment on Transport/Transformation of Environmentally Relevant Trace Constituents in the Troposphere in Europe* (EUROTRAC); other MPIs participated in the *Cooperation for Open Systems Interconnection Networking in Europe* (COSINE). Since 1987, the MPI for Biochemistry has even led a project on *Protein Design* (PRODESIGN).³⁴⁴ International scientific cooperation generally occurred in the form of temporally limited and narrowly defined

340 Conversation Lüst (Nolte), 2008, p. 202. Regarding the history of the ESA, see Krige, Russo, and Sebesta, *A History of the ESA*, vol. 2, 2000; Trischler, "Triple Helix," 2002; Hoerber and Stephenson, *European Space Policy*, 2017.

341 Cf. Hohn and Schimank, *Konflikte*, 1990, pp. 114–115, p. 119, p. 134.

342 Pfuhl, *Öffentliche Forschungsorganisation*, 1958, p. 194; quoted here after Hohn and Schimank, *Konflikte*, 1990, p. 115.

343 Note regarding the German-French initiative EURECA (sic!, undated, approx. spring 1985), BArch B196/156212: The BMFT defined here as the first of its "essential principles" for further negotiations: "EURECA is not an anti-SDI program, but is compatible with SDI. It is [crossed out: especially] not only limited to SDI areas."

344 List of EUREKA projects with German participation as of 1986, BArch B 196/111034; further references can be taken from the project websites: EU 7/EUROTRAC EUREKA,

projects whenever it went beyond mutual visits, international congresses, and similar classical modes of communication with foreign colleagues and science organizations: The more of such projects there were, the greater the emphasis on project-based and -financed research.

The tension between project funding and base funding was repeatedly discussed in the Senate of the MPS, where the positions of political representatives fluctuated regardless of their party affiliation. When their respective party was in the opposition, they extolled the virtues of basic research, decrying its dwindling funds; when their party was in power, they defended project-bound research expenditures and argued that basic research in general and the MPS, in particular, would suffer no harm. Hans-Hilger Haunschild, who had been a civil servant and State Secretary since 1971, representing the BMBW or BMFT in the MPS Senate, was the exception. He didn't need to change roles and usually moderated the diverging interests by pointing to the Federal Government's constant or increasing, but never decreasing, expenditures on basic research. He also highlighted the restraining role played by the *Länder* in the joint federal-*Länder* financing of the MPS.³⁴⁵ Haunschild had served all subsequent governments starting with the Kiesinger administration (CDU) until he was dismissed in 1987 by Federal Research Minister Riesenhuber (CDU), who no longer wanted to

Project Database, <https://www.eurekanetwork.org/project-database/>; EU 8/COSINE (Hill and Newman, *Eureka Cosine Project*, 1989); EUREKA, EU 41/PRODESIGN, <https://www.eurekanetwork.org/project/id/41>, last accessed on April 5, 2019. The project database of the EUREKA Network (*EUREKA, Project Database EUREKA*, <https://www.eurekanetwork.org/project-database/>, last accessed on June 13, 2022) lists ten projects to date with MPI involvement. I received all these references thanks to Annemone Christians, who has been working in the DFG Research Group *Cooperation and Competition in the Sciences* at LMU Munich, on the subproject "The EUREKA Project. European Research and Technology Policy between Cooperation and Competition (ca. 1980–1992)." Regarding EUROTRAC, see Lax, "Erdsystemwissenschaften," 2024, p. 316.

- 345 In 1980, for instance, Kurt Birrenbach and Gerhard Stoltenberg from the CDU were concerned about "a narrowing of the financial leeway in the promotion of basic research" due to the strains on the federal budget from "defense spending, the development of new technologies, subsidies, and investment promotion measures" (Protocol of the 95th Senate Meeting on March 7, 1980, AMPG, II Abt., Rep. 60, No. 95.SP, fol. 165). After 1982, it was primarily the Social Democratic members of the Senate, like Glotz in 1985, who expressed "doubts about a balanced research policy of the Federal Government" (Protocol of the 110th Senate Meeting on March 8, 1985, AMPG, II Abt., Rep. 60, No. 110.SP, fol. 232). On both occasions, Haunschild countered by pointing to the—also in an international comparison—high percentage of basic research in the total research expenditures of the federal government. Regarding the curtailed "locomotive function" of the BMFT in financing the MPS at 50 % by the Federal Government and 50 % by the *Länder* community, whereby the base funding of the MPS by the federal government could not be higher than that of the *Länder*, see Memo Hahn from Oct. 10, 1986, BArch B 196/96344. For a detailed account of the MPS's financial policy: Balcar, *Ursprünge*, 2019, pp. 85–110; Balcar, *Wandel*, 2020, pp. 60–85, pp. 133–162.



Fig. 11: Hans-Hilger Haunschild in an interview for the *MPG-Spiegel* 2 (1980), 26/27.

tolerate Haunschild's unilateral commitment to major research institutions.³⁴⁶ At the same time, Riesenhuber announced in a conversation with MPS President Staab that he planned to attend future MPS-Senate meetings himself.³⁴⁷

Staab welcomed the ministerial presence and seized the next opportunity, namely the General Meeting of the MPS in June 1987, to publicly settle the score regarding federal research funding.³⁴⁸ While the MPS had been promised a five-percent increase in its base funding for the following year, and project funding from the BMFT had more than tripled since 1981, reaching 87 million DM in 1987, Staab argued that this was all heading in the wrong direction. The increase in expenditures for basic research in the BMFT budget, from 26 to 35 percent, did not benefit the MPS; it still received only 5.5 percent of the

³⁴⁶ Haunschild, who supplemented his civil servant pension with consulting contracts from, among others, the Fraunhofer Society and CERN, remained a privately supporting member of the MPS. Therefore, at least a portion of the tax-financed consulting fees for the retired civil servant, which *Der Spiegel* criticized, in turn flowed back into a tax-financed institution: "Doppeltes Polster für Beamte a. D." (Double cushion for retired civil servants), *Der Spiegel* 42/1989 (Oct. 16, 1989), p. 146; see also Hoffmann, "Kulisse," *Die Zeit*, Oct. 23, 1987, p. 26.

³⁴⁷ Staab to Riesenhuber on April 21, 1987, BArch B 196/156203.

³⁴⁸ Staab, "Ansprache des Präsidenten," 1987, pp. 20–25.

total BMFT budget, which was also due to the strict rule of equal federal and *Länder* financing. The rising project funding was a kind of Trojan horse, as “the principle of independent, autonomous scientific inquiry pursued by the institutes since the founding of the Kaiser Wilhelm Society was endangered by excessive dependence on project approvals.”³⁴⁹ These fundamental issues, which Staab had diagnosed long before, were acutely exacerbated from his perspective by the scientifically senseless, at best externally and European-policy justifiable, promotion of “space technology” for manned space travel. Its share of the BMFT budget had already increased by fifty percent compared to 1982 and would double by 1990.³⁵⁰

The BMFT was alarmed, especially as the press had taken up Staab’s criticism of manned space travel, which was also controversial in the public eye. Initially, it attempted to restore a consensual basis at the level of State Secretary and Secretary-General, inquiring whether the “less welcome” project funds should now be withheld and whether the MPS would still maintain the currently submitted six applications, the financing of which was by no means certain.³⁵¹ Notwithstanding, it was assumed that “the MPS itself examines whether the proposals it has submitted jeopardize its autonomy and that the MPS bases its own high standards of topic selection and quality on these proposals.” Moreover, the funding for space research was offset by “drastic reductions in other programs, such as energy research.”³⁵²

It did not help. Although Haunschild’s successor at the BMFT, Gebhardt Ziller, and the new Secretary-General of the MPS, Wolfgang Hasenclever (1987–1995), who had previously been a board member at the DFVLR, had informally agreed following Staab’s diatribe that project funds would still be welcome, Staab reiterated his criticism a few months later, as Federal Research Minister Riesenhuber gathered from the media, “practically unchanged.” Staab did so in his introductory statement at the MPS’s annual press conference in November 1987, which happened to be scheduled just one day before the *Bundestag* debate on the BMFT budget and was also set in Bonn.³⁵³ Secretary-General Hasenclever had only seen the manuscript shortly before the event and could no longer exert any moderating influence on it.³⁵⁴ None of the numerous press reports refrained from quoting the renewed criticism of the eminent West German research

349 Ibid., p. 24.

350 Ibid.

351 Riesenhuber’s marginal note on Wahl’s memo from June 19, 1987 (quote); BMFT Secretary of State Ziller to MPS Secretary-General Hasenclever July 1, 1987, BAArch B 196/96345.

352 BMFT Secretary of State Ziller to MPS Secretary-General Hasenclever on July 1, 1987, BAArch B 196/ 96345.

353 Riesenhuber’s memo Nov. 26, 1987, BAArch B 196/96345.

354 Annual Press Conference of the MPS in Bonn Nov. 24, 1987—Introductory statement by the President of the MPS Prof. Dr. Heinz A. Staab; Frenzel’s memo from Dec. 14, 1987 (quote), BAArch B 196/96345.

institution regarding the Bonn space program, and many even placed it in the headline.³⁵⁵ Riesenhuber, in any case, concluded from his press reading “that we apparently have an almost irrational dissent with the MPS on space travel.”³⁵⁶ One of his advisors even suspected that Staab, who had previously presented himself as “restrained-critical,” had been “deliberately influenced from both inside and outside.” In particular, two “exponents of German critical scientists against BMFT space policy” came under suspicion, namely Erhard Keppler from the MPI for Aeronomy, “who himself is actively involved in funded unmanned space research,” and Dürr, “who opposes space and SDI as military ambitions and recently received the ‘Alternative Nobel Prize’.”³⁵⁷

Even Staab, who might have been influenced by the articulate critics of manned space travel such as Keppler, Pinkau, and Trümper, though certainly not by Dürr, was alarmed by the media resonance.³⁵⁸ He promptly and unsolicitedly sent his speech manuscript to Riesenhuber without retracting any of his statements. Instead, he distanced himself only from the interpretations of his remarks by the press and radio and requested a clarifying conversation “as soon as possible.”³⁵⁹ The BMFT officials, who meticulously prepared for this conversation by subjecting Staab’s statements, the corresponding press release from the MPS, and the press reports to a comparative textual analysis, considered the dissent to be less serious than their minister did. On the contrary, they were actually on the same page with Staab, as the ministry and its minister had repeatedly emphasized that the European space program adopted in The Hague was based only partially on research-policy grounds, but mainly on “foreign and European policy considerations.” They had demanded an increase in the BMFT budget with precisely this argument and the note that basic research should by no means be “dried out.”³⁶⁰ As for project funding—including the more than

355 Press clippings from Nov. 25, 1987 (*Frankfurter Allgemeine Zeitung*, p. 7; *Handelsblatt*, p. 6 and p. 18; *Süddeutsche Zeitung*, p. 6; *Die Welt*, p. 12; *General-Anzeiger*, p. 32), BArch B 196/96345.

356 Riesenhuber’s memo from Nov. 26, 1987, BArch B 196/96345.

357 Frenzel’s memo from Dec. 14, 1987, BArch B 196/96345. Frenzel probably referred to the “Forum for junge Erwachsene” on the theme “Der Griff nach den Sternen” (Reaching for the Stars), which was carried out by the Evangelische Akademie Tutzing in late November 1986 and in which Keppler and Dürr critically confronted the first West German astronaut, Ernst Messerschmidt. See Jung-Hüttl, “Per Anhalter,” 1986.

358 Keppler, Pinkau, and Trümper were among the authors in 1990 of the critical resolution of the German Physical Society (DPG) on manned spaceflight: Wolfgang Heinicke, Erhard Keppler, T. Mayer-Kuckuk, J. Treusch, J. Trümper, K. Pinkau, and H. Warlimont: Resolution of the German Physical Society on Manned Spaceflight. DPG, 1990. https://www.dpg-physik.de/veroeffentlichungen/publikationen/stellungnahmen-der-dpg/bemannte-raumfahrt/mem_raum_1990 last accessed on April 28, 2019. See also Riesenhuber interview (Trischler) Oct. 5, 2010, p. 18.

359 Staab to Riesenhuber on Nov. 26, 1987; Bitter’s memo from 15.12.1987 (quote), BArch B 196/96345.

360 Leitersdorf’s memo from Jan. 12, 1987, BArch B 196/96345.



Fig. 12: MPS President Heinz A. Staab (right) conversing with Heinz Riesenhuber (left), Federal Minister for Research and Technology, at the 25th Anniversary Celebration of the MPI for Plasma Physics on July 5, 1985 in Garching.

30 million DM for the MPIs involved in space research alone in 1987—the MPS welcomed this and intended to make use of it, as long as the financial limitations of the shared federal-*Länder* funding arrangement did not permit an independent increase in unrestricted base funding through the BMFT.³⁶¹ The meeting scheduled for the end of January 1988 between Research Minister Riesenhuber and MPS President Staab aimed to “clear up ongoing irritations,” namely on the one hand the BMFT’s concerns that “the MPS is deliberately confronting current space policy,” and on the other hand, the MPS’s concerns that “its funding by the BMFT could depend on research-policy compliance.”³⁶² This suspicion had been raised by the CDU member of the *Bundestag* and budget policy expert Dietrich Austermann, who—annoyed by Staab’s statements to the press—had warned him that “we, in a certain way, also expect consideration of the general political line.”³⁶³ The BMFT did not want to go that far; it merely requested that Staab

361 Note from Helle on Dec. 1, 1987; Note from Frenzel on Dec. 14, 1987; Note from Wahl on June 19, 1987, BArch B 196/96345.

362 Note from Wahl on Jan. 11, 1988 regarding the conversation strategy, BArch B 196/96345.

363 Austermann to Staab on Nov. 26, 1987 (quote); Staab to Austermann on Dec. 22, 1987, BArch B 196/96345.

“keep the press interpretation in mind for future public statements.”³⁶⁴ They agreed that manned space travel could certainly be advanced based on foreign and European policy considerations in accordance with the decisions of the Federal Government and the *Bundestag*, which the MPS would not comment on, but its promotion should not come at the expense of basic research and the MPS. Regarding project funding through the BMFT, a “three-digit million amount” annually, Riesenhuber recalled more than twenty years later:

I then told Mr. Staab [...] that I had no interest at all in restricting a clearly defined institution like the MPS in any way with regulations. If they believed that project funding was not helping but was affecting their culture, we could put an end to it within a week. The MPS decided at that time that the impact on their culture was not that critical, and things have developed well since then.³⁶⁵

At no point did any hopes of redirecting saved funds from energy research to areas deemed more scientifically sensible or even to the base funding of the MPS have a realistic foundation.³⁶⁶ The MPS continued to operate within the hard framework of federal budgetary and financial conditions imposed by its joint federal-*Länder* financing. However, in the midst of the recent “turmoil surrounding the topic of space,”³⁶⁷ and with the support of the BMFT, Staab managed to secure not only a special program for equipment modernization but also a one-time five percent increase in the base funding of the MPS by the federal and *Länder* governments for the year 1988. In his farewell speech as MPS President in June 1990, he interpreted this as a “breakthrough towards more consistent and sufficient funding.”³⁶⁸ This was because, by the end of 1989, the “Education Summit” convened by Chancellor Kohl, involving all federal and *Länder* ministers of science and finance, decided to increase the base funding of the MPS and the DFG by five percent each year for five years starting

364 Note from Wahl on Jan. 11, 1988, BArch B 196/96345. In the following *MPG-Spiegel* (Globig, “Jahrespressekonferenz,” 1988), all of Staab’s arguments were repeated; however, the occasional use of the subjunctive in indirect speech took away some of the edge from the statements made at the press conference in November 1987. The BMFT had to provide clarifications from its point of view with a draft for the press: Draft for an article for *Blick durch die Wirtschaft*, undated, approx. Dec. 3, 1987, BArch B 196/96345.

365 Interview Riesenhuber (Trischler) Oct. 5, 2010, p. 11.

366 In the draft for an article for *Blick durch die Wirtschaft*, it is explained that the increase in the BMFT’s budget for 1988 was solely due to the space policy focus of the Federal Government: “That is, approx. 150 million DM of BMFT’s research expenditures in 1988 are due to space projects; they would not have been approved for other projects. They are an approval of the Federal Government within the framework of the general political objectives associated with the space projects. This money is not available for basic research in general. They cannot be distributed.” BArch B 196/96345.

367 Note from Bitter (regarding conversation request from Prof. Staab) on Dec. 15, 1987, BArch B 196/96345. For the budgetary possibilities and limits of federal-state funding for the MPS, see Balcar, *Wandel*, 2020, pp. 65–79, pp. 133–162.

368 Staab to Riesenhuber on Jan. 28, 1988; Staab to the *Länder* Prime Ministers on Jan. 28, 1988, BArch B 196/96345.

from 1991.³⁶⁹ However, completely different challenges were looming on the horizon for the MPS and its newly designated President, Hans Zacher, as the turn of the year 1989/90 approached.

From Politics to the Administration of International Scientific Relations

The science foreign policy orientation points of the MPS—summarized as: autonomy in choosing research subjects, scientifically intrinsic selection of cooperation partners, direct scientific cooperation at the lab level, financial flexibility, invitation over dispatch principle—had been repeatedly articulated by the International Relations Unit until 1989/90. These were regularly echoed in annual reports, press conferences, and talking points for negotiations led by the presidents.³⁷⁰ The MPS continuously aimed to meet resistance, especially from certain Eastern European countries, and the evolving foreign and European political conditions affecting international scientific cooperation, with as few compromises to their own priorities as possible. Several restructurings in Administrative Headquarters in the 1970s, and particularly in the “political” Department I led by Edmund Marsch, accommodated the increasing workload for maintaining MPS’s international scientific relations. Since 1978, the unit headed by Dietmar Nickel essentially focused on the area of “Foreign Collaboration,” which he had made his personal area of emphasis from the outset.³⁷¹ This effort was partly due to the Europeanization of research, driven by Brussels, but also to the flourishing China program. Both prompted Nickel, in late 1980, to

369 Staab, “Ansprache des Präsidenten,” 1990, pp. 20–21 (quote).

370 The reporting became more extensive and at the same time more standardized; that’s probably why it was not printed every year in the annual reports. In addition to depicting developments on the three levels first differentiated by Nickel in 1974 (direct collaborations or guest scientists; membership/participation of the MPS in international research institutions or large research facilities; bilateral contracts), rounded (and therefore hard to compare) numbers of guests and research projects with foreign cooperation partners, the number of foreign MPI directors and members of advisory boards, and occasionally those of external scientific members from abroad were given. Regional or diachronic comparisons are rare; occasional, very restrained or only indirect scientific and/or political evaluations are more omitted than made explicitly. See for example: *MPG-Tätigkeitsbericht* 1985, 1985, pp. 85–92; and Staab’s statement at the annual press conference of the MPS on Nov. 24, 1987, pp. 6–7, BArch B 196/96.345.

371 Interview with Nickel (Sachse) on April 12, 2018, and organizational charts, 1971–2002, DA GMGP, Privatarhiv Sachse, ID 600020. From his numerous areas of responsibility in 1971, more and more were outsourced to their own units, so that Department I consisted of four units from 1978 onwards, of which Nickel headed unit Ic, which was also responsible for supporting members and protocol questions. This organizational structure remained in place until Nickel’s move to the management of the Minerva Foundation in 1996.

critically reevaluate, as he had already done in 1974, the guidelines for the MPS's international activities.

In comparison to the three levels of collaboration with foreign institutions defined as early as 1974, and based on a survey among the institutes, he concluded:³⁷² Direct cooperation initiated by Max Planck Institutes or researchers themselves with professionally interesting foreign institutes or colleagues was still the most important. This cooperation manifested particularly in hosting guest stays, research trips, conferences, and seminars. On the second level, that is, the institutional memberships of the MPS in international research organizations, more had been added.³⁷³ The increasingly expanding third level consisted of contractually regulated joint projects like EISCAT and multinational research facilities such as the Institut de Radioastronomie Millimétrique (IRAM) founded in 1979 in Grenoble. It had telescopes at Pico Veleta near Granada and in the French Alps, and was jointly administered by the MPS, the French CNRS, and the Spanish *Instituto Geográfico Nacional* (IGN). What remained problematic at this level, in Nickel's view, were the "general contracts," like those that had so far only existed with the Spanish CSIC and the Chinese Academy of Sciences (CAS) and which were currently being prepared with the French CNRS. Such contracts had previously been willingly left to the DFG, the official representative of West German science abroad, so as not to limit the MPS's freedom in choosing foreign partners or in flexibly using foreign funds through contractually specified focus areas and exchange quotas. The priority was particularly on the principle of invitation over dispatch, which was admittedly difficult to enforce with all countries. The point was not to have to accept guests chosen by the contractual partner based on their own criteria—whether institutionally or politically motivated—but only those who were selected for their precisely matching scientific expertise.³⁷⁴

However, the global foreign science political conditions had changed: The DFG's claim to be the sole representative was undermined by the growing number of direct contracts between research institutes from several countries for jointly used large-scale research facilities, through multilateral research alliances, and also through an increasing number of bilateral partnership agreements between universities. In collaboration with the Soviet Union, the DFG,

372 Note from Nickel on Feb. 25, 1974 (here Nickel had summarized the principles of MPS's international work for the first time), AMPG, II. Abt., Rep. 70, No. 373, fol. 32 and note from Nickel on Oct. 30, 1980, AMPG, II. Abt., Rep. 70, No. 86, fol. 12.

373 In addition to IIASA, the Galapagos Foundation, and the Jungfrauoch Foundation, Nickel now also mentioned the International Centre of Insect Physiology and Ecology (ICIPE) in Nairobi and the Institut des Hautes Études Scientifiques (IHES) in Bures-sur-Yvette, France. Note from Nickel on Oct. 30, 1980, AMPG, II. Abt., Rep. 70, No. 86, fol. 12.

374 Protocol of the 98th Senate meeting on March 6, 1981, AMPG, II. Abt., Rep. 60, No. 98. SP; Interview with Nickel (Sachse) on April 12, 2018: The invitation principle could not be enforced against the Soviet Union at all, and only in later years against China.

which still had the leadership role here—as also desired by the Foreign Office—proved to be a hindrance for many MPS scientists who preferred to communicate directly with their well-known and professionally relevant colleagues (→ 3.3).³⁷⁵ On the other hand, in the cooperation with China, the MPS had learned to appreciate the advantages that came from taking the lead, which provided more room for maneuvering and, not least, better insights into the evolving Chinese research landscape (→ 3.4). Nickel observed a “strengthening of the contract tendency not only in the so-called state research countries” but also at the U.S. National Science Foundation (NSF), along with a growing interest everywhere in using “scientific collaboration as a means of political cooperation.”³⁷⁶ Often, such countries made the provision of travel cost subsidies for their scientists dependent on the existence of a framework contract; such subsidies could help relieve the tight budget of the MPS for overseas activities, particularly in the lean 1980s.³⁷⁷ Nickel did not want to give the Federal Ministry for Research and Technology (BMFT) any reason to review and reduce the MPS’s overseas funding, referring to DFG budget titles also used by the MPS.³⁷⁸ In short, there were good reasons to reevaluate MPS’s contract policy and develop criteria for future contracts that would give the MPS, its institutes, and researchers the greatest possible freedom in collaboration with foreign colleagues, while largely avoiding long-term budget commitments. Depending on how much regulation was required for the bi- or multilateral research projects, or how keen the contract partners were on regulation, three models should be chosen: the preferred “general framework contract,” the “special framework contract,” and the “detail contract,” to be avoided if possible.³⁷⁹

The extent to which Nickel’s contract design scheme was actually implemented would have to be examined on a case-by-case basis in contracts concluded in subsequent years. Few other bilateral country contracts came into existence that went beyond cooperation agreements with specific research institutions, like those with Spain and China. In 1980, working possibilities for the emeritus behavioral researcher Konrad Lorenz, who had returned to his homeland, were secured in a framework contract with the Austrian Academy of Sciences. In 1981, a framework agreement with the CNRS was concluded; apart from the use of joint large-scale research facilities, it aimed to address the low level of scien-

375 See the correspondence between Hans Weidenmüller from the MPI for Nuclear Physics and Secretary-General Ranft, AMPG, II. Abt., Rep. 70, No. 285: Weidenmüller to Ranft on Oct. 16, 1981, pp. 466–468; Ranft to Weidenmüller on April 5, 1982, pp. 453–456.

376 Note from Nickel on Oct. 30, 1980, AMPG, II. Abt., Rep. 70, No. 86, fol. 12.

377 Protocol of the 98th Senate meeting on March 6, 1981, AMPG, II. Abt., Rep. 60, No. 98. SP, fol. 9: This also applied to the NSF, which had signed such an agreement with the DFG since 1980, which also included the MPS and the Fraunhofer Society, without restricting them in the free choice of their cooperation partners.

378 Note from Nickel on Oct. 30, 1980, AMPG, II. Abt., Rep. 70, No. 86, fol. 18.

379 Ibid., fol. 19.

tific exchange with France and counteract presumed “linguistic barriers.”³⁸⁰ Further agreements followed in 1984, one with Brazil’s *Conselho Nacional de Desenvolvimento Científico e Tecnológico* (CNPq), primarily aimed at securing tropical ecological research at the MPI for Limnology and a new project at the MPI for Chemistry on bio- and atmospheric research in the Amazon area. Another framework agreement was made with Japan’s RIKEN Institute, but it was hardly used until the 1990s.³⁸¹ Generally, the MPS continued to adhere to the policy, as Zacher stated in 1995, of keeping “the list of bilateral special relations of a general nature [...] as small as possible.”³⁸²

At least the numbers of guests from both East and West confirmed this: the number of colleagues from France barely increased after the contract with the CNRS came into force; before the contract, their number fluctuated between 15 and 43, afterwards between 23 and 40, and only from 1988 did the number rise to between 50 and 60 annually.³⁸³ In 1987, the “apparently low interest of French scientists in a research stay in the Federal Republic” was again the subject of a Senate discussion—like the young German scientists, they preferred the USA. Added to this was the sentiment that “further qualification at a foreign research institution did not have the same status in the academic career of French researchers as it does in Germany.”³⁸⁴ The contract with RIKEN also had no influence on the number of Japanese guests, which stayed at a comparatively high level, with between 80 and 100 guests annually. Only slightly fewer, namely around 80 to 85 guests, regularly came annually from the two major Western European countries of Great Britain and Italy. While the American guests, who came in roughly constant numbers during the 1980s averaging around 220, still represented the largest group, their proportion relative to Western European guests declined. Under the framework of the DFG’s contract with the Soviet Academy of Sciences, by contrast, no more than a dozen guests, and often even fewer, visited a MPI in a year up until 1985. After that, their number increased slightly at first, and then dramatically from 1989 onward (1988: 18; 1990: 64; 1992: 178; 1993: 248). Exchange with Eastern European countries, whose bilateral contract wishes the MPS had not agreed to, developed differently: The Polish group grew in the 1980s to well over a hundred guests per year, becoming the second-largest national group after the USA (1980: 79; 1982: 121; 1984: 113; 1987: 144). The Hungarian group also doubled from 1981 to 1982 to 34 people

380 Protocol of the 98th Senate meeting on March 6, 1981, AMPG, II. Abt., Rep. 60, No. 98. SP, fol. 12. See Heinemann, “MPG und CNRS,” 2013, p. 193.

381 Protocol of the 106th Senate Meeting on Nov. 18, 1983, AMPG, II. Abt., Rep. 60, No. 106. SP, pp. 112; Protocol of the 107th Senate Meeting on March 9, 1984, AMPG, II. Abt., Rep. 60, No. 107. SP, fol. 581–582.

382 Zacher report from Feb. 8, 1995, GVMPG, BC 213481, pp. 85. Regarding Lorenz, see Taschwer and Föger, *Lorenz*, 2009 and Kaufmann, *Konrad Lorenz*, 2018.

383 Statistik Thoms, DA GMPG, Privatarhiv Sachse, ID 601104.

384 Protocol of the 116th Senate Meeting on June 11, 1987, AMPG, II. Abt., Rep. 60, No. 116. SP, fol. 87.

and held steady in the following years, sometimes with over 50 guests, almost balancing with the French group.³⁸⁵

At the end of his term, MPS President Staab could look back with a certain sense of satisfaction: With the backing of his Administrative Headquarters and also his colleagues in the 'Holy Alliance' of German science organizations, he had successfully defended the funds deemed necessary by the MPS for basic research. He had managed to maintain a high proportion of non-project-specific base funding by the state, without getting too involved in the foreign policy-motivated research priorities of the Kohl government—manned space travel and the European SDI counterpart program EUREKA. At the same time, it became clear that one could only approach the European research area—anticipated to someday compete with the U.S. and the Soviet Union—through additional project-related, multilateral research cooperation. Next to the unusual, federally structured West German science funding policy, which only allowed additional federal funding for the MPS in the form of BMFT-financed projects, European science funding policy also increasingly gnawed at the MPS's defense of base funding as a guarantee for autonomous basic research.

Moreover, whether they liked it or not, the MPS—especially with extraterrestrial research and fusion research—was heavily involved in the dramatic foreign science policy developments of the 1980s, during which renewed armament and détente overlapped. Unlike during the 1960s and 1970s, the MPS was neither willing nor able as an institutional actor to take a position on these foreign policy developments. The foreign science policy dialogue, as led by Carl Friedrich von Weizsäcker and Willy Brandt on the New *Ostpolitik*, and by Reimar Lüst and Helmut Schmidt on the relationship between science and politics, found no counterpart in the Kohl era. Neither Lüst, who, as he himself said, was “checked out” as a Schmidt man by Kohl, nor his politically less prominent successors Staab and Zacher maintained that close of a relationship with the Bonn government.³⁸⁶ The long-serving CDU Chancellor for his part also seldom sought closeness to the MPS, instead letting the responsible minister handle matters. This new distance at the top of the Bonn government was reflected in the MPS's Administrative Headquarters, which, for its part, did everything it could to navigate Max Planck Institutes and their scientists through the politically charged times as smoothly as possible. This naturally required good relationships at the working level between the Bonn ministries and the Administrative Headquarters. This foundation would be drawn upon during German reunification when it came to participating in the homogenization of the German scientific landscape, according to the structures established in the old federal Länder.

385 All information according to: Statistik Thoms, DA GMPG, Privataarchiv Sachse, ID 601104.

386 Interview Lüst (Renn and Kant) May 18, 2010, p. 50. Accordingly, Kohl only appeared once to bid farewell to Lüst in 1984 at an MPS General Meeting.

2.5 After the Cold War: German Reunification in an Expanded Europe

When President Staab summarized the successes of his six-year term at the MPS's ceremonial assembly in Travemünde at the end of June 1990—a funding base for the MPS that was consolidated for the foreseeable future, six Nobel Prizes for MPS scientists, nearly fifty new appointments, including seven reappointments of German scientists from the U.S. and seven appointments of foreigners, and the establishment of three new institutes—he was passing the baton to his successor, social law expert Hans Zacher from the MPI for Foreign and International Social Law, in a world that had drastically changed just a few months earlier.³⁸⁷ After the ratification of the Intermediate Range Nuclear Forces Treaty (INF Treaty) in the summer of 1988, the U.S. and the USSR had begun removing medium-range missiles from Central Europe. At the same time, Soviet President Gorbachev withdrew the military and political support his Eastern European allies would have needed to suppress mass demonstrations by people demanding Perestroika and Glasnost in their own countries and to maintain their strict border regimes. In the months leading up to the unintended opening of the Berlin Wall in November 1989, and especially thereafter, tens of thousands of citizens had fled from East Germany. Since the spring of 1990, the first freely elected government of GDR and the Federal Government had been negotiating state treaties, which led to the implementation of the Monetary, Economic, and Social Union on July 1, 1990, just a few days after the Travemünde ceremonial event. In the subsequent negotiations, which culminated in the Unification Treaty of September 1990 and the accession of the GDR into the scope of the Federal German Basic Law, the focus was also on the amalgamation of the science systems of the two German states. This made the issue of reunification extremely pertinent for the MPS.

But that was not the only challenge that the newly installed President saw coming in June 1990. On the European issue, too, according to Zacher, “much was at stake.” What was growing anew in Europe could “suddenly” become “a preliminary decision for the research constitution of Europe.” And nothing was “less obvious” than that this would be the German one, which, precisely in its unique federal structure in Europe, guaranteed the autonomy of the MPS and the DFG.³⁸⁸

387 Staab, “Ansprache des Präsidenten,” 1990. The appointment of at least one woman as a Scientific Member went unmentioned: It was the biologist and geneticist Christiane Nüsslein-Volhard, who following her activity as a junior research group leader at the Friedrich-Miescher-Laboratory (MPS) was appointed to the MPI for Developmental Biology in 1985; she received the Nobel Prize for Physiology or Medicine in 1995.

388 All quotes: Zacher, *Herausforderungen*, 1990, p. 32.

With the alleged end of block politics, German reunification, and the ongoing and territorially expanding European integration process, the science policy position of the MPS and its core identity, autonomous basic research, were no longer as taken for granted in both the national German and supranational European contexts as they had been in the decades before. Rather, the MPS found itself suddenly on the defensive at the end of the Cold War. From this position, the lawyer Zacher set out the research policy line for the coming years: the aim was to defend the autonomy of research in general and the MPS in particular on two constitutional fronts at once, and to reject or at least contain foreign science political impositions. From this defense, which had to be secured under all circumstances, the MPS did, however, make a strong personal, institutional, and intellectual commitment to the national and supranational unification processes that needed to be steered in the right direction. This engagement would, within the framework of Federal Germany, pay off beyond initial expectations for the MPS until the end of the century. However, in the supranational context, it yielded—at least with regard to the European “research constitution” focused on by Zacher—only limited tangible results, albeit with increasing administrative effort.³⁸⁹

The Administrative Headquarters in a State of Emergency

The relationships that the MPS maintained with scientific institutions in the GDR or more precisely, the numerous connections their members had kept up with their East German colleagues through the cracks in the Iron Curtain, were deeply shaped by the absurdities of the intra-German relationship. Following the Basic Treaty of 1972/73, there had been over fifteen years and more than thirty rounds of negotiations at the government level, occasionally involving the MPS informally, to agree on a scientific and technical cooperation (STC) agreement, before it was finally signed in September 1987.³⁹⁰ The agreement had repeatedly failed over the “Berlin question,” specifically the inclusion of West Berlin scientific institutions. It was only at the last minute that it was agreed to apply the “Frank-Falin Clause,” named after its diplomatic originators and used since 1972 in many other East-West agreements. This clause stated that the participation of West Berlin institutions would not affect the differing legal

389 For a detailed reconstruction of the role of the MPS in the reunification process, see Ash, *Max-Planck-Gesellschaft*, 2023. Its role in the European unification process has hardly been examined in historiography.

390 “Abkommen über die Zusammenarbeit auf den Gebieten der Wissenschaft und Technik zwischen den Regierungen der Bundesrepublik Deutschland und der Deutschen Demokratischen Republik” (Agreement on Cooperation in the Fields of Science and Technology between the Governments of the Federal Republic of Germany and the German Democratic Republic) (STC Agreement) from Sep. 8, 1987.

viewpoints concerning the status of Berlin.³⁹¹ Nevertheless, even months later, the joint commission tasked with practically implementing the STC agreement couldn't convene because the Federal Government insisted on the participation of a West Berlin scientist, which the GDR government refused to accept.

Simultaneously, it was the Fritz Haber Institute (MPI) in Berlin-Dahlem that simply ignored the Berlin policy recommendations of the Federal Ministry of Research and Technology (BMFT). According to a survey from the International Relations Unit in July 1987, this institute had the most numerous, longest-standing, and most intensive working contacts with colleagues at universities in Rostock, Leipzig, Halle, and Jena.³⁹² At least two of them, experimental physicist Joachim Finster (University of Rostock) and chemist Armin Meisel (University of Leipzig), had also visited Dahlem several times.³⁹³ However, GDR citizens—let alone East German women—were among the rarest guests in the global population of MPS guests. Between 1968 and 1973, and probably later as well, at most one each year came for a short term; by 1985, the number had increased to two and in 1986, to just four.³⁹⁴ Even if one were to count the 13 GDR refugees who had received stipends from the MPS in 1973,³⁹⁵ East Germany still ranked last among all Eastern Bloc countries even behind Romania, as Staab stated in his 1990 farewell speech as MPS President.³⁹⁶

391 The clause was agreed upon in advance of the trade agreement between the Federal Republic and the Soviet Union on April 3, 1972 by the Secretary of State in the Foreign Office, Paul Frank, and the Soviet Ambassador to Bonn, Valentin Falin: *Akten zur Auswärtigen Politik 1972*, pp. 366–368 (Document 86). Memo by Nickel dated April 19, 1988, AMPG, Sec. II, Rep. 70, No. 110, fol. 411.

392 “Wissenschaftliche Beziehungen von Max-Planck-Instituten zu osteuropäischen Ländern (Stand Januar 1987),” p. 1, memo by Peters dated July 8, 1987, AMPG, Sec. II, Rep. 70, No. 110, fol. 28: Of the seven other institutes listed there, only the MPI for Breeding Research and the MPI for Medical Research reported longer-standing contacts, while the others reported planned or desired contacts with certain colleagues and scientific institutions in the GDR.

393 For the GDR, invitations from West Berlin were acceptable if they were issued directly by the Berlin institution without the involvement of a possible West German carrier organization; however, the Administrative Headquarters admonished the Berlin MPIs to properly highlight their affiliation to the MPS—and thus the connection of West Berlin to the Federal Republic—and to occasionally test invitations through the West German carrier organization to see if the GDR might have changed its policy. Memo by Peters dated July 8, 1987, AMPG, Sec. II, Rep. 70, No. 110, fol. 28; Memo by Nickel dated May 7, 1986, AMPG, Sec. II, Rep. 70, No. 110, fol. 411.

394 Nickel to Loosch (BMFT) on March 1, 1974, AMPG, Sec. II, Rep. 70, No. 110, fol. 161. Nickel to Mönig (BMFT) on Aug. 25, 1986. Protocol of the 116th Senate meeting on June 11, 1987, AMPG, Sec. II, Rep. 60, No. 116.SP, fol. 84. Unfortunately, there is no consistent statistical data available for GDR guests.

395 I do not have data on GDR refugees from other years, Nickel to Losch (BMFT) on March 1, 1974, AMPG, Sec. II, Rep. 70, No. 110, fol. 161.

396 Staab, “Ansprache des Präsidenten,” 1990, p. 23.

However, this was only the case for the East-West travel direction that was blocked by the GDR government; in the opposite direction the situation was quite different. Already in the 1960s, biologist Käthe Seidel from the Limnological Station Niederrhein in the MPS collaborated with Erich Rübensam from the German Academy of Agricultural Sciences in the GDR. Known as “Binsenkäthe” (Kathe of the Reeds) in the West, she developed the “Krefeld System” for biological wastewater treatment and initially helped her East German colleagues set up a test plantation of aquatic reeds. Subsequently, they collaborated on a successful project to explore the phenol uptake of this species and its potential use for industrial wastewater treatment. This collaboration was facilitated by the former director of the KWI for Cultivated Plant Research, Hans Stubbe, who after the war led both the Institute for Cultivated Plant Research at the German Academy of Sciences (DAW) in Gatersleben and the Academy of Agricultural Sciences in East Berlin. He maintained regular contact with Butenandt, notably through this project.³⁹⁷ However, most such contacts were limited to information trips. For example, in the 1970s, staff from the MPI for Comparative and International Private Law visited their counterparts at the Potsdam Institute for Foreign and Comparative Law at the GDR’s Academy for State and Legal Sciences; no joint projects emerged from these interactions.³⁹⁸ The Basic Treaty of 1972 didn’t change this; rather, the renaming of the DAW to the Academy of Sciences of the GDR (AdW) only emphasized the two-state nature of the German nation, recognized in German-German treaties.³⁹⁹

On the other hand, in the years leading up to the fall of the Berlin Wall, more than fifty of the approximately two hundred MPS members, including all the still-living MPS presidents from Butenandt through Lüst to Staab, were also members of the Leopoldina.⁴⁰⁰ Founded in 1652, this German Academy of Naturalists in Halle had managed to defend its unique science political status against the demarcation mania of the GDR leadership, at least in terms of its membership: more than twice as many German members, as well as foreign

397 Stubbe to Butenandt on June. 6, 1964; Butenandt to Stubbe on July 1, 1964; Stubbe to Butenandt on Feb. 25, 1966; Butenandt to Stubbe on April 6, 1966; Butenandt to Stubbe on March 4, 1967, AMPG, Sec. II, Rep. 70, No. 109, fol. 437, 436, 434, 433, 429. On Käthe Seidel (1907–1990): Globig, “Katzenpaul,” 2004. Happel, *Gutes Wasser Lebensquell*, 2001. For a discussion on Stubbe’s unique professional and private status in the GDR, see Heim, *Die reine Luft*, 2002, pp. 36–39.

398 Yet, thanks to repeated inquiries involving all MPIs, the International Relations Unit had a fairly good overview of the research situation and the more or less interesting research fields in the GDR. Nickel to Losch (BMFT) on March 1, 1974, AMPG, Sec. II, Rep. 70, No. 110, fol. 161.

399 Nötzoldt, “Deutsche Akademie der Wissenschaften zu Berlin,” 2018, p. 393.

400 Staab, “Ansprache des Präsidenten,” 1990, p. 23. For 1989/90, Ash indicates 60 MPS members who simultaneously were members of the Leopoldina, of which seven were also members of their Senate. Käthe Seidel, who had such intensive work contacts in the GDR, was neither a member of MPS nor Leopoldina, see Ash, *MPS im Kontext der Deutschen Vereinigung*, 2020, p. 53.

members, came from the West. Many of the MPS members frequently attended the biennial general assemblies.⁴⁰¹ They also held high positions within the East German scholarly society, with Butenandt as a long-standing vice-president being a prime example. Several MPS members were on the leadership board and in the Senate, or like Staab, who not only served as Senator but also as head of the Chemistry Section.⁴⁰² Heinz Staab was also approached in early 1987 by the Erlangen Institute for Society and Science, which was working on public relations for the future German-German scientific dialogue on behalf of the BMFT. The institute wanted to advertise using the expectations of experts familiar with the East German scientific landscape in a promotional brochure. In his response, Staab pointed out the close ties to the Leopoldina, the regular visits from its president, Heinz Bethge, to the MPS, and his own numerous lecture trips to East Germany. He specifically mentioned the appointment of linguist Manfred Bierwisch, who worked at the AdW in East Berlin, as an External Scientific Member (AWM) to the MPI for Psycholinguistics, founded in 1980 in Nijmegen, the Netherlands.⁴⁰³

However, the institutional relationships between the MPS and the AdW in East Berlin, the central research institution of the GDR, remained cool until the latter was dissolved in 1992. Things were different with its successor organization, the Berlin-Brandenburg Academy of Sciences (BBAW), founded in 1993. The BBAW sought to profile itself as an innovative research academy vis-à-vis the West German scholarly societies, while still placing itself in the tradition of the Prussian Academy of Sciences, which had merged into the AdW in 1946.⁴⁰⁴ In the 1960s, political attempts to co-opt the MPS were deflected with diplomatic finesse—such as the demand from the presidency to counter “the manipulation

401 In 1980, 718 members of the Leopoldina came from the West, of which 356 were from the FRG; from Warsaw Pact countries, there were 292 members, with 143 from the GDR, see Macrakis, “Einheit der Wissenschaft,” 1997. Otto Hahn, who was appointed to the Leopoldina in 1926, of course, remained a member even after the war.

402 Butenandt also maintained the unofficial donation account for the Leopoldina in the West. Payments to this were a continuous source of disappointment for Hans Hermann Weber (MPI for Medical Research) because they were not tax-deductible, as Butenandt did not wish to involve the FRG tax authorities, see Marsch to Weber on Feb. 19, 1965, Weber to Marsch on Feb. 20, 1965, Butenandt to Weber on April 1, 1965, AMPG, II. Abt., Rep. 70, No. 109. Regarding Staab’s activity in Leopoldina from 1981–1999, see AMPG III. Abt., Rep. 150, No. 43, fol. 381, 380, 379. For the history of the re-admission of Leopoldina in the GDR: Gerstengarbe, “Leopoldina SBZ DDR,” 2016; regarding Butenandt see *ibid.* pp. 437, 446–467.

403 Whether the non-German location of the MPI for Psycholinguistics, which after the Roman Bibliotheca Hertziana became the second of to date five MPIs in foreign countries, facilitated the appointment of the AdW member, needs verification. Burrichter to Staab on Feb. 2, 1987; Staab to Burrichter on Feb. 26, 1987, AMPG, II. Abt., Rep. 70, No. 110, fol. 43, 41.

404 For the revived Prussian tradition, see the BBAW website, Academy history, <http://www.bbaw.de/die-akademie/akademieggeschichte>, last accessed on July 11, 2019. For the history of the Berlin Academy, see Kocka, *Berliner Akademien der Wissenschaften*, 2002.

of public opinion by the Springer press,” West Germany’s notorious tabloid press and the “outrageous acts of the police and their auxiliaries against democratic forces and emergency laws opponents from student youth, science, and other circles of the population in West Germany and West Berlin” following the assassination attempt on Rudi Dutschke at Easter in 1968.⁴⁰⁵ Only after the uprisings in Paris five weeks later did Butenandt express gratitude for the sympathy of his East Berlin colleagues, which he ironically and euphemistically valued as “proof of a unity among scientists.” However, the “slight weight” of science could, he wrote, achieve nothing in the face of the “widespread dissatisfaction and uncertainty of the emerging generation with regard to [...] especially their own future” and the “not clearly foreseeable and therefore not clearly assessable situation of political unrest.” Rather, he hoped that the new “unity of science between the two parts of Germany would not only manifest itself in times of crisis like the present but become a reality again through active cooperation in our actual task.”⁴⁰⁶

This hope predictably proved to be in vain. Around 1975, the BMFT indeed harbored the idea that the STC framework agreement, which was under negotiation, should be underpinned, among other things, by an individual agreement between the MPS and the AdW.⁴⁰⁷ However, little changed in the subsequent twelve years leading up to the signing of the framework agreement—despite occasional exploratory talks and two moderately functioning collaborations, including mutual visits: both the MPI for Biochemistry and the MPI for Immunobiology collaborated with colleagues from the University of Rostock.⁴⁰⁸ The visit prepared by the BMFT of Herbert Weiz, the GDR’s Minister for Science and Technology, in the summer of 1982, which included a visit to the MPS, and the return visit of the MPS President to the East Berlin AdW in January 1983, also failed to break the deadlock.⁴⁰⁹ For one, the BMFT once again warned against agreeing to further collaborations at the institute level without consulting with it and the Federal Ministry for Inner-German Relations (BMB), because the GDR would offer collaborations only in a few areas that were technologically of interest for them, such as metallurgy and laser technology. In contrast, the

405 Hartke, Klare, Rompe (all DAW) to Butenandt on April 22, 1968, AMPG, II. Div., Rep. 70, No. 109, fol. 427.

406 Butenandt to Hartke on May 27, 1968; the day before, Butenandt had presented the matter to the Executive Council, AMPG, II. Div., Rep. 70, No. 109, fol. 425.

407 Note from Nickel dated Dec. 18, 1975, AMPG, II. Div., Rep. 70, No. 373, pp. 22; Haunschild (BMFT) to Lüst on May 20, 1975; Lüst to Haunschild on June. 10, 1975; Lüst to Klare (AdW) on July 24, 1975, AMPG, II. Div., Rep. 70, No. 109, fol. 217, 213, 20.

408 At the MPI Biochemistry, the directors Gerhard Ruhenstroth-Bauer and Kurt Hanning collaborated with Dr. H. L. Jenssen (University of Rostock) and at the MPI Immunobiology, Dr. Jann with Prof. Nimmich (University of Rostock). Notes from Kazemi dated July 7, 1982, and April 15, 1983, AMPG, II. Div., Rep. 70, No. 110, pp. 291–294, fol. 344.

409 Notes from Nickel dated July 7, 1982, AMPG, II. Div., Rep. 70, No. 110, pp. 291 and Jan. 21, 1983, AMPG, II. Div., Rep. 70, No. 110, fol. 344; Nickel to Petzow (MPI for Metals Research) on Aug. 9, 1982, AMPG, II. Div., Rep. 70, No. 110, fol. 63.

Federal Government had to insist on a balance of interests and collaboration especially in the humanities, including unhindered access to the GDR's state archives, demanded by the MPI for History, the inclusion of West Berlin, and the signing of a corresponding framework agreement.⁴¹⁰ Moreover, starting from 1983, the GDR attempted to use the delay of this agreement to pressure the Federal Government to abandon the NATO-Dual Track Decision and to win the support of the MPS for this move. As a result, a visit scheduled for November 1983 by the Deputy Minister for Higher and Technical Education of the GDR, Günter Heidorn, was first postponed by the MPS due to the initial deployment of the American Pershing II missiles on West German soil and was then completely canceled by Heidorn.⁴¹¹

Even after the STC framework agreement was finally signed in the autumn of 1987, progress still stalled. MPS President Staab did invite his counterpart from the AdW, Werner Scheler, to Munich in November 1987 and accepted a few months later a counter-invitation to the AdW in East Berlin. However, his International Relations Unit warned him against making hasty commitments: the invitation principle preferred by the MPS was difficult to enforce against the dispatch principle, which the AdW insisted upon, citing the STC agreement. Longer stays by invited GDR scientists at Max Planck Institutes usually still foundered on approval from the AdW. It was far from guaranteed that MPS researchers, with their broad range of interests in scientific collaborations, would be able to realize them as intended, not only with the AdW but also with East German universities. Should Staab, during his visit to East Berlin, still want to aim for a direct agreement between the MPS and the AdW, as was certainly desired by the BMFT, Nickel strongly recommended "insisting that a first draft be prepared on our end and transmitted to the AdW." The details should preferably be "clarified at the staff level," and the final round should take place on West German soil.⁴¹² Only in October 1989, "just before the collapse," as Nickel put it in an interview, did the AdW show a genuine interest in collaboration. After the opening of the Wall, they were also willing to accept the invitation principle that Nickel had written into an initial draft contract. During the Christmas break of 1989/90, the two Presidents, Staab and Scheler, wanted to finalize the contract for signing. However, Nickel, as the international relations officer, in agreement

410 See Schöttler, *MPI für Geschichte*, 2020, pp. 67–82. Note from Nickel dated Aug. 16, 1982, AMPG, II. Div., Rep. 70, No. 110, pp. 146; Notes from Kazemi dated April 15, 1983, AMPG, II. Div., Rep. 70, No. 110, fol. 344.

411 Werner Scheler (President AdW) to Lüst on Oct. 10, 1983, AMPG, II. Div., Rep. 70, No. 110, pp. 182; Heidorn to Lüst on Oct. 11, 1983, AMPG, II. Div., Rep. 70, No. 110, fol. 179; Note from Nickel dated Nov. 3, 1983, AMPG, II. Div., Rep. 70, No. 110, fol. 178.

412 Note from Nickel dated April 19, 1988, AMPG, II. Div., Rep. 70, No. 110, fol. 415; Note from Peter dated April 29, 1987, *ibid.*, fol. 170; Compilation of ongoing, planned, and desired cooperations of MPIs with Eastern European countries including the GDR dated July. 8, 1987, *ibid.* Note dated Nov. 12, 1987 regarding MPS Senate on Nov. 19, 1987, BArch B196/156219.

with the Secretary-General of the MPS, Wolfgang Hasenclever, did everything in his power to delay the signing—firstly, in view of the first free elections to the People’s Chamber of the GDR scheduled for March 1990, and then because of the negotiations in the Unification Treaty and the associated assessments of GDR’s science institutions by the West German Science Council.⁴¹³

Whether the President of the MPS noticed or even criticized the delay tactics of his administration is not documented. However, he was likely grateful a few months later that it had prevented him from unwittingly endorsing the dangerous talk of the AdW as a “potential merger partner” for the MPS in “a future ‘Science Union’ of the two German states,” or even a “convergence of the science systems.”⁴¹⁴ In his keynote speech in June 1990, Staab drew a clear line of separation: colleagues from the Leopoldina—their outgoing President Bethge as well as his successor Benno Parthier—were warmly welcomed as representatives of the institution that “has steadfastly ensured the scientific intertwining of East and West free from political influence across 40 years of division.”⁴¹⁵ However, he settled accounts with the “GDR Academy.” It had been “firmly embedded in the centralized state power apparatus,” which was still reflected in its membership and governing bodies. At best, a quarter of its activities came “close to our understanding of basic research.” It was completely inadequately equipped in terms of infrastructure and apparatus but was overstaffed in personnel. Yet, he acknowledged, there were—“as we know primarily through the Leopoldina”—“outstanding scientists who could achieve noteworthy things even under these difficult conditions.” It was now important to identify, support, and promote these scientists on the international stage, most of whom had not been part of the “travel cadres” for “political reasons.”⁴¹⁶

What Staab had formulated here as a future task was to be operationalized just a few days later, specifically during the “fireside chat” on July 3, 1990. In this meeting, the presidents of the ‘Holy Alliance’—among them the newly elected President of the MPS, Zacher—pre-negotiated the science-policy provisions of the future Unification Treaty with West and East German ministry negotiators. By the end of the day, nothing was yet set in stone. The GDR representatives could still hope that some elements of their science system would be incorporated into the unified research structure of the reunified Germany, and that the dismantling of the AdW and corresponding mass layoffs could be avoided.⁴¹⁷ Conversely, from the MPS’s perspective, the danger had not yet been averted of being confronted with a research academy foreign to the West German science

413 Interview with Nickel (Sachse) on April 12, 2018. See Ash, *MPG im Kontext der Deutschen Vereinigung*, 2020, p. 54.

414 Staab, *Ansprache des Präsidenten*, 1990, pp. 24–25.

415 *Ibid.*, p. 16.

416 *Ibid.*, p. 24.

417 Regarding the “fireside chat” on July 3, 1990, including its lead-up and aftermath, see Ash, *MPG im Kontext der Deutschen Vereinigung*, 2020, pp. 19–50; Ash, *Max-Planck-Gesellschaft*, 2023, pp. 58–62.

system or some new kinds of institutions, and possibly having to make adjustments themselves. There were still 18 months left, until the end of 1991, during which the working groups appointed by the West German Science Council (WR) would evaluate the non-university research institutions of the (soon-to-be former) GDR—sorted by discipline clusters—to ultimately recommend their dissolution, continuation, or restructuring. This time had to be used wisely.⁴¹⁸

Twenty MPI directors participated in seven of the eight WR working groups that evaluated the AdW institutes and the Academy of Agricultural Sciences.⁴¹⁹ Many Max Planck Institutes also took the initiative to evaluate the research potentials that the disbanding GDR offered: They sought out labs and working groups that seemed interesting to them, supported them—thanks to additional funds from the MPS, the Federal Government, and the DFG—with science literature and equipment, and temporarily invited over a hundred male and female scientists as guests into their institutes.⁴²⁰ With this “informal cooperation program,” which had already started in 1989, they were able to catch up, from the bottom up, on former GDR territory, what had always been practiced in MPS’s international scientific exchanges.⁴²¹

Moreover, as Mitchell Ash has elaborated in detail, the MPS took on a strictly time-limited role in restructuring the science system in the *Beitrittsgebiet* (acceding territory) and fitting of institutions or only individual research teams deemed worth preserving into the science system of the Federal Republic—a system seen as reliable not only in the eyes of MPS leadership.⁴²² Stemming once again from the initiative of individual MPIs and under their individual guidance, nearly thirty working groups were formed between 1991 and 1992 and affiliated

418 The following presentation is based primarily on the speeches printed in the MPS yearbooks by Staab and Zacher on the occasions of the MPS General Meeting in 1990 and 1991, as well as the report on “Forschungspoliitik und Forschungsplanung” published there, Staab, “Ansprache des Präsidenten,” 1990, pp. 23–25; Zacher, “Ansprache des Präsidenten,” 1991, pp. 17–20; *MPS Jahrbuch 1991*, pp. 93–98. Its argumentation also draws on Ash, *MPS im Kontext der Deutschen Vereinigung*, 2020 and Ash, *Max-Planck-Gesellschaft*, 2023. See also Mayntz, *Deutsche Forschung*, 1994.

419 List of MPS scientists in evaluation commissions of the Scientific Council, as of Nov. 27, 1990, AMPG, II. Div., Rep. 57, No. 482, fol. 182–184; I thank Mitchell Ash for drawing my attention to this document. The fact that five MPS members alone participated in the working group (WG) examining the physical institutions may not be surprising, but it is noteworthy that just as many were involved in evaluating the economic and social science institutions. Except in the WG for Mathematics and Informatics, MPI members were represented in all WGs. Key documents for the AdW evaluation have been made available online by the Federal Foundation for the Study of the Communist Dictatorship in East Germany: Bundesstiftung Aufarbeitung, Auflösung, <https://deutsche-einheit-1990.de/ministerien/mft/adw/>, last accessed on Aug. 12, 2022.

420 In 1990, “more than a hundred guest researchers and scholarship holders from the new federal states” came, *MPG- Jahrbuch 1991*, p. 93.

421 Zacher, “Ansprache des Präsidenten,” 1991, p. 19.

422 Ash, *MPG im Kontext*, 2020.

with universities in the new *Bundesländer*. The aim was to shift research, which had been largely concentrated under the umbrella of the AdW following the Soviet model, back to universities, and to more closely tie university teaching to current research. Provided that these working groups—which were led with few exceptions by East Germans, exclusively male scientists, while the remaining members came from various regions—proved productive, they were to continue under university governance after a span of five years.⁴²³

For the MPS, this unusual task—given its institutional self-concept—along with the temporary stewardship of the seven newly-created Humanities Centers that it additionally took on at the suggestion of the WR in 1992, was not a selfless service to German reunification.⁴²⁴ Initially, it was a gain in time; for the MPS was under considerable time pressure from the Federal Government, as Beatrice Fromm, the department head responsible for all “new initiatives” within the Administrative Headquarters, perceived. The government wanted to set a positive example for the scientific “reconstruction of the East” by rapidly establishing roughly twenty new Max Planck Institutes in the acceding territory.⁴²⁵ However, founding institutes within the MPS typically involved a long lead time of meticulous selection of themes, personnel, and locations, which the MPS had no intention of shortening to meet the political priorities of reunification. Of course, setting up these working groups also required significant effort on the part of the supervising institutes and the Administrative Headquarters, which installed a coordinating special commission, although without significant staffing reinforcement. From the MPS’s viewpoint, this commitment was justified as a well-calculated, and by the way federally funded, preparatory measure to maintain the MPS’s established structures. Even a global event of the century like the collapse of the Soviet Union should not challenge these structures. Initially, the goal was to establish “normality in university research” as defined by West German standards in the new *Bundesländer*. Only then could the MPS build upon that foundation to establish its own institutes, with the aim of subsidizing innovative research fields not yet represented at universities. The plan was, as

423 See *ibid.*, pp. 156 and 295: Originally, 30 were planned, but after political review of the intended leaders from the former GDR, 27 remained.

424 On the humanities centers, see *ibid.*, pp. 97–103, pp. 249–265. Here three of the seven acting heads (the philosopher Hans-Peter Krüger from 1994 on, the historian Martin Fontius, and the linguist Ewald Lang) were former GDR scholars, all of them men. See Förderungsgesellschaft Geisteswissenschaftliche Neuvorhaben mbH, Tätigkeitsbericht 1992 der geisteswissenschaftlichen Forschungsschwerpunkte, Munich 1993. I thank Dieter Hoffmann for drawing my attention to this document.

425 Written communication from Fromm to CS on January 24, 2020, and verbal communication from Fromm to CS on January 26, 2020: In the summer of 1990, at the request of the MPS President, Fromm interrupted her vacation after he had informed her about the expected number of new establishments. The working groups were designed following the model of the Clinical Study Groups within the MPS. Regarding these see Schlünder, “Medizinische Forschung,” 2023.

it has been since Harnack's time, to "enable outstanding researchers to work on important, promising topics in basic research."⁴²⁶

Only one AdW institute was transformed into a new, more narrowly focused Max Planck Institute in 1992 in a way that it remained recognizable thematically, regionally, and from the standpoint of personnel. Not coincidentally, it was the Institute for Solid State Physics and Electron Microscopy in Halle, founded in the 1960s by the later President of the Leopoldina, Heinz Bethge. His successor in leading the institute, Johannes Heydenreich, had already built it into an internationally networked and renowned center for electron microscopy during GDR times. As an external member of the Stuttgart MPI for Metal Research, he had been partially integrated into the MPS since 1990. Until his retirement in 1995, he continued to lead it as the MPI of Microstructure Physics, starting in 1993 alongside two younger colleagues from the West.⁴²⁷

In contrast, there was no shortage of ideas for new Max Planck Institutes that could potentially be realized in the course of rebuilding the East. Although these would be situated in unusually distant locations due to the politics of reunification, they would, of course, follow the established procedures of the MPS. The question would not be whether the newly appointed colleagues came from East Germany or even from the dissolved research institutes, but rather whether they were the most suitable candidates for research areas in which significant international breakthroughs were expected using MPS's resources.⁴²⁸ All three sections made proposals and established committees to soon flesh out their institute-founding plans and present them to the MPS Senate for decision-making. However, in his 1991 keynote speech, Zacher cautioned against too high expectations: "It is likely foreseeable that we could approve more projects than our financial and staffing framework will ever allow."⁴²⁹

By 1993, the MPS had clarified with its funders how the new institutes would be financed. Then, by 1996, nine institutes had already begun operations in the

426 Zacher, "Ansprache des Präsidenten," 1991, p. 19.

427 These were Jürgen Kirschner, previously an experimental physicist at the Free University of Berlin, and Ulrich Gösele, who had driven his dissertation and habilitation at the MPI for Metal Research and later took on a professorship at Duke University, North Carolina. He was called back to the MPI for Microstructure Physics from there in 1993. See the obituaries for Heydenreich and Gösele: Max Planck Institute of Microstructure Physics, Former Directors, <https://www.mpi-halle.mpg.de/ehem-Direktoren>, last accessed on July 22, 2019. Secondly, in 1992/93, the MPI of Colloid and Interface Research was founded in Golm near Potsdam. It was based, at least, on the concept of an AdW scientist, Burkhard Philipp, who suggested merging several working groups, which were active in different AdW institutes, into a new interdisciplinary MPI. How many AdW scientists were actually taken over there is unclear; Philipp himself still worked there as an emeritus; however, all three male directors came from the West. For details on the first two foundations, see Ash, *MPS im Kontext der Deutschen Vereinigung*, 2020, pp. 119–131.

428 For staff recruitment in the NBL, see Ash, *MPG im Kontext*, 2020, pp. 292–297, 307; Ash, *Max-Planck-Gesellschaft*, 2023, pp. 160–179.

429 Zacher, "Ansprache des Präsidenten," 1991, p. 20.

new *Länder* and the eastern part of Berlin, with another five in the pipeline.⁴³⁰ The rapid progress is all the more remarkable given the economic crisis of reunification in the early 1990s and the fact that the MPS, with all its bodies, insisted on its time-consuming internal procedures for founding institutes and appointing staff, which could rarely be concluded quickly. Apart from the MPI for Microstructure Physics, these processes resulted in only one other case by 1996 in the appointment of an East German scientist, when Eberhard Zeidler became the founding director of the MPI for Mathematics in the Sciences. It was not until around the turn of the millennium that two more East German scientists were included in the circle of MPS's Scientific Members: Gunter Fischer (Max Planck Research Unit for Enzymology of Protein Folding) and Sibylle Günter (MPI for Plasma Physics), the latter being the only woman in the group.⁴³¹

This also showcased what Mitchell Ash rightly described as the dominant structural conservatism of the MPS.⁴³² This conservatism permeated almost all science policy strategies, decisions, and justifications within the MPS at every level during the reunification process. It held together the extensive efforts of the organization's leadership, administrators, and many of its scientists, and motivated their actions, which Renate Mayntz, the director of the MPI for the Study of Societies, aptly termed "identity-conforming" as early as 1992.⁴³³ The goal was to avoid any structural changes in adapting to new circumstances and to export the proven business model into the 'acceding territory' one-to-one. This goal was brilliantly achieved within the national context, with now eighteen Max Planck Institutes and research units in the new *Länder*. Scientists from the former GDR hardly benefited from this in the first round of appointments, especially at the director level.⁴³⁴ Instead, this substantial increase in Max Planck Institutes in the 1990s and into the early 2000s coincided with a significant internationalization, or more precisely, a "Westernization" of MPS membership, but not a surge in feminization: About half of the approximately fifty newly appointed MPI

430 Zacher, "Ansprache des Präsidenten," 1996, p. 19. For further new foundations in detail, see Ash, *MPS im Kontext der Deutschen Vereinigung*, 2020, pp.131–153, 189–223, p. 307; Ash, *Max-Planck-Gesellschaft*, 2023, pp. 160–179.

431 Ash, *Max-Planck-Gesellschaft*, 2023, pp. 226–228, 254–255.

432 Ash, *MPG im Kontext der Deutschen Vereinigung*, 2020, pp. 84, 87, 103 and elsewhere.

433 Mayntz, "Research," 1992, pp. 77–78.

434 Unfortunately, there are no statistics on how many scientists from the former GDR were hired as scientific staff in the newly founded MPIs. At least three of the seven leaders of the temporarily established Humanities Centers exclusively came from the West. However, the heads of the temporary working groups came almost entirely from the GDR and were predominantly employed by the universities they were affiliated with after their contracts expired. See Ash, *MPG im Kontext der Deutschen Vereinigung*, 2020, pp. 292–297. Also see Kolboske and Scholz, *Spannungsfelder*, 2023. The distribution of MPIs across the old (64) and new (17) federal states approximately corresponds to the population proportions; there are also five MPIs, two of which are new foundations, in Berlin: Max Planck Society, Institutes in the Federal States, [http://www.mpg.de/institute_karte], last accessed on June 17, 2024.

directors in the new *Länder* came from the Western world, mainly from the U.S. With the exception of American historian of science Lorraine Daston (MPI for the History of Science, Berlin) and West German neuropsychologist Angela Friederici (MPI for Cognitive and Neurosciences, Leipzig), they were all men.⁴³⁵

Europe: Constant “Erosion” of the German Research System

The transfer of the West German research system to the new *Länder* was hardly guided onto the desired tracks, let alone completed, when new challenges began to emerge in early 1992 with the Maastricht Treaty on the European Union (EU). These challenges took up significantly more space in internal reports than the problems related to reunification.⁴³⁶ The new dangers were lurking in Articles 130 f–p, which expressed the will of the member states—or at least their governments—to elevate the “process of European integration” to a “new level” in the field of research and development.⁴³⁷ Until then, the EU’s science-relevant funding programs had primarily focused on industrial or industry-related and agricultural research and development projects. Now, basic research was to be included in the funding. Numerous Max Planck Institutes, some of which had previously financed EU-compatible projects from Brussels, quickly took advantage of this. As early as 1993, 39 institutes had secured nearly 21.2 million DM in EU grants, almost double the amount received the year before:

435 See Ash, *Max-Planck-Gesellschaft*, 2023, pp. 78–79, 102–103, 217–220 for the lists of working groups and institute start-ups, including the names of the directors and their previous institutional affiliations; accordingly, all East German leaders of the 27 working groups were male. The transfer of the West German science system to the East also predominantly benefited (Western) males in the humanities and social sciences at the universities who were appointed to the newly available professorships. It is by no means polemical to state that the transformation of the East German science system was essentially a project by Western men (in evaluation, founding, and appointment committees) for Western men, hoping for a career jump, who then occasionally chafed at the remnants of old structures and networks that remained at the middle and lower levels. Contrary to its own claim to innovation, the MPS’s commitment in the new *Bundesländer* followed this traditional gender-political pattern. On the gender politics of the MPS in the context of German equal opportunities policy in the 1990s, see Kolboske, *Chancengleichheit*, 2018 and Kolboske, *Hierarchies*, 2024.

436 Especially the *MPG-Jahrbücher* 1992 (pp. 85–96), 1993 (pp. 18–19, pp. 96–102) and 1994 (pp. 71–74) detailed problems of European research policy; however, the reporting on developments caused by reunification “normalized” surprisingly quickly and was immediately integrated into the standard sections of new institute foundations and new appointments. See Zacher, “Ansprache des Präsidenten,” 1992, pp. 21–22; Zacher, “Ansprache des Präsidenten,” 1993, pp. 18–19.

437 Quotes: Political Union, Treaty on the EU, <http://www.politische-union.de/euv/euv1.htm>, last accessed on August 2, 2019.

EU Funding for MPI Projects 1981–1993

Year	DM (thousands)	Year	DM (thousands)
1981	275	1988	3.145
1982	363	1989	5.254
1983	1.145	1990	10.353
1984	1.972	1991	12.260
1985	1.958	1992	11.491
1986	2.543	1993	21.247
1987	3.723		

Source: Note by Lange-Gao dated May 3, 1995, AMPG II-1–489, fol. 96.

In this year of 1993, a total of 232 individual projects were funded from EU funds. However, more than half of the total funding was concentrated on the four MPIs for Meteorology (20 projects; 5.9 million DM), Breeding Research (26 projects; 2.3 million DM), Quantum Optics (11 projects; 1.9 million DM), and Solid State Research (21 projects; 1.2 million DM).⁴³⁸

What was wrong with this obviously welcome European financial windfall at the institutes? Despite its seemingly less impressive scope at second glance—it accounted for hardly 1.3 percent of the MPS’s total budget of 1.69 billion DM in 1993 and far less than the project funds provided by the BMFT—it initially reinforced a tendency towards increasing project funding with stagnant base funding. This trend, which, at least in the eyes of MPS leadership, preprogrammed a loss of autonomy in the decision-making over future research focuses and directions, was even more difficult to counter at the European level than within the national framework of the Federal Republic.⁴³⁹ Furthermore, the fine print—particularly Article 130 n of the Maastricht Treaty—contradicted the basic structures of the MPS deeply embedded in the German science system:

The Union may set up joint undertakings or any other structure necessary for the efficient execution of Union research, technological development and demonstration programs.⁴⁴⁰

The following Article 130 o further clarified who was to determine the details of these future structures, namely the European Council, unanimously “on the

438 Note by Lange-Gao dated May 3, 1995, AMPG, II. Abt., Rep. 1, No. 489, fol. 97–101. Cf. regarding the drawing on EU funding: *MPS Jahrbuch* 1992, p. 92.

439 For budget data see Balcar, “Die MPG in ihrer Zeit,” 2023, pp. 158–201.

440 Maastricht Treaty § 130n: Political Union, Treaty on European Union, https://www.cvce.eu/content/publication/2002/4/9/2c2f2b85-14bb-4488-9ded-13f3cd04de05/publishable_en.pdf, last accessed on Oct. 5, 2021.

proposal of the Commission and after consulting the European Parliament and the Economic and Social Committee.”⁴⁴¹ European science organizations were not mentioned at all.

Hardly had the Maastricht Treaty been finalized in the spring of 1992, when MPS President Zacher felt compelled to emphatically alert the General Meeting to the looming dangers for the German science system in general, and the MPS in particular. Specifically, he warned against:

[...] the structural inequality between research funding in Germany and research funding in Europe, and the constant process of erosion of the German system through European dynamics.⁴⁴²

Not only was EU research policy “unilaterally focused on project funding,” but it also tied the allocation of funds to criteria that Zacher viewed as “foreign to science.” These criteria included balanced regional distribution and the promotion of cohesion in the European research area, which would be advanced through guidelines for the multilateral composition of project teams. According to Zacher, these European policy criteria would push back the scientific competition that should be promoted first and foremost in order to finally form a European science community based on “comparative performance” and targeting the “competence of the best,” as Zacher and his predecessors had always demanded. Only such a community would then be able to compete with the USA and Japan.⁴⁴³ What Zacher found even more devastating was the “massive European decision-making machinery” of the Commission, Parliament, and Council, which left no room for the “independent articulation of science,” let alone delegate program development and execution to the autonomous and solely competent science organizations. As he saw it:

The autonomy of science was largely reduced to the freedom of choice to either apply for participation in the programs or not.⁴⁴⁴

441 Maastricht Treaty § 130c: Ibid. Additionally, about 70 program committees were created, in which, however, the state governments only sent their political representatives, not representatives of the national science organizations.

442 Zacher, “Ansprache des Präsidenten,” 1992, p. 21.

443 Zacher articulated his understanding of research policy, which should primarily focus on performance, selection, and innovation, in his ceremonial addresses in 1994 and 1995, cf. Zacher, “Ansprache des Präsidenten,” 1994, 23; Zacher, “Ansprache des Präsidenten,” 1995, 20–21.

444 All the aforementioned quotes: Zacher, “Ansprache des Präsidenten,” 1992, p. 21. Regarding the competition of global scientific spaces see Staab, “Ansprache des Präsidenten,” 1989, pp. 20–23; Zacher, “Ansprache des Präsidenten,” 1993, p. 20. Concerning the relationship between scientific competition and the EU research policy oriented towards the “science-foreign” goal of “cohesion”, i.e., balancing the disparity of prosperity and scientific levels in Europe, cf. *MPG-Jahrbuch* 1992, p. 94; Zacher, “Ansprache des Präsidenten,” 1995, p. 20.

Zacher felt completely abandoned by German politics. Although it had done the “utmost” to transfer what had “made the success of German monetary policy in the post-war period” to the European level, it had done nothing to give expression to the “principles that have enabled the success of German research.”⁴⁴⁵ He concluded that this was something that needed to be taken into one’s own hands:

We must explore and assert what is conceivable and feasible for preserving the values that the Max Planck Society stands for in a European future.⁴⁴⁶

Various approaches were combined, all of which shared two fundamental characteristics: First, the bottom-up principle should be asserted in both European and international science cooperation, starting from the working level of labs and desks, in contrast to the “top-down philosophy” that all presidents had repeatedly criticized, through which the “Colossus of Brussels” aimed to impose its bureaucratic structures and extra-scientific objectives on the “Europe of Researchers.”⁴⁴⁷ Second, the position of national as well as independent European science organizations should be strengthened—especially the European Science Foundation (ESF), which was by then considered the lesser of two evils. Despite opposing EC/EU treaties, they persistently and futilely advocated for the decentralization of European research funding and science self-governance. In this vein, the MPS and the DFG had already initiated ESF-funded European Research Conferences targeting early-career scientists in 1989.⁴⁴⁸ As a model for highly selective bottom-up funding, and supported solely by national partners, the Alexander von Humboldt Foundation (AvH) and the BMFT, the Max Planck Research Prize was established in 1990, endowed with a significant 200,000 DM. It was awarded in specified research areas to two researchers, one based domestically and the other abroad, to enable them to collaborate intensively for three years.⁴⁴⁹

445 Zacher, “Ansprache des Präsidenten,” 1992, p. 22.

446 Ibid.

447 The quotes come from Staab, “Ansprache des Präsidenten,” 1989, p. 21, but similar ones can also be found from his predecessor and successor, as well as in the reports of the Administrative Headquarters.

448 The first six conferences took place in 1990, followed by 23 more in 1991, and over fifty conferences were planned for 1992; the program continued until 2015: European Science Foundation, Conferences, <http://archives.esf.org/serving-science/conferences.html>, last accessed on August 5, 2019. Staab, “Ansprache des Präsidenten,” 1989, pp. 21–22; *MPS Jahrbuch* 1992, p. 94

449 The list of award recipients can be found at: *Max-Planck-Forschungspreis*, <https://de.wikipedia.org/w/index.php?title=Max-Planck-Forschungspreis&oldid=168795977>, last accessed on Aug. 5, 2019. The award criteria have been changed several times, most recently in 2017. The requirement for bilateral cooperation was dropped as early as 1995, but the prize money was significantly increased to its current amount of 1.5 million euros: *Bundesministerium für Bildung und Forschung—BMBF, Forschungspreis ab 2018*, July 31, 2017, <https://web.archive.org/web/20210305100902/https://www.bmbf.de/de/neuer-max-planck-humboldt-forschungspreis-ab-2018-4542.html>, last accessed on Aug. 5, 2019.

To secure a fair share of European funding despite reservations about project funding, the MPS, along with other German science organizations, established the Coordination Office of Science Organizations (KOWI, Koordinierungsstelle der Wissenschaftsorganisationen) in Brussels in 1990.⁴⁵⁰ They had calculated—again, not for the first time—that far less funding was returned to Germany than the German taxpayer contributed to the EC budget. The suspected reason was primarily the lack of information among research staff in the federally structured German science system. KOWI was designed to address this gap by quickly disseminating information about new funding programs to universities and research institutes and by supporting potential applicants. Last but not least, KOWI was also intended to effectively incorporate the interests of German research groups and institutions into the planning and implementation of EC programs.⁴⁵¹

The ideas for these initiatives, as well as the MPS's commitment to establishing European mobility scholarships that should preferably be allocated under the control of scientific organizations, originated from before the transition of 1989/90. However, the collapse of the Soviet empire offered opportunities to promote the advantages of the German science system in Europe. On one hand, efforts were made, in collaboration with all relevant German organizations, to persuade the East Central European countries eager to join the EU about the merits of Germany's decentralized scientific structure and the administrative autonomy of its organizations. A seminar held in February 1992 aimed to offer the invited representatives from East European academies and universities "suggestions for development in their own countries."⁴⁵² Perhaps the hope was to make the unique German model a role model, if not for all of Europe, then at least for the enlargement area, and to broaden its regional base within the EC/EU in the medium term. On the other hand, there was a direct effort to influence administrative power in Brussels. Through an initiative by the MPS, supported by the DFG and AvH, a pilot program was wrested from the EC Commission in 1992 following "intense discussions." This was prompted by an EC program launched the same year, with a budget of 55 million ECU, aimed at promoting the sciences in East Central Europe. All researchers from these countries who applied for a guest stay in Germany were evaluated not only by the relevant EU bodies but also by the MPS, DFG, and/or AvH. The comparison of selection criteria aimed to demonstrate "to what extent future evaluation processes and

450 *MPG-Jahrbuch 1992*, p. 93: AvH, AGF, DFG, DAAD, FhG, and HRK founded the Verein zur Förderung europäischer und internationaler wissenschaftlicher Zusammenarbeit e. V. as the sponsoring organization.

451 *Ibid.*, pp. 93–94. For the meager return of funds and delayed flow of information, see also the discussion during the first symposium in the series: Max-Planck-Gesellschaft: *European Research Structures*, E1/1994, pp. 27–28, p. 34, p. 37.

452 *MPG-Jahrbuch 1992*, p. 96. The information event was jointly organized by AvH, AGF, DAAD, DFG, FhG, and HRK.

fund management could be entrusted to national or supranational organizations supported by the scientific organizations of EC countries.”⁴⁵³ Regardless of the outcome of the experiment, it failed to achieve its objective: the transfer of program development and funding decisions to national or supranational self-governing bodies, as desired by the German scientific organizations and especially the MPS, remained out of reach.

In the following year, MPS President Zacher launched a full-scale offensive. He reported almost euphorically at the MPS’s General Meeting in June 1993 about surprising breakthroughs at the European level. By then, the German Science Council had issued its “Recommendations for the Internationalization of Scientific Relations,” which dealt with research policy perspectives following the Maastricht Treaty.⁴⁵⁴ In January 1993, the *European Heads of Research Councils* (EuroHORCs), including of course the MPS President, had come together to act in a coordinated manner as representatives of the European science community and authorized contact points vis-à-vis the EU Commission.⁴⁵⁵ The Commission, for its part, had signaled a “completely new openness for dialogue and collaboration with research,” according to Zacher’s perception.⁴⁵⁶ The head of Directorate-General XII (DG XII), responsible for Research and Development, Paolo Fasella, had been persuaded to co-host a three-part series of symposia with the MPS in 1993/94. These symposia, to be held at Schloss Ringberg, the MPS conference venue on Lake Tegernsee, would address the “Changes and Challenges” facing European research structures. Zacher, a social law expert, received collegial support from several MPI directors: the public international law expert Jochen Frowein and the patent law expert Joseph Straus; each of their MPIs was responsible for one of the symposia.⁴⁵⁷

However, the agreement between the hosting institutions, the MPS and DG XII, was limited. This was already evident in the financing mode: The Commission willingly took over the costs for the second and third symposiums, which dealt with the more technical issues of the prerequisites of social law for intra-European mobility of scientists and questions about European patent law and intellectual property. However, the MPS was left to cover the costs for the first symposium, which revolved around the particularly sensitive institutional aspects of European research policy. This wasn’t because, as Frowein had ironically suggested in his opening speech, “the EC Commission [...] believes that

453 Ibid.

454 Wissenschaftsrat, *Empfehlungen zur Internationalisierung*, 1992.

455 The EuroHORCs dissolved in 2011 and became part of the new European science organization *Science Europe*, see <https://www.scienceeurope.org/>, last accessed on Aug. 10, 2019.

456 Zacher, “Ansprache des Präsidenten,” 1993, p. 19.

457 Max-Planck-Gesellschaft, *European Research Structures. Mobility*, E3/1994; Max-Planck-Gesellschaft, *European Research Structures. Intellectual Property*, E2/1994. Organizational responsibility here lay with the MPI for Foreign and International Social Law and the MPI for Foreign and International Patent, Copyright, and Competition Law.

here the principle of subsidiarity should also apply.”⁴⁵⁸ The real reason was revealed by Zacher after the conclusion of the series:

In fact, the first institutional colloquium was viewed as being politically too explosive to be organized under its (the DG’s XII) auspices.⁴⁵⁹

Whether it was tactically wise is up for debate, but the organizers from the Heidelberg MPI for Comparative Public Law and International Law took advantage of the MPS’s financial control to tailor the program entirely to their own specifications. They filled all speaking positions, except for the keynote, with two female speakers and five male speakers from the MPS. The Administrative Headquarters also made up the vast majority of the audience. However, the talks were primarily directed at the six visiting senior executives from the EU Commission/DG XII, and then at guests from German and some Western European universities, institutes, and science administrations.⁴⁶⁰ For the opening lecture, they had invited the young constitutional lawyer Hans-Heinrich Trute, who was currently conducting a comparative legal study on European research policy.⁴⁶¹ He compared the Western European science systems and also provided an optimistic interpretation of Article 130n from a German perspective, suggesting that this would now allow the Commission to finally create decentralized self-governing structures for science in Europe.⁴⁶²

The remarks of this acknowledged but external expert were doubly commented upon in the subsequent discussion by MPS members Renate Mayntz and Fritz Scharpf from the MPI for the Study of Societies.⁴⁶³ Both shifted the focus to the institutional specifics of the German science system. These specifics, which contradicted European research policy directives in many ways, needed to be defended. This was especially important because they justified the MPS’s historically hard-won special status within the German system, and in interna-

458 Max-Planck-Gesellschaft, *European Research Structures. Institutional Aspects*, E1/1994, p. 1. Here organizational responsibility was with the MPI for Comparative Public Law and International Law.

459 This refers to Zacher’s introduction to the later publication of the second symposium: Max-Planck-Gesellschaft, *European Research Structures. Mobility*, E3/1994, p.8.

460 Besides the MPS members, six university professors from Germany participated. International guests came from France (2), the Netherlands (1), Great Britain (2), Finland (1), Spain (1), and Portugal (1); see Max-Planck-Gesellschaft, *European Research Structures. Institutional Aspects*, E1/1994, pp. 116–120.

461 He had recently finished his habilitation in Heidelberg with a work on science law and was immediately appointed to Dresden: Trute, *Forschung zwischen grundrechtlicher Freiheit*, 1994; Trute and Groß, *Rechtsvergleichende Grundlagen*, 1994; Trute, *Comparative Analysis*, 1994.

462 Max-Planck-Gesellschaft, *European Research Structures. Institutional Aspects*, E1/1994, p. 21.

463 The other presentations by MPS members Jozef Schell (MPI for Breeding Research), Christine Langenfeld (MPI for Comparative Public Law and International Law), and Wilhelm Krull (Administrative Headquarters) were immediately followed by the general discussion without comment, *Ibid*.

tional comparison. The defense line by Mayntz and Scharpf revolved around four well-known arguments: 1) Central was the peculiarly institutionalized distinction between basic research and applied science in Germany. While these terms are also used elsewhere as analytical and descriptive categories, nowhere else has this distinction been elevated to the guiding principle of the institutional organization of a national science system; 2) Particularly the MPS and the DFG, responsible for basic research in Germany, enjoyed exceptional administrative and research-policy autonomy. They solely took charge of all personnel decisions, including the appointment of their presidents, the selection of their research focal points and funding criteria, as well as selection processes and funding decisions; 3) The single criterion for both content and personnel selection was the principle of excellence, which is appropriate for basic research; this, however, stood in insurmountable contrast to the European political guiding principle of harmonizing regional disparities or the cohesion among member states; 4) From the German perspective, the redirection of funds from the national budget into a European budget for basic research was highly concerning. It would be better if the principle of subsidiarity would apply here, in the sense of German federalism: Basic research was to remain under individual state authority; European funding measures were to continue to focus on applied research, big science facilities, and such projects that would strain national budgets and thus bring European added value.⁴⁶⁴

As Scharpf had already conceded in his commentary, these German essentials could hardly be applied to European partners. They operated in different, possibly more centrally organized science systems or were less sharply separated from state administrations, but still did not feel more constrained by the policies of their countries than their German counterparts did. Jacques Guin, a French legal scholar from the University of Montpellier, was more concerned about the consequences of decentralization just beginning in his country. Now local and regional authorities would try to exert much more influence on research directions than the national government ever had.⁴⁶⁵

On the other hand, as Gérard Rivière from the French *Club des Organismes de Recherches Associés* (CLORA), a Brussels-based organization like Germany's KOWI, suggested, the cooperation between the French government and CNRS in mobilizing European research funds was functioning well. European funding had also enabled cooperation programs between industry and science institutions that otherwise would not exist.⁴⁶⁶ The interpretation of the principle of subsidiarity remained inconsistent among speakers from different countries; some assigned it more to "basic research," while others to "research and development." Nevertheless, MPS discussants aimed to direct EU's subsidiary funding towards applied research and particularly to cost-intensive large-scale technolo-

464 Ibid., pp. 27–33.

465 Ibid., pp. 101–102.

466 Ibid., pp. 34–35.

gies, thus defending the national budget for basic research. They saw this as the only way to somewhat secure MPS's base funding and thereby its autonomous research planning independently of European project and program funding.⁴⁶⁷ Hendrik Tent, the Dutch Deputy Director of DG XII, mocked this very core identity of the MPS:

I must admit, I am still totally confused about the distinctions between basic research, applied research, mission-oriented research, diffusion-oriented research and so on; in fact, it ends up being confusion-oriented.⁴⁶⁸

Tent, too, dashed the hopes that Trute had stirred with his interpretation of Article 130n, namely that the Commission could use it to delegate research policy decisions to autonomous European scientific organizations under the umbrella of EuroHORCS and ESF. At most, they could delegate routine tasks involved in program management:

However, in the present structure there is no question of delegating decision-making processes, even if we discuss it, because it is simply not possible at the moment and it would only create new infrastructures in the system. This is one of the elements agreed on by all the Ministers of Research including the German Minister. [...] They thought that only the Commission could ensure the balance that they are looking for. In other words, the Ministers trust each other less than they trust the Commission.⁴⁶⁹

Zacher's summer euphoria had vanished even before the symposia series concluded in January 1994. The EU Commission, however, drew its own conclusions from these discussions. Utilizing the latitude granted to them by Article 103n of the Maastricht Treaty, they bypassed EuroHORCS and established a European Science and Technology Assembly (ESTA) in March 1994. The Commission itself appointed its 112 members from science and industry, asking only for shortlists from national business associations and science organizations.

DFG President Wolfgang Frühwald, who had always consulted Zacher on his European policy offensive, was furious about this "coup" with which the Commission had "tactically and smartly" preempted the EuroHORCS. They would not back down but would do everything possible to prevent "funds for national research from being cut in favor of membership fees payable to Brussels," as has been "practiced in the UK since the Thatcher era and has brought basic research there to the brink of ruin."⁴⁷⁰ In his Paderborn University speech in June 1994,

467 Trute and Lengenfeld elaborated in detail in their presentations on various interpretation possibilities, see *ibid.*, pp. 20–21, pp. 72–73. The discussants also repeatedly returned to the question of where exactly the boundary between national and European research funding can be drawn using this principle, see *Ibid.*, pp. 61, 87, 111 and throughout.

468 *Ibid.*, p. 35.

469 *Ibid.*, p. 38.

470 Frühwald, *Wissenschaftssystem*, 1994, pp. 5–6, http://gcc.unipaderborn.de/AccessDB/OFFICE/PUBLIC/WI2_TRA5.NSF/ba96c98116259251c125683100441208/2613cbacfeeb9421412560cc005047f0?OpenDocument&AutoFramed, last accessed June 19, 2024.

Frühwald took the opportunity to publicly settle scores with the European research policy of “harmonization.” He urgently recommended not only to the upcoming German Presidency of the EU Council but also to other European science organizations: the “unique” German science system, and especially the European “exception” of a “self-administered basic research (the famous bottom-up approach),” must be preserved; the historically evolved diversity of European science systems must be maintained, not standardized; and EU research funding should not be at the expense of national research budgets and their growth rates. In short: “The boundaries between national and EU research funding should not be blurred.” However, national borders were to be made more permeable, so that “students and scientists can freely move from one system to another” without worrying about the recognition of their qualifications and degrees.⁴⁷¹

Both the presidents of the DFG and the MPS were on the same page. For Zacher, the founding of ESTA was “the most striking event,” following which European science could no longer expect anything good from EU research policy and now had to consider it an almost unmanageable risk for international scientific collaboration:

It is with skepticism that not only the Max Planck Society but most of our partner organizations in the other Member States follow such top-down approaches by the Commission. ESTA is yet another example of the hitherto unsatisfactory interaction between the political and administrative institutions of the European Union and the organizations representing the scientific community. [...] I do hope, that at least in the long run, it will be possible to establish a truly European scientific community which can rest upon strong communication channels, well-established cooperative projects and programs, and intensive exchange of personnel.⁴⁷²

The European science funding policy particularly challenged the German science system, which had its specific features rooted under the aegis of the occupying powers. These were, first, its primarily federal constitution with only subsidiary, always contested, national competencies, and second, the institutionalized differentiation between applied and basic research. In contrast, member states with a centrally organized science policy could more compactly represent their national interests in Brussels’ funding policy and had a more institutionally flexible approach to the heuristic distinction between basic and applied research. Within the German science system, the MPS, whose core identity in autonomous basic research as well as its unique federal-*Länder* funding were firmly rooted in these specifics, was more challenged than universities and technical colleges, whose research had long been largely project-based and funded, or than the

471 Ibid., pp. 6–8, p. 10.

472 Max-Planck-Gesellschaft, *European Research Structures. Institutional Aspects*, E1/1994, pp. XX–XXI. See *MPG-Jahrbuch* 1994, pp. 70–74; Zacher, “Ansprache des Präsidenten,” 1995, pp. 20–21.

Fraunhofer Society, whose *raison d'être* was precisely project-based and flexibly funded cooperation with the industry.

Additionally, as recently demonstrated by the lost competition between the self-organized EuroHrcs and the ESTA, unilaterally installed by the Brussels Commission, it had become clear that European-level science and research lacked both legitimate, respected representatives and specific points of contact. The responsible DG XII of the Brussels Commission did not operate like the BMFT, whose ministers or at least state secretaries never missed an MPS Senate meeting. The efforts of European science organizations, including the rather committed MPS, to articulate themselves jointly vis-à-vis Brussels were insufficient, came too late, or led nowhere. Until the mid-1990s, the most that could be agreed upon was that each national science system should continue along its tried-and-tested paths, and that the EU should focus on removing the political and legal barriers to scientists' mobility and cooperation, so that national scientific hubs could enter into an expanded competition for the best ideas and minds.

Until the *European Research Council* (ERC) began its work in 2007 and could actually emancipate its organization and funding structure from European political directives, aiming to focus exclusively on the criterion of scientific excellence, attaining this goal was still a long way off. The MPS along with other German science organizations represented in the 'Holy Alliance,' participated in this process, as did their partner organizations in other EU countries.⁴⁷³ In the end, they largely succeeded in implementing their ideas regarding autonomous topic selection by those slated for funding. These individuals' 'excellence' served as the primary selection criterion, and the selection panels were comprised of members from the respective international scientific communities. However, to the great disappointment of the first ERC Secretary-General and former DFG President, Ernst-Ludwig Winnacker, what they could not achieve was an independent administrative organization separate from the EU Commission.⁴⁷⁴ The funding principle, which involved entrusting an "excellent" researcher with the responsibility of forming an internationally composed research team for a funding period limited to five years, might have resembled the junior research groups already established within the Max Planck Society. But it was also very much in line with the trend of the times. Angelika Lange-Gao, the MPS's inter-

473 According to Kai Simons (MPI for Molecular Cell Biology and Genetics, and the former president of the European Life Scientist Organization, ELSO), European bio-scientists were particularly engaged in the implementation of the ERC. See Simons und Featherstone, "Council," 2005. A first study on the history of the ERC is available: König, *Council*, 2016. I am grateful to Vanessa Osganian for valuable additional leads.

474 The former DFG president, Ernst-Ludwig Winnacker, who had to operationalize the ERC in Brussels as its first Secretary-General from 2007 to 2009, vividly described his exhausting experiences with EU bureaucracy in his book *Winnacker, Europas Forschung im Aufbruch*, 2012.



Fig. 13: Christiane Nüsslein-Volhard in the so-called “Fliegenstall” (fly house) of the MPI for Developmental Biology in Tübingen, ca. 1982.

national relations officer who was temporarily assigned as a “national expert” to the Brussels-based ERC office in its early years, observed that in most countries participating in the ERC, there was a search for “alternatives to permanent employment of scientists” in order to “gain more financial flexibility” and to “respond more quickly to new research trends.”⁴⁷⁵

In the ERC committees, the MPS was prominently represented from the outset by one of the still rare female MPI directors, developmental biologist and Nobel laureate Christiane Nüsslein-Volhard (MPI for Developmental Biology), physical chemist Hans-Joachim Freund (Fritz Haber Institute of the MPS), and atmospheric chemist and Nobel laureate Paul Crutzen (MPI for Chemistry).⁴⁷⁶ During the term of the 7th EU Research Framework Program from 2007 to 2013, within which the first ERC grants were announced, the MPS ranked third in the most successful scientific institutions in the EU and the associated states with 50 “Advanced Grants” for scientists with long-term research experience. It came in behind France’s CNRS (61)—which consolidates most French research institutions—and the University of Oxford (53) as a single university. This is a

475 Interview Lange-Gao (Sachse) Dec. 11, 2021.

476 Winnacker, *Europas Forschung im Aufbruch*, 2012. König, *Council*, 2016.

self-assessment from the MPS's website, of course, and would need further contextualization considering the incommensurable units of comparison.⁴⁷⁷

The End of the Cold War and Its Significance for the MPS's Science Foreign Policy

Even amidst the collapse of the bloc system, two political processes were initiated in a reunifying Europe that equally affected both the self-understanding and positioning of the MPS within the FRG's science system, yet ultimately had contrary effects. The first was the rapid, sequential implementation of the established West German system into the new *Bundesländer*. This was accompanied, as we have seen, by a significant exchange of elites, from which primarily younger male scientists from the old *Länder*, as well as from other Western countries, benefited. The MPS participated in this process of system-conforming scientific-political integration—or, to put it more pointedly, the colonization of the new *Länder*—with strong commitment, administrative expertise, and scientific-epistemic creativity. The success was noteworthy: Just as in the years of the West German economic miracle, the MPS expanded its ensemble of institutes by nearly a third within just a decade, successfully maintaining its institutional structures and procedural modes while continuing to build upon its most productive research fields.

Nonetheless, this success came at a price. Despite the economic crisis that emerged early during the reunification of Germany and the persistently tight public budgets, it wasn't necessary to completely offset the expansion towards the East with financial cutbacks in the West. However, consolidation was called for everywhere during those years. Towards the end of the term of the "Reunification President" Zacher, pressure grew to put the Max Planck Institutes and their departments in the old *Länder* under scrutiny and to identify potential candidates for closures. In this contentious situation, the MPS in 1996 appointed for the first and only time to date someone from the outside, zoologist Hubert Markl, an experienced science manager, to lead the MPS. The former DFG President coupled the unenviable task of financial consolidation of the MPS with an overhaul of the Administrative Headquarters, aligning it with the "New Public Management" and administrative reforms that, in these years, were being broadly implemented in Germany's public administrations. Advised by Boston Consulting, Barbara Bludau, successor to Secretary-General Hasenclever and the

477 Max Planck Society, *ERC Advanced Grants*, Oct. 2, 2013, https://www.mpg.de/7541606/erc_advanced_grants, last accessed Sep. 26, 2021. Comparing these institutions, which vary greatly in size, institutional reach, and disciplinary focus, based on such rankings is not informative. An in-depth study on the MPS's involvement in the preparation and organization of the ERC, as well as the grants obtained by MPS scientists within a sufficiently weighted European comparison, falls outside the scope of the research period of this study.

first female head of Administrative Headquarters, led these reform processes.⁴⁷⁸ At the same time, Markl aimed to further accelerate the internationalization of the directorship in the MPS, which had already picked up speed with appointments in the new *Länder*, to bring the MPS up to international standards in the promotion of women, and to properly address the NS history of its predecessor institution, the KWS, as repeatedly called for in leading international scientific journals, particularly *Nature* and *Science*.⁴⁷⁹

At the same time that efforts were underway in the Federal Republic of Germany to expand its own scientific landscape in accordance with its established structures to the East, the EC/EU also intensified its attempts to homogenize the nationally fragmented European scientific landscape and promote scientific collaboration in Europe through new instruments. While the MPS could agree with the Bonn government's direction in the German reunification process, even if not in the politically accelerated pace, this was by no means the case in the parallel European integration process. Instead, challenges had to be fended off from Brussels, particularly those that questioned the German science system and especially the position anchored in it by the MPS. Substantively, this involved the already established use of research funding to primarily serve economic and industrial policy objectives of the EC/EU. Here, subsections of basic research were also to be included, specifically those that would prioritize research topics promising rapid industrial relevance, hence the concern. Budget-wise, the risk particularly during tight budgets was that tax money transferred from member states to Brussels for this expanded European research funding would be drawn from national funding pots, over whose distribution one still had more influence than over the "Brussels behemoth." Procedurally, it was ultimately the application and selection processes that were in the hands of the European Commission, and not scientific self-administration, be it on a national or transnational level.

At least in this request, the MPS hoped to still counteract and, as in the 1970s when the establishment of the ESF was in question, sought solidarity with the science organizations of other European countries, including some non-EC/EU nations. With this deliberately non-EU-compliant territorial scope, the self-

478 These reforms initially met with little understanding among the staff of the Administrative Headquarters, as was the case in other administrations during these years. See Interview Fromm (Sachse) Jan. 22, 2018; oral communications from Angelika Lange-Gao to CS between 2018 and 2021. On the 'New Public Management' in tertiary education, see Boer, Enders und Schimank, *On the Way*, 2007; Boer, Enders und Schimank, *Comparing Higher Education*, 2008; Schimank, *Public Management*, 2005. I am grateful to Britta Behm for these references and text discussions; Balcar, "Die MPG in ihrer Zeit," 2024, pp. 163–177.

479 In 1997/98, both the "C3 special program for female scientists in the MPS," the first women's support program, and the research program on the History of the Kaiser Wilhelm Society during National Socialism, led by an independent presidential commission, were launched. See Kolboske, *Chancengleichheit*, 2018, pp. 99; Kolboske, *Hierarchies*, 2024; Kaufmann, *Einleitung*, 2000; Sachse, *Verbindung nach Auschwitz*, 2003; Sachse, "Was bedeutet 'Entschuldigung'?", 2011.

governance of European science would be organized beyond the jurisdiction of the Brussels Commission, thereby institutionally underpinning its claim for political independence. However, this transnational process made slow progress, struggled to keep pace with Brussels' rhythm, and by the end of the 1990s was far from its ultimate goal. The establishment of the ERC in the subsequent decade led to partial successes, but not to the level of administrative autonomy that the DFG and the MPS had been accustomed to since the establishment of the Federal German science system in the late 1940s and early 1950s.

The EU's supranational science policy, which primarily served an economically oriented European integration, challenged the MPS's scientific self-understanding far more than its various engagements in Federal German foreign science policy had ever done. National foreign policies, as well as the *détente* policies of both blocs, essentially relied on the universality of the sciences and the global networking of scientists. Provided they were not subject to security-related restrictions—as was the case primarily in the USA and the USSR—scientists from both sides (although only very few MPS members were among them) were willing to make their collegial communication channels and specific expertise available for diplomatic purposes. This was to expand the negotiation margins of both sides in the lead-up to official arms control talks and to prevent the Cold War from turning into a hot war. Especially at the beginning of the *détente* policy from the mid-1980s onwards, it was important to build trust by demonstrating a willingness for trans-bloc scientific cooperation. Research areas that were neither militarily sensitive nor immediately applicable were best suited for this, as was the case with fusion research. The MPS, through its significant contribution via its MPI for Plasma Physics, could thus help strengthen European influence in the now trans-bloc or globally conducted fusion research.

Such foreign science policy engagements may have found some reflection in bilateral research collaborations that otherwise might not have occurred. However, unlike the directive and programmatically organized European science funding, these forms of scientific second track diplomacy only had a mediated influence on the subjects of research and how they were dealt with within the MPS. They impacted even less on the institutional and financial conditions of the Federal German science system, in which state-funded basic research—and thus the internationally exceptional autonomy of the MPG—was anchored and which the MPS did not want to be shaken at all. Rather, the MPS, particularly as represented by its Presidents Staab and Zacher, defended structures born out of the necessity of the lost war—the German federalism in science funding, especially in the financing of the MPS, the associated decentralization of research institutions including Max Planck Institutes, the institutionalized difference between applied and basic research, and their limitation to the latter—as guarantors of their scientific autonomy against a politically driven European research policy.

Nevertheless, since the 1990s, through the increasingly professional and multimedia self-presentations of the MPS to the German and international public, one can observe that the theme of purpose-free basic research, as the unique

selling point of the MPS, gradually merged into the discourse of application-oriented research and was increasingly supplemented by reports on successful applications of research findings from Max Planck Institutes.⁴⁸⁰ European science funding contributed its share, but two additional factors came into play: firstly, scientific collaborations of MPS scientists with colleagues in countries like the USSR and China, who cared less about the fine distinctions between basic versus applied research; and secondly, and not least importantly, it was the neoliberal revaluation of the relationship between basic research and application orientation on a global scale that also did not stop at the MPS. This made it increasingly opportune to highlight industrial, biomedical, or large-scale technological applications that had emerged from research at Max Planck Institutes, or spin-offs of start-ups (especially in the field of biotechnology) as successes of the MPS in their public media.

480 The shift was not merely a superficial discursive one, but one accompanied by institutional and epistemic developments since the 1980s. This has been demonstrated by Jaromír Balcar using the example of ‘Garching Instruments.’ In the 1970s, it initially attempted to market scientific instruments developed solely within the MPI. In the 1980s, the company shifted its focus to licensing and patents, and from the 1990s, it predominantly supported the establishment of start-ups and spin-offs. See Balcar, *Instrumentenbau—Patentvermarktung—Ausgründungen*, 2018.

3. Special Relationships: The Cultural and Scientific Policy Missions of the MPS in Italy, Spain, the USSR, and China

In this section, based on four case studies, we examine those missions that demonstrate how the MPS acted as a foreign science political actor in various theaters of the European post-war order and the Cold War. Here, the MPS's actions for international scientific relations often stood in contrast to the preferred principles of its own Administrative Headquarters, such as how they should be administratively managed. As shown, guidelines for MPS's cooperation with foreign countries, first put in writing by the International Relations Unit in the Administrative Headquarters in the early 1970s, increasingly emphasized the (now more valid than ever) credo: international relations should be primarily based on the concrete scientific needs of researchers in the institutes. Universal basic knowledge should be able to circulate freely across all national borders, and its production in the institutes should be advanced through direct bi- and multilateral collaborations with relevant colleagues in foreign research institutions, wherever they were located. Governmental foreign policy should only come into play as "Diplomacy for Science," one of the three scientific-diplomatic dimensions defined by the Royal Society in 2010.¹ In other words, only when diplomatic interventions could help remove political obstacles to cross-border communication and mobility of research knowledge producers.

These principles, however, met the hard-edged ground of international realpolitik, to which the imagined universe of scientific knowledge, as we saw in the previous section, remained intricately bound: whether leading protagonists of the MPS themselves, occasionally with quite controversial emphases, positioned themselves as national or global citizens with regard to domestic and foreign political issues, or whether they sought to defend the national resource base of "basic research," that is, their own profession and institution, whenever they felt it was endangered by external, bloc, German, or European political developments and corresponding decisions by the Federal Government.

Regarding individual countries, scientific relationships also emerged that, as Hans Zacher would have put it, were shaped in a particularly foreign-policy-oriented way. Such countries—Italy, for a long time the country with MPS's only institute abroad, Spain, the Soviet Union, and China—are examined in the following as case examples of MPS's active engagement with foreign political realities as well as the directives and priorities induced thereby. These are, of

1 The Royal Society, *New Frontiers in Science Diplomacy*, 2010, p. V, p. 9.

course, not the countries with which the most intense scientific contacts were maintained; those were primarily the USA, Great Britain, and Japan, and to a lesser extent, France. Of course, relations with colleagues in these countries were not entirely “free of foreign policy” either. They, too, were sometimes influenced by considerations of foreign science policy—especially the hope of countering American hegemony in the international world of science by creating a European research area.² But the relationships of the MPS with its partners in these major Western science nations were far less affected by the foreign policies of the involved states than the connections to those countries selected here. These case examples represent consecutive historical phases with their respective starting points but also different styles in MPS’s foreign science policy. They also show the trend towards “normalization,” as favored by the Administrative Headquarters, which can be described with the keywords: flexibility, increased autonomy, and depoliticization of foreign science policy.

The journey began with the research institutions in southern and south-eastern Europe, some of which dated back to the founding period of the Kaiser Wilhelm Society (KWS) and which were deeply tied to the foreign cultural and expansionist policies of the German Empire. After World War II, only the art historical Bibliotheca Hertziana in Rome would be reopened following protracted negotiations. It remained the sole overseas institute of the MPS for the ensuing decades. This experience made the MPS decidedly cautious against further cultural-political experiments abroad, even causing it to shy away from taking over the German Institute for Japanese Studies in Tokyo in 1987.

In the case of Spain, the scientific relationships that had been maintained since the 1920s were relatively easy to resume a few years after World War II, and this in two ways: on one hand, the Francoist-Nazi cultural policies continued in a sometimes disturbingly persistent post-fascist fashion, with MPS scientists involved. On the other hand, collaborations, particularly in the field of nuclear physics and atomic energy policy, developed—although for Spain, these were even less detached from nuclear weapons aspirations than in other countries. However, the MPS had only a limited role in this scientific-technical cooperation, restricted to the training of junior scientists due to its institutional non-responsibility regarding atomic energy development in the 1950s West German science system.

As could be expected during the Cold War, relations with Eastern Bloc countries were tightly regulated in terms of foreign policy. However, as shown by the case of East Germany,³ this was much more strictly controlled by Eastern powerbrokers than by the federal governments. West German governments

2 Bonolis and Leon, *Astrophysics*, 2023; Kraft et al., “Die MPG in der Welt,” 2024, pp. 694–701. According to Henning, the exchange with the USA went “smoothly,” even without being contractually regulated—apart from a few years 1981 to 1986. Cf. Henning, “Auslandsbeziehungen,” 1999, pp. 109.

3 Cf. above Chapter 2.5 and Ash, *MPG im Kontext der Deutschen Vereinigung*, 2020.

might have wished for more “resolve” from the MPS on the Berlin issue, but they did value the rare scientific collaborations and the far more extensive informal contacts maintained by MPS scientists (including one female scientist) with East German universities, research institutes, and especially with the Leopoldina in line with their claim of a one-German “cultural nation.” On the other hand, in the relationships between MPS scientists and their Soviet counterparts, we can explore a dimension that isn’t even anticipated in the Royal Society’s schema of science diplomacy, namely a form of ‘science against diplomacy,’ which, nevertheless, occasionally harbored the potential for diplomatic synergies.

Other cases were clearly diplomatic missions undertaken by the MPS on behalf of the Federal Government, at least during their initiation and implementation phases. These include the relationships with Israel, administered since 1962 by the Minerva Foundation GmbH, the history of which has already been extensively documented.⁴ The exchange program between the Federal Republic of Germany and China, managed by the MPS since 1974 and discussed here in detail as the fourth case study, is also a classic example of the science-diplomatic dimension termed ‘science for diplomacy’ in the framework of the Royal Society—a role from which the MPS would have preferred to abstain. Both missions began under very different premises: while the externally instigated and supported cooperation with Israeli colleagues was academically on an equal footing from the outset—despite mutual caution due to contrasting positions regarding the Nazi past—the cooperation initiated under the auspices of the Cultural Revolution with Chinese colleagues was initially asymmetric in every respect. This, however, quickly changed in a mutual learning process where the MPS tested the instruments of science foreign policy it hoped to rely on in the globalized scientific landscape of the 21st century.

The labels of ‘science for diplomacy,’ ‘diplomacy for science,’ and here also ‘science against diplomacy,’ used in the following four case studies, rarely prove to be unambiguous in practice. Moreover, the relationships of the MPS with the countries selected here have changed over the course of history. A chronological arrangement of the examples according to their starting points is therefore more appropriate to better incorporate their respective historical contexts. This approach also allows for a more precise tracing of how motives and priorities in the relationships of the MPS with these countries have shifted over time, ultimately leading in various ways to a tendency toward minimally politically shaped bilateral scientific cooperations.

4 Nickel, “Wolfgang Gentner,” 2006. Steinhauser, Gutfreund, and Renn, *Turning Points*, 2017. See, also above Chapter 2.2.

3.1 Italian and Other (Lost) Outposts in South(east) Europe

The Bibliotheca Hertziana (MPI), reopened in 1954 and located in Rome's Palazzo Zuccari, remained the Max Planck Society's sole institute abroad until 1980. Named after its founder from a German-Jewish family, Henriette Hertz—one of the last salonnières in the history of European culture—had bequeathed it in her will to the recently established KWS just months before her death in September 1912. However, this art historical research library was neither the first nor the only institute located outside Germany in the long history of the KWS/MPS.⁵

In fact, the KWS had taken over the Zoological Station of the Berlin Aquarium as its very first institute during its founding year 1911. Located in the southern locale of Rovigno/Rovinj on the Istrian coast, which was then part of the Habsburg Crown Lands, it was funded and enabled by Paul Schottländer. Originating from a Jewish family in Breslau and inheriting one of the largest fortunes in Germany at the time, Schottländer himself was a biologist and marine researcher. As a sponsoring member and senator, he facilitated the KWS's acquisition of the station, originally opened in 1891, which otherwise would have been bankrupted along with the Aquarium, its primary client for marine animals, in 1909/1910.⁶ Schottländer thus laid the foundation for biological research in the KWS, which, following World War I, made further attempts to explore the European "Southeast" as a research resource.

Welcome and Unwelcome Donations: Zoological Station Rovigno and Bibliotheca Hertziana

Both donations were in line with the tradition of German-Jewish patronage, from which the KWS would benefit multiple times at its German locations, before it reluctantly complied with the guidelines of the Nazi regime. This led to the expulsion of its benefactors from their governing bodies, including Paul Schottländer. Moreover, their names were erased from the records and names of institutes, including that of Henriette Hertz.⁷

5 The following presentation is based on the data collections of Henning and Kazemi, *Handbuch*, 2016: Bibliotheca Hertziana (pp. 142–162); Biologische Station Lunz (pp. 261–265); Deutsch-Bulgarisches Institut für Biologie in der KWG (pp. 318–320); Deutsch-Griechisches Institut für Biologie in der KWG (pp. 612–615); Deutsch-Italienisches Institut für Meeresbiologie, Rovigno (pp. 738–743); Forschungsstelle und KWI für (Geschichte der) Kulturpflanzenforschung (pp. 851–859); Meteorologische Stationen des Sonnblick-Vereins (pp. 1061–1066).

6 Groeben, "Rovigno," 2010, pp. 198–200.

7 For details, see: Kreutzmüller, *Zum Umgang der KWG*, 2005. Rürup, *Schicksale*, 2008, pp. 37, p. 84.



Fig. 14: Henriette Hertz, ca. 1900, probably in Palazzo Zuccari in Rome.

The Mediterranean locations of these two early KWIs were by no means as peripheral as they may appear when compared to the much-lauded “German Oxford” emerging on the outskirts of Berlin, complete with its chemical and physical labs.⁸ Italy, as a cultural space extending beyond its actual national borders, had long been more than just a dream destination to be traveled in Goethe’s footsteps. It was the heterotopia of the European bourgeoisie and its artistic and scientific bohème. Around 1900, art-historical, historical, and archaeological institutes from several European countries, as well as the United States, gathered in Rome and Florence. German sponsors alone maintained four other institutes

8 Henning and Kazemi, *Dahlem*, 2009. To this day, the MPS offers guided tours in the “German Oxford” of Dahlem: Wissensstadt Berlin, overview tour, <https://www.mpg.de/11137898/dahlemtour.berlin>, last accessed June 19, 2024.

there in addition to the Hertziana.⁹ Along the Adriatic and Riviera, marine biologists of various nationalities—educated laypeople together with university professors and local fishermen—sought marine species that promised not just new aesthetic sensations, but especially insights into evolutionary biology or served as model organisms for various studies. The Stazione Zoologica, founded in Naples in 1873 by the German zoologist Anton Dohrn and privately operated until the 1960s—with support from the KWS/MPS among others—remains a leading institute in marine biological research to this day.¹⁰ Friedrich Alfred Krupp, another KWS patron, also established a marine biological laboratory in his villa on Capri. Doctors—like the German Moritz Schiff—from various countries, whose medical care for their illustrious international clientele left them with spare time, conducted physiological studies in their villas and debated with British and German animal protectionists traveling to Italy—Henriette Hertz also engaged accordingly—over the scientific necessity and moral reprehensibility of vivisection.¹¹ In short, Italy was, before World War I, a cultural and life-scientific hub of the educated Western world. Whether seeking knowledge, education, or relaxation, the directors and secretaries general of the KWS gladly visited their Italian contacts. However, this idyllic dream came to an abrupt end. As soon as Italy sided with the Entente in 1915 and declared war on the Central Powers, their institutes in Italy and Istria were closed and confiscated by Italy during the peace negotiations at St. Germaine, including both KWIs.

Even before the war, there had been nationalist disruptions — and these were from German quarters. Henriette Hertz had initially offered her library, including the Palazzo Zuccari in which it was housed, as a testamentary gift to the German Empire. However, Paul Fridolin Kehr, the director of the Prussian Historical Institute (PHI) in Rome since 1903 and an influential Prussian science manager, strongly opposed this gift's acceptance by the imperial authorities. Kehr sought to prevent further fragmentation of German institutes in Rome, described as “petty scholarly statehood,” and under his leadership aimed to merge his institute with the German Archaeological Institute (DAI, Deutsches Archäologisches Institut), the Accademia Tedesca/Villa Massimo, and, if it

9 The other German institutes were the Kunsthistorisches Institut in Florence and the Deutsches Archäologisches Institut in Rome, both under Reich sponsorship, the Preußisches Historisches Institut and, initially, as a private foundation, the German Academy Villa Massimo, both in Rome.

10 Partsch, *Die zoologische Station*, 1980; Groeben, “Stazione Zoologica,” 2006. The Stazione Zoologica Anton Dohrn, as it has been called since 1982, is now a national Italian research institute; for its post-war history see: Stazione Zoologica Anton Dohrn Napoli, “Our History—Stazione Zoologica Anton Dohrn Napoli,” <https://www.szn.it/index.php/en/who-we-are/our-history>, last accessed Jan. 23, 2022.

11 Sachse, “Streit um die Vivisektion,” 2006, pp. 11–12. Hertz's will, apart from the donations to the KWS (Bibliotheca Hertziana) and the Italian state (painting collection), also included a codicil dated Jun. 18, 1912 for a legacy to the animal protection association, see Tesche, *Ernst Steinmann*, 2002, pp. 268–270.

could not be avoided, the Bibliotheca Hertziana. This merger would create a potent German National Institute capable of competing with the French and Austrian cultural representations in the area.¹² He certainly did not want to have another academic competitor led by Germans, especially given the art historical department at the PHI he had been building since 1905.

His monopolization plan was thwarted by his Roman colleagues' resistance. However, the President of the KWS, to whom Henriette Hertz next offered her gift due to Kehr's stirred-up reservations at the imperial level, was receptive. For Adolf von Harnack, it was a gift fraught with peril, which the KWS accepted only out of consideration for the empire's foreign policy interests in Italy and its Jewish patrons in the Senate. This gift did not fit the KWS's concept, an institution founded for "the promotion of sciences" in Germany.¹³ The gift opened the door to the unwanted humanities and did so in a particularly compromising manner, namely as a "continuation of the salon of the founder," as Hertz had also stipulated that the director she had appointed, Ernst Steinmann, not only remain in office for life but also choose his successor. This violated the KWS's founding principle, later named the Harnack Principle, of first identifying an outstanding scientist and then building a suitable institute around him.¹⁴ The feared "salon aestheticism" might have remained unchecked even through a second generation of directors.

This — albeit unsuccessful — resistance to Hertz's gift encapsulates all the elements of the imperial-era discourse on science that sought to complete what the modern institutionalization of science in the long 19th century had set out to do: the clean separation of academic knowledge from lay knowledge, scientific research from bourgeois hobbies, and truth from beauty. As part of the battle between the sexes, this separation manifested itself not only in the exclusion of women from academic settings, but also in the elevation of a model of the scientist adorned with all of the inversely corresponding symbols of virility. Last but not least, this polarization was accompanied by the nationalization of the sciences.¹⁵

Steinmann, a long-standing confidant of Henriette Hertz, scarcely fit the mold of the virile scientist with a strong sense of national identity. The book

12 The quote is from Kehr's statement dated Jan. 11, 1908 regarding the request of the Prussian Academy of Arts to the Chancellor for the establishment of an Imperial German Art Historical Institute, cited here after Tesche, *Ernst Steinmann*, 2002, 63. For Kehr's resistance against the Hertz donation, see *ibid.*, pp. 53–56, pp. 62–71.

13 Tesche describes the Senate's silent acknowledgment of the donation in 1912 and the "inconspicuous" inauguration as an institute of the KWS in 1913, which, like a funeral, took place "in complete silence" (Tesche, *Ernst Steinmann*, 2002, p. 71).

14 Paraphrased after the correspondence between Harnack and Kehr cited by Tesche, *ibid.*, pp. 68–69. See also *ibid.*, p. 191; Schieder, "Werner Hoppenstedt," 2013, p. 90.

15 See the paradigmatic study by Hausen, "Polarisierung," 1976. Cf. also Honegger, *Ordnung der Geschlechter*, 1991; Sachse, "Streit um die Vivisektion," 2006; Jansen, *Schädlinge*, 2003; Wobbe, *Vorderbühne*, 2006; Jessen and Vogel, *Wissenschaft und Nation*, 2002.

collector, who occasionally embarked on art historical “pilgrimages” with his wife, Olga von Gerstfeldt, or translated and published Shakespearean sonnets, had been prone to depression since his wife’s early death.¹⁶ His understanding of scholarship—a passionate devotion to artistic genius, particularly Michelangelo’s Sistine Chapel, coupled with a meticulous commitment to comprehensive archival positivism—was deemed outdated by art historical pioneers like Aby Warburg and historians convinced of German cultural superiority like Paul Kehr. “God forbid,” Kehr warned his correspondent Harnack, “that the KWS should be exposed to the planned publications of the Steinmann school.”¹⁷ Steinmann’s vision of the political role of German cultural institutions—as international sites for cosmopolitan communication about the humanistic legacy of the Renaissance and Baroque in Italy—did not align with the increasingly culture- and science-imperialistic zeitgeist of the early 20th century.

If the Hertziana, as Harnack feared, could “become a threat to our institution by its mere existence,” a countermeasure was needed now that this “poisonous mushroom” had taken root in the KWS. Kehr, who like Steinmann and all other German staff at cultural institutes in Italy, had to return to Germany in 1915, assumed further roles in Berlin that solidified his position as Germany’s leading national historian. He not only became the General Director of the Prussian Archives and President of the *Monumenta Germaniae Historica*; in 1917, he was also appointed the Director of a newly-founded KWI for German History, which could legitimately challenge the Italian “accidental child” Hertziana for the status of the first-born humanities-focused KWI.¹⁸

In Rome, Steinmann, who had returned immediately after the war ended, was able to quickly re-establish the Hertziana as a hub of international cultural life. Library operations resumed as early as 1920, albeit unofficially, out of consideration for the national sensitivities of the host country and unresolved property issues. Even without a sign on the door—let alone national flags—the numerous Italian and international guests from the realms of art, culture, and politics found their way to Steinmann’s regular social evenings, which provided them with valuable informal contacts during these politically tense early post-war years. Steinmann’s salon culture, a holdover from the 19th century, evolved into an early form of “informal diplomacy” in 1920s Rome, granting the Hertziana “a position of self-sustaining relevance” years before any intergovernmental agreement.¹⁹ His good connections with leading representatives of Italian art institutions and politics, including philosopher and briefly serving Minister of

16 Steinmann and Gerstfeldt, *Pilgerfahrten*, 1910. See Tesche, *Ernst Steinmann*, 2002, pp. 84.

17 Cited after Tesche, *Ernst Steinmann*, 2002, pp. 71–72. For Steinmann’s place in art history, see Ebert-Schifferer, “Ernst Steinmann,” 2013.

18 All quotes are from the correspondence between Harnack and Kehr, cited here after Tesche, *Ernst Steinmann*, 2002, pp. 68–69. For Kehr, see the entry: Schieffer, Kehr, 1977. The Hertziana, however, was denied the legitimate name “Kaiser Wilhelm Institute” and continued to be run only as a library; I thank Wolfgang Schieder for this information.

19 Cited after Tesche, *Ernst Steinmann*, 2002, p. 143.



Fig. 15: Ernst Steinmann in 1927 at the grave of his wife Olga von Gerstfeldt (1866–1919) at the Cimitero Acattolico in Rome.

Education Benedetto Croce, contributed to this, as did the reputation of the late founder in Italy, who had bequeathed her art collection to the host country, and the ongoing financial support of the Hertziana by the Mond family, London-based entrepreneurs closely associated with Henriette Hertz even beyond her death. Even PHI Director Kehr, still in office though mostly from a distance, had to begrudgingly admit during his visit to Rome in 1920/21 that, unlike all other institutes, the Hertziana was already operational and not seriously threatened despite the uncertain legal situation.²⁰

20 Ibid., pp. 146–147. Kehr had already explored the situation of the German institutes in Italy on behalf of the AA in 1919/1920 and remained the acting head of the PHI despite his Berlin functions, see Esch, “Die Lage,” 1992.

In fact, the legal situation of the Hertziana, like that of the other German institutes, only became clear after 1925, when the trade regulations of the Treaty of Versailles, which had granted the victorious powers, including Italy, unilateral most-favored-nation status over Germany, had expired. Germany could renegotiate its foreign trade agreements. Mussolini, for his part, was keenly interested in low German import tariffs for Italian agricultural products and, in return, willing to relinquish the sequestered German cultural institutes in Italy. Following the conclusion of the German-Italian trade agreement, Mussolini decreed in 1927 to abandon the liquidation of German property in Italy; the KWS could publicly claim ownership of the Palazzo Zuccari and its art historical library again, allowing Steinmann to continue his work in the tried-and-true manner.²¹

The Zoological Station, located in what was once Habsburg Istria, seemed lost, however. After Italy declared war in 1915, the inventory and library were partially evacuated to Graz, and the mostly Austrian staff was conscripted. As soon as the Italian military had captured Istria a few days before the end of the war, the station in Rovigno was placed under Italian administration, and the remaining German KWS employees were dismissed. The Italian directors, especially Massimo Sella, who served from 1923 to 1945, converted the existing facilities into a marine biology observation station, which became as attractive to international guests, including especially biologists from the newly established bio-scientific KWIs, as the Stazione Zoologica in Naples. It is possible that such fruitful Italian-German scientific collaborations would arise now that the KWS voluntarily renounced the formal return of the station in Rovigno after Mussolini's 1927 decree. Instead, they agreed in 1930/31 with the Consiglio Nazionale delle Ricerche (CNR) and the Regio Comitato Talassografico Italiano (CTI), which had operated the station since 1918, to transfer it into the jointly funded and collaboratively managed German-Italian Institute for Marine Biology.²² In any case, such a bilateral agreement fit well with the KWS's foreign science policy during the Weimar Republic and its foreign cultural policy, which also targeted the German-speaking part of Austria, by now an independent republic.

The Vision of a "Central European" Science Space

Compared to Germany, where the Emergency Association of German Science and later the German Research Foundation (DFG) were able to establish themselves as surprisingly effective funding institutions given the circumstances, the financial situation for sciences in Austria was dismal. Private research

21 See Tesche, *Ernst Steinmann*, 2002, pp. 142–147; Becker, *Handlungsspielräume der Agrarpolitik*, 1990, pp. 164–166. Torunsky, *Entente*, 1986, pp. 133–142.

22 Groeben, "Rovigno," 2010, pp. 200–202. In 1931, the agreement signed by the secretaries-general of the KWS and the CNR came into force. See also Kazemi, "Gründung," 2005; Kazemi, "Meeresbiologische Forschung," 2010.

institutions, mostly endowed by Jewish patrons, faced the threat of collapse due to hyperinflation. As two of the first to act, Franz Ruttner, the head of the Biological Station Lunz established in 1906 in the Lower Austrian Prealps, and the botanist Richard Wettstein, reached out to their colleagues in the KWS in 1922/23. With the support of Max Hartmann, the director of the KWI for Biology founded in 1914, they managed to secure joint sponsorship and funding from both the KWS and the Austrian Academy of Sciences (ÖAW, Österreichische Akademie der Wissenschaften) for this limnologically focused station in 1924. A similar approach was soon taken for the meteorological stations of the Sonnblick Association on the High Sonnblick and the Obir in Carinthia. In 1926, a consortium was formed under the chairmanship of Austrian geophysicist Felix Exner, which, in addition to the KWS and ÖAW, included other institutional and individual members and later also the German-Austrian Alpine Association.²³

These two German-Austrian joint projects not only acted as a template for the marine biological institute in Rovigno, operated bilaterally by KWS and CTI a few years later. They also prefigured on a quasi-private level—made possible by the KWS's non-governmental status—what was too sensitive to discuss or implement on the intergovernmental stage. The prohibition of unification, laid down in the Paris Peace Treaties and reaffirmed multiple times by the Allies, explicitly forbid Austria from engaging in a political union with Germany and also from entering any bilateral arrangements that could threaten its independence. Urgently requested grants, for example, from the DFG or the German Foreign Office for Austrian scientists—grants that the German side was moderately willing to provide—had to be routed below the Allies' radar.²⁴ Such scientific funding was part of a cautious policy of "alignment," already practiced in areas such as economy, law, and transport, aimed at circumventing the prohibition of unification. The aim of German foreign policy in this regard, as formulated by Georg Schreiber, a parliamentary representative for the Centre Party and also a papal domestic prelate and senator of the KWS, in the German Reichstag in 1929, was to "unite the ethnic compatriots out there on the Danube with their Reich-German brothers in a unified cultural consciousness."²⁵ Supported by Paul Löbe, the Social Democratic President of the Reichstag Schreiber was the "driving force" behind intensified German cultural work abroad and especially in Austria, culminating in 1929 with the formation of the Austrian-German Science Assistance (ÖDW, Österreichisch-Deutsche Wissenschaftshilfe), funded primarily by the DFG, and operating as inconspicuously as possible. It sponsored, among other things, projects in Lunz or on the Sonnblick.²⁶

23 Summarized after Henning and Kazemi, *Handbuch*, vol. 1, 2016, pp. 261–265; Henning and Kazemi, *Handbuch*, vol. 2, 2016, pp. 1061–1066. See also Löffler, *70 Jahre Biologische Station*, 1976; Schiemer, "Limnologie," 2014; Auer et al., *Labor*, 2011.

24 See for the following Fengler and Luxbacher, "Aufrechterhaltung," 2011.

25 Schreiber, *Deutschland und Österreich*, 1956, p. 32. Quoted here after Fengler and Luxbacher, "Aufrechterhaltung," 2011, p. 308.

26 Ibid., p. 307.

In the end, “Greater-German” cultural policy also caught up with the Roman Hertziana. As director of an art historical institute that was by then also officially under the KWS umbrella, Steinmann attempted in the latter half of the 1920s to push back against the image of the Hertziana as a cultural salon, reserving its highly frequented library—popular among amateur art enthusiasts from around the world and students from Italian universities—for “men of science.” Although academically qualified women with suitable recommendation letters still gained access to the reading room, they needn’t even have bothered applying for one of the rare scholarships.²⁷

From 1933 onward, the focus shifted to integrating the Hertziana into “Greater German” cultural policy—in two respects. Firstly, the Foreign Office, relying on the Reich Chancellery, pushed for the appointment of the “old fighter” Werner Hoppenstedt as deputy director, albeit operationally independent. The art historian with a doctoral degree and occasional tour guide, lacking scholarly ambitions of his own, was to internally accelerate Nazi *Gleichschaltung* (alignment) and serve externally as a “liaison between the NSDAP and the Fascist Party, especially in the realm of cultural policy.”²⁸ The Director-General of the KWS and Mussolini admirer, Friedrich Glum, did not resist this request—in spite of it mocking the otherwise highly prized principle of scientific autonomy—but took the opportunity to negotiate higher subsidies from the Reich for the Hertziana. Steinmann, lacking support in the Administrative Headquarters, just managed to prevent Hoppenstedt from also being nominated as his successor, thanks to the testamentary stipulations of Henriette Hertz. He otherwise had to come to terms with his new colleague, who was perceived as personally amiable.²⁹ The Hertziana was renamed and divided into two departments in 1934 as the KWI for Art and Cultural Sciences, allowing both directors to operate independently. Hoppenstedt’s cultural propaganda efforts have been thoroughly described by Wolfgang Schieder and aptly assessed as a “perversion of cultural science.”³⁰ These activities expanded into anthropology and racial studies in the early years of the war, and even involved educating the Italian allies in racial politics, actively assisted by hereditary researchers from the KWS.³¹

27 Ebert-Schifferer, “Ernst Steinmann,” 2013, quote: p. 57 and note 222: As a *Gentiluomo*, which he remained, Steinmann felt unable to issue directives associated with the scholarship to a “lady,” and for this reason rejected the application of a graduated female art historian.

28 This was the sentiment of the leader of the cultural policy department in the AA, Friedrich Stieve, in his letter to the Secretary-General of the KWS, Friedrich Glum, dated July 3, 1933, quoted here after Schieder, “Werner Hoppenstedt,” 2013, p. 92.

29 Ibid., pp. 92–94.

30 Ibid., p. 115.

31 The anthropological program was influenced by the directors of the notoriously racial-political KWI for Anthropology, Human Genetics, and Eugenics (Berlin) and for Psychiatry (Munich), as well as the KWI for Biology. Speakers included, among others, Eugen Fischer, Othmar von Verschuer, Ernst Rüdin, Alfred Kühn, and Fritz von Wettstein. See *ibid.*, pp. 110–115.

But the art history department also adapted to the spirit of the times. Although Steinmann had been able to push through his preferred candidate shortly before his death in November 1934, with Leo Bruhns he had chosen an established art historian who represented an almost contrary research program. Steinmann and Hertz had focused the Bibliotheca Hertziana on the humanistically inspired study of the artistic legacy of the Italian Renaissance and Baroque, and on the contemporary mediation of the timeless and transnational values perceived therein. Bruhns, on the other hand, who had previously hardly dealt with Italian art, now wanted to search in the medieval religious and secular buildings of the Hohenstaufen in Southern Italy for the stone testimonies that would help to prove centuries-old German cultural influence extending there and to historically substantiate the “Berlin-Rome Axis”.³² With this “paradigm shift,” as Kai Kappel calls it, Bruhns opened the Hertziana to German nationalist enthusiasm for the Hohenstaufen, which had reached a peak in 1927 with the rapturous biography of Holy Roman Emperor Frederick II of Hohenstaufen, written by Ernst Kantorowicz and personally edited by Stefan George. This had captivated the leading figures of the Nazi movement from Rosenberg to Himmler to Hitler, as well as KWS President Harnack and his historical advisor Kehr.³³ The art history department at the Prussian Historical Institute was initially established in 1905 with the specific aim of not surrendering Southern Italian Hohenstaufen research to the French competitor. However, financial constraints led to its closure after World War I.³⁴ By absorbing this area of study—which from a German viewpoint had been largely neglected—into the Hertziana, the Institute shifted its focus. Instead of a humanistic exploration of Italian art, the emphasis was now on viewing the art “from a distinctly national perspective” for the sake of historical justification.³⁵

The National Socialist policy on alliances, expansion, war, and occupation also provided several Germany-based KWIs the opportunity to broaden their territorial scope and simultaneously contribute to the realization of the Nazi regime’s grand plans that extended well beyond “Greater Germany.” Primarily, as Susanne Heim has shown, it was the botanists, geneticists, and plant breeders of the KWI for Biology in Berlin and for Breeding Research in Müncheberg who were interested in exploring and settling the new *Lebensraum* (living space) in southeastern Europe and further into the Eurasian east.³⁶ In the first years of the war, numerous plans for foreign institutes were forged in consultation with the Foreign Office, other Reich ministries, the Wehrmacht, and industry—par-

32 See Tesche, *Ernst Steinmann*, 2002, pp. 238–239; Dobler, “Leo Bruhns,” 2013, pp. 76–77.

33 Kappel, “Gebrochene Tradition,” 2013, p. 171.

34 Esch, “Die Lage,” 1992, p. 324.

35 So Bruhns in his annual report from 1934/35, quoted here after Kappel, “Gebrochene Tradition,” 2013, p. 171; on the Stauffer research in Italy and the general German Stauffer enthusiasm: *ibid.*, pp. 168–171.

36 Heim, *Kalorien*, 2003. Also see Heim, *Autarkie und Ostexpansion*, 2002; Gausemeier, *Ordnungen*, 2005, pp. 291–303. Regarding the semantic significance, geographical vague-

ticularly with the Central European Business Forum (MWT, Mitteleuropäischer Wirtschaftstag), which was especially interested in the development of the southeastern European “supplementary space.”³⁷ The German-Hungarian Agricultural Research Institute did not progress beyond initial explorations in Budapest. For the Microbiological Research Facility, which was supposed to study the diseases widespread in the occupied eastern territories and also test biological weapons on the Bulgarian-occupied island of Thassos, extensive lab equipment was indeed purchased. However, due to delays in construction plans, this equipment was never delivered to the Aegean. In Bulgaria, which was particularly receptive to the MWT’s “supplementary economic” plans, a likewise bilaterally led Institute for Agricultural Research was supposed to be established. However, after a grandiose foundation-laying ceremony in 1942, no further progress was made, and with the approach of the Red Army, some of the already transferred equipment could only just be evacuated back to Germany.³⁸

The Marine Biological Institute that opened in 1942 in German-occupied Piraeus fared somewhat better, housed in a building provided by the Greek government. Having already rendered outstanding services in rescuing the bankrupt Biological Station Lunz, Fritz von Wettstein, Richard Wettstein’s son and the director at the KWI for Biology since 1934, and his mentor Max Hartmann had also begun marine planning in the pre-war years. Along with their Greek colleague Konstantin Tzonis, they aimed to “biologically penetrate” the relatively unexplored eastern Mediterranean.³⁹ In practice, they initially focused on military penetration, conducting oceanographic measurements for the Naval High Command. With the German retreat in 1944, the institute fully transitioned to the Greek Academy of Sciences, which, after the war and civil war, hoped in vain to secure Hartmann as director once again and to strengthen its ties with the KWS/MPS.⁴⁰

The KWI for Cultivated Plant Research made the most substantive advancements, although it could only be opened in 1943 near Vienna, the by then German Reich’s “gateway to the southeast.” Since Hitler’s annexation of Austria in 1938, the productive network around the Austrian dynasty of botanists, the

ness, and aggressive connotations of the terms *Mittleuropa*, *Balkan*, and *Südosten*, refer to Sachse, “Einführung. ‘Mitteleuropa’ und ‘Südosteuropa,’” 2010, pp. 15–19; Sachse, “Ehe von Schornstein und Pflug,” 2010.

37 For MWT, refer to Freytag, *Deutschlands “Drang nach Südosten,”* 2012.

38 Heim, *Kalorien*, 2003, pp. 72–84. On the developmental policy projects of MWT in Bulgaria, see Wien, *Selektive Wissensimporte*, 2010.

39 The quote comes from a letter by F. v. Wettstein to Telschow on Jan. 4, 1941, cited here after Zarifi, “Das deutsch-griechische Forschungsinstitut,” 2002, p. 229.

40 Zarifi, “Das deutsch-griechische Forschungsinstitut,” 2002; Henning and Kazemi, *Handbuch*, vol. 1, 2016, pp. 612–615. For Hartmann’s involvement in Greece, also see Gausemeier, *Ordnungen*, 2005, pp. 299–300. In the case of Piraeus, although the intended scientific apparatuses were provided by KWS, they were rather stored in Lunz until the end of the war, from where they disappeared during successive Allied occupations.

Wettsteins, had paved the way for it with the aim of collecting a “global assortment of wild and primitive forms of our cultivated plants” for use in breeding research.⁴¹ The designated director, Hans Stubbe, a close collaborator of Fritz von Wettstein, had already collected extensive wild plant material during his two expeditions in 1941 and 1942 to the central mountain ranges of the Balkans and Greece for the planned seed bank. Soon after, he attempted to secure some of the seed samples that the *Ahnenerbe*, the Ancestral Heritage research branch of the SS and a powerful competitor in cultivated plant research, had taken from the unique seed collections of the world-renowned Soviet plant geneticist Nikolai Vavilov. Once Fritz von Wettstein and Stubbe learned that Vavilov, an opponent of Lysenko, had been arrested by the Soviet secret police in 1941 on alleged espionage charges, they fantasized about taking over his research institutions, particularly his central institute near starving Leningrad, and establishing a network of research stations from the Arctic Ocean to the Mediterranean.⁴² In early 1945, Stubbe managed to transfer his southeast European collections and possibly also his share of the Russian loot fully into the “Old Reich.” However, he chose to take them to the eastern side of the future inner-German border, where he also preferred to stay—despite offers from his western colleagues to join them in the reconstituted MPS in 1948.⁴³

At the end of World War I, the dream of a “European living space” had vanished along with that of a “Greater German cultural space.” The unfinished foreign institutes of the KWS, or what was left of them, disappeared behind the soon-to-be-established Iron Curtain. The bilaterally operated stations in Austria, Greece, and now Yugoslavia were taken over by the re-emerging or newly established nation-states and their national scientific institutions. In trizonal West Germany, returnees and the Administrative Headquarters had more urgent matters to attend to than mourning the loss of these outposts. The focus was on the very survival of the KWS and the reactivation of its institutes at their old and new West German locations.

Only the Roman branch, which had been seized by the Allies in 1944 and again sequestered by the Italian state in 1945, was not to be given up. Unfortunately, the suave cultural diplomat of the old school, Steinmann, was no longer on-site, succeeded by a disgruntled national art historian. Bruhns had—his biographer suspects against his own will—followed a “Führer directive” instigated by Hoppenstedt in the spring of 1944. Before the arrival of the Allies in Rome, he had relocated the libraries of all four German cultural institutes, including the Hertziana, to the Salzkammergut.⁴⁴ In doing so, he had gone against the

41 This is how the institute’s task was described, cited here after Henning and Kazemi, *Handbuch*, vol. 1, 2016, p. 856.

42 For criticism on the recent revival of Lamarckian genetics by Trofim Lysenko and Lysenkoism, see Graham, *Lysenko Epigenetics*, 2016.

43 Summarized from Heim, *Kalorien*, 2003, pp. 212–229.

44 Dobler, “Leo Bruhns,” 2013, pp. 85–86.

testator's last wishes, which mandated the library's presence in Rome. This could have been avoided since the Vatican, which had already assumed custody of the Palazzo Zuccari, would of course have safeguarded the books behind its walls. This action, along with Bruhns' cultural propaganda activities at the helm of the KWI for Art and Cultural Sciences during the Nazi era, and his dubious role in German troop care in the last months before the liberation of Italy, were not forgiven by Rome.⁴⁵ Nor by the Allies, especially the British, who were vigilant about the foundations of Hertz and the British couple Mond; nor by the anti-fascist Croce, who had been dismissed from all his positions by Mussolini in 1935 and now, in liberated Italy, had once again become a central figure in cultural politics. After World War I, he had advocated for the return of the Hertziana led by Steinmann to the KWS. After this most recent war, he demanded the return of the illegally relocated books to Italy.⁴⁶ The American occupation forces did indeed swiftly arrange for the libraries' return but placed them under the custodial direction of the specially established *Unione Internazionale degli Istituti di Archeologia, Storia e Storia dell'Arte (Unione)*, "to keep them out of Italian hands."⁴⁷

Denazification and the Late Arrival of the Hertziana in the MPS

What followed was a seven-year diplomatic dispute concerning the future international, Italian, or West German sponsorship, the ownership of the buildings, and their potential reopening as research or cultural institutes. Involved were the Western Allies, the Italian state, and the Federal Government of Germany. Behind the scenes, however, science policy actors such as the *Unione* and the *Accademia dei Lincei* were also involved, as well as an advisory "Commission for Scientific Work Abroad" on the West German side.⁴⁸

The possibilities for the KWS/MPS to endeavor the return of Hertziana were limited but fully exploited. As early as June 1946, KWS President Max Planck—a member of the Pontifical Academy of Sciences since 1936—personally wrote to Pope Pius XII asking for the Vatican's support.⁴⁹ Prelate Georg Schreiber, who had lost his seat on the KWS Senate during the Nazi era and immediately

45 Ibid., p. 85; Matheus, "Deutsche Akteure," 2013, p. 29.

46 Matheus, "Deutsche Akteure," 2013, pp. 124, 136, 139.

47 The Rector of the University of Bonn, Theodor Klauser, in his protocol of a meeting with Mr. Constable, the "cultural adviser of the American military governor," on May 13, 1949 in Bonn (protocol from May 17, 1949, AMPG, III. Abt., Rep. 93, No. 228, fol. 328). Klauser was a member of the Central Directorate of DAI and the Görres-Society and was an important ally of Heisenberg in his efforts to return Hertziana to MPS. Also refer to Esch, "Institutsbibliotheken," 2007, pp. 88–92.

48 For more on this and the following, see Matheus, "Deutsche Akteure," 2013; Esch, "Institutsbibliotheken," 2007, pp. 93–97.

49 Henning and Kazemi, *Handbuch*, Vol. 1, 2016, p. 152.

regained it after the war, used his connections to the Vatican and to the political Catholicism of the Adenauer era. From 1949 on, he advised Hans Globke, the former co-author of the Nuremberg Racial Laws and then Chief of the Federal Chancellery, on cultural and scientific matters; he also represented the interests of the MPS on that advisory commission. Bruhns, back in Rome since August 1945, did what he could to make his too obedient service to the collapsing Nazi regime forgotten, but felt “defenseless and weak” and asked, like Schreiber, for the support of the Nobel laureates of the MPS: they, “the shining peaks of German natural research,” should “send out flashes for the rescue of Hertziana.”⁵⁰ In the spring of 1949, Heisenberg—Planck had died in 1947—traveled to Rome, where he was received by Pope Pius XII in a private audience. Here and in numerous other discussions, he learned that the Italian side was not necessarily opposed to the return of the German cultural institutes, especially since the Unione was running out of money, and was indeed interested in functional, internationally accessible institutes under German management. However, the American occupying power had to be convinced first, and this was conceivable only if the institutes would restart with new, politically untainted staff.⁵¹ Until then, there were still several years of diplomatic complications, occasional misunderstandings, and all too justifiable accusations to be dealt with through new language regulations.

Now, the politically agile Secretary-General of the MPS, Ernst Telschow, took charge. He traveled to Rome several more times, including for a papal private audience. Alongside his protégé Hoppenstedt—who, in spite of not being accepted as full-fledged scientific member, was soon able to secure himself a status as supporting member of the MPS thanks to continued financial allowances and to a most lenient denazification process—he “privately” discussed future director candidates in case the institutes would be returned to the Federal Republic. To the bewildered Bruhns, as the proverbial sacrificial lamb, Telschow communicated that he would not be considered for the role of director of a reopened Hertziana but would still be welcome as an emeritus in the MPS.⁵²

Ultimately, it was Adenauer who secured the return of the German cultural institutes as a concession from the Western Allies to his policy of *Westbindung*. He received support from the Italian government, which preferred maintaining this scientifically important infrastructure for Italy through the Federal Republic over a politically and financially risky internationalization. The Federal Chancellery had conducted the crucial negotiations with the Western Allies, and after the establishment of the Foreign Office, its department of cultural policy took over. There, they understood quite clearly the political price to be paid:

50 Bruhns to Hahn on Jan. 25, 1949, cited here after Matheus, “Deutsche Akteure,” 2013, p. 130.

51 Dobler, “Leo Bruhns,” 2013, p. 88; Matheus, “Deutsche Akteure,” 2013, pp. 130–131.

52 Hachtmann, *Wissenschaftsmanagement*, 2007, p. 1120 and Note 213; Matheus, “Deutsche Akteure,” 2013, p. 133.

the term “cultural institute” was tainted due to its propagandistic connotations, and they had to become “pure” research institutes. All the previous directors, regardless of their involvement with the Nazi regime, had to be replaced, unlike the practice back home.⁵³

In the case of the Hertziana, whose former directors Bruhns and Hoppenstedt were still operating in more or less official capacities in Rome, they wanted to be absolutely certain. When Telschow met in Rome in 1952 with Franz Graf Wolff-Metternich, the responsible cultural attaché at the Foreign Office, to discuss potential directors for the Hertziana, which was to reopen as an MPI, Wolff-Metternich immediately put himself forward for the position. Given the circumstances, this was a noteworthy option—especially if one didn’t even want to consider Richard Krautheimer, the prominent German-Jewish art historian suggested by the Unione, who had developed his ground-breaking architectural iconography while in American exile.⁵⁴ Wolff-Metternich had worked for many years as the provincial conservator of the Rhineland. Most importantly, he had led the Wehrmacht’s art protection efforts in occupied France in 1941/42 in a manner that was interpreted by the security service as being too Francophile. This denunciation likely accelerated his recall to his increasingly bomb-ravaged homeland, which, in the view of his superiors, urgently needed his expertise. France, on the other hand, thanked him for his cooperative attitude and appointed him an Officer of the Legion of Honor after the war. Adenauer himself patronized the art protector respected by the Allies and had already envisioned him as a cultural attaché in Italy. However, Wolff-Metternich was more drawn to academia.⁵⁵ Telschow quickly convinced his President in Göttingen of the opportunity offered by such a diplomatically motivated personnel selection.⁵⁶ Hahn consulted with Adenauer on the further use of the Officer of the Legion of Honor in the MPS before informing the Scientific Council of his decision. Subsequent opinions and the protest from the Association of German Art Historians could not change this, nor could the bodies of the MPS that were actually responsible for appointments of future MPS members.⁵⁷

53 Matheus, “Deutsche Akteure,” 2013, pp. 131–143.

54 Ibid., p. 131; Dobler, “Leo Bruhns,” 2013, pp. 87–88; Kinney, “Civis Romanus,” 2013, p. 193.

55 Matheus, “Deutsche Akteure,” 2013, p. 131; Thoenes, “Kontinuität,” 2013, pp. 145–146. For a more detailed biography of Wolff-Metternich, see Heyer, “Metternich,” 2020. Heyer reevaluates, based on newly available sources from the family estate and French records, the resistance Wolff-Metternich claimed for himself after the war, who had joined the NSDAP mainly for opportunistic reasons after consultation with his Maltese Order in May 1933. With the advent of new provenance research, Wolff-Metternich has come into sharper focus, and the final word on his wartime activities is likely still pending. For further references, see Costa, “Kunsthistorisches Institut,” 2023.

56 He particularly pointed to his reputation in France, from where the strongest resistance to the return of the Hertziana was expected. See Matheus, “Deutsche Akteure,” 2013, p. 131, FN 76.

57 Ibid., p. 131.



Fig. 16: Audience with Pope Paul VI, early 1970s; Franz Graf Wolf-Metternich presenting him *Die Erbauung der Peterskirche zu Rom im 16. Jahrhundert*, vol. XX of the *Römische Forschungen*, Bibliotheca Hertziana.

Indeed, Wolff-Metternich picked up in 1953 with his diplomatic and integrative leadership style right where Steinmann had left off in 1934. With the steady expansion of the library and photo archive, he quickly re-transformed the Hertziana into a highly frequented service facility for international art scholarship, and with weekly lecture evenings, also into a cultural gathering spot for the city. Another achievement was that the Unione, which had fought for years for the internationalization of German cultural institutes, admitted the Hertziana to its circle in 1953.⁵⁸ Personnel-wise, he remained loyal to his pre-predecessor: He staunchly resisted the appointment of Anneliese Maier, an art and science historian highly esteemed both in Rome and internationally, to the Hertziana.⁵⁹ During his ten-year tenure, only one of the around 15 scholars on stipend was a woman, and even the research assistants were overwhelmingly male; however,

⁵⁸ Thoenes, "Kontinuität," 2013, p. 146.

⁵⁹ In 1938, Anneliese Maier came to Hertziana with a DFG scholarship, and it was the National Socialist Hoppenstedt who, having withdrawn from Nazi Germany to Rome, appointed her as his assistant in 1943 after his male assistants were drafted. She was later appointed a member of the MPS in 1954, but without her own department and formal connection to the Hertziana, she received funding only by research grants from a special MPS fund. See Vogt and Paravicini Bagliani, "Anneliese Maier," 2013, pp. 119–121.

the photo archive had been led by a woman since 1960.⁶⁰ In comparison to Steinmann's effusive style, Wolff-Metternich practiced a downright nihilistic positivism: He believed that the study of "their art" should be left "to the Italians" as "their own national task."⁶¹ Because he could not conceive of art history except as a national endeavor, nothing remained for German art historians in Rome except the interpretation-free description and cataloging of Italy's art treasures. In his work, he focused—again following Steinmann—on nothing less than St. Peter's Basilica, though not the frescoes of the Sistine Chapel but rather, drawing on his experience as a regional conservator, on the building's history. Christof Thoenes, who had come to the Hertziana in 1953 as a doctoral student and worked for decades alongside Wolff-Metternich on the history of St. Peter's Basilica, credited his mentor primarily for not making his conservative-positivist institute program into dogma and for doing nothing to "rein in the research enthusiasm of his young team."⁶² Summing up Wolff-Metternich's directorship, which ended in 1962, Thoenes said tersely on the occasion of the Hertziana's 100th anniversary:

Leveraging its quasi-monopoly of its Rome library, the Hertziana conducted top-level research in the field of historical-critical monument analysis, not in the production of ideas.⁶³

It took half a century for the Hertziana to transform from an unloved "accidental child" into a full-fledged Max Planck Institute. Not just two, as had been feared during the hesitant acceptance of the Danaean gift in 1912, but three generations of directors passed before the successor organization to the KWS could search for a Hertziana director who met their meritocratic criteria, free from inheritance constraints and massive interference by the Foreign Office. They found him in Wolfgang Lotz, who continued the architectural historical work of his predecessor but, crucially, met a hiring criterion that had become mandatory in the 1960s: U.S. experience. Since 1952, thanks to early contacts with Richard Krautheimer, he had taught at Vassar College (Poughkeepsie, NY) and later at New York University. As director of the Hertziana, he made amends and arranged for Krautheimer, who was already considered one of the most important art historians of the 20th century and whom the MPS had not even considered for the directorship of the reopened Hertziana in the early 1950s, to be appointed as an external scientific member of the MPS. In 1971, Lotz invited his retired friend and benefactor to move with his wife to Palazzo Zuccari in

60 Ebert-Schifferer, "Wissenschaftlerinnen," 2013, pp. 336–337.

61 This is how Wolff-Metternich described it in his "Gedanken über die Aufgaben der Bibliotheca Herziana in Rome," probably written at the end of 1952; cited here after Thoenes, "Kontinuität," 2013, p. 151.

62 Ibid., p. 151.

63 Ibid., p. 153. The commemorative speeches on the occasion of his death in 1978 have a similar tone: *Gedenkfeier Franz Graf Wolff Metternich*, 1979. On Thoenes' lifelong work at the Hertziana, see Satzinger, "Christof Thoenes," 2013.

Rome, where the “grand old man” of the Hertziana lived, researched, and wrote until his death in 1994.⁶⁴

Institutes Abroad: A Negative Balance Sheet and Its Lessons for the MPS

Reviewing the first fifty years of international activities of the KWS/MPS, which were concentrated in this period in the foreign institutes, the balance sheet is sobering. The Age of Extremes, driven especially by Germany in the first half of the 20th century and experienced far beyond its borders, also affected KWS/MPS’s attempts to establish itself in the European field of scientific research: sovereignty over the station in Rovinj, the first KWI ever, was lost in 1915 after just four years. In the 1920s, one could at least arrive as a guest and then share house rights with the Italian partner for fourteen years, before everything was lost to Yugoslavia at the end of the next war. The jointly operated alpine stations in Austria were primarily self-financed by the KWS for about twenty years and can be viewed ultimately as futile contributions to the “Greater German” science space, passing into the sole ownership of the now permanently established Alpine Republic after 1945. The institute foundations of the 1940s in Budapest, Thassos, Sofia, and Vienna, begun with a perspective towards a European science space imagined as German-dominated, were halted even in their initial phases. Investments already made were lost in the last months of the war and the first post-war months. Piraeus had moved even further to the periphery beyond the Soviet-dominated Balkans and lost its attractiveness; the originally jointly operated institute was readily handed over to Greek colleagues. In the case of the Hertziana, a leading international outpost of the KWS/MPS, its integration into the foreign cultural policy of the German Reich—or its legal successor—went beyond mere institutional alignment. This policy exerted a strong influence on its staffing decisions as well. Consequently, the successive management staff, with their national-historical focus after 1933 and the positivist corrections from 1954 onwards, put themselves entirely at the service of the respective national foreign cultural policy. At least up until the end of the 1950s, the Hertziana was not only institutionally shaped by foreign cultural policy, but was also epistemically permeated by it.

In light of this loss-heavy and scientifically unacceptable balance sheet, it’s not surprising that the MPS abstained from establishing new foreign institutes in the subsequent decades. The way they had been set up and managed no longer

64 Thoenes, “Wachstum,” 2013, p. 156. If we go by Thoenes’ account, Lotz was primarily busy with overseeing an ever-increasing collection of books, photos, and users. On top of this, he had to navigate the tensions surrounding different generations and the role of authority in the 1970s, which spilled over into the Hertziana. For more on Krautheimer’s role at Hertziana, see Kinney, “Civis Romanus,” 2013.

aligned with the new understanding of scientific autonomy and the newly built image of the MPS as a bastion of apolitical basic research. An exception was the Max Planck Institute (MPI) for Psycholinguistics, founded in 1980 in Nijmegen, the Netherlands. It was built around Willem Levelt, who had been teaching in Nijmegen since 1974, entirely in the tradition of the Harnack Principle. Levelt had previously done research at the Harvard Center for Cognitive Studies and the Institute for Advanced Studies in Princeton and had led an MPS project group for Psycholinguistics in Nijmegen since 1976, which was initially assigned to both the Humanities Section (GWS) and the Biology and Medicine Section (BMS). Following this preliminary phase, the project group was transformed into an MPI in 1979/80 through the usual procedures by the MPS committees and anchored solely in the BMS.⁶⁵

The situation was different in the 1980s for some humanities and social science institutes abroad, which the Federal Ministry for Research and Technology (BMFT) would have gladly transferred to the MPS. For instance, the MPS flatly refused to sponsor the German Historical Institute founded in Washington in 1987, even though the Federal Minister for Research Riesenhuber assured that its tasks would be “exclusively in the field of research and not in cultural policy.”⁶⁶

In the case of the German Institute for Japanese Studies in Tokyo, whose re-establishment had already been proposed by Chancellor Kohl in 1983, the MPS did set up a commission in 1986, led by Renate Mayntz (MPI for the Study of Societies), on the recommendation of the Scientific Council and at the request of the BMFT.⁶⁷ This commission spent a year investigating the conditions under which MPS sponsorship could be possible and eventually set the bar so high that the BMFT abandoned its plans. There was consensus on the subject matter, specifically the social scientific investigation of modern-day Japan, which represented an unexplored area within university-level studies of Japan in the Federal Republic of Germany. However, according to the Mayntz Commission, an institute with two locations—one in Germany and one in Japan—should be established. Moreover, the German institute should, for the time being, maintain academic leadership. The Japanese location was to serve initially only as an infrastructural base for scholars—either from the proposed MPI or from German universities—who needed to conduct their research temporarily in Japan. For a future permanent director of this satellite location, Japanese language and local knowledge were expected, but not necessarily individual research ambitions; and there was nothing warranting his appointment as a scientific member of the MPS. For the temporary leadership positions at the German site, who would also supervise the Japanese location on a rotational basis, the

65 Henning and Kazemi, *Handbuch*, vol. 2, 2016, pp. 1396–1400.

66 Riesenhuber to Staab, Feb. 7, 1986, BAArch B 196/96342.

67 Speaking notes Pusch (BMFT), June 11, 1987, for the SAFPP meeting, BAArch B 196/156218. For the back story of the Japan Institute, see Friese, “Kontinuität und Wandel,” 1990 or Hack, “Japanisch-Deutsches Kulturinstitut,” 1995.

idea was to recruit several distinguished scholars from various disciplines with “specialized knowledge of Japanese culture and society,” but not necessarily with Japanese language skills. These scholars would potentially be given leave from their universities for a few years to advance their Japan-focused research and train the next generation of scholars.⁶⁸

The provisional nature of this overly cautious and Germany-centered concept was due, on the one hand, to the belief that there were no researchers in the field of contemporary Japanese studies who met MPS criteria, but that there was university-based talent that still had to prove itself. On the other hand, it was crucial to avoid at all costs any association of the MPS with West German cultural policy or its degradation into an institutional bearer of a scholarly service facility for West German business travelers and other interested parties.⁶⁹ Additionally, there were reservations, even among the surveyed Western European and American experts, against a Japanese society that would only open up in its foreign trade relations with the West. Faced with this elaborate denial by the MPS, the BMFT resorted to an already-prepared alternative sponsorship in the form of the Philipp-Franz-von-Siebold Foundation. They brought the Humboldt Foundation and the Minerva Foundation GmbH, responsible for tasks outside the MPS’s statutes, on board as founders, along with the MPS President as a member of the board of trustees, and opened the solely located German Institute for Japanese Studies (DIJ) in Tokyo in 1988.⁷⁰

The MPS faced fewer challenges a dozen years later when the BMFT once again proposed that it take over the Art History Institute in Florence (KHI, Kunsthistorisches Institut), which had been in existence since 1897. The thematic overlaps and historically established cooperative relationships with the Bibliotheca Hertziana in Rome were not seen as prohibitive in the sense of avoiding duplication, but rather were likely considered as facilitating a swift transformation of this institute into an MPI. Since 2003, organized in two

68 Report of the “Japan Institute” Commission to GWS, May 15, 1987, BAArch B 196/156218.

69 Ibid. There were some complications from the BMFT’s end. The federal-*Länder* financing rules did allow for the founding of an MPI in the Federal Republic unless it received proportional financing from a *Bundesland*. However, the plan was for the Japan Institute to be solely federally funded (memo Feb. 17, 1987, BAArch B 196/156216; Riesenhuber Ito Staab, May 15, 1987, BAArch B 196/156218). Also, the non-scientific members in the MPS Senate didn’t seem to favor the concept proposed by the Mayntz Commission (Protocol of the 116th Senate meeting on June 11, 1987, in Hamburg, AMPG, II. Abt., Rep. 60, No. 116. SP, fol. 85–92.)

70 Philipp-Franz-von-Siebold Foundation, founding concept dated Nov. 2, 1987, draft of the foundation’s statutes; memo from the first founding committee meeting on Nov. 2, 1987, status Japan Institute, Jan. 22, 1988, for a meeting between Riesenhuber and Staab, BAArch B 196/156219. From 2002/3 onward, the newly established Max Weber Foundation took over the supervision of the German Humanities Institutes abroad; see Max Weber Stiftung. Deutsche Geisteswissenschaftliche Institute im Ausland, Deutsches Institut für Japanstudien, <https://www.maxweberstiftung.de/institute-dij-tokyo.html>, last accessed on Jan. 27, 2022.

departments focusing on “the histories of art and architecture” in Italy, Europe and the Mediterranean, the institute “understands itself as a laboratory of basic research in art history in dialogue with other disciplines,” aligning itself with MPS standards through a “collaborative model centered on basic research.”⁷¹

Another decade later, two more institutes were opened at foreign locations: in 2009, the Max Planck Florida Institute for Neuroscience in Jupiter, Florida, and in 2012, the Max Planck Institute Luxembourg for International, European, and Regulatory Procedural Law, following protracted contract negotiations with Luxembourg.⁷² These foundations can hardly be interpreted as a revival of the cultural missions of the foreign KWS institutes from the time of the German Empire, or of the Italian and Spanish activities of the MPS in the early years of the Federal Republic. Neither did these foundations come from initiatives by the Federal Government, nor did the BMFT provide any special funding for them. Instead, both institutes have been largely financed by their host countries through various arrangements; in the first case by the State of Florida and Palm Beach County, and in the second case by Luxembourg. This essentially represents the—depending on one’s perspective—export or import of the specific MPS model of research organization to two highly significant foreign locations for their respective fields of research. The first is in the immediate vicinity of the Scripps Research Campus for Biomedicine in Jupiter, opened in 2003, and the second is the seat of the European Court of Justice in Luxembourg.⁷³ Nevertheless, early in 2024 this institute was transformed into an interdisciplinary center and is no longer an MPI, but part of the University of Luxembourg. Whether this “proliferation”⁷⁴ of the Max Planck model can be considered paradigmatic for a new internationalization strategy of the MPS, discussed since the mid-1990s, is more than questionable and will be revisited in the concluding chapter of this study.

71 Quotes from KHI website: <https://www.khi.fi.it/en/institut/index.php>, last accessed April 22, 2024; and *Forschungsbericht des KHI-MPI 2004–2006*, p. 15, cited after Henning and Kazemi, *Handbuch*, vol. 1, 2016, p. 866. Wolfgang Schieder to CS, written and verbal communications, April 30 and May 5, 2020. Schieder, who was the inaugural chairman of the Council of the Stiftung Deutsche Geisteswissenschaftliche Institute im Ausland (since 2012: Max Weber Foundation) from 2003 to 2009, had proposed to integrate the German Forum for Art History, established in 1997 in Paris, into the MPS, too. However, this suggestion was declined.

72 See Henning and Kazemi’s *Handbuch*, vol. 1, 2016, pp. 523–526, pp. 918–921.

73 Scripps Research, <https://www.scripps.edu/about/history/index.html>, last accessed on Oct. 12, 2021.

74 This term was introduced by Jürgen Renn in a conversation on Nov. 3, 2021, about foreign foundations.

3.2 Old Comrades and New Instruments: Spain

The connections between the KWS/MPS and Spanish institutions have a historical reach almost as long as their engagement in Italy, dating back to the early 1920s. From the beginning, these relationships were strongly shaped by foreign policy considerations. However, unlike in Italy, it would require a quite expansive understanding of culture to subsume Spain's interests under either the imperial or federal German foreign cultural policy. After both World War I and World War II, the focus was primarily on arms technologies, specifically on the most advanced systems developed with significant contributions from KWS scientists. Initially, the initiative came from the German side, who were looking for ways to offload their contraband stockpile of poison gases in the early 1920s. Nearly thirty years later, Spanish military officials disguised as diplomats traveled to occupied West Germany to recruit nuclear experts for Spain's nuclear program launched in 1948. In both cases, Spain, which had remained formally neutral during the World Wars, was fundamentally interested in catching up with the international state of arms technology. Beyond this, there was a very specific aim to secure control over the rebellious North African colonies.

Early Arms Patronship

In the Second Moroccan War that began in 1921, the Kabyle rebels initially inflicted significant losses on the Spanish troops in the Rif Mountains. The tide was meant to turn with the subsequent use of the most advanced war technology of the time—namely the chemical gases used in the “Great War.” After irritants of French production proved insufficiently effective in view of the Spanish military, offers from specialized German circles—eager to bypass the Versailles Treaty's prohibition on weapons production, particularly the ban on chemical warfare—became highly attractive.⁷⁵ Acting at the intersection of these circles from the economy, military, and science were Fritz Haber, Director of the KWI for Physical Chemistry and Electrochemistry, who had developed the most effective chemical gases to date, tested their field application, and managed their mass production during the war; Madrid-based entrepreneur and banker Julio Kocherthaler, who advised his relative Haber in his patent disputes with BASF; former member of the Operations Division of the Supreme Army Command, Max Bauer, who was now making a name for himself as a military advisor in Spain (and later also in the Soviet Union and China); and Haber's wartime assistant Hugo Stoltzenberg. Upon Haber's recommendation, the Reich Trust Office had commissioned Stoltzenberg with the disposal of the still abundantly available stock of poison gases, an extremely risky task that led to several deadly

75 Kunz and Müller, *Giftgas gegen Abd el Krim*, 1990.

accidents due to exploding stock as chronicled by media like *Die Weltbühne*.⁷⁶ Stoltzenberg rephrased this dangerous mission as “reutilization of chemical warfare agents,” proving profitable in multiple ways: the conversion of poison gases into harmless substances offered Haber new research opportunities; the sometimes explosive experiences during interim storage improved military know-how in handling chemical substances. The sale of conversion products for civilian use, as well as the illegal displacement of embezzled old stock, brought additional funds into the newly established Chemical Factory Stoltzenberg. All of this made the owner highly sought after as an expert for gas warfare strategies worldwide, particularly with Haber as his scientific advisor in the background. Haber’s financial advisor from the German-Spanish banking group Kochenthaler/Ullmann/Lewin secured him his first foreign contract in 1921: the construction of an advanced gas factory in Marinosa, south of Madrid, the delivery of German residual stocks of poison gas, and the development of a military strategy that combined incendiary and chemical bombs to wipe out the Kabyle rebels and destroy their living space with poison gas. With poison and expertise from the KWI for Physical Chemistry, what Margit Szöllösi-Janze calls the “first aero-chemical war in history” culminated in a “campaign of annihilation against the Rif Kabylans.”⁷⁷

Of course, the Reichswehr was fully behind this German-Spanish collaborative project; Haber kept the German military updated on the newly acquired chemical, production-technical, and strategic insights for future gas wars.⁷⁸ The victorious Entente powers were not ignorant of the Spanish violations of international law in their war practices, nor of the German breaches of the Versailles Treaty. However, for colonial powers France and Britain, their own interests—namely in suppressing any anti-colonial uprisings in the Mediterranean region—were closer to their hearts than international law.⁷⁹

The Role of the MPS in the Spanish Nuclear Program

At first glance, the resumption of Spanish-German scientific relations after World War II seems to follow the same script—except with modernized props. Upon closer inspection, however, it becomes evident that the most significant

76 For example, in an article by Ossietzky, “Gasangriff auf Hamburg,” 1928. See also Naumann, “Ein Leben für den Tod,” *Die Zeit*, Sep. 28, 1979.

77 The portrayal of the Stoltzenberg affair follows Szöllösi-Janze, *Haber*, 1998, pp. 467–480, quotes: pp. 469, 470. See there also the discussion on Stoltzenberg’s and Haber’s activities in the Soviet Union, which resulted in a financial disaster for the *Chemische Fabrik Stoltzenberg*. For further industrial and military cooperations between Spain and Germany up to the 1950s, see Presas i Puig, “Deutsche Wissenschaftler,” 2006, pp. 154–158; Presas i Puig, “Technological Transfer,” 2008.

78 Szöllösi-Janze, *Haber*, 1998, p. 470.

79 Sasse, *Franzosen, Briten und Deutsche*, 2006.

tool, the use of atomic energy in the form of weapons and reactors, profoundly changed the entire geopolitical stage and thus the course of these relations in the 1950s and 1960s. The role that the MPS played also evolved, not least because its nuclear physicists, unlike the KWS's physicochemists during World War I, had not reached the global forefront and had only some knowledge to offer, but as yet no functioning technologies.

At the end of World War II, Spain had neither expertise nor technology in atomic energy, but, as Spanish authorities indicated, it did possess one of Europe's largest uranium deposits.⁸⁰ Just a few days after the atomic bombings of Hiroshima and Nagasaki, the Franco regime publicly announced that it had learned its geopolitical lesson: only a country possessing this weapons technology would be taken seriously as a military power, particularly in its remaining West Saharan colonies.⁸¹ Spain's ambitions triggered nervousness among the world's then only nuclear power—especially given the historically plausible idea of coupling German expertise with Spanish raw materials. This led to a swift reorientation of U.S. policy towards Spain. Instead of continuing to penalize the formally neutral country for its support of Nazi Germany and isolating it internationally, the Truman administration, as early as 1946/47 and coinciding with the dissolution of the West-East wartime alliance, recognized the strategic importance of the Iberian Peninsula and its potential role as a uranium supplier for the West. José María Otero de Navascués, a high-ranking naval officer and director of the physical institute in the Council for Scientific Research (CSIC, Consejo Superior de Investigaciones Científicas), was among the first to benefit from American overtures. In 1947, the naval attaché of the U.S. Embassy in Madrid presented him with a collection of American scientific journals on atomic physics that had previously been classified. This quiet beginning of nuclear scientific and atomic economic cooperation with the U.S. intensified years before the conclusion of bilateral military agreements and Eisenhower's "Atoms for Peace Program" of 1953, but especially thereafter.⁸²

Otero de Navascués became the key figure in the Spanish nuclear program, which began to institutionalize in 1948 and, after several reorganizations, culminated in the creation of the Junta de Energía Nuclear (JEN) in 1951. The JEN was led by military or aviation ministers, initially by General Juan Vigón

80 The following description largely relies on the work of Albert Presas y Puig, to whom I also owe gratitude for comments and advice as well as the provision of an unpublished manuscript, which greatly facilitated my own source research.

81 *Mundo* VI/276 from Aug. 19, 1945 and VII/300 from Feb. 3, 1946, p. 161; paraphrased here after Presas i Puig, "Science on the Periphery," 2005.

82 Presas i Puig, "Science on the Periphery," 2005, p. 201 (FN 23), pp. 207–208. Torre, "Who Was Who," 2017, p. 37. A summary of the American-Spanish nuclear agreement from 1955, reached after forty months of negotiations, can be found in: "Uran," *Der Spiegel*, June 8, 1955, p. 27: In exchange for delivering uranium ore in fixed quotas, the USA covered all costs for uranium mining, the construction of nuclear power plants, and the training of Spanish scientists and technicians in American labs.

Suerodiaz and from 1955 by General Hernández Vidal. However, Vice-Director (and from 1958, Director) Otero, who had studied at technical universities in Zurich and Berlin-Charlottenburg in the 1930s, was responsible for their work program. The program aimed to cover all components from geological exploration and uranium mining to atomic physics and chemistry research, as well as the development of reactor technology and to control the entire fuel cycle.⁸³ The most pressing issue identified by Otero and his colleagues in the organizational precursor stages of the JEN was personnel development in both scientific and technological terms. For this, they sought foreign support. As early as the spring of 1948, an agreement was reached with Italian colleagues, who due to allied restrictions lacked the raw materials to resume nuclear experiments, to exchange uranium for knowledge. In the first step, Spanish uranium samples were sent to Italy, discreetly carried in diplomatic baggage. A few months later, selected Spanish scientists were permitted to travel for further training in Italian research institutes.⁸⁴

Only in the following year did contacts with West German scientists, and particularly the well-known KWS/MPS nuclear researchers, begin to be sought through various channels. This was not straightforward given the formerly close economic and scientific relations with Germany. As part of their ‘Safe Haven’ strategy, the Western Allies continued to exert pressure (although diminishing) on Spain and other formerly neutral Western European states. The idea was to expel politically questionable Germans and confiscate German assets that had been withdrawn from Allied control in the occupied zones. Moreover, the occupying powers could deny travel visas to invited West Germans and also to MPS scientists at any time. While Spain, not wishing to overly irritate the Allies, occasionally felt compelled to “repatriate” one or another notorious Nazi, they otherwise did everything possible to protect the majority of the German colony and to maintain its reputation as a refuge for Germans, regardless of any Nazi associations.⁸⁵

So, the managers of the Spanish nuclear program courted German nuclear physicists who wanted to continue their research banned in West Germany. Initially, two technically and physically trained German-speaking officers with diplomatic status were sent into the Western zones in what was more or less a covert operation. Although the “head hunters” were able to locate ten German physicists willing to relocate, including Heisenberg’s closest collaborator and reactor construction expert Karl Wirtz, their clients were not yet satisfied with the haul.⁸⁶

83 Presas i Puig, “Science on the Periphery,” 2005, pp. 203–204; Presas i Puig, “Human Capital,” 2017, pp. 106–107.

84 Presas i Puig, “Science on the Periphery,” 2005, pp. 203–204.

85 Cf. the Allies’ Safe Haven strategy and its limited success in Spain: Collado Seidel, *Angst vor dem “Vierten Reich”*, 2001. On the ambivalent repatriation policy see *ibid.*, pp. 81–91.

86 Presas i Puig, “Science on the Periphery,” 2005, p. 206.

Next, they attempted to personally contact Heisenberg through reliable Roman channels. Johannes Gehlen, the older brother of the chief of the Gehlen Organization and later the Foreign Intelligence Service of Germany (BND, Bundesnachrichtendienst)—already appointed by the Americans in 1946—had encouraged them during his “discussions with government agencies in Spain.”⁸⁷ Johannes Gehlen officially operated from Rome as the Secretary for Foreign Affairs of the Sovereign Order of Malta, and, under the pseudonym Gustav, simultaneously headed a seven-member intelligence group supplying his younger brother Reinhard’s organization in Pullach with information from the Italian capital. Born in Rome in 1901 as the premarital son of his parents, Johannes was raised by German foster parents and worked in Italian and British banks in Rome until 1935. He then went back to university, studying physics, mathematics, and astronomy in Leipzig under Heisenberg and radiation physicist Robert Döpel. In 1942, he transferred to Walther Bothe at the KWI for Medical Research as a post-doctoral scientific assistant.⁸⁸ Even then, his “eventful life” and various “contacts abroad” aroused the “suspicion” of his Leipzig teachers. In August 1945, the interned Heisenberg, Kurt Diebner, and Walter Gerlach pondered at Farm Hall whether Gehlen might have been “inserted by the British Secret Service” among them.⁸⁹ Given this, it might not have been a good idea to send Otero to Göttingen with a letter of recommendation from Gehlen, even if he reminded Heisenberg that he had been a “longtime auditor” and emphasized his honorable intentions:

It was always my favorite thought to use the international level of the [Maltese, CS] Order and its neutral position, as well as its purely humanitarian-oriented goals, more for the benefit of science.⁹⁰

As a precaution, Gehlen had also asked Ludwig Curtius, the former DAI director who was forcibly retired by the Nazis in 1937, but still lived in Rome, for another letter of recommendation for Otero.⁹¹

Armed with these endorsements, Otero met with Heisenberg in June 1949, and an understanding was quickly reached among physicists: Heisenberg would travel to Spain multiple times in the coming years to give lectures.⁹² His MPI for Physics would provide some pre- and postdoc positions for young Spanish talent

87 Gehlen to Heisenberg on May 30, 1949, AMPG, III. Abt., Rep. 93, No. 1792, fot. 183.

88 See Wolf, *Entstehung des BND*, 2018, pp. 426–429. For a detailed biography of Johannes Gehlen see Franceschini, Wegener Friis, and Schmidt-Eenboom, *Spionage*, 2017, pp. 53–63.

89 The quotations come from the overheard conversation between Gerlach and Heisenberg on Aug. 5, 1945: Hoffmann, *Operation Epsilon*, 2023, p. 1 60.

90 Cover letter Gehlen to Heisenberg, May 30, 1949 (fot. 183); the actual recommendation letter is dated May 29, 1949 (fot. 187), AMPG, III. Abt., Rep. 93, No. 1792.

91 Curtius to Heisenberg on May 28, 1949, *ibid.*, fot. 191.

92 See the correspondence between Heisenberg—Otero 1949–1972, AMPG, III. Abt., Rep. 93, No. 1792.

in nuclear physics, much like prestigious American and Italian research institutions were already doing. First to arrive in 1952 was María Aránzazu Vigón, daughter of the JEN Director, who, as Heisenberg reported back to Madrid, was considered a full “member of the institute” after just a few months and who later also published with Wirtz. She was to take on an important, if not leading, role in the JEN upon her return. In contrast, her male colleague at the MPI for Physics, Ramón Ortíz Fornaguera, was considered for such a position but exhibited an overly timid demeanor. This greatly concerned Otero, who regularly discussed the progress of their mutual protégés with Heisenberg.⁹³

However, the most significant West German educational investment in the Spanish nuclear program was embodied by Karl Wirtz. The reactor specialist was allowed as the first nuclear researcher from the MPS to travel to Spain for several weeks in March 1950 for a dual mission: he was to accompany Spanish colleagues in the search for a location for an observation station for cosmic rays in the Sierra Nevada, and also advise the leaders of the Spanish nuclear program on the organizational restructuring of the precursor institutions to JEN. During its startup phase in 1951, he even stayed on site for two months and continued to visit Spain in the following years, occasionally also with representatives of West German industrial companies like Degussa-Nukem, which—exploiting a gap in the list of banned items in the Allied nuclear prohibition law—supplied Spain with a plant for the production of highly pure uranium in the early 1950s.⁹⁴

Meanwhile, in the Federal Republic, debates were ongoing about the location of the future Nuclear Research Center (KfK), along with its research reactor. With the decision made immediately after the Paris Agreements in 1955 to place the reactor center in Karlsruhe rather than Munich, Chancellor Adenauer not only thwarted his Minister for Special Assignments, from 1955 the Minister for Atomic Affairs, the Bavarian Franz Josef Strauß, but also Heisenberg, who then withdrew from reactor research. While the MPS would hardly have been considered as a possible base institution for such an industry-oriented large-scale research facility, Heisenberg would have still wanted it in close proximity to his MPI for Physics, which was in the process of moving to Munich.⁹⁵ For Wirtz, who had been significantly involved in planning the KfK from the beginning as the head of the reactor group at the MPI for Physics, this ultimately meant institutional detachment from the MPS, but also emancipation from his

93 Otero to Heisenberg, May 18, 1953 (fot. 193–194); Heisenberg to Otero, Jun. 9, 1953 (quote, fot. 101); Heisenberg to Otero, April 5, 1954 (fot. 91–93); Otero to Heisenberg, April 10, 1954 and Oct. 25, 1958 (fot. 79, 89), *ibid.*

94 Müller, *Geschichte der Kernenergie*, vol. 1, 1990, p. 54; Matz, *Aufbruch*, 1985; Kollert, *Politik der latenten Proliferation*, 1994, p. 468; Wirtz, *Im Umkreis*, 1988, pp. 81–82; Presas i Puig, “Deutsche Wissenschaftler”, 2006, p. 163; Presas i Puig, *Reflections*, 2008, pp. 19–21. See also Radkau, *Aufstieg und Krise*, 1983.

95 Carson, *Heisenberg in the Atomic Age*, 2010, pp. 232–243; Müller, *Geschichte der Kernenergie*, Bd. 1, 1990, pp. 129–140; Gleitsmann, *Im Widerstreit der Meinungen*, 1986.

academic mentor. He transferred his Göttingen reactor group to the Institute for Neutron Physics and Reactor Technology at the KfK, which he led, and took up a professorship at the Technical University of Karlsruhe. However, he remained connected to the MPI for Physics and the MPS as an external scientific member, and also maintained personal and scientific exchanges with Heisenberg.⁹⁶ Spanish-German collaboration in reactor technology naturally shifted to Karlsruhe. Although Spanish junior scientists continued to come to the MPI for Physics to deepen their knowledge in theoretical and experimental physics, Heisenberg rarely found the time to accept one of the many lecture invitations to Spain which he received.⁹⁷

The German-Spanish cooperation in atomic research and reactor technology that began in 1949/50 has repeatedly fueled speculation that Hitler's and Franco's atomic physicists had conducted forbidden research and pursued secret nuclear weapons plans.⁹⁸ As evidence for this, both states' preference for developing natural uranium heavy water reactors was cited, as these reactors generate a particularly large amount of weaponizable plutonium. The public avowals of the exclusively peaceful use of nuclear energy, especially in the 1957 Göttingen Declaration of West German nuclear scientists, were considered merely a smokescreen. The task would thus be to convict the scientists guilty of secretive machinations.⁹⁹

In reality, the story is less mysterious but still not without a harmful component. Spain, which only joined the Nuclear Non-Proliferation Treaty (NPT) in 1987, long after the Franco dictatorship, made no secret of its desire to keep open the option for nuclear weapon production. Also in the re-armed West Germany of the 1950s, the government's desire for participation in new weapons technology and the creation of a European nuclear power based on its own weapons production was widely discussed.¹⁰⁰ According to the much-quoted quip by Adenauer, the NPT was viewed by the CDU-led Federal Government until the end of the 1960s as an unacceptable "Morgenthau Plan squared," and Spain was

96 Wirtz to Heisenberg on May 22, 1957, AMPG, III. Abt., Rep. 93, No. 1906, fot. 185. Wirtz, *Im Umkreis*, 1988, p. 85.

97 Heisenberg to Albareda on Jul. 16, 1964, AMPG, III. Abt., Rep. 93, No. 93, fot. 110–112.

98 Especially Kollert, *Politik der latenten Proliferation*, 1994, pp. 463–489. Following this, most recently Hanel, *Die Bombe als Option*, 2015. Presas i Puig similarly argues in "Science on the Periphery," 2005, p. 209, FN 69; Presas i Puig, *Continuities*, 2005, p. 34, FN 207. However, Presas corrected this in 2007, as no reliable documents could be found indicating such intentions by MPS physicists; see Presas i Puig, *Scientific and Technological Relations*, 2007, p. 20. Stephan Geier's review ("Bombe als Option," 2015) is refreshingly straightforward in rejecting Hanel's exposing approach.

99 For a detailed discussion of the argumentative ambivalences of the Göttingen Declaration, see Lorenz, *Protest der Physiker*, 2011; Walker, "Mit der Bombe," 2014.

100 From the extensive literature see Radkau, *Aufstieg und Krise*, 1983; Küntzel, *Bonn und die Bombe*, 1992; Thoß, *NATO-Strategie*, 2011; Thoß, *Atomkriegsplanungen*, 2014; Möller, *Franz Josef Strauß*, 2015, pp. 184–205; Siebenmorgen, *Franz Josef Strauß*, 2015.

seen as an important pillar of an international Anti-NPT coalition.¹⁰¹ After the change in government in 1969, the newly elected Social Democratic Chancellor Brandt distanced himself from Francoist Spain and shelved the nuclear weapons plans. However, he only signed the NPT after it was contractually ensured—thanks in no small part to scientific advice from Wirtz and Weizsäcker—that West German companies could fully participate in the further development of civilian nuclear technology.¹⁰²

The realization that depending on the reactor design, varying amounts of weaponizable plutonium are produced—which could also be used for other purposes—was already well known in 1941 by Carl Friedrich von Weizsäcker, the author of the Göttingen Declaration. His idea of a two-stage plutonium-breeding reactor was patented in 1955 by Diebner, a collaborator in the NS Uranium Club and detainee at Farm Hall who was not particularly popular among KWS nuclear researchers, right after the lifting of Allied research bans.¹⁰³ Therefore, the military option inherent in any nuclear energy production—though to varying degrees depending on the reactor type—was known to anyone who wanted to know, whether in Spain, Germany, or elsewhere. Nuclear scientists and technicians may either have wanted to realize this option as a military-diplomatic bonus for their respective countries, or they may have been willing to accept it as a political risk, the responsibility for which they left to others.

Whatever their stance, in the 1950s the heavy water-moderated natural uranium reactor was still considered the facility of choice by most people involved in building up the European nuclear industry. The West German reactor researchers led by Wirtz had from the beginning been working towards such a facility, and with the decision at the KfK to develop a fast breeder reactor by the end of the 1950s, the anticipated demand for uranium grew. In Spain, the goal was to use available natural uranium to become less dependent on enriched uranium imports from the United States and the controls attached to them. France, which was developing its independent *Force de Frappe*, also chose a series of natural

101 Adenauer quote in: *Die Welt* Feb. 20, 1967; *Der Spiegel* Feb. 27, 1967, here cited after Geier, *Schwellenmacht*, 2013, p. 227. See also Schrafstetter, “The Long Shadow of the Past,” 2004, pp. 132–135. Regarding the Anti-NPT Coalition, see Kollert, *Politik der latenten Proliferation*, 1994, pp. 470, 480–483; Küntzel, *Bonn und die Bombe*, 1992, pp. 53 ff. Presas i Puig, “Deutsche Wissenschaftler”, 2006, p. 164.

102 Wirtz advised Chancellor Kiesinger during his negotiations: Manuscript Wirtz, “German-American Interaction in the Field of Atomic Energy,” lecture at Battelle Memorial Institute Seattle, Feb. 1970, 17, AMPG, III. Abt., Rep. 93, No. 1906, fol. 63–77. Weizsäcker utilized his Pugwash contacts and supported Chancellor Brandt in pursuing this interest, see Sachse, “Max Planck Society and Pugwash,” 2018, pp. 195–199 (→ 2.2 and 4.2).

103 Among the extensive literature on the *Uranverein*, only the following reference work may be noted here: Walker, *Die Uranmaschine*, 1990. For a summary on the recent controversies, referring to the meanwhile published relevant literature, see Walker, “Physics,” 2017. On the rather late discovery of the plutonium patents and their significance, see Karlsch, *Hitlers Bombe*, 2005, pp. 282–286; Karlsch and Walker, “New Light,” 2005.

uranium reactors that were gas-cooled and graphite-moderated, for similar strategic reasons. It was no coincidence that Électricité de France (EDF), along with three Spanish energy companies, started constructing a Uranium Naturel Graphite Gaz Réacteur (UNGG reactor, Vandellós 1) in Tarragona in 1968, whose highly plutonium-rich waste was processed in France in exchange for some of the recycled plutonium. Spain received the remaining part for free use under the condition that it would not be sold to third parties and that a certain level of oversight was to be allowed by the French regulatory body, the Commissariat à l'Énergie Atomique (CEA), which exercised this responsibility rather casually.¹⁰⁴ In fact, some JEN scientists pursued the idea of a Spanish plutonium bomb but eventually abandoned the plan due to high costs, lack of support from their government, and foreign policy considerations with their overwhelmingly powerful American partner in the development of Spanish nuclear energy.¹⁰⁵ Spain was therefore not dependent on West German cooperation partners for plutonium production, but the Germans were certainly interested in Spanish uranium. This was discussed by Atomic Minister Strauß during his visits to Spain in the mid-1950s, but he eventually rejected the offer as too expensive.¹⁰⁶

Meanwhile, international conferences across Europe, of course with American participation, discussed the advantages and disadvantages of various existing and developing reactor types. As a result of a conference of the European Atomic Energy Society (EAES) in May 1956 in Italy, for example, Wirtz concluded that so far “no optimal reactor type could be identified,” but under the plausible assumptions of his Canadian colleague Wilfrid Bennett Lewis, “power reactors with natural uranium and heavy water as moderator and coolant could deliver very cheap electricity.”¹⁰⁷

Economic aspects increasingly came to the forefront, intensifying the conflicting interests within the Franco regime. Spain fell into a prolonged economic crisis in 1956 and was urged by the International Monetary Fund and the World Bank to liberalize its autarkistic economic policy. This also affected its nuclear policy, which had so far aimed to keep all stages, from uranium extraction to nuclear research and electricity and, potentially, plutonium production, under

104 Sánchez-Sánchez, “An Alternative Route,” 2017, p. 169.

105 The UNGG reactor went into operation in 1972; it is unclear whether the bomb plan was abandoned before Franco's death or only in 1981 when the Islero project was finally shelved under U.S. government pressure, cf. *ibid.*, pp. 162–169 and FN 62; Velarde, *Proyecto Islero*, 2016.

106 *Die Atomwirtschaft*, July/August 1956, p. 283. Aschmann, *Treue Freunde*, 1999, pp. 231–233; Presas i Puig, “Deutsche Wissenschaftler,” 2006, p. 164. However, Kollert (*Politik der latenten Proliferation*, 1994, p. 469) raises the question, “whether Strauß discussed with the Spanish general the options of a German-Spanish atomic cooperation from a military perspective,” but provides no evidence for this.

107 Confidential report by Wirtz on the “Results of the Conference of the European Atomic Energy Society from May 21 to 26, 1956 on Monte Faito, Italy,” AMPG, III. Abt., Rep. 93, No. 1906, fot. 195–206.

the management of JEN. While their own reactor development had been a prestige project symbolizing national scientific and technological capabilities, nuclear power plants became a commodity to be more affordably acquired on the international market even before Spain could offer a competitive product. In any case, the Spanish energy sector broke away from the autarkistic consortium; they primarily ordered American light water reactors, which came with favorable financing plans from the U.S. EXIM Bank, and also sourced the enriched uranium that American manufacturers abundantly provided the world market for their operations.¹⁰⁸

Otero, observing the aggressive pricing of the Americans, saw the financial and legitimizing foundation for the nuclear physical research and development carried out within JEN dwindling away. In the following years, he frequently asked his West German cooperation partner Wirtz for strategic advice on JEN's position in Spanish nuclear and science policy, as well as for facilitation of West German investments as a counterbalance to the Americans. Wirtz advised him to come to terms, on the one hand, with the American light water reactors and the overall international commodification of nuclear energy.¹⁰⁹ On the other hand, Wirtz summed up his years-long observations in Spain and his experience with JEN in a memorandum requested by Otero in 1968/69. He stated that a coherent program must be devised that justifies government investments in research even under the prevailing market-liberal conditions, while also holding the Spanish industry accountable. It had to be a government program for which not JEN, but the responsible ministry, should be accountable; only a minister would have the authority to balance the various internal Spanish interests. At the same time, he wished for a reliable contractual partner in two respects: first, for future cooperative projects between KfK and JEN's research center in Moncloa, especially concerning the development of the fast breeder as the European project that should eventually stand up to American competition. Secondly, for possible contracts to West German reactor builders, who had thus far never been able to establish themselves in the Spanish market, primarily dominated by Westinghouse and General Electric.¹¹⁰

In at least one instance, Wirtz's commitment to the Spanish nuclear program also yielded the desired foreign economic success for the Federal Republic: in 1975, during Franco's lifetime, when seven reactors were already in operation and nine more were under construction, the German Kraftwerksunion (KWU), a joint venture between AEG and Siemens, won the contract for the construction of

108 Presas i Puig, "Science on the Periphery," 2005, pp. 213–217; Rubio-Varas and Torre, "Major U.S. Nuclear Client," 2017.

109 Presas i Puig, "Science on the Periphery," 2005, p. 212.

110 Wirtz hoped to integrate Spain into the development of breeder reactors, similar to Belgium and the Netherlands. In September 1968, a delegation from the KfK explored the possibility of collaborating with the JEN Nuclear Research Center in Moncloa in

the Trillo 1 pressurized water reactor in Guadalajara. KWU board member Hans Frewer effusively thanked Wirtz for his decades-long commitment to Spain.¹¹¹ Trillo 1 came online in 1988, five years after the first socialist government of Spain had called off further expansion of nuclear energy, as well as the planned reactor block Trillo 2, and one year after the second socialist government had finally joined the Nuclear Non-Proliferation Treaty.¹¹² Soon afterwards, the fast-breeder reactor built in Kalkar but never operational, which was the flagship project of the KfK, was also definitively abandoned.

The interests that underlay the long-term Spanish-German relations in nuclear energy research were not always congruent, but often overlapped. Initially, the JEN led by Otero sought mentors in the nuclear physicists of the MPI for Physics, Heisenberg and Wirtz, for its own scientific next generation. Later, they sought primarily organizational advice from Wirtz and the KfK for the institutional construction or restructuring of the Spanish nuclear program. Otero, however, found it difficult to abandon the idea of a state-controlled nuclear energy complex that would encompass everything from uranium mining, nuclear physics research and technological development, to reactor construction (and initially perhaps even nuclear weapons development). He believed that only then would the Francoist regime sustainably invest in building a generation of Spanish nuclear physicists capable of competing internationally in all areas of modern physics. The 1960s would confirm his belief in a devastating way: As soon as it became clear that the Spanish energy industry was not waiting for Spanish reactors but readily seized American special offers, the Franco regime decided to save contributions to CERN and terminated the country's membership in 1969. Requested interventions by international nuclear physics luminaries like Isidor Rabi, Victor Weisskopf, Francis Perrin, and even Heisenberg could not change

the field of fast breeder reactors (Confidential Report "Atomic Energy in Spain," dated Sep. 18, 1968, AMPG, III. Abt., Rep. 93, No. 1906, fot. 79–112). In March 1969, at the urgent request of Otero, Wirtz visited JEN again to draft the desired memorandum and a government program; in his travel report, his rather pessimistic expectations regarding Otero's willingness to reform and JEN's ability to reform are evident: Proyecto "Programa Nuclear del Gobierno Español," March 17, 1969, AMPG (fot. 31–45); Memorando sobre las actividades de la Junta de Energía Nuclear, March 21, 1969 (fot. 47–59); Wirtz's travel report, April 10, 1969 (fot. 27–30), AMPG, III. Abt., Rep. 93, No. 1906. See also Sanz Lafuente, "Long Road," 2017, 199.

111 Sanz Lafuente, "Long Road," 2017, pp. 187–188. A list of Spanish nuclear power plants can be found in Rubio-Varas and Torre, *The Economic History of Nuclear Energy in Spain*, 2017, pp. 250–254. In addition to the three reactors listed there that were connected to the grid by 1975, there are four research reactors: https://de.wikipedia.org/w/index.php?title=List_of_nuclear_installations_in_Spain&oldid=219936801, last accessed on Aug. 14, 2022.

112 For the complex background of the KWU winning the tender, see Sanz Lafuente, "Long Road," 2017. Regarding the end of the Spanish nuclear program, see Presas i Puig, "Deutsche Wissenschaftler," 2006, p. 165.

this.¹¹³ It was only in 1983 that the socialist government reversed priorities and decided to rejoin CERN alongside withdrawing from the nuclear program.¹¹⁴

Wirtz had initially considered Spain—alongside South America and Australia—as an alternative location for his still-forbidden reactor research. With the research freedom regained in 1955 and the soon-after-founded KfK, things developed in the desired direction for him in the Federal Republic. However, the KfK differed significantly from JEN, as it was an entity operating at the intersection of science, politics, and industry, and focused on large-scale, project-based research. Despite this, Wirtz integrated his intimate knowledge of JEN, the Spanish nuclear program, and especially the Nuclear Research Center in Moncloa, as well as his intensive Spanish contacts which were made during his time at the MPI for Physics, into the KfK. He tried to use his expertise in Spain—in conjunction with the Federal Government—to put the German fast-breeder reactor project on a broader European basis and at the same time to open the door for the domestic nuclear industry to the American-dominated Spanish market. Just as the first signs of success began to appear in the early 1970s, the nuclear twilight in Spain, due to regime change, loomed even faster than in the Federal Republic of Germany.¹¹⁵

Regaining Cultural-Political Terrain

As early as the summer of 1949, the Secretary-General of CSIC, chemist and Opus Dei member¹¹⁶ José María Albareda, had invited Otto Hahn, his presidential counterpart at the MPS, to Spain. However, this first attempt to restore the institutional relations between the two scientific organizations, which had been interrupted in 1945, failed due to the travel visa for Hahn being denied by the Allied authorities. It was only a year later that the MPS President was

113 Otero to Heisenberg on April 14, 1969, AMPG, III. Abt., Rep. 93, No. 1792, fot. 29–33.

114 Presas I Puig, “Human Capital,” 2017, pp. 109–110.

115 Wirtz, *Im Umkreis*, 1988, pp. 87–88; Sanz Lafuente, “Long Road,” 2017, pp. 196–199.

116 The Opus Dei (since 1982 *Prelatura Sanctae Crucis et Operis Dei*) was founded in 1928 by the Spanish priest Josemaría Escrivá de Balaguer y Albas as a Roman Catholic order, which both clergy and laypeople can join. Those who are almost entirely academically educated, celibate, and mostly living in order institutions, organized separately by gender, are referred to as “numeraries.” They form the leadership layer of the order but predominantly pursue civilian professions. Regarding Albareda’s biography: Pérez López, “José María Albareda,” 2010. For this right-wing Catholic intellectual milieu see Prades Plaza, *España y su historia*, 2014. Regarding its West German counterpart and its pan-European connections, see Conze, *Europa der Deutschen*, 2005, particularly the discussions about the European Documentation and Information Center (CEDI), founded in 1952 in Santander. Here, under the leadership of Otto von Habsburg, Spanish, French, German, and other Western European “Occidentals” gathered, wanting to revive the “Occidental culture” that extends to “Ibero-America” for the benefit of the “pan-European” economic power, see *ibid.*, pp. 169–206.

allowed to travel to Spain with a three-member delegation, which also included the biologist Georg Melchers.¹¹⁷ Melchers, who had stayed away from the delegation's reception by Generalísimo Franco and primarily sought contact with regime opponents among his Spanish colleagues, later derided the fascist clerical pomp with which the MPS delegation was received, as well as the architectural grandeur of the Spanish science palaces, which made the Harnack House look like a humble hut in comparison.¹¹⁸

Politically less sensitive and below the radar of the MPS's Administrative Headquarters, some institutes had already resumed scientific exchanges with Spanish colleagues starting in the early 1950s. The ties were particularly close between the MPI for Brain Research in Cologne and the Instituto Cajal, which had been established in Madrid in 1900 for the nerve histologist and later Nobel Prize winner Santiago Ramón y Cajal. The long-serving MPI Director Hugo Spatz and his newly appointed colleague Klaus-Joachim Zülch maintained an extensive network of scientific relations with Spanish research institutions and university hospitals, where they occasionally also gave lectures in Spanish.¹¹⁹ The directors of the MPI for Iron Research (Franz Wever), the MPI for Comparative Public and International Law (Hermann Mosler), the MPI for Breeding Research (Wilhelm Rudorf), and the MPI for Agricultural Labour and Agricultural Technology (Gerhardt Preuschen) also undertook study and lecture trips to Spain and hosted several Spanish postdocs as guests in their institutes.¹²⁰

It was the insistent inquiries from the Federal German Consul General in Barcelona, Herbert Schaffarczyk, that prompted the Administrative Headquarters to survey the institutes about their contacts in Spain.¹²¹ The consul had hosted a breakfast in 1956 in honor of the lecture-traveling Mosler, inviting high-ranking representatives of the local university and strongly recommending that the MPS invite their rector, the chemist Francisco Buscarons Úbeda, to their next General

117 Albareda to Hahn on Dec. 23, 1949, AMPG, III. Abt., Rep. 14, No. 5205, fol. 2. Hahn to Albareda on Jan. 17, 1950; Albareda to Hahn on Jan. 26, 1950, AMPG, III. Abt., Rep. 14, No. 31, fol. 1, 2. Hahn to Nordstrom (Chief Research Control Group OMGUS) on Feb. 4, 1950, AMPG, III. Abt., Rep. 14, No. 3150, fol. 2–3. The delegation included the MPI directors Erich Regener (MPI Physics of the Stratosphere), Karl Ziegler (MPI Coal Research), and Gunther Lehmann (MPI Labour Physiology). A brief summary of Hahn's trips to Spain in 1950 and 1953 is contained in an undated note in the files for the preparation of the Butenandt trip in 1963, AMPG, II. Abt., Rep. 102, No. 346, fol. 225.

118 As stated by Melchers in a letter to his colleague and confidant, Anton Lang, on June 6, 1950, paraphrased here based on the English translation by Presas i Puig, *Scientific and Technological Relations*, 2007, pp. 18–19.

119 Ballreich to Schaffarczyk on Jan. 16, 1958 and Feb. 11, 1958, AMPG, II. Abt., Rep. 102, No. 347, fol. 465–466 and 489.

120 Ballreich to Schaffarczyk on Jan. 16, 1958, *ibid.*, fol. 472–473. See also Presas i Puig, *Scientific and Technological Relations*, 2007, pp. 20–23.

121 Circular from the Administrative Headquarters on Jan. 20, 1958, AMPG, II. Abt., Rep. 102, No. 347, fol. 485–486.

Meeting.¹²² From then on, Schaffarczyk repeatedly but not always successfully requested suitable lecturers from the Administrative Headquarters “in the fields of medicine, chemistry, and physics;” they were to help regain the ground lost in the immediate post-war years to “France, England, and especially the USA.”¹²³ This need, increasingly articulated since the mid-1950s primarily by the German colony in Spain, the embassy in Madrid, and the consulate in Barcelona, corresponded on the Spanish side to the desire to counter the perceived overwhelming American presence in economy and science with diversified international contacts, particularly those with Germany, the old ideological partner.

Crypto-Fascists Get Involved

Even as the MPS delegation’s visit was being prepared, a particularly politically active member of the German colony in Spain stepped in. Hans Juretschke, a young doctoral graduate in Romance Studies, was caught in Madrid by the onset of the war just as he had taken up his lecturing position at the university; as a student, he had joined the SA (Nazi storm troopers) and, before leaving, the National Socialist Teachers’ League. In addition to his university work, he had been a part-time “scientific assistant” since 1942 in the cultural department of the German Embassy, compiling data for a bibliographic bulletin. Presumably not just because of this, the “model Catholic” made himself indispensable to the Foreign Office and the Reich Ministry of Education, such that he was repeatedly declared “unavailable” until the end of the war, without further explanation.¹²⁴ After the war, he remained in Madrid and was among those Germans who the Spanish government was happy to keep in the country, despite Allied demands for their expulsion. In Spain, his professional impact was valued as much as his

122 Mosler to Ballreich on May 11, 1956; Schaffarczyk to Ballreich on May 16, 1956, *ibid.*, fol. 515, 517–518. Schaffarczyk was originally intended by the head of the Federal Chancellery, Otto Lenz, to whom he was close, to lead the personnel department in the AA. However, when Lenz’s plans for an information ministry, which was also supposed to include the Gehlen organization, failed in 1953 due to Allied opposition, and Lenz himself was dismissed, Schaffarczyk was transferred to Barcelona. It was only in 1967 that Bernt Engelmann revealed that Lenz, who died under mysterious circumstances in Ischia in 1957, had been involved in the largest arms procurement scandal surrounding the *Schützenpanzer* (armored infantry fighting vehicle) HS-30. This was followed in 1967 by a parliamentary inquiry committee, more deaths, murder charges, and potential miscarriages of justice (Vera Brühne/Johann Fehrbach). See Engelmann, *Schützenpanzer HS 30*, 1967.

123 Schaffarczyk to Ballreich Dec. 10, 1957 (quotes); Ballreich to Schaffarczyk on Jan. 16, 1958; Seeliger to Schaffarczyk on March 14, 1958, AMPG, II. Abt., Rep. 102, No. 347, fol. 455, 487–488, 492–493.

124 Quote: Hausmann, “*Vom Strudel der Ereignisse verschlungen*,” 2000, p. 487. *Auswärtiges Amt, Biographisches Handbuch*, 2005, pp. 454–455. Personnel record Juretschke, PA AA P 1/6900 and P 1/6901.

continued disciplining influence on the German colony, his connections to the Falange, and to the politically cooperative Catholic orders, namely Opus Dei.¹²⁵ Juretschke, who would be appointed in 1958 as the director of the German-Spanish Research Institute of the Görres Society in Madrid and in 1963 as a professor at the university there, continued his teaching at the university and his bibliographic-documentary work from 1947 on, now, however, under the protective hand of his brother-in-faith Albareda in the CSIC, specifically in the “Juan de la Cierva” Board for Technical Research. Through Josef Goubeau, a professor in chemistry who had qualified at the Bergakademie Clausthal in 1937 and was now teaching in Göttingen, and who had been allowed to travel to Spain as early as 1949, Juretschke made contact with the MPS Administrative Headquarters and, as the editor-in-chief of the CSIC journal *Arbor*, requested information about the MPS and its institutes.¹²⁶

It is possible that it was the inorganic chemist Goubeau who introduced Juretschke to his colleague, the chemist Erich Pietsch. The editor of the central reference work, *Gmelin's Handbuch der anorganischen Chemie*, had moved with his editorial team from Berlin to Clausthal in 1946. There, the documentation enterprise, which had been operating as the Gmelin Institute since 1940, was initially overseen by the KWS under pressure from the Allies, before being incorporated into the re-founded MPS in 1948.¹²⁷ Juretschke, who would later take over the leadership of the Servicio de Documentación Científica in the CSIC, and Pietsch, shared not just a professional interest in scientific documentation. They could also exchange experiences about their European wartime roles as informant in Madrid or as organizer of forced scientific labor and plunderer of scientific institutions in occupied Poland.¹²⁸

This crypto-fascist duo felt called to restore German cultural influence in Spain to its former glory. A classic approach to foreign cultural policy was

125 Collado Seidel points to sources that classified Juretschke as a “Kryptonazi” of a group of former embassy staff who still held party meetings around the change of year 1945/46 and heavily pressured non-compliant Germans. See Collado Seidel, *Angst vor dem “Vierten Reich,”* 2001, pp. 82–83, 123 FN 13. Similarly, Hausmann, “Vom Strudel der Ereignisse verschlungen,” 2000, p. 487.

126 Goubeau to Telschow Feb. 15, 1950; Telschow to Goubeau on Feb. 18, 1950; Pollay to Juretschke on Feb. 21, 1950; Juretschke to Pollay on Mar. 17, 1950, AMPG, II. Abt., Rep. 102, No. 347, fol. 615–618. On Juretschke, the journal *Arbor*, CSIC, and Opus Dei, see Prades Plaza, “Las plataformas,” 2012; Prades Plaza, *España y su historia*, 2014, pp. 102–123; Díaz Hernández, *Rafael Calvo Serer*, 2008.

127 Henning and Kazemi, *Handbuch*, vol. 1, 2016, pp. 587–590. The takeover of the Beilstein-Institut, publisher of the corresponding manual for organic chemistry, as a foundation into the MPS was also due to the pressure of the American occupying forces, Hahn to Nordstrom on Feb. 4, 1950, AMPG, II. Abt., Rep. 102, No. 347, fol. 619.

128 Regarding Juretschke, see Presas i Puig, *Scientific and Technological Relations*, 2007, pp. 17–19. For a detailed account of Pietsch's *Osteinsatz* on behalf of the divisional head for inorganic chemistry in the Reich Research Council, and the KWI Director Peter Adolf Thiessen, see Schmaltz, *Kampfstoff-Forschung*, 2005, pp. 178–188.

presented by the replication of the Ice Age ceiling paintings in the Altamira Caves, produced through a stereo imaging process under Pietsch's guidance for the *Deutsches Museum* in Munich and soon after for the Museo Arqueológico Nacional de España.¹²⁹ This activity, which Pietsch insisted was voluntary, along with his enthusiasm for the prehistory of chemical technology and his cooperation with Juretschke from the CSIC in his actual professional field of scientific documentation—which from 1957 also extended to “nuclear energy” research—led Pietsch to regularly travel to Spain starting in the mid-1950s.¹³⁰

What had worked so well with the *Deutsches Museum* should surely be possible with the MPS as well. The new president, Butenandt, who had close ties to the chemical industry, had just taken office in June 1960 when Pietsch—now relocated with his Gmelin Institute to the Carl-Bosch-House in Frankfurt, the hub of German chemical industry politics—requested an urgent meeting.¹³¹ He was commissioned by the CSIC to discuss “more intensive German-Spanish collaboration.”¹³² An internal memo from the MPS's Secretary-General warned Butenandt that the conversation would not solely focus on Pietsch's German-Spanish collaboration in scientific documentation, but would also extend to a potential honorary doctorate and invitation to Spain for himself. Also on the agenda were Pietsch's cramped circumstances in the Carl-Bosch-House and his disagreements with his board chairman Karl Winnacker, head of Hoechst AG and the German Atomic Forum. The memo advised the MPS president to “initially negotiate cautiously and to consult Professor Winnacker's viewpoints before making any plans.”¹³³

Pietsch was particularly concerned about the future of his life's work, the *Gmelin Handbuch*, a German-language reference work for all inorganic chemical compounds, which had been published in various editions since 1817. This handbook was increasingly being eclipsed by the American *Chemical Abstracts*,

129 Pietsch to the Federal Foreign Minister Brandt on April 7, 1967, AMPG, III. Abt., Rep. 22, No. 74. Here, Pietsch describes the inception of this project. In Munich, the replication has been displayed since 1962. For the museum and technical historical significance of the German-Spanish Altamira project, see the German Museum collection, website: <https://www.deutsches-museum.de/museum/sammlung>, last accessed on Jan. 24, 2020.

130 Presas i Puig, *Scientific and Technological Relations*, 2007, p. 23. Pietsch did not mention his German-language Altamira publication in the *MPG-Jahrbuch*, but he did reference the Spanish translation released a year later by CSIC: Pietsch, *Altamira*, 1963; Pietsch, *Altamira y la Prehistoria*, 1964; *MPS-Jahrbuch* 1965, p. 205. For the positioning of the Central Office for Nuclear Energy Documentation (ZAED, Zentralstelle für Atomkernenergie-Dokumentation) within the Gmelin Institute, see Henning and Kazemi, *Handbuch* vol. 1, 2016, p. 591.

131 For Butenandt's connections to the chemical industry, see Gaudillière, “Biochemie und Industrie,” 2004; Stoff, “Butenandt in der Nachkriegszeit,” 2004, pp. 390–397.

132 Note from Ballreich on June 20, 1960, AMPG, II. Abt., Rep. 102, No. 347, fol. 413.

133 Note from Ballreich on July 1, 1960. The conversation between Butenandt and Pietsch then took place on Aug. 5, 1960, in Göttingen, *ibid*, fol. 408, 412.

first published in 1907.¹³⁴ Especially in Spain, whose emerging science system was significantly influenced by American aid and collaboration offers, this threat loomed large. Pietsch and Juretschke aimed to counteract this through a broad cultural-political mission:

Here it should not be underestimated that the Spanish intelligentsia was keen to align with Germany. Upon closer examination of this phenomenon, it becomes clear that this taps into an old tradition. However, over the past two decades, there has been increasing vacillation, often framed in a way that questions whether Germany is a desired partner for conversation and collaboration, or whether there exists—or is beginning to exist—a German disinterest. This would force the Spanish, against their own will, to consider reorienting their alliances. Other countries, particularly the USA and the United Kingdom, are skillfully advocating for such reorientation. The sentiment is often precisely phrased as follows: “Do you Germans really want to allow the last possible avenues for collaboration to be blocked by the United Kingdom? Do you want to wait for a change in our form of government before reactivating this collaboration? By then, you will find all seats taken.”¹³⁵

Thus, in great detail and with a style reminiscent of intelligence reports from the Nazi era,¹³⁶ Pietsch, who saw his honorary membership in the CSIC as a duty towards Spain in terms of development policy, justified to the Foreign Office his years-long quest to allocate German funds for the CSIC’s purchase of chemical research instruments. However, he was unsuccessful in his efforts with the federal ministries and also with Hermann Abs, the CEO of Deutsche Bank and MPS Senator, to whom he also turned for help.¹³⁷

A Fiesta for Butenandt and a Gift to Spain

On the other hand, after further advances by CSIC President Albareda and a patriotic encouragement from the Federal German ambassador in Madrid that was instigated by Pietsch, Butenandt agreed to travel to Spain at the end of 1963.¹³⁸

134 I thank Carsten Reinhard for clarifying this context.

135 Pietsch to Dumke (AA, Department for Cooperation with Developing Countries) on Dec. 21, 1960, AMPG, III. Abt., Rep. 22, No. 74.

136 The Security Service (SD) of the Reichsführer SS began collecting sentiment reports from the German population in 1937/38, which were summarized as “Meldungen aus dem Reich” or “SD-Berichte zu Inlandsfragen”: Boberach, *Meldungen*, 1984.

137 AMPG, III. Abt., Rep. 22, No. 74: This file documents Pietsch’s correspondence, which occupied him for years, with the Federal Ministries for Economy, for Education and Science, and for Economic Cooperation, as well as with Abs and the German Embassy in Madrid. Regarding Hahn’s honorary membership in the CSIC: Albareda to Hahn on Sep. 11, 1950; Hahn to Albareda on Sep. 27, 1950; AMPG, III. Abt., Rep. 14, No. 31.

138 Note by Ballreich on July 11, 1962; Ambassador von Welck to Butenandt on Feb. 6, 1963; Pietsch to Butenandt on Mar. 5, 1963, AMPG, II. Abt., Rep. 102, No. 346, fol. 295–296, 301–304.



Fig. 17: Spain trip of the MPS President Dec. 9—18, 1963; arrival at the Hotel Ritz; from left to right: Erika Bollmann, Erika Butenandt and Adolf Butenandt.

This decision was certainly not made without consulting his personal advisors, Winnacker and Carl Wurster from BASF. The Executive Council, where the daily politics of the MPS were decided, not least with the influential voice of Vice-President Wurster, had so far exercised caution. For example, the Council rejected the appointment of a representative in Spain, which would have inevitably fallen on Juretschke, as well as a donation from the widow of a former German consul general, who offered her Spanish country house and larger property to the MPS in 1961—experience had shown that such gifts were a mixed blessing.¹³⁹ Butenandt had been forewarned and asked for clarification, specifically from Pietsch, on “what expectations had been raised in the conversations you have had with Spanish authorities,” so that “I will not be too surprised.”¹⁴⁰

On his first international trip as MPS President, Butenandt was accompanied by his wife, Erika, and his office manager Erika Bollmann, but not his indispensable Secretary-General who was tied up in Munich. The ten-day “Butenandt

139 Excerpt from a letter from Benecke to Schreiber on Feb. 21, 1958 (or 1959) as well as an excerpt from the protocol of the Executive Council on Jun. 6, 1961 in Berlin, AMPG, II. Abt., Rep. 102, No. 347, 406, 451.

140 Butenandt to Pietsch on Nov. 25, 1963, AMPG, II. Abt., Rep. 102, No. 346, fol. 266A–267.



Fig. 18: Reception of the MPS President Adolf Butenandt at General Francisco Franco in December 1963. From right to left: Franco, Butenandt, Ambassador Helmut Allardt, Manuel Lora Tamayo Martín (Spanish Minister of Education), and probably a translator.

Festival,” as he later summarized his experiences, didn’t just surprise him; it overwhelmed him.¹⁴¹ Tours of institutes in Madrid, Toledo, Sevilla, and Huelva, academic honors, embassy events, banquets, and state receptions, including a private audience with the Generalísimo, followed one after the other. The halls were always full, and both the audience and the press were enthusiastic.¹⁴² The Federal German Ambassador, Helmut Allardt, reported back to Bonn highly satisfied and thanked Butenandt, who had come at just the right time to “exert a lasting influence on at least certain areas of Spanish intellectual and research life, before it is too late.”¹⁴³

141 Butenandt to Juretschke on Dec. 20, 1963 (quote), *ibid.*, fol. 151–152; the file contains all the very personally formulated letters of thanks following the trip, written by Bollmann and based on detailed instructions from Butenandt. See Karlson, *Biochemiker, Hormonforscher, Wissenschaftspolitiker*, 1990, pp. 229–230.

142 Travel protocol by Bollmann on Jan. 30, 1964, AMPG, II. Abt., Rep. 102, No. 346, fol. 74–81.

143 Allardt to Butenandt on Jan. 13, 1964, *ibid.*, fol. 107–108. Allardt to the Foreign Office on Jul. 24, 1964, PA AA/B 26-REF. 206/IA 4/281.

Throughout the trip, Albareda and Juretschke never left Butenandt's side. Their focus was not just on the scope and modalities of Spanish-German scientific exchange. The parties quickly agreed on mutual guest lectures by established scientists, several-month guest professorships for younger German scientists at Spanish universities and research institutes to train the local young talent in the use of new instruments and methods, as well as an exchange of publications. Beyond that, they wanted to commit the MPS as the central point of contact for Spanish postgraduates whom the CSIC intended to send to the Federal Republic for further training. Butenandt assured Albareda that the MPS would annually provide up to five scholarships for young scientists who would work at their institutes. For young people from other disciplines not represented at the MPIs, the DAAD or the Humboldt Foundation would be responsible.¹⁴⁴ Specifically, the Spanish side sought to sidestep these organizations' selection processes, which did not quota by nationality, and thereby avoid international competition.

Initially, things moved sluggishly, primarily due to the often-inadequate language skills of the Spanish applicants, even though Juretschke had arranged for special German courses in collaboration with the German Cultural Institute and the Goethe Institutes.¹⁴⁵ However, with the first lists of candidates for the MPS scholarships, the latent conflict became overt. In the spring of 1966, Juretschke traveled first alone and then again with two CSIC colleagues for further negotiations to Munich.¹⁴⁶ Butenandt found himself in a bind: the MPS Executive Council insisted on a clear delineation of responsibilities between MPS, DAAD, and the Humboldt Foundation and rejected the financing of a scholarship program that extended beyond the MPIs. Wurster, moreover, pointed out that BASF would only sponsor Spanish industrial chemists, if at all, on its own terms; and all agreed that there was no need for an additional intermediary body in which Juretschke would represent the Spanish side and Pietsch the German side.¹⁴⁷

Nonetheless, Butenandt made concessions to his former hosts, who had so lavishly courted him in Spain, contravening the guidelines of the Administrative Headquarters for bilateral scientific exchange, particularly the "invitation principle." His office manager, Bollmann, who drafted the letters to the CSIC,

144 Note by Bollmann on Dec. 29, 1963 (AMPG, II. Abt., Rep. 102, No. 346, fol. 116–120) based on her stenographic notes from the final meeting on Dec. 12, 1963 in Madrid. Bollmann, "Zusammenarbeit," 1964.

145 Ynfiesta (Technical Secretary of the CSIC-Patronato Juan de la Cierva) to Butenandt on Jan. 12, 1965, Butenandt to Ynfiesta on Feb. 10, 1965, AMPG, II. Abt., Rep. 102, No. 348, fol. 234–235, 237–238.

146 Notes by Bollmann for the President on March 1, 1966 and Mar. 28, 1966, *ibid.*, fol. 193–194, 223–224.

147 Excerpt from the protocol of the Executive Council meeting on March 10, 1966 in Hanover; Bollmann's note to the president on Mar. 28, 1966, *ibid.*, fol. 195–198, 200; Bollmann's note to the president on April 1, 1966, AMPG, II. Abt., Rep. 102, No. 347, fol. 139–140.

blurred the decisions of the Executive Council to the point of unrecognizability: the MPS would also find a place for those scholarship recipients who were not suitable for an MPI at another academic or industrial research institution, and would also take care of the “financial arrangements,” possibly with the help of Senators Wurster of BASF and Siegfried Balke of Hoechst AG.¹⁴⁸ The CSIC, for its part, attempted to sway the two Senators as they had previously tried with Butenandt, using similarly elaborate invitations.¹⁴⁹

In this complicated landscape, Spain’s objectives were clearly outlined. They aimed to train their up-and-coming experts in the Federal Republic through scholarships provided by the MPS. Although Max Planck Institutes were the preferred choice, the focus was mainly on technical or other specialized fields, making suitable industrial labs and universities also acceptable. The Spanish government wanted to bypass the standardized selection processes of the DAAD and the Humboldt Foundation, aiming for their candidates to be directly supported and financed by the MPS. Self-proclaimed cultural politicians like Juretschke and Pietsch, both with strong ties to *Reich* German heritage, saw this as an opportunity. They wanted to not only counterbalance Spain’s reliance on the United States in matters of foreign, economic, and scientific policies but also to rejuvenate Germany’s dwindling cultural influence in Spain. Pietsch, in particular, sought to protect the status of the *Gmelin*, a main German-language chemistry reference source, within Spain.¹⁵⁰ They employed their social capital, leveraging their memberships in the CSIC and MPS, to gain the support of Federal German diplomatic channels in Spain. They did everything in their power to mobilize the MPS as a vicarious agent of Spanish qualification interests.¹⁵¹

148 Report by Juretschke on the conversations in Munich from May 5–7, 1966 to the Spanish Minister of Science Lora-Tamayo; Juretschke to Pietsch on July 22, 1966; Pietsch to Butenandt on July 27, 1966; Butenandt to Juretschke on Aug. 4, 1966; Butenandt even apologized to Juretschke for a different decision made by his managing director, Edmund Marsch, who had rejected Spanish applicants citing the DAAD and the Humboldt Foundation, AMPG, II. Abt., Rep. 102, No. 348, fol. 99–106 (quote on fol. 102), 124–125, 130, 137–138, 147.

149 Bollmann’s note on March 4, 1966 and Juretschke to Bollmann on July 8, 1966, *ibid.*, fol. 147, 199–200.

150 Pietsch to Brandt on April 7, 1967, Pietsch to BMWF Stoltenberg on April 10, 1967; by 1967, as Pietsch emphasized in his letter to the new West German Foreign Minister, two universities (Madrid and Valencia) had already incorporated the *Gmelin* into their libraries, which was presented to them as a gift. In doing so, Pietsch believed they had championed the cause of the German language in the Spanish education system. AMPG, III. Division, Rep. 22, No. 74.

151 Not only did the Federal German embassy in Madrid appreciate the cultural support of the MPS; President of the *Bundestag* Gerstenmaier also conveyed to Heisenberg that he should kindly consider the invitation to the 25th anniversary of the CSIC (note from Albareda to Heisenberg on Feb. 18, 1964, marginal note without signature, AMPG, III. Abt., Rep. 93, No. 93, fol. 143). Heisenberg did not accept this request. Instead, the biochemist and Nobel laureate Feodor Lynen represented the MPS at this event (Bollmann’s note on Nov. 4, 1964, AMPG, II. Abt., Rep. 102, No. 347, fol. 213–214).

Butenandt, aided by his office manager Bollmann, found it hard to resist these initiatives driven by cultural imperialism. The Administrative Headquarters and the Executive Council failed to uphold the already established divisions of responsibility between the MPS, DAAD, and the Humboldt Foundation in the Federal Republic's foreign science policy. Even chemical industry representatives, who were among Butenandt's closest advisors, wanted to maintain these boundaries. They preferred to independently recruit young talent for their Spanish subsidiaries, without the MPS's help and certainly without the meddling of amateur German cultural patriots or Spain's Francoist science managers.¹⁵² Against Butenandt's own commitments, there was little that could be done other than to reluctantly and restrictively administer the agreements that had already been made.¹⁵³ It wasn't until the term of the new MPS President, Reimar Lüst, and a shift in Spain's political regime, that the MPS's Spain program was transformed. Modeled after a scholarship agreement made between the DFG and CSIC in 1971, the program evolved into a mutual exchange, offering more credibility to the concept of an "invitation-based system."¹⁵⁴

Scientific-Technical Collaboration 2.0

Nevertheless, some MPS scientists knew how to capitalize on their institution's unilateral commitments. In 1967 for instance, Lüst, acting as the director of the MPI for Extraterrestrial Physics, undertook an extensive lecture tour to Spain. As the chair of the Scientific Committee of the ESRO, he also explored how Spain, hitherto a rather passive member, could be activated for European space research—he himself intended to invite "a qualified Spanish scientist for 1 to 2 years to our institute" as part of the scholarship program.¹⁵⁵ According to Juretschke's report to Munich, Lüst thus had a lasting impact "as a trailblazer and pioneer for German-Spanish relations," unlike the recently retired Pietsch, who had been "a unique special case due to his personal connections." A crucial factor had also been the "absolutely apolitical character" of the lecture events, insisted upon by the President of the *Comisión Nacional de Investigación del Espacio* in preliminary discussions.¹⁵⁶ Federal Research Minister Stoltenberg,

152 Bollmann's note to the president on April 1, 1966, AMPG, II. Abt., Rep. 102, No. 347, fol. 139–140. BASF and Bayer each held 25 % of a Spanish paint factory, *Fabricación Nacional de Colorantes S. A.* (FENCE), Hoechst was involved with the company CROS S. A.

153 Marsch to Pfuhl on May 22, 1967, AMPG, II. Abt., Rep. 102, No. 349, 78.

154 Interview Nickel (Sachse) on April 12, 2018; BMFT memo with attachment from Dec. 12, 1984 in preparation for a visit from the Spanish Minister of Education in Jan. 1985, BAArch B138/44717.

155 Lüst to Butenandt on June 21, 1967, AMPG, II. Abt., Rep. 102, No. 349, fol. 86–87.

156 Juretschke to Butenandt on May 27, 1967 (quotes) and Lüst to Stoltenberg (BMWF) on May 16, 1967, *ibid.*, fol. 74–75, 77–79; Lüst (Nolte) conversation, 2008, p. 157. Hence, only the military and cultural attachés were present at the lectures, much to Juretschke's disappointment.

however, reacted more politely than enthusiastically to Lüst's suggestions for supporting Spanish space research. In his travel report, Lüst had advocated such a commitment by pointing out that Spain's future "equipment needs" held "points of contact [...] for German industry."¹⁵⁷

The situation changed with the new social-liberal Federal Government, which made scientific-technical cooperation the third pillar of its new foreign policy. As early as the spring of 1970, the government signed a framework agreement with Francoist Spain, where even more universities were being established than in the Federal Republic.¹⁵⁸ Friedrich Schneider, the Secretary-General of the MPS since 1966, used the ongoing government negotiations as an opportunity to communicate the MPS's current priorities to State Secretary Ralf Dahrendorf, the official in charge of the new foreign policy program at the Federal Foreign Office. For the MPI for Astronomy, founded in 1967, three large telescopes were planned, at least one of which was to be located in the Mediterranean region; founding director Hans Elsässer had identified south-eastern Spain as an ideal location and had already conducted preliminary discussions.¹⁵⁹ Schneider now suggested to the Federal Government that along with the framework agreement, and citing the "special scholarship program" through which the MPS had been financing "training stays in Germany for young scientists, and not only at Max Planck Institutes but also at university institutes" for years, a preliminary contract should be concluded for the establishment of an MPS observatory on Calar Alto near Almería.¹⁶⁰ With this "first concrete project," the framework agreement could be immediately substantiated. The MPI for Comparative Public Law and International Law quickly drafted a first version and forwarded it to the BMBW, which was tasked with the preparation of the state treaty.¹⁶¹

Things didn't proceed as quickly as hoped, and the MPS had to make some concessions to the Spanish side: The observatory was not officially run as an external branch of the MPI, but rather as a bilateral German-Spanish Astronomical Center (DSAZ, Deutsch-Spanisches Astronomisches Zentrum); although the observation times for Spanish research institutes could still be kept relatively limited, more Spanish scholarship recipients had to be invited for training at

157 Lüst to Stoltenberg (BMBW) on May 16, 1967 (quotes) and Stoltenberg to Lüst on June 5, 1967, AMPG, II. Abt., Rep. 102, No. 349, fol. 73, fol. 77–79.

158 BGBl 1971 Part II No. 38 page1005 ff.: Framework Agreement between the Government of the Federal Republic of Germany and the Government of the Spanish State on Cooperation in Scientific Research and Technological Development, signed on April 23, 1970, entered into force on March 10, 1971.

159 For the following historical data on the MPI for Astronomy and the German-Spanish Astronomical Center (DSAZ) in Almería and on Calar Alto, see: Henning and Kazemi, *Handbuch*, vol. 1, 2016, pp. 109–123. For its scientific significance, see Bonolis and Leon, *Astrophysics*, 2023, pp. 372–414. I thank Juan-Andres Leon for further leads.

160 Schneider to Dahrendorf, March 12, 1970, BArch B196/16748.

161 Preiß (MPG-GV) to von Heppé (State Secretary BMBW) April 9, 1970 (quote); Draft of an Aide-Mémoire from April 6, 1970; Preiß to von Heppé on May 25, 1970, BArch B196/16748.



Fig. 19: The observatory on Calar Alto (province of Almería, Spain) in the construction phase, ca. 1978/79.

the MPI for Astronomy and a majority of the station's maintenance staff had to be recruited in Spain.¹⁶² After the contract was finalized in 1972, construction costs escalated and delays occurred; occasionally, the work was even halted due to corruption allegations.

The first observations with one of the planned telescopes began only in July 1975. Even before the DSAZ could officially be inaugurated with the completion of the first construction phase in 1979 and the commissioning of the second larger telescope in an official ceremony, it became apparent that the Andalusian nights were not as cloud-free as initially thought during site selection.¹⁶³ By the time the third and largest telescope was installed in 1986, it was already technologically outdated compared to the instruments of the European Southern

162 Note by Preiß on the discussions in Spain from Jun. 30 to July 7, 1970 dated July 13, 1970; Preiß to Blatzheim (BMBW) Jul. 17, 1970, Ibid. Only 5 % of observation time was allocated to Spanish projects. See also the various draft agreements for the DSAZ, which were primarily prepared by the MPI for Comparative Public Law and International Law. Pierre Encrenaz and his co-authors, in contrast to IRAM, speak of a “near-colonialist attitude:” Encrenaz et al., “Highlighting the History,” 2011, p. 88.

163 The opening ceremonies are extensively documented in BArch B196/20310. For the glitches in construction and the technical inadequacies of the Calar Alto Telescopes, see Bonolis and Leon, *Astrophysics*, 2023, p. 373.

Observatory (ESO) at La Silla, on the fringes of the Chilean Atacama Desert, with which the MPS had been involved from the outset. Despite this, the telescopes at Calar Alto were used not only for long-term observation projects of the MPI for Astronomy—such as the Calar Alto Deep Imaging Survey (CADIS)—but also enabled some spectacular observations of black holes, supernovae, and pulsars in collaboration with a global network of observation stations. In their study on astronomy, astrophysics, and space research at Max Planck Institutes, Luisa Bonolis and Juan-Andres Leon nevertheless assess the MPS's involvement at Calar Alto, which ultimately concluded in 2018 after several modified cooperation agreements, as a problematic experience that prompted a reevaluation of such approaches. This led the MPS to subsequently refrain from making large independent infrastructural investments and instead to participate in multi-lateral projects, whose complex infrastructure is maintained by supranational institutions such as ESO or CERN.¹⁶⁴

Diplomacy for One's Own Sake

However, one might retrospectively assess the scientific yield of the significant infrastructural investments on Calar Alto, their successes and failures were largely attributable to the scientific initiative, contractual arrangements, technical planning, and business management of the MPS. More specifically, they were the work of the Administrative Headquarters and the MPI for Astronomy it supported, which had access to the largest share of observation times in the observatory constructed according to its own research interests. These investments and their handling fell within the early 1970s, when Willy Brandt's new foreign policy began to take shape, with scientific and technical cooperation as its "third pillar" (→ 2.3). During this period, the MPS's engagement in foreign science policy in Spain underwent a change: initially permeated by crude, not to say reactionary, cultural-political ideas, there was a shift towards science foreign policy primarily oriented towards its own research interests. This approach relegated any external political considerations, including the question of how to deal with a dictatorial regime, to the background.

Overall, the MPS's activities in Spain cannot be neatly categorized into any of the three dimensions of science diplomacy—'science for diplomacy,' 'diplomacy for science,' or 'science in diplomacy.' This is all the more true given that the MPS did not act as a unified entity. On the one hand, there were figures like the self-proclaimed cultural politician Pietsch and the MPS President Butenandt, whom he influenced, along with Erika Bollmann, the long-time head of the presidential office who had administratively advanced the South-East European ambitions of the KWS during World War II until they were halted by the retreat-

164 Bonolis and Leon, *Astrophysics*, 2023, pp. 324, 325, 372–414, 428 and passim.

ing frontlines.¹⁶⁵ On the other hand, in the early post-war years, there were opportunistic nuclear scientists who wanted to keep the option open to continue their research in Spain despite allied prohibitions. Later on, there were the radio astronomers solely concerned with selecting a location for their telescopes based on topographical and climatic factors, a location that ultimately proved to be meteorologically less suitable than expected. And then, there was the Administrative Headquarters, reforming since the 1960s, which tried to normalize the MPS's relations with Spain, especially the unilaterally MPS-funded scholarship program for young talent, which they couldn't entirely select and place in their own institutes.

None of these variously and sometimes conflictly acting players within the MPS has ever documented reservations about the Franco regime, which was in power until 1975. They negotiated with whoever presented themselves as partners, who were invariably from the Francoist-clerical milieu that intellectually supported the regime. Ultimately, they even accepted the notorious Nazi informant Juretschke, from whom they initially kept their distance, as the official "liaison" and negotiator for the CSIC in German matters.¹⁶⁶ This political indifference on the part of MPS actors did not serve a science diplomatic mission on behalf of the government but rather their own self-defined interests—be it the outdated cultural-political fantasies of the cryptofascist duo Pietsch/Juretschke or the offered infrastructural conditions for atomic and astronomical research interests. When the MPS engaged in diplomacy here, it was for its own sake—although it was generally in line with the respective policies of the West German government.

From the perspective of the Federal Governments, the activities of the MPS, or some of its leading scientists, in German-Spanish scientific exchange were not only in line with their foreign and especially atomic policies during the times of Adenauer and Strauß. Social-liberal governments also appreciated them in line with their new focus on bilateral scientific-technical cooperation before and after the regime change in Spain. In preparation for the opening ceremonies at Calar Alto in 1979, the responsible BMFT evaluated the outcomes of the German-Spanish framework agreement of 1970.¹⁶⁷ MPS scientists were actively involved, either consulting or doing research, in nearly all of the successes listed there: this began with Wirtz's guest stays since the early 1950s, which over the years promoted several atomic energy policy collaborations, including a 1973 individual agreement between KfK and JEN on "cooperation in the field of peaceful use of nuclear energy," and a corresponding government agreement in

165 Regarding Bollmann, see Heim, *Kalorien*, 2003, pp. 80–84; in detail about Bollmann: Kolboske, *Hierarchies*, 2024, pp. 101–106 and *passim*.

166 Thus, in 1970, MPS Secretary-General Schneider introduced him to the new State Secretary at the Federal Foreign Office, Dahrendorf: Schneider to Dahrendorf on March 12, 1970, BAArch B 196/16748.

167 Note by van Hees, Sep. 11, 1979, BAArch B 196/20310.

1978. The momentum continued with Lüst's stay in Spain in 1967, which was followed by several cooperation projects between the German Aerospace Center (DFVLR) and the corresponding Instituto Nacional de Técnica Aeroespacial (INTA), as well as Spain's deeper involvement in ESRO. It reached a climax with the government agreement of 1972 regarding the German-Spanish Astronomical Center (DSAZ) on Calar Alto, formally operated jointly by the MPS and CSIC but in reality predominantly used for scientific purposes by the MPS.

With the institutional division of labor between the MPS and the newly founded Nuclear Research Center (KfK), and the associated move of Wirtz and his reactor research group to Karlsruhe, the atomic energy scientific collaboration with Spanish colleagues became superfluous. Nonetheless, the physics-oriented Max Planck Institutes remained a preferred destination for the advanced training of Spanish scientific talent. Why the MPS so readily met the self-confidently expressed educational wishes of the CSIC and JEN through its one-sided scholarship program, sidelining its own criteria for science foreign policy, may be explained by the specific mental constellation that linked the Francoist-clerical present of the protagonists of the one side with the National Socialist past of those on the other side. Despite the politically dictatorial reality in Spain, which was never mentioned in the MPS records except by the notoriously critical biologist Melchers, the MPS saw itself in its relationship with Spanish scientific organizations as the giving party. The Federal German representations in Madrid and Barcelona felt the same way and assured them of the fatherland's gratitude. From the Spanish side too, MPS representatives—Hahn, Heisenberg, Wirtz, Pietsch, and Butenandt—gratefully received accolades such as honorary doctorates from Spanish universities, honorary memberships in the CSIC and scientific societies, and even state orders, while also unquestioningly attending receptions with Franco.¹⁶⁸

After all, the scholarship program, which was rather reluctantly administered and funded by the Administrative Headquarters over the years, likely fostered a willingness on the Spanish side to stretch their foreign science policy guidelines. Essentially, Francoist science policy rejected foreign institute foundations and instead aimed to develop the Spanish scientific landscape on its own terms, albeit with experts trained abroad.¹⁶⁹ Nevertheless, they eventually allowed the MPS to establish an observatory on Calar Alto, which was formally configured as a bilateral center but was practically operated as an external scientific branch of the MPI for Astronomy until 2004. In this regard, it was not comparable to the

168 The highest distinction, namely the Commanders' Cross of the 'Alfonso X El Sabio,' Order was accepted by Wirtz in 1960, as he still noted with pride in 1988, see Wirtz, *Im Umkreis*, 1988, p. 88; Hermann, *Karl Wirtz*, 2006, p. 124. Critical remarks are neither found in the internal records of the Administrative Headquarters or the presidential files of the MPS nor in the correspondence between Heisenberg and Wirtz or between Butenandt and Pietsch.

169 The director of the MPI for Plant Cultivation Research, Reinhold v. Sengbusch, had to experience this when he hoped in 1963 to establish a branch in Tenerife (Albareda to

Bibliotheca Hertziana in Rome or the MPI for Psycholinguistics in Nijmegen as independently functioning Max Planck Institutes abroad.¹⁷⁰

In retrospect, the Spanish engagement held two lessons in foreign science policy for the MPS: First, one should avoid one-sided obligations, especially those that forced guest researchers selected by the foreign cooperating partner upon oneself. Second, investments in elaborate infrastructure facilities, such as ever-larger telescopes for astronomy and space research, should be avoided. Such high financial risks, especially abroad, were better shifted to supranational institutions, and the scientific use should be organized multilaterally with the corresponding foreign partners.

An example of successfully heeding the second lesson is the *Institut de Radioastronomie Millimétrique* (IRAM), which was ultimately founded in 1979 after years of negotiations with various potential partner institutions in Europe and multiple failed financing plans. It was, at least, established in collaboration with the French CNRS and the Spanish Instituto Geográfico Nacional (IGN). The institute maintains two observatories on the Plateau de Bure near Grenoble, where the main administration is also located, and on Pico Veleta near Granada. Today, IRAM presents itself as “a model of scientific multinational cooperation.”¹⁷¹ In this vein, the special relations between the MPS and Spain normalized since the end of the 1970s—the scholarship program was restructured, the DSAZ on Calar Alto was actually led bilaterally from 2004 and was fully transferred to Spanish sponsoring institutions in 2018. At the same time, the MPS’s engagement in multilaterally operated large research facilities intensified.

Pietsch on March 29, 1963, AMPG, II. Abt., Rep. 102, No. 346, fol. 305–306). After his return from Spain, Butenandt informed him that the Spanish Minister of Culture and the CSIC President had clearly rejected the “establishment of German research institutions in Spain,” just as the MPS Executive Council had previously done. They had enough research institutions there and were only interested in receiving “intellectual stimulation and personnel supplementation” from Germany (note from Ballreich on Dec. 20, 1963, Butenandt to Sengbusch on Dec. 21, 1963 (quotes), AMPG, II. Abt., Rep. 102, No. 346, fol. 181–183).

170 Henning and Kazemi, *Handbuch*, vol.1, 2016, p. 121.

171 Institut de Radioastronomie Millimétrique (IRAM), *Institute*, <https://www.iram-institute.org/EN/content-page-8-1-8-0-0-0.html>, last accessed on Feb. 9, 2020. Regarding the protracted foundation history, which also involved British, Swedish, and Dutch institutions, see Encrenaz et al., “Highlighting the History,” 2011, pp. 87–90. For the research conducted in collaboration with IRAM by the MPI for Radio Astronomy, see Bonolis and Leon, *Astrophysics*, 2023, pp. 376–378.

3.3 Collaboration with the Political Adversary: The USSR

The development of the MPS's scientific relations with the Soviet Union presents a completely different picture: although a normalization according to the foreign scientific policy criteria of the Administrative Headquarters can also be observed here, it only began nearly twenty years later, initiated by Gorbachev's ending of the Cold War. Until then, the MPS's scientific relations with Soviet research institutions had a varying degree of tension depending on the political climate of the Cold War, both in relation to the foreign policy of the Federal Government and especially to the political restrictions and above all, the travel bans to which their Soviet colleagues were subjected.¹⁷² From the side of the Federal Governments, the MPS was very rarely given the opportunity to proactively serve a foreign cultural policy. On the contrary, most of the time it found itself in a politically delicate situation, trying to maintain and expand its scientific relations—which sometimes dated far back—while navigating around all the political restrictions of the Cold War.

Since the establishment of diplomatic relations between Bonn and Moscow in 1955, the MPS sought to restore the normality and intensity of scientific exchange that had characterized its predecessor organization's relationship with Soviet institutions, colleagues, and peers—even beyond 1933—until the Reich Ministry of Science banned it in 1937. Jürgen Nötzold has described this special connection, which was based on a German-Russian tradition of bilateral scientific transfers dating back to the Enlightenment of the early 18th century. From an initially German-dominated teacher-student relationship, it quickly became a qualitatively equal exchange between colleagues. This existed primarily within the fields of physics and agricultural sciences, but also between variously developed disciplines.¹⁷³

Science Transfer: From Mutual Benefit to Security Risk

For the KWS, this general observation is vividly illustrated by looking back at the late 1920s and early 1930s. In 1925, Oskar Vogt, the director of the KWI for Brain Research, was invited to Moscow to perform a pathological examination on Lenin's brain, the revolutionary leader having died in 1924, and to simultane-

172 The Soviet foreign science policy looked different within its own Eastern European sphere: Nagornaja and Nikonova, "Sowjetische Kulturdiplomatie," 2018; Schmid, "Nuclear Colonization?," 2011. I thank Fabian Lüscher for his critical reading of this chapter and valuable advice.

173 Nötzold, "Wissenschaftsbeziehungen," 1990, pp. 778–792. See also Beitel and Nötzold, *Wirtschaftsbeziehungen*, 1979.

ously establish the state and later academic institute for brain research. In 1932, he was even offered the leadership of the entire Soviet field of neurology and psychiatry.¹⁷⁴ Meanwhile, the German Consul-General in Leningrad reported on the All-Russian Genetic Congress of 1927 to the Foreign Office in Berlin:

For Germany, the result of the Congress is disappointing in a scientific sense. It has proven that Russia, as I have been assured from various sides, has far surpassed us in the field of genetic science.¹⁷⁵

After preparing Lenin's brain in 30,000 slices and attributing to the revolutionary leader a brilliant ability for association, the KWS scientist chose to return home. There, along with his wife and colleague, Cécile Vogt, and their daughters Marthe and Marguerite, he continued to advance brain research. Before that, however, he had convinced the two young Russian biologists, Nikolai and Elena Timoféeff-Ressovsky, to move to Berlin and establish *Drosophila* genetics at his institute, a field previously unrepresented in the KWS.¹⁷⁶ While German-Soviet scientific relations lost their prominence in both countries and also in the KWS by the late 1920s, as of 1930/31, the Soviets still comprised the third-largest group of guests at the Kaiser Wilhelm Institutes, with 26 persons, following Japan with 43 and the USA with 39 people.¹⁷⁷

The war and the immediate Cold War that followed interrupted this close scientific exchange for almost twenty years. However, as soon as the Soviet Union cautiously began to open itself to international scientific exchange, particularly with the West, during the "thaw" period shortly after Stalin's death in 1953, Soviet scientists showed interest not only in the latest scientific and technological developments in the United States, France, and Great Britain, but also in West Germany. However, the geopolitical conditions for German-Soviet scientific exchange had radically changed: The Soviet Union had risen to a global and nuclear power and had expanded its European sphere of influence to the inner German border. Scientific research on both sides of the Iron Curtain had become, more than ever in the history of scientific transfers, both a problem and a guarantee of national security within their respective bloc systems.¹⁷⁸

174 Nötzold, "Wissenschaftsbeziehungen," 1990, p. 781.

175 Quoted from *ibid.*, p. 785.

176 On the work of these two researching families and their subsequent dramatic biographies, see Satzinger, *Geschichte*, 1998; Satzinger, "Krankheiten," 2003; Granin, *Der Genetiker*, 1991. For the *Drosophila* genetics at the KWI for Brain Research, see Gausemeier, "Ordnungen," 2005, pp. 150–175. On Vogt's activity in Moscow, see Spengler, *Lenins Hirn*, 1991.

177 Nötzold, "Wissenschaftsbeziehungen," 1990, p. 787.

178 This issue, following the works of Forman ("Behind Quantum Electronics," 1987) and Kevles ("Cold War and Hot Physics," 1990), has been primarily addressed for the U.S.-American history of physics: Robinson, *Redefining Science*, 2016; Krige, "National Security and Academia," 2014; Krige, "Ford Foundation," 2012. For the Soviet side: Holloway, *Stalin and the Bomb*, 1994; Kremmentsov, "In the Shadow of the Bomb," 2007. Also see Lüscher, *Nuklearer Internationalismus*, 2021, pp. 97–102, pp. 136–144.

When the first scientifically attractive invitations from Moscow arrived for MPS scientists in 1955/56, they cautiously contacted the Federal Foreign Office. Franz Wever, the director of the MPI for Iron Research, and his associate Max Hempel did not want to embark on their two-weeks lecture series at the Soviet Academy of Sciences without an official assurance that their visit was actually “in German interest.” The Office did not confirm this but raised no significant concerns and recommended that the travelers be taken under the protection of the German Embassy in Moscow and asked for a subsequent travel report that would be evaluated by the German Association for East European Studies (*Deutsche Gesellschaft für Osteuropakunde*).¹⁷⁹

Karl-Friedrich Bonhoeffer from the KWI for Physical Chemistry, however, did not want to submit to the supervision of the Foreign Office, but rather only preempt any future accusation of treason or breach of state secrets. He had been invited the same year to the Fourth All-Union Conference of Electrochemistry by his Moscow colleague Alexander N. Frumkin, who was also struggling, albeit moderately successfully, against his government’s publication and travel bans.¹⁸⁰ Only in the previous year, 1955, had his planned lecture tour to the general meeting of the Electrochemistry Section in the Society of German Chemists been canceled at the last minute. Bonhoeffer, referring to the political interference faced by his colleague in the Soviet Union, tried to counter the reservations of the Foreign Office about his own trip. If he were to decline the counter-invitation, it would only show that in both cases these were not visits “politically steered” by the Soviets, as the Office had assumed, but rather “politically prevented” visits by two scientists who “for factual and humane reasons wish to maintain or resume contact;” the undertone was that the Federal Government would align itself with the Soviet leadership. Moreover, he had already coordinated with his colleagues at the Massachusetts Institute of Technology (MIT) for a professional colloquium in West Germany in 1957, to which relevant Soviet colleagues would also be invited. In this respect, his trip to Moscow was “entirely in line with the current sense of science policy of the Western powers.”¹⁸¹ Bonhoeffer traveled to Moscow in good conscience, even without the blessing of the Foreign Office.

179 Phone note for Horst on June 7, 1956; Wever to Topchiev (AS-SU) on June 9, 1956; Wever to Horst (AA) on Aug. 28, 1956 (quote); Horst to Wever on Sep. 17, 1956; note by Merten (Embassy Moscow) from Oct. 20, 1956 about the visits of Wever and Hempels to the embassy, PAAA B 94–28.

180 On Frumkin and the All-Union Conference 1956, see Petrii and Fletcher, “Frumkin Era,” 2015, pp. 79–80.

181 von Trützschler (AA) to Bonhoeffer on Jul. 7, 1956; Bonhoeffer to von Trützschler (AA) on Aug. 16, 1956 (quotes), PA AA, B 94-REF. 604/IV5/28.

Scientific Rapprochement Under Foreign-Policy Fire

Wever and Bonhoeffer were not the only MPS scientists who traveled to the Soviet Union in the mid-1950s. By 1958, Secretary-General Telschow knew of at least three more directors, and he suspected that even more MPS scientists had traveled there in the meantime.¹⁸² Given the adverse circumstances of the time, from the MPS's perspective, the exchange with Soviet colleagues was actually not going badly, even though there were problems with reciprocal invitations. The exchange would have intensified further had a proposal been quickly implemented that the cultural attaché of the Soviet embassy, on behalf of the Academy of Sciences of the USSR (AS-SU), personally presented to MPS Secretary-General Telschow in May 1958: the MPS and AS-SU should mutually send negotiation commissions to initially familiarize themselves with the scientific circumstances of the other institution and then negotiate the details of an exchange program—specifically, longer working stays for younger scientists and shorter lecture tours for senior scientists.¹⁸³ The proposal was met with unanimous approval by the Executive Council and Senate. Even the Federal Chancellor expressed his agreement on the sidelines of the MPS's General Meeting at the end of May 1958; he just recommended to “inform the Americans,” not to ask for their permission but to let them know before the press did.¹⁸⁴ With this support, Telschow moved forward—despite the telephone intervention of DFG President Gerhard Hess, who indignantly inquired a few days after the Senate meeting whether the MPS intended to “handle the matter on its own” after not responding to an earlier informal conversation offer from AS-SU to DFG and MPS, following the Foreign Office's recommendation.¹⁸⁵ Telschow was undeterred; he assembled a possible delegation led by Heisenberg and quickly sent the corresponding presidential letter to the AS-SU.¹⁸⁶

Over the summer of 1958, not much happened, neither in Moscow nor in Bonn or Göttingen. However, in the fall, the Foreign Office invited Telschow to Bonn after being confidentially informed by its Moscow embassy about

182 Telschow to Scholl (AA) on Nov. 18, 1958, AMPG, II. Abt., Rep. 102, No. 353, fol. 302–304. The well-known Moscow travelers were Karl Ziegler (MPI for Coal Research), Ludwig Biermann (MPI for Physics and Astrophysics) and Walter Dieminger (MPI for Aeronomy.)

183 Note by Telschow on May 13, 1958, AMPG, II. Abt., Rep. 102, No. 354, fol. 379–381. See also Nötzold, *Wissenschaftsbeziehungen*, 1990, fol. 792–795. On the history of the AS-SU, see Vucinich, *Empire of Knowledge*, 1984.

184 Protocol of the 30th Senate meeting on May 29, 1958 in Hannover, AMPG, II. Abt., Rep. 60, No. 30.SP, fot. 20; Note by Telschow on June 5, 1958 (quote), AMPG, II. Abt., Rep. 102, No. 353, fol. 319.

185 Note by Telschow on June 4, 1958, AMPG, II. Abt., Rep. 102, No. 353, fol. 323–324.

186 Note by Telschow on June 5, 1958; Hahn to Nesmejanow (President AS-SU-SU) on June 13, 1958, *ibid.*, fol. 313, 319. The delegation members should be: Heisenberg, Biermann, Butenandt, Kuhn, Dölle, Friedrich-Freksa, possibly also Witt and Rudolf.

the intentions of the MPS and AS-SU.¹⁸⁷ There, a five-member panel from the cultural department briefed him on the plans of the Federal Government—specifically, the conclusion of a cultural agreement with the Soviet Union—and urged for unified foreign science policy among German science organizations.¹⁸⁸ The Foreign Office was under pressure: the cultural agreement with the Soviet Union needed to be finalized as quickly as possible before “other countries and particularly the SBZ could outmaneuver us in crucial areas.”¹⁸⁹ The Office and its Moscow embassy were fully aware of the attractiveness of the MPS specifically for the Soviet negotiators, who would have preferred to focus on folklore, ballet, and language promotion in the cultural sector while leaning on the ideologically less sensitive natural sciences in the academic sector. In this, cooperation with the Academy’s research institutes was to be reserved for the Max Planck Institutes, whereas universities—viewed by the Soviets as educational institutions with low scientific productivity—should exchange only among themselves.¹⁹⁰ Such a downgrading was unacceptable for West German universities and their advocates, the DFG and the West German Rectors’ Conference (WRK). If the Foreign Office wanted to achieve its cultural policy interests, which were tied not least to student exchanges and the hoped-for political impact on the next generation, it had to entice the Soviet side with Max Planck Institutes but could not alienate the universities at home. Federal German science had to be negotiated as a complete package; cherry-picking by the Soviets or the MPS had to be prevented. The DFG, WRK, and all other authorities of Federal German science policy shared this view.¹⁹¹

Telschow reluctantly complied and thereafter kept the Foreign Office informed about his further correspondence with the AS-SU. However, he consistently pointed out that if the MPS were to be included in the state cultural agreement, details of scientific collaboration that would limit the autonomy of Max Planck Institutes in shaping their cooperation with Soviet research institutions should under no circumstances be stipulated.¹⁹² When the cultural agreement was

187 Von Trützschler to Telschow on Oct. 14, 1958, *ibid.*, fol. 311–312.

188 Note by Telschow on Nov. 5, 1958 about the meeting in the AA on Nov. 3, 1958, *ibid.*, fol. 307–308.

189 Telegram from Kroll (Moscow Embassy) to AA on June 6, 1958, PA AA BAV 164-MOSK/5009; SBZ stands for Soviet Occupation Zone.

190 Regarding the tense relationship between physicists of the AS-SU and their colleagues at the universities, see Holloway, *Stalin and the Bomb*, 1994, pp. 209–213.

191 Von Trützschler to Telschow on Oct. 14, 1958, Note by Telschow on Nov. 5, 1958, AMPG, II. Abt., Rep. 102, No. 353, fol. 307–308, 311–312. This problem situation, which continued even after the conclusion of the cultural agreement, is also addressed in protocol and notes of the AA, e.g., note on the second meeting at the State Committee for Cultural Relations with Foreign Countries in Moscow on June 26, 1959; protocol of a session in the AA on April 25, 1960 with representatives from AA, BMI, DFG, KMK, MPS, HRK, DAAD; report by Fehling (AA) April 25, 1960, PA AA/B 97-REF. VI 8/VI 10/97.

192 Telschow to von Trützschler on Nov. 14, 1958, Telschow to Scholl on Nov. 18, 1958 and June 16, 1959, AMPG, II. Abt., Rep. 102, No. 353, fol. 302–304, 334, 363–364.

finally signed in May 1959,¹⁹³ Telschow sarcastically thanked the responsible legation councilor: “It did take you a long time to achieve this result,” and “I think you and all the gentlemen involved deserve thanks,” although it remained to be seen what it would bring for the Federal Republic. He concluded with the ambiguous announcement that within the MPS, there was “a firm will to make the best of the proposed terms.”¹⁹⁴ Legation Councilor Scholl responded no less ironically, thanking him “for the kind words.”¹⁹⁵

In fact, the idea of a special agreement between the AS-SU and the MPS was not off the table even after the state cultural agreement had come into force. The AS-SU, in particular, as the representative of the Foreign Office noted during negotiations on its concrete implementation in the spring of 1960 in Moscow, stubbornly clung to this “tenaciously pursued goal.” It was stingy with exchange slots for West German university researchers and focused on the pending delegation exchange with the MPS, which had been delayed due to intergovernmental negotiations.¹⁹⁶ The MPS, for its part, reserved the right—despite all appeals for solidarity from West German science organizations—to decide the matter “at the highest level within the Max Planck Society.”¹⁹⁷ Speaking openly to the Russia-born Director of the MPI for Biophysics, Boris Rajewsky, who was just in the process of coordinating with the Foreign Office about a possible trip to the Soviet Union, Telschow railed against what he saw as the presumptions of West German foreign and science policymakers:

[...] a proposal was made from among the [West German, CS] negotiators that the Max Planck Society should in the future align with the Foreign Office for all agreements with the Moscow Academy. I have great reservations about this; not even in the Third Reich were we obliged to consult the Foreign Office for a scientific exchange. We merely informed them of our arrangements. [...] We know ourselves what we owe with respect to the political behavior of the Federal Republic [...].¹⁹⁸

193 “Die Kabinettsprotokolle der Bundesregierung” Online: 8. Approval of the Federal Government for the draft of a German-Soviet agreement on cultural and technical-economic exchange, AA. Federal Archive, May 14, 1959. https://www.bundesarchiv.de/cocoon/barch/0/k/k1959k/kap1_2/kap2_18/para3_7.html, last accessed on Feb. 16, 2019.

194 Telschow to Scholl on June 16, 1959, AMPG, II. Abt., Rep. 102, No. 354, fol. 334.

195 Scholl to Telschow on July 8, 1959, PA AA, B 97-REF. IV8/IV10/57.

196 Report by Fehling (AA) on April 25, 1960, regarding his negotiations for the implementation of the agreement in Moscow in spring 1960, PA AA, B 97-REF. IV8/IV10/57. Regarding the delays in delegation exchanges, see: Scholl to Telschow on Jul. 8, 1959; Memorandum on Aug. 19, 1959; Hahn to Nesmejanow (AS-SU) on Aug. 27, 1959; Roether (AA) to Telschow on March 2, 1960, PA AA, B 97-REF. IV8/IV10/57.

197 As stated by Pohley, the MPS representative at the AA meeting on April 25, 1960, Protocol of a meeting in AA on April 25, 1960, PA AA, B 97-REF. IV8/IV10/57, 7.

198 Telschow to Rajewsky on May 12, 1960, AMPG, II. Abt., Rep. 102, No. 354, fol. 172–173. The correspondence between Rajewsky and the Federal Foreign Office on one hand, and Telschow on the other, is documented in AMPG, II. Abt., Rep. 102, No. 354, fol. 172–178.

Telschow was once again able to rally the Executive Council to his interpretation of scientific autonomy versus state foreign policy, but his days as General Director were numbered.¹⁹⁹ Just a week later, in May 1960, the Senate elected Hahn's successor to the presidency. Although Butenandt appointed the concurrently retired Telschow as his personal advisor, others took care of ongoing operations. Scientific exchanges with the Soviet Union were henceforth managed by the quickly successive Secretaries General Otto Benecke, Hans Seeliger, and Hans Ballreich. The Federal Government took advantage of this period of personnel discontinuity, which lasted until 1966, to increase pressure on the MPS and sent their Atomic Minister and MPS Senator Balke to align the new MPS leadership on a common foreign science policy toward the Soviet Union. The aim was to forgo a special agreement with the AS-SU and instead participate in the Central Exchange Office, now established at the DFG.²⁰⁰ Butenandt was open to dialogue, but at the same time renewed the invitation to the AS-SU's presidency.²⁰¹

By the fall of 1960, the extension of the first intergovernmental cultural agreement, which was barely limited to the end of the year, was already due. The MPS leadership finally agreed to incorporate their ideas into these negotiations.²⁰² As Butenandt explained in the Executive Council, the MPS was only exceptionally willing to submit to higher-level goals:

We have previously expressed the view here that the Max Planck Society must be free in concluding any exchange agreements; however, there do indeed seem to be special circumstances here that must be taken into account in the overall interest of German science.²⁰³

To facilitate approval by the Senate and simultaneously demonstrate to the Federal Government the limits of their political influence, he added, "that the agreement does not affect the direct contact and visits of our institute directors, which we finance ourselves."²⁰⁴ Precisely these "private" business trips, which were nowhere centrally recorded, led to recurring irritations on the part of the DFG Exchange Office, the Foreign Office, and its Moscow Embassy in the following years.

199 Excerpt from the Protocol of the 45th Executive Council meeting on May 17, 1960, in Bremen, *ibid.*, fol. 169–171.

200 Note by Ballreich on Jun. 23, 1960, and Balke to Butenandt on Jul. 13, 1960, AMPG, II. Abt., Rep. 102, No. 356, fol. 255–257, 340–341.

201 Butenandt to Balke on Aug. 3, 1960, and Butenandt to AS-SU-Presidium on Aug. 11, 1960, AMPG, II. Abt., Rep. 102, No. 354, fol. 153, 155–156.

202 Scholl to Benecke on Jul. 28, 1960, Benecke to Scholl on Aug. 2, 1960, and Scholl to Benecke on Aug. 11, 1960, PA AA, B 97-REF. IV8/IV10/57.

203 Excerpt from the Protocol of the 47th Executive Council meeting on Nov. 10, 1960, in Cologne, AMPG, II. Abt., Rep. 102, No. 354, fol. 148–151, quote: fol. 149.

204 Excerpt from the Protocol of the 37th Senate meeting on Nov. 11, 1960, in Leverkusen, *ibid.*, fol. 144–147, quote: fol. 146.

The MPS on the Short Leash of the Foreign Office

Once again, things did not go as planned. This was because negotiations for the extension of the state cultural agreement were to repeatedly falter over the issue of Berlin—right up until the end of the decade. However, this by no means signified the end of scientific exchange. Instead, all parties involved settled into a non-contractual state. For the West German side, the negotiations were no longer handled by the Foreign Office but by Wolfgang Kasack, the “Commissioner for the Exchange of Scientists with the Soviet Union at the DFG.” His institutional counterparts on the Soviet side were primarily the AS-SU and the ministries responsible for various types of higher education.²⁰⁵ The quotas for exchanges, which were now only verbally agreed upon between them, also qualified as “private” agreements. These could sidestep the diplomatic taboo in German-Soviet relations and tacitly include West Berlin institutions.²⁰⁶ From then on, the MPS conducted its exchanges with the Soviet Union—aside from the research trips financed out of its own budget—via the DFG Exchange Office. Through membership in the associated committee—first by Josef Straub from the MPI for Breeding Research, later by Alfred Seeger from the MPI for Metals Research—the MPS secured its influence on the selection of exchange scholars.²⁰⁷

The relationship with the Foreign Office remained tense. At times it urged the MPS to exercise restraint on those “private” trips, which, in its view, threatened to weaken the West German stance on the Berlin issue; at other times it attempted to use the scientific allure of the Max Planck Institutes as a bargaining chip to wrest concessions from the Soviet side. The MPS usually adapted to this ambivalence without allowing interference in the “private” trips to the Soviet Union. And whenever friction intensified in the complex web of power, responsibility, and negotiation, its executive representatives openly contemplated whether a

205 Moscow Embassy to AA on Jan. 20, 1961, v. Ostermann (AA) to Moscow Embassy on Feb. 6, 1961, PA AA, B 97-REF. IV8/IV10/57.

206 For details, see Kasack, “Die wissenschaftlichen Beziehungen,” 1965. The head of the Zentrale Austauschstelle (Central Exchange Office) describes the processes, the participating institutions, and the extent of the exchange; accordingly, from 1959 to 1965, a total of 45 Germans and 37 Soviets made short information trips; long-term stays within the framework of the university agreements were completed by 46 Germans and 39 young Soviet professionals, and within the framework of the academy agreements by 10 Germans and 14 Soviets, see *ibid.*, pp. 34. The MPS participants are not listed there, nor are the personal lecture invitations to the respective other country specified. Even Kasack’s internal annual reports and negotiation protocol do not provide this data: *Tätigkeitsbericht* for the year 1961 on Feb. 1, 1962, fol. 561–566 and report by Kasack on Oct. 15, 1962, AMPG, II. Abt., Rep. 102, No. 357, fol. 328–330; recording of the discussions in May 1967, AMPG, II. Abt., Rep. 102, No. 358, fol. 47–49.

207 Circular from Kasack to the members of the Committee for the Exchange of Scientists with the Soviet Union on April 9, 1965, AMPG, II. Abt., Rep. 102, No. 358, fol. 393–394.

special agreement—like the ones periodically offered by the AS-SU—might not be a better option, only to grudgingly fall back into line with official foreign science policy.²⁰⁸

The delegation exchange agreed upon as early as 1958 was finally realized in 1962/63, following a renewed initiative from the AS-SU, and was primarily organized by the DFG Commissioner Kasack.²⁰⁹ Various visit requests had been signaled by the Soviet side, including from university institutes, providing the Foreign Office with the leverage to intervene in the coordination of the visits:

The categorization of Soviet visit requests enables us to transfer the coordination of the visit program to the special committee of the DFG, thereby limiting the opportunity for discussions on a special agreement between the Max Planck Society and the Soviet Academy, especially as Dr. Kasack can then be present during the visit to the Max Planck Society.²¹⁰

After the MPS had been reined in, there were still complicated protocol questions to resolve, intended to reflect the shifted jurisdiction and the downgraded diplomatic importance of the delegation exchange. The number, rank, and status of delegation members had to be balanced on both sides. Although the AS-SU did not send leading representatives, petrochemist Georgy V. Vinogradov, metallurgist Ivan A. Oding, and quantum radiophysicist Nikolay G. Basov were not “the third tier,” as Rajewsky assumed because he was unfamiliar with them.²¹¹ All were senior staff at academy institutes; the youngest, Basov, would receive the Nobel Prize two years later.²¹² Even though the Soviet ambassador did not miss the opportunity to attend the MPS evening reception for the AS-SU delegation, the Foreign Office abstained from sending a higher-ranking representative to maintain the “private” nature of the event.²¹³ On the West German side, after some back and forth, it was established in high-level discussions between Foreign Minister Gerhard Schröder and MPS President Butenandt that the MPS had

208 PA AA/B 97-REF. VI 8/VI 10/97: Note by Ostermann (AA) on Nov. 30, 1962; this detailed note about a phone call with Ballreich (MPS) again reflects the doubts within the AA about the loyal stance of the MPS on this issue. That these doubts were not unfounded is evident from the protocol of the Scientific Council on May 14, 1963 in Augsburg, AMPG, II. Abt., Rep. 62, No. 1491. Seeger to Butenandt on Jan. 26, 1965, AMPG, II. Abt., Rep. 102, No. 358, fol. 412.

209 Note by Ballreich on March 23, 1962, AMPG, II. Abt., Rep. 102, No. 357, fol. 396; Note by Marsch on April 10, 1962, II. Abt., Rep. 102, No. 353, fol. 240; Protocol of the 41st Senate meeting on March 9, 1962 in Göttingen, AMPG, II. Abt., Rep. 60, No. 41.SP, fol. 21–22.

210 Record by Ostermann on Feb. 17, 1962, PA AA, B 97-REF. IV 8/IV 10/57.

211 Note by Marsch on Nov. 14, 1962, AMPG, II. Abt., Rep. 102, No. 353, fol. 196.

212 *Ibid.*, fol. 193–195.

213 Note by Marsch on Nov. 14, 1962, *ibid.*, fol. 196. Butenandt to Dieter Sattler (Ministerial Director AA) on Nov. 26, 1962, PA AA B 97-REF. VI 8/VI 10/97. Note by Ballreich about a conversation with Sattler on Feb. 25, 1963, AMPG, II. Abt., Rep. 102, No. 354, fol. 111–112.

no mandate to negotiate.²¹⁴ The special agreement still favored by AS-SU was therefore not even up for discussion. Rather, if the contract-free state of verbal agreements were ever to be transformed into a “private” agreement, the DFG would be the contracting party.²¹⁵ The diplomatic rank of the MPS delegation, which was to travel to Moscow a year later in November 1963, was subsequently also downgraded: instead of the MPS President, Rajewsky traveled; Heisenberg was replaced by the younger Reimar Lüst; only Richard Kuhn remained as the delegation leader from Telschow’s original personnel proposal.²¹⁶

Autonomy or Plan, Purpose-Free or Useful Science?

So what did they learn from each other? During the two rounds of discussions in December 1962 with MPS leadership in Munich—present besides Butenandt were Executive Council members Heisenberg and Dölle—the questions from the Soviet guests revolved almost exclusively around the structure of the West German science system and the position of the MPS. Even when compared to the American and French systems, with which they believed themselves familiar, they found it hard to comprehend the absence of any central science planning in the Federal Republic and the seemingly boundless freedom of scientists in choosing their research topics. They repeatedly asked about possible functional equivalents to their “perspective plans,” “problem councils,” and the newly established “State Committee for the Coordination of Scientific Research,” for which comparable bodies or structures did exist in the USA and France. Despite Butenandt’s insistence that this was not the case in the Federal Republic, Basov could hardly believe it, for he had “gained the impression that this question [of coordination, CS] is currently topical in the German scientific world.” Vinogradov could only explain the “high trust” accorded to leading scientists and especially to MPI directors with the observation that scientists in industry institutes earned more than those in state facilities and at the MPS. Thus, “anyone wanting to work at a Max Planck Institute would have to sacrifice

214 Note by Ballreich on Jun. 25, 1963, AMPG, II. Abt., Rep. 102, No. 353, fol. 64; Butenandt to Schröder on Oct. 23, 1963, AMPG, II. Abt., Rep. 102, No. 354.0, fol. 85–86.

215 From the MPS side, the stance was less decisive, and they kept reminding themselves that they were potential contract partners: Sattler to Butenandt on Feb. 17, 1962, AMPG, II. Abt., Rep. 102, No. 357, fol. 556–557. Protocol of the 44th Senate meeting on March 13, 1963 in Freiburg, AMPG, II. Abt., Rep. 60, No. 44.SP, fol. 251–252, 256. Protocol of the 57th Executive Council meeting on May 14, 1963 in Augsburg (also excerpt AMPG, II. Abt., Rep. 102, No. 353, fol. 71–73). Protocol of the 46th Senate meeting on Dec. 6, 1963 in Frankfurt am Main, AMPG, II. Abt., Rep. 60., No. 46.SP.

216 Note by Ballreich on Jan. 21, 1963 and Ballreich to Kasack on Feb. 25, 1963, AMPG, II. Abt., Rep. 102, No. 353, fol. 83–84, p. 88.

their financial interests for the sake of maintaining their scientific initiative.”²¹⁷ Butenandt did not disagree.

Heisenberg mainly wanted to know how he could ensure that his Soviet colleagues, with whom he had planned research visits, could actually make it to his institute. Up until then, cancellations, often at the last minute, were more common than actual visits. He was advised to do what his American and French peers were already doing: send invitations not just to the individual scientist, but also to the leadership of the Soviet Academy, and do so by late autumn for the coming year. Once the plans were finalized, there wouldn't be much flexibility left. Even then, the invited researcher might become unavailable on short notice due to scheduling conflicts. As a precaution, it was advised to reserve the option to send another specialist and even to specify fields of study for exchange rather than naming individual people.²¹⁸ So, the Soviets' preference for sending scientists they themselves had selected was based primarily on their own internal planning needs, and only secondarily on any desire for political control. However, this approach allowed them to easily disguise their control objectives when needed. In essence, the argument boiled down to two incompatible ways of thinking about scientific research. On one side was the Western idea of independent scientists, driven by their own intellectual curiosity and surrounded by the accordingly designed infrastructure. On the other side was the Eastern view, favoring organized, socially useful research with personnel that could be swapped out according to planning needs. Only quantum physicist Basov tried to correct the impression that Soviet researchers were strictly controlled. He clarified that their Academy's institutes also had the freedom to choose research topics; their “problem councils” were coordinating bodies, not instructional ones.²¹⁹

217 All quotes: see record of the talks on Dec. 4 and 5, 1962 by Kasack, AMPG, II. Abt., Rep. 102, No. 357, fol. 64–75. Heisenberg and Dölle were only present on the first day; on both days, senior staff of the Administrative Headquarters and, of course, Erika Bollmann and Kasack from the DFG were involved.

218 Record of the talks on Dec. 4 and 5, 1962 by Kasack, *ibid.* Regarding the Soviet primacy of the dispatch principle, which determined the German-Soviet exchange from the beginning, see also the note about the second meeting at the State Committee for Cultural Relations with Foreign Countries, June 26, 1959, report by Fehling (AA) from April 25, 1960, and protocol of the meeting in AA on April 25, 1960, PA AA/B 97-REF. VI 8/VI 10/97.

219 Record of the talks on Dec. 4 and 5, 1962 by Kasack, AMPG, II. Abt., Rep. 102, No. 357, fol. 64–75. The long-time U. S. program coordinator of the U. S.-Soviet and East European Programs at the National Science Foundation, Gerson Sher, confirms this in a way: While about 70 percent of Soviet research in civilian institutes was financed by the military, scientists in these institutes had an unusual degree of freedom in choosing their topics. “In part, this was one of the luxuries of the top-down, command-economy type of funding that characterized the Soviet science establishment in general. Funding was not project-specific; it was institute-specific, and the director had substantial latitude



Fig. 20: Reception of the Soviet delegation of scientists at the MPS in Munich on Dec. 4, 1962; Georgy Vinogradov (2nd from left), Ursula Tschauner (center), Nicolay Basov (2nd from right).

The main part of the visit program for the Soviet guests, just like a year later for the MPS delegation in the Soviet Union, consisted of a dense sequence of institute visits, individually tailored for each delegation member according to their expertise. Ursula Tschauner, an employee of MPS's Administrative Headquarters who accompanied Vinogradov as an interpreter, reported internally on her tour with a rather obstinate guest. According to Tschauner, Vinogradov preferred asking questions rather than answering them. It's possible that the embassy secretary, who picked him up at the hotel in the middle of the night for an "informative walk," had instructed him to do so. Meticulously prepared tours of institutes that interested Vinogradov less, such as the MPI for Fluid Dynamics, were shortened without regard for politeness; however, he was enthusiastic about the Petroleum Institute in Hannover, the Institute of Mechanics at the Technical University of Aachen, and the German Plastics Institute in Darmstadt. At least in his case, the DFG's strategy paid off: The petrochemist had convinced himself that he found more motivated young talent and interesting conversation partners

in determining which scientists and laboratories would be funded, and how." Sher, *From Pugwash to Putin*, 2019, p. 115.

for his field at technical universities rather than in the MPS.²²⁰ His colleague Oding's doubts about the social justification for purpose-free research, however, could not be dispelled even by his institute visits.²²¹

On the return visit of the MPS delegation and especially its institute visits in November 1963, the already experienced Soviet Union traveler Lüst reported extensively in the *MPG-Mitteilungen*. He was impressed by the sheer size of some institutes, such as the Kurchatov Institute for Nuclear Energy with several thousand employees, or the large number of young graduates in fields like astronomy, but most of all by the abundant and advanced equipment, as well as the long-standing experiences and innovative methods used in areas such as plasma physics, but also in extraterrestrial physics for observing the sun and the moon.²²² However, as he reported years later in the Senate, the "atmosphere was extremely poor," and they "could hardly make contact with important offices."²²³ His conclusion was clear: given the "open-mindedness of the scientists there" and the "high level of scientific research at those institutes," the exchange "must continue at all costs."²²⁴

There were not many means to do so; it came down to informal verbal agreements between the DFG representative and the various responsible agencies in the Soviet Union. The MPS scientists learned that they got the furthest when they directly invited their desired Soviet partners or when they visited them on "private" trips or reached out through their growing personal contacts. They paid little heed to the Foreign Office's request to strictly observe reciprocity.²²⁵ In this way, even the West Berlin institutes could best maintain their contacts in the Soviet Union.²²⁶

220 Report by Tschauner on Dec. 21, 1962 about the individual journey of Vinogradov Dec. 5–15, 1962, AMPG, II. Abt., Rep. 102, No. 357, fol. 43–50.

221 His corresponding remarks in the journal *Sowjetunion heute* served Butenandt in his ceremonial speech in 1963 as a contrast for his defense of the Harnack Principle, cf. Butenandt, "Ansprache des Präsidenten," 1963, 27, (→ 2.2).

222 Lüst, "Eindrücke," 1964. Regarding the Kurchatov Institute, which represented the center of the Soviet nuclear program, see Holloway, *Stalin and the Bomb*, 1994; Josephson, *Red Atom*, 2000; Schmid, *Producing Power*, 2015.

223 Protocol of the 67th Senate meeting on Nov. 24, 1970 in Stuttgart, AMPG, II. Abt., Rep. 60, No. 67.SP, fol. 16.

224 Lüst, "Eindrücke," 1964, quotations: 63.

225 Protocol of the 48th Senate meeting on June 9, 1964 in Hamburg, AMPG, II. Abt., Rep. 60, No. 48. SP, fol. 171, 179–180; protocol of the 54th Senate meeting on June 22, 1966 in Frankfurt am Main, AMPG, II. Abt., Rep. 60, No. 54.SP, fol. 220, 226; protocol of the 57th Senate meeting on June 8, 1967 in Kiel, AMPG, II. Abt., Rep. 60, No. 57.SP, fol. 267–268. Kasack's record of a top-level conversation of scientific organizations in the Foreign Office on June 16, 1966, AMPG, II. Abt., Rep. 102, No. 355, fol. 420–421. Peckert (AA) to Butenandt on Jun. 24, 1966, AMPG, II. Abt., Rep. 102, No. 358, fol. 176–178.

226 Even a humanities institute could benefit: Hellmut Becker from the MPI for Research in the Field of Education met during his four-week Moscow trip with the board of the International Institute for Educational Planning of UNESCO in October 1965 for a one-on-one conversation with the president of the Soviet State Commissariat for Cultural

New State Agreements and Other Obstacles

The arrival of the new Social Democratic Foreign Minister in 1966/67 revitalized German-Soviet scientific relations. Specifically, the relations with the USSR were bolstered by the third pillar of Brandt's foreign policy—the scientific and technical cooperation. Just before the DFG representative left for his annual meetings in Moscow in May 1967 to discuss the exchange quotas for the following year, the Foreign Office informed him that “for political reasons, great importance would be attached to a significant expansion of the exchange of scientists.” It also requested that “any scientific reservations be set aside in favor of political necessity.”²²⁷ Some of his counterparts in the ministry responsible for universities were willing to increase the exchange quotas; however, the DFG representative did not make headway with the AS-SU. There, they had different ideas about the future intensification of scientific collaboration and signaled to the MPS president through the Soviet Embassy in Bonn that the Secretary-General of the Academy would like to come to Munich for direct discussions. Butenandt also hoped, with the support of the new foreign policy, to expand exchanges with the Academy institutes and, above all, to bring more intriguing Soviet guests to the MPIs, promptly invited AS-SU Secretary-General Jānis W. Peive.²²⁸ However, his hopes were soon dampened.

It would take another four years before the agreed-upon visit actually took place in the summer of 1971. By then, the Social-Liberal government elected in 1969 had steered the course of foreign scientific policy onto more organized, but not necessarily new, tracks. A prerequisite for this was the signing of the Moscow Treaty in August 1970, serving as the foreign policy foundation for the New *Ostpolitik*. Concurrently, the Federal Ministry of Education and Research (BMBW), in consultation with the DFG, negotiated an agreement on scientific-technical cooperation (STC) with the relevant Soviet authorities. Due to the still-applicable Berlin Clause, a state treaty between the respective ministries, the BMBW and the State Committee for Science and Technology, was out of the question. Instead, they agreed on a “final communiqué” to be arranged between the “private” scientific institutions DFG and the AS-SU, aimed at providing a formal framework to the long-standing practice without contracts, while leaving specific commitments for later specialized commissions. The signing by DFG President Speer and AS-SU Secretary-General Peive in September 1970 was staged as “purely academic” in the hall of the AS-SU, in the presence of all

Relations with Foreign Countries, Romanovsky, and an agreement was reached on a pragmatic approach to West Berlin institutes, Becker to Sattler on Oct. 21, 1965; Moscow Embassy to AA on Oct. 28, 1965, PA AA, B 97-REF. IV8/IV10/53.

227 Kasack's record about the meetings in May 1967, AMPG, II. Abt., Rep. 102, No. 358, fol. 47–49, quotations fol. 48.

228 Butenandt to Peive on Sep. 18, 1967, AMPG, II. Abt., Rep. 102, No. 355, fol. 9–10.

its living members. In reality, it culminated a twelve-day state visit by Federal Minister of Science Leussink, who was accompanied by the heads of the 'Holy Alliance': DFG President Speer, Butenandt for the MPS, Lüst for the Science Council, and Hans Rumpf (Technical University of Karlsruhe) for the West German Rectors' Conference (WRK). Alongside their minister, they executed a visitation program through Soviet scientific administrations, universities, and research institutes in Moscow, Leningrad, Tbilisi, Serpukhov, and Novosibirsk, using a specially reserved airplane.²²⁹

In a pre-meeting, where the members of the delegation had gathered at Tegernsee ten days before their flight to Moscow, the foreign policy goals of their scientific mission and their negotiation strategy were clearly defined: the aim was to recalibrate the "importance and function" of the Federal Republic "in the technological gradient between West and East." Starting points were "the political guideline that the Federal Republic remains firmly anchored in the Western community of states, as well as the vital interest of German science and economy in the steady flow of scientific-technical know-how from the USA." Therefore, the trust of the Western protective power, which was primarily ensured by adhering to NATO's embargo regulations (COCOM), must not be jeopardized. On the other hand, the guidelines should "not hinder our long-term aspiration for greater independence from the USA:"

This means that cooperation with the USSR in areas where we can learn from the Soviets, and where Western potential is not endangered, should not fail due to the embargo regulations.²³⁰

Efforts had to be made to redirect the areas of future collaboration favored by the Soviet Union, which largely lay in fields closely related to industry and technology, to less sensitive areas like higher education pedagogy, documentation, or oceanography. When it came to sensitive topics like new technologies, data processing, nuclear energy, and space research, the focus was to be "on areas in basic research far removed from industry (or software in the case of data processing)."²³¹

Once again, the strict rhetorical and organizational distinction between basic and applied research, which permeated Federal German science policy,

229 About this trip (Sep. 17–29, 1970), the various discussions and inspections, a detailed report was written in the BMBW, which among other things contains the reports on the various inspections and the final communiqué, which subsequently also appeared as STC agreement or DFG-AS-SU agreement from Sep. 28, 1970, AMPG, II. Abt., Rep. 70, No. 375, fol. 1–89. Among those who joined Leussink's delegation were some ministry officials as well as Berthold Beitz from the Friedrich-Krupp Foundation and the Karlsruhe lecturer Görke, who visited the computing center and the Institute for Semiconductor Physics in Siberian Akademgorodok.

230 All quotations: Memo (IB5) Sep. 9, 1970 on "Ergebnis der Besprechung in Rottach-Egern am 7.9.1970 zur Vorbereitung der Reise in die UdSSR," BArch B 138/7405.

231 Memo (IB5) Aug. 27, 1970 in preparation for the meeting on Sep. 9, 1970, *ibid.*

defined the framework for foreign science policy actions. The Soviets' desire for collaboration in various fields of industrial research was noted—not least because Berthold Beitz, the pioneer of West German trade with the East and Chairman of the Alfried Krupp von Bohlen und Halbach Foundation, was also a member of the otherwise all-scientist delegation. However, Minister Leussink could declare himself unqualified for such matters and refer to his colleague in the Federal Ministry of Economics, Karl Schiller, whose delegation was almost simultaneously negotiating in Moscow. Thus, Leussink could limit himself to those fields of research represented by the DFG and MPS as institutional embodiments of basic research. Claus Grossner, the accompanying reporter from *Die Zeit*, labeled Beitz as the “uncrowned king of this mission.” According to him, the dilettante politicians from the world of science, including Leussink, were not only overwhelmed due to their lack of preparation—the responsible State Secretary von Dohnanyi had preferred to plan his holidays—but they were also outclassed by their negotiating partners, who were “not only highly intelligent, politically trained scientists but also politicians.” In their self-sufficiency as “experts,” the German scientists had let the scientific-political opportunities of the moment pass them by.²³² The delegation members, all of whom, including Beitz, were also members of the MPS Senate, reported in the autumn of 1970 that they were once again impressed by the number, size, and equipment of the institutes they visited. They were pleased by the atmosphere brightened by the Moscow Treaty and were satisfied with the results.²³³

Given the economic bottlenecks and technological shortcomings in the Soviet Union that were already becoming apparent at this time, more could perhaps have been achieved if they had been able to entice with industrially relevant scientific cooperation, rather than just insisting on adherence to parity exchange quotas, which the Soviet Union regularly fell short of.²³⁴ In the research areas covered by the agreement between the DFG and the AS-SU, exchange numbers did increase in the short term. This also applied to the Max Planck Institutes, which under the now formalized DFG-AS-SU-regime were more obligated than ever to coordinate their exchange projects via the DFG: While scientists from the MPS took an average of 25 trips a year to the Soviet Union from 1966 to 1969, in 1970 there were already 41, and even 53 in 1971. The number of Soviet guests — never more than three per year before 1969 — rose to eleven in 1970

232 Even Leussink's Advisory Committee on Research Policy (BAF), this “body overloaded with representatives of the science policy establishment,” which at this time included Lüst and Heisenberg on behalf of the MPS, had “provided virtually no prior analysis.” Grossner, “Leussink's Mission,” *Die Zeit*, Oct. 2, 1970.

233 Protocol of the 67th Senate meeting on Nov. 24, 1970 in Stuttgart, AMPG, II. Abt., Rep. 60, No. 67.SP, fol. 13–19.

234 For example, see the following correspondence: Arnold (AA) to Lüst on Jan. 30, 1973 (fol. 438–440); Memo Nickel on Feb. 16, 1973 (fol. 437); Lüst to Arnold on Feb. 21, 1973 (fol. 430–432); Schiel (DFG) to Skrjabin (AS-SU) on March 30, 1977 (fol. 365–366), AMPG, II. Abt., Rep. 70, No. 541.

but fell back to five in 1971, and by mid-1972, when the MPS's International Relations Unit collected these numbers, none of the eight researchers (two were female) invited for that year had actually arrived.²³⁵ Hans-Jürgen Overbeck from the MPI for Limnology, who had left the GDR only in 1961 and was familiar with Soviet research in his field, described the ongoing debacle in concrete terms:

The interest of Soviet colleagues to come to Germany is huge. You can constantly feel how persistent the isolation from the foreign countries is at meetings and in discussions. [...] The Russians have a vast country with an instinct for ecological issues. Limnological institutes are spread all over the Soviet Union. There's a large institute in Irkutsk on Lake Baikal, another in the Caucasus, and smaller ones on the Kola Peninsula in Karelia. This would provide us with excellent opportunities. Especially what we call regional limnology, the large-scale diversity of aquatic systems, etc., which we can't study in our confined space, could be excellently researched in cooperation.²³⁶

However, although the "tradition of contact with Russian limnologists," which dates back to the 1920s, was "quite well resumed" after World War II, nothing had changed "even after political relaxation" in the "known political difficulties." Alongside invitations to Soviet colleagues that went nowhere — he was still waiting for the appearance of a "good female mathematician" who was supposed to work with him in bacteriology—Overbeck mentioned the prohibitive costs of congress trips to the USSR. The state travel agency Intourist would charge the "usual tourist prices," thereby excessively burdening the institute's budget, as the DFG did not finance all these trips.²³⁷

Obviously, even the visit from Peive, which had finally been made up for in July 1971, had no effect. While the disparities and coordination problems had been openly discussed and mutual improvement promised; Peive and his foreign policy advisor, Yevgeny Tabakeyev, also complained about the often short-term cancellations of West German guests.²³⁸ On their tour through several MPIs, however, they were positively impressed by the equipment at the MPI for Radio Astronomy, particularly by the "novel construction" of its recently inaugurated telescope, which they wanted to recommend to their colleagues back home. Above all, soil chemist Peive, who had by now been succeeded Georgi K. Skryabin as the

235 Confidential memo Nickel on Jun. 27, 1972, AMPG, II. Abt., Rep. 70, No. 546, fol. 290–294.

236 Information Overbeck, undated (approx. April 1972) in connection with the preparation for the visit of Kotelnikov (Vice President AS-SU) and N. F. Krasnov ("Deputy Minister for University and Higher Technical Education of the USSR") on April 25, 1972 in Munich including a tour of some MPI and a meeting with MPS-President Butenandt, AMPG, II. Abt., Rep. 70, No. 546, fol. 373–382. Also see the autobiographical novel: Overbeck, *Insel der Kraniche*, 2013.

237 Information Overbeck, undated (approx. April 1972), *ibid.*, fol. 373–382.

238 Note Nickel July 19, 1971 on the concluding discussion from July 15, 1971, AMPG, II. Abt., Rep. 70, No. 374, fol. 98–100; Protocol of the 70th Senate meeting on Nov. 14, 1971 in Munich, AMPG, II. Abt., Rep. 60, No. 70.SP, fol. 12–14.

General-Secretary of the AS-SU and was traveling as the academic secretary of the Department for General Biology to the MPS, was interested in the biological and agricultural science MPIs. From these, he expected more for Soviet biology than, say, from the European Molecular Biology Organization (EMBO) in Heidelberg; he also repeatedly expressed interest in a special agreement with the MPS in the field of biology.²³⁹

This greatly alarmed the DFG. Even beforehand, its Vice-President Heinz Pick was highly irritated that the DFG had not been informed in advance; instead, he learned about Peive's impending trip by chance during talks in Moscow. The DFG immediately organized a meeting between Peive, their president, the BMFT, and other scientific organizations in the Bonn area, and also included a tour of the Agricultural University of Hohenheim in the visit program.²⁴⁰ During the Bonn discussions, the DFG leadership and State Secretary Haunschild from the BMFT took the opportunity to repeatedly spell out the role of the DFG to the Soviet guests, namely, "to take the lead in international relations for the scientific organizations in the Federal Republic." Peive then dropped the idea of the special agreement. At the staff level, Doris Schenk of the DFG, based on recent experience with the first DFG-AS-SU expert commissions for molecular biology and physics, explicitly warned her MPS colleague Nickel against getting involved in something like that without consulting the BMFT and DFG:

The Soviets were mainly interested in cooperation in the field of molecular biology and less so in physics. One should ensure here that both areas are included in the exchange. Negotiations in the field of molecular biology had gotten stuck on the Berlin issue. However, the Soviets tried to bypass this obstacle through special arrangements. No opportunity should be given for this.²⁴¹

Rather, the MPS should also insist on strict adherence to the DFG-AS-SU agreement, parity, and reciprocity in the exchange of scientists.

From the MPS's perspective, the DFG-AS-SU agreement had not improved Soviet handling of exchange relations at all. On the contrary, their own scope for action had significantly narrowed, and the disputes with the DFG, which now

239 Note Nickel July 19, 1971 on the concluding discussion from July 15, 1971, AMPG, II. Abt., Rep. 70, No. 374, fol. 98–100. Protocol of the 70th Senate meeting on Nov. 14, 1971 in Munich, AMPG, II. Abt., Rep. 60, No. 70.SP, fol. 12–14.

240 Pick to Butenandt on May 19, 1971; telephone note NN (Db) for Marsch about a conversation with Müller-Dehn (DFG) on May 28, 1971 (fol. 302); Butenandt to Pick on June 3, 1971 (fol. 300–301); Butenandt to Peive on June 4, 1971, AMPG, II. Abt., Rep. 70, No. 374.

241 Note Nickel from July 15, 1971 (Quotes), AMPG, II. Abt., *ibid.*, fol. 116–120. Protocol of the 70th Senate meeting on Nov. 14, 1971 in Munich, AMPG, II. Abt., Rep. 60, No. 70.SP, fol. 12–14. Regarding the long-time DFG expert and later head of the DFG liaison office in Moscow, see German Research Foundation: DFG opens liaison office in Moscow. Press Release No. 30, July 11, 2003. https://www.dfg.de/service/presse/pressemitteilungen/2003/pressemitteilung_nr_30/index.html, last accessed on March 16, 2020.

represented them alongside the universities vis-à-vis Soviet partners, increased. Now, they were obliged to request and manage the trips of their scientists to the USSR and invitations to Soviet colleagues within the agreed exchange quotas if they did not want to strain their own budgets and be accused of betraying the common foreign science policy.²⁴²

The DFG was particularly focused on the physics institutes of the MPS. Even before the state visit of the Federal Minister of Science, they had noted as a problem that the AS-SU was ignoring applications from West German physicists to visit Academy institutes, allegedly because their topics were not being addressed in those institutes. Meanwhile, the MPS's international relations officer Nickel reported to the BMBW about the numerous and quite intensive contacts of the MPIs with fields of physics, which were mainly maintained through short-term visits by MPS scientists to the respective Soviet institutes, usually funded out of their own budgets.²⁴³

After the Moscow Treaty, which was at least as important to the Soviet leadership as it was to the Federal Government, was finally ratified in May 1972, Soviet colleagues were likely encouraged to be more cooperative, and special arrangements at the institute level or between the Academy and the MPS could potentially be made. The Federal Government aimed to prevent exactly this: it wanted to finally revive the state cultural agreement, suspended since 1960—albeit including West Berlin—and thus not have its comprehensive negotiation package for bilateral scientific-technical cooperation weakened by uncontrolled individual agreements. With that, the elephant was back in the room, and the physicists from the MPS and AS-SU especially had to carefully navigate their

242 Circular GV from Dec. 15, 1971, AMPG, III. Abt., ZA 116, No. 64. Time and again, the MPS foreign representative Nickel had to call individual MPI directors to order or legitimize their behavior towards the DFG, the embassy in Moscow, and the federal ministries: Note Nickel from Nov. 14, 1975, AMPG, II. Abt., Rep. 70, No. 373, fol. 315; Note from April 5, 1977, AMPG, II. Abt., Rep. 70, No. 541, fol. 368. E.g., Dürr from the MPI for Physics, who regularly traveled to the Soviet Union and invited Soviet colleagues to Munich, could hardly be disciplined (Nickel to Dürr on April 5, 1977, AMPG, II. Abt., Rep. 70, No. 54, fol. 367; Dürr to Nickel on May 15, 1979, AMPG, III. Abt., ZA 116, K 58). Ludwig Genzel from the MPI for Solid State Research also had to be set on the right path (Schenk [DFG] to Genzel on Nov. 25, 1981, fol. 158–160; Genzel to Nickel on Nov. 26, 1981, fol. 157; Lüst to Genzel on Dec. 21, 1981, AMPG, II. Abt., Rep. 70, No. 541, fol. 156). Note Nickel from Feb. 25, 1974, AMPG, II. Abt., Rep. 70, No. 373, fol. 32–37. In his experiences with the agreement, Nickel summarized in the— not implemented—recommendation to the DFG to return to the contract-free status quo to finally regain a scope for action. Note Nickel from Dec. 18, 1975, AMPG, II. Abt., Rep. 70, No. 373, fol. 20–22. On the occasion of the difficulties that the MPI for Metals Research had with the DFG, a symposium series with the Moscow Bajkow Institute (AS-SU) was brought into play by Nickel highlighting the potential benefits of a special agreement with the AS-SU.

243 Notes from Schenk/Pick about the meetings in Moscow, March 23–26, 1970, AMPG, Sec. II, Rep. 70, No. 439, fol. 226–242; Speer to Leussink on Aug. 26, 1970; Nickel to Schneider (BMBW) on Aug. 25, 1970, BArch, B 138/7405. Protocol of the 69th Senate meeting on Jun. 24, 1971 in Berlin, AMPG, Sec. II, Rep. 60, No. 69.SP, photo 17.

desires for cooperation around it. In this regard, the Berlin-based Fritz Haber Institute, in particular, displayed skill and audacity to sometimes liaise with one or the other relevant bodies—MPS Administrative Headquarters, DFG, Foreign Office, BMFT—or sometimes bypass them all to arrange invitations for Soviet guests and their own trips to the Soviet Union.²⁴⁴

New Cooperations—In Spite of Existing Agreements

For a few years, it was also possible to launch some trial balloons—in the form of cooperative research projects at the institute level, which the Soviet side preferred as individual agreements and which would not impact their Three-State Theory. The Federal Government also accepted such cooperative projects as long as they were conducted within the framework of the DFG-AS-SU agreement and thus interpreted as consistent with their Berlin policy.²⁴⁵ At the end of 1973, the MPI for Extraterrestrial Physics and the Academy's Institute of Physics of the Earth agreed in a memorandum to an entire bundle of joint experiments, including balloon experiments to measure X-ray radiation in the polar light zone, which, subject to the approval by the presidiums of both their institutions, were to be conducted in the coming years.²⁴⁶ The first of these were to be rocket experiments with artificially injected barium ion beams. The scientific attaché of the Federal German embassy in Moscow had beforehand “pushed all possible buttons” to “overcome the local specific bureaucratic hurdles” and to set this scientific as well as political experiment on track:

Last but not least, the whole thing also has political significance: it would be one of the first concrete bilateral scientific projects in which it can practically be shown how scientific collaboration with the USSR works, and from whose course conclusions can be drawn for future collaboration.²⁴⁷

In addition to securing support from foreign policy channels, Lüst also secured approvals from both the DFG and the BMFT before giving his final go-ahead.²⁴⁸

244 Gerischer to Lüst on March 8, 1974 (fol. 151–152); Marsch to Trabandt (BMFT) on March 25, 1974 (fol. 166); DFG to BMFT on April 4, 1974; AA to BMFT on May 6, 1974 (fol. 156), AMPG, Sec. II, Rep. 70, No. 373.

245 Regarding the West German-Soviet “project-related research,” which over the course of the 1970s would exceed individual academic exchanges between the two countries by quotas according to the annual DFG-AS-SU agreements by threefold, see also Nötzold, “Wissenschaftsbeziehungen,” 1990, pp. 796–800.

246 Haerendel (MPIE) to Lüst on Dec. 20, 1973, attached the memorandum signed in Moscow by MPI Director, Gerhard Haerendel, and the AS-SU representative V. A. Troitskaya (probably on Dec. 14/15, 1973), AMPG, Sec. II, Rep. 70, No. 373, fol. 177–179.

247 Brenner (Moscow Embassy) to Lüst on Aug. 15, 1973, AMPG, Sec. II, Rep. 70, No. 373, fol. 206.

248 Lüst to Speer on Dec. 21, 1973, *ibid.*, fol. 175–176; Loosch (BMFT) to Lüst on Jan. 16, 1974, *ibid.*, fol. 170; Nickel to Loosch on Feb. 18, 1974, *ibid.*, fol. 168.

The latitude profile experiment for recording pulsations, which had been developed by the MPI for Aeronomy and was listed in the 1973 memorandum, was also able to start quickly. The longitudinal variation of magnetic micropulsations was to be measured along a line of latitude from the Atlantic to the Urals that was known to be geomagnetically stable; four of the six magnetometer stations to be supplied by the MPI for Aeronomy were to be set up on the territory of the Soviet Union.

In May 1974, the two lead MPI researchers took all the required equipment to Borok, a research facility located in a secure zone about 350 km north of Moscow. Here, they set up the first of the four magnetometer stations. They also trained their Soviet counterparts, including one woman, on how to assemble, maintain, and operate the equipment; it was left to the Soviet team to set up the remaining three stations independently. The wish of the MPI scientists to offer advice at the other locations was denied, presumably to limit their exposure to the breadth of the Soviet Union's research landscape.²⁴⁹

The MPI for Radio Astronomy probably made the most progress, whose telescope particularly impressed the academician Peive during his 1971 visit. At the end of 1976, MPI Director Peter Mezger arranged a three-year collaboration with the AS-SU in the field of "galactic and extragalactic radio astronomy." The MPI for Physics and Astrophysics was also involved in this endeavor.²⁵⁰ Reciprocal arrangements allowed radio astronomers from both countries to use the 100-meter radio telescope in Bonn and the 22-meter radio telescope near Simeis on the Crimean Peninsula, along with other instruments. Although this collaboration took place within the framework of the DFG-AS-SU agreement, mutual research stays were managed flexibly and not restricted by DFG exchange quotas. In fact, they succeeded in inviting several "prominent Soviet theorists" like Rashid Sunyaev and Boris Shklovskii to Bonn for weeks or even months. However, not everyone who was desired received permission to leave the country. Consequently, joint seminars were held in the Soviet Union, where discussions could take place with figures like Vitaly Ginzburg and Yakov Zeldovich, who, either because of their prior involvement in the Soviet nuclear weapons program or due to anti-Semitic reasons, could not travel abroad.²⁵¹

249 Lüst to Keldych (AS-SU) on May 21, 1973, *ibid.*, fol. 369–371; Travel report Schmidt and Wilhelm (MPI Aeronomy) from Jul. 12, 1974, *ibid.*, fol. 129–142.

250 Protocol of the working meeting of the representatives of the MPI for Radio Astronomy in Bonn and the scientific council for problems of radio astronomy of the AS-SU on the development of a program on collaboration in the field of galactic and extragalactic radio astronomy, Nov. 25, 1977, AMPG, Sec. II, Rep. 70, No. 540, fol. 164.

251 Inventory of the cooperation in the field of radio astronomy between Soviet and German institutes, undated, *ibid.*, fol. 39–53. In the 1970s and 1980s, numerous Jews from the USSR tried to emigrate and possibly also uslogeroed professional trips abroad for this purpose. Sunyaev (*1943) was appointed a member of the MPI for Astrophysics in 1995, see Max Planck Society, Rashid Sunyaev, https://www.mpg.de/379023/astrophysik_wissM1, last accessed Mar. 19, 2020. Shklovsky (*1944) moved to the

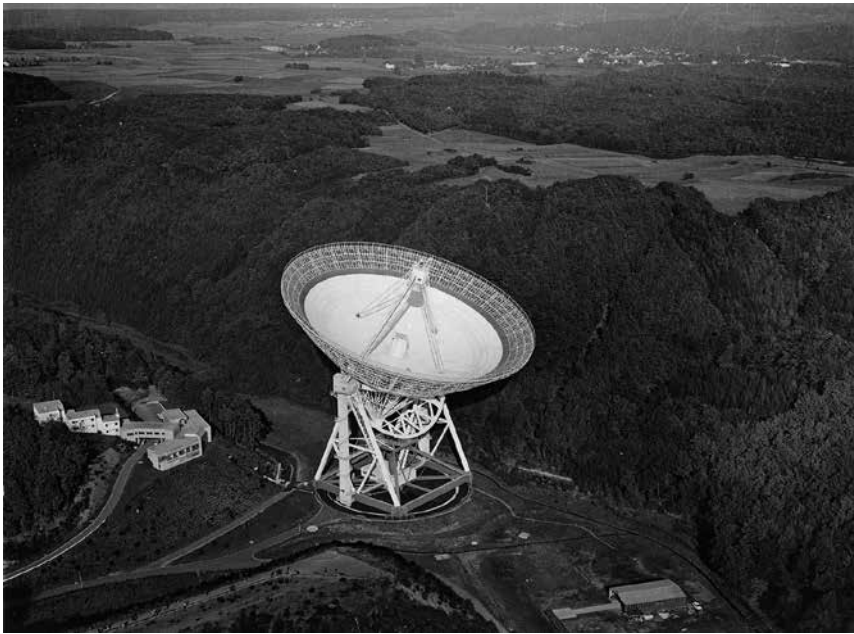


Fig. 21: Effelsberg radio-telescope of the MPI for Radio Astronomy, inaugurated on May 12, 1971.

This radio-astronomical collaboration was considered so successful by all parties involved that an extension for another three years until 1982 was requested and approved by both the DFG and AS-SU, even though the political climate had already begun to shift.²⁵² Ian Axford from the MPI for Aeronomy was the first to feel this headwind. Rather casually, he had informed the BMFT in the spring of 1979 that he had just signed a memorandum in Moscow with Roald Sagdeev, the director of the Institute for Space Research (IKI) at the AS-SU. Like the memorandum of 1973, this document listed several fields for potential cooperation. A project on solar wind research had already been specifically agreed upon; satellite experiments led by Helmut Rosenbauer at the MPI and Konstantin Gringauz at IKI would fly separately— one with NASA's International Solar Probe Mission (ISPM), the other with a Soviet Prognos satellite. However, both would have

University of Minnesota in 1990; Zeldovich (1914–1987) and Ginzburg (1916–2009) received prestigious international awards for their later work in the fields of particle physics and astrophysics or superconductivity, including the Nobel Prize 2003 for Ginzburg. For antisemitism, see also the Sagdeev (Diamond) interview 2018, p. 39.

252 Mezger to Lüst on July 12, 1979; Inventory, undated, AMPG, Sec. II, Rep. 70, No. 540, fol. 101–102.

parallel instrumentation, and the collected data would be jointly analyzed.²⁵³ The BMFT responded extremely negatively to this autonomous action:

As you know, the long and difficult negotiations on a scientific framework agreement with the USSR have so far led to no success. Therefore, scientific cooperation with the USSR should be limited to the absolute necessary minimum, as regrettable as that may be from the viewpoint of scientists. Despite these conditions, which you surely know, your institute has concluded a cooperation agreement with the 'Institute for Space Research' of the Russian Academy of Sciences. I would therefore be grateful if you could provide more information on this, including with whom this agreement was coordinated with in advance.²⁵⁴

The reply to this severe accusation went through several drafts over the next six months, corrected by the international relations officer in the Administrative Headquarters. These drafts reconstructed the history of Axford's hasty signature, distributed responsibility among all parties involved—Axford, Sagdeev, DFG, AS-SU—and ended by asking for ministerial support while promising future good behavior. In fact, plans for the upcoming years had to be “put on ice.”²⁵⁵

Sagdeev took the rejection gracefully and with an understanding of the political background. In November 1979, he had become the first Soviet citizen since World War II to be appointed as an external scientific member of the MPS at the MPI for Physics and Astrophysics, despite opposition from the BMFT. The ministry had concluded from a report by the Moscow embassy that the extensive contacts of the MPI's directors with Soviet colleagues far exceeded what was politically acceptable. A script prepared for the MPS- Senate meeting contained an urgent call for restraint to the overly cooperative MPS physicists: the appointment of a Soviet scientist “does not fit into the political landscape;” although there were no professional objections, “such a demonstrative, additional gesture is not opportune.”²⁵⁶

The majority of the Senate ignored the ministerial warning. For the MPS and its Chemistry, Physics and Technology Section (CPTS), Sagdeev was a boon. The author of the “Sagdeev formula” for calculating effective collision frequencies in collision-free plasma connected various scientific disciplines in his work: plasma and space research, X-ray and infrared astronomy, thereby relating to multiple key physical-experimental focal points at the MPIs for Physics and Astrophysics, Aeronomy, Radio Astronomy, Astronomy, Nuclear Physics, and

253 Axford to Fincke (BMFT) on April 20, 1979, *ibid.*, fol. 294; Memorandum (draft), *ibid.*, fol. 210–211.

254 Fincke to Axford on May 30, 1979, *ibid.*, fol. 291.

255 Draft letters Axford to Fincke, final version from Nov. 6, 1979, *ibid.*, fol. 208–209, 287–300; Rosenbauer to Rouget (AA) on April 30, 1981, *ibid.*, fol. 224.

256 Speaker notes for the Max-Planck Senate on Nov. 23, 1979 (quotes); Embassy Moscow to AA on Oct. 11, 1979, BArch B 196/20431. Interview Sagdeev (Diamond), 2018, 11, 35.

Plasma Physics.²⁵⁷ As stated in his laudatory speech, he “never tired of praising near-Earth space as an ideal plasma lab.”²⁵⁸

The intention was to establish a working group on theoretical plasma physics that would meet alternately in Garching and Moscow starting in 1980.²⁵⁹ But that wasn’t all: the IKI director also served as the ideal gateway to Soviet space research and their co-flight offers. The MPS space physicists were keenly interested in these co-flights, so they wouldn’t have to, as radio astronomer Mezger put it, “stand there merely recipients of orders in relevant negotiations with NASA.”²⁶⁰

Indeed, in 1980, Sagdeev extended another invitation to colleagues from the MPI for Aeronomy; this time, they could have flown experiments developed by Erhard Keppler on a Soviet VENERA probe to Halley’s Comet—a mission scheduled for the end of 1984 and designed to complement ESA’s GIOTTO mission.²⁶¹ Keppler’s institute director Rosenbauer pulled out all the stops: he involved the Administrative Headquarters early on, and explored—supported by Sagdeev’s patience and background diplomacy—the possibility of formally running the experiments through the Department of Cosmic Rays at the Hungarian Central Institute for Physics, a suggestion which Lüst advised against. He also activated an informal contact in the Foreign Office, hoping that “the whole matter could still be kept within the realm of the unofficial and that silent concessions might be obtained from those affected,” but ultimately failed. Yet, he was not entirely wrong in his observation that over the last few years “much seemed informally desirable, which could not be conceded officially.”²⁶²

257 Together with his Soviet colleague Albert Galejev and American colleagues, Sagdeev had researched the theory of so-called banana diffusion at the IAEA Center for Theoretical Physics in Trieste in the 1960s: Sagdeev, *The Making of a Soviet Scientist*, 1994, pp. 126–131; Galeev and Sagdeev, “Transport Phenomena,” 1968. In response to emerging criticism, Sagdeev and Galejev published further scientific publications: Galeev and Sagdeev, “Paradoxes,” 1970; Galeev and Sagdeev, “Ob odnom,” 1969. Soviet fusion researchers were particularly privileged travelers due to their field of research being predestined for international cooperation. I thank Fabian Lüscher for this information; see also in detail Lüscher, *Nuklearer Internationalismus*, 2021, pp. 195–196, 219–225 as well as the interview with Sagdeev (Diamond), 2018, pp. 12–20.

258 Materials for the meeting of the CPTS of the Scientific Council on May 9, 1979 in Mainz; Excerpt from the protocol of the meeting of the CPTS of the Scientific Council on May 9, 1979 in Mainz, Materials for the 94th Senate meeting on Nov. 23, 1979 in Munich, AMPG, II. Abt., Rep. 62, No. 470, pp. 18, p. 58, pp. 62–63 (quote).

259 Haerendel to Genzel (CPT Chair) on Sep. 19, 1979, *ibid.*, fol. 23.

260 Mezger to Lüst on Jul. 13, 1982, AMPG, II. Abt., Rep. 70, No. 540, fol. 3. Trümper to Regula (BMFT) on Nov. 6, 1979, BArch, B196/20431.

261 Keppler to Meinecke (GV-MPG) on Feb. 24, 1981, AMPG, II. Abt., Rep. 70, No. 540, fol. 221–222. Regarding the West-East collaboration on the planned missions to Halley’s Comet, which would come within reach in 1985 (and then not again for 76 years), see also the conversation Lüst (Nolte) 2008, pp. 205–208.

262 Rosenbauer to Lüst on Nov. 10, 1980, AMPG, II. Abt., Rep. 70, No. 540, fol. 230–231; Lüst to Rosenbauer on Dec. 17, 1980, *ibid.*, p. 229; Rosenbauer to Nickel on April 14, 1981, *ibid.*, fol. 218–219; Rosenbauer to Rouget (AA) on April 30, 1981, *ibid.*, fol. 223–225;

The Cold War Resumes

In late October 1979, Federal Minister of Research Volker Hauff reminded MPS President Lüst that the Federal Government expected the greatest restraint from scientific organizations in their relations with the Soviet Union. The immediate reason for this was that discussions between Foreign Ministers Genscher and Gromyko had made no progress on the still-unsigned STC agreement because of the Berlin issue. The backdrop was the increasing tension over armaments policy between the blocs due to the deployment of nuclear intermediate-range missiles (SS-20 and Pershing 2) in Europe. Lüst, in turn, had “appealed to the institute directors in the section meetings not to make any new formal agreements at this time,” but, as he wrote to Hauff, had “encountered very limited understanding.” The MPS scientists feared becoming “untrustworthy” to their Soviet colleagues, having always striven for scientific contacts “regardless of political difficulties.” In addition, besides the solar wind measurements and the Halley mission from the MPI for Aeronomy, other important projects were also at stake.²⁶³ In his response formulated only months later, Hauff maintained the general line of the Federal Government but also promised to stay in contact with the Foreign Minister “to jointly seek a way out of the current, unfortunate situation.”²⁶⁴ However, this proved to be more difficult than expected, as the Foreign Office became increasingly less conciliatory in light of the further escalating block confrontation following the Soviet invasion of Afghanistan in December 1979.

This became evident in a project that was particularly dear to Lüst, as it originated from his own institute, the MPI for Physics and Astrophysics. In the spring of 1979, Sagdeev had also invited his MPI colleague Joachim Trümper to have several experiments and the corresponding instrumental equipment flying on a Soviet X-ray astronomy satellite; in particular, an imaging X-ray microscope from Garching would, the Soviet colleagues Zeldovich, Sunyaev, and Shklovskii hoped, thus also come on board.²⁶⁵ State Secretary Haunschild in the BMFT was generally supportive, but feared a veto from the Foreign Office and, given that the launch was planned for 1983/84, played for time—even after his hopes were dashed in October 1979 that Genscher and Gromyko might come

Rosenbauer to Sagdeev on Jun. 15, 1981, *ibid.*, p. 214; Rosenbauer to Lüst on Sep. 22, 1981, *ibid.*, fol. 201–203. As early as 1976, BMFT State Secretary Haunschild had expressed his general “unease” on the board of the MPI for Physics and Astrophysics about the contacts, since “the Russians deliberately exclude Berlin research,” but on request assured that “each individual case will of course be examined separately,” Protocol MPIPA Board Feb. 27, 1976, p. 10, BArch B196/20336. Sagdeev recalls the Halley project as a “nightmare,” which prompted him to become more involved in research politics: Interview Sagdeev (Diamond) 2018, pp. 23–24.

263 Lüst to Hauff on Nov. 8, 1979, BArch B 196/20431.

264 Hauff to Lüst on Jan. 24, 1980, AMPG, II. Abt., Rep. 70, No. 541, fol. 286.

265 Note Trümper to Lüst on Mar. 5, 1979; Lüst to Hauff on Nov. 8, 1979, BArch, B 196/20431; Note Trümper to Lüst on Dec. 10, 1979, AMPG, II. Abt., Rep. 70, No. 541, p. 75.

closer to a consensus on the STC agreement.²⁶⁶ For now, MPI researchers were only to enter into a non-binding preparatory phase with their Soviet colleagues. The wording of the corresponding letter from the MPS president to his AS-SU colleague Anatoly Alexandrov had to be coordinated with the BMFT, which in turn checked back with the Foreign Office, and could only be sent after written authorization had been personally given by the Federal Minister of Research. Three drafts were discarded; the sticking point was a sentence that made the actual execution of the planned experiments dependent on the timely conclusion of the intergovernmental framework agreement, which was nowhere in sight due to the Berlin issue. After numerous phone calls and telegrams between Munich and Bonn over the New Year, MPS's international relations officer Nickel was finally allowed to send his president's letter with an appropriate addendum in early January 1980.²⁶⁷ In the subsequent Senate meeting, Haunschild explained the Federal Government's tougher, yet still ambivalent, position: ongoing cooperation projects should not be terminated, and the DFG-AS-SU agreement should continue to be served; however, now was not the time to reciprocate the Soviet Union's efforts for increased scientific collaboration. In the Senate, Lüst assured the government representative that the MPS would support the Federal Government's foreign policy and, for the time being, refrain from official visits and new cooperation projects with Soviet institutes. Personal and professional relationships, however, like the one with the new external member Sagdeev, would continue to be maintained.²⁶⁸

Indeed, Lüst and his colleagues—apart from the physicists especially the jurists—struggled significantly with this foreign policy shift and the role of the MPS. They had established close cooperation relationships with the Soviet Union in previous years and were currently involved in around twenty ongoing or planned cooperation projects.²⁶⁹ Given the inflexibility of the Foreign Office

266 Memos Blaesing (BMFT) to Haunschild on April 18, 1979 and April 24, 1979; Haunschild to Lüst on May 2, 1979, BArch B 196/20431.

267 Memos Nickel on Dec. 10, 1979 and Dec. 17, 1979, AMPG, II. Abt., Rep. 70, No. 540, fol. 324, 321; Telex BMFT to Nickel on Jan. 7, 1980 with memo Nickel from Jan. 8, 1980, *ibid.*, p. 318; Lüst to Alexandrov on Dec. 17, 1979 (Draft) and on Jan. 7, 1980 (Letter), *ibid.*, fol. 319, 318; Hauff to Lüst on Jan. 24, 1980, AMPG, II. Abt., Rep. 70, No. 541, p. 286. Telex Nickel to Freytag (BMFT) on Dec. 19, 1979; Telex Blaesing (BMFT) to Nickel on Jan. 3, 1980, BArch, B196/20431.

268 Protocol of the 95th Senate meeting on March 7, 1980 in Düsseldorf, AMPG, II. Abt., Rep. 60, No. 95.SP, p. 167.

269 Lüst to Hauff on Nov. 8, 1979; Note Marsch to Lüst on Feb. 25, 1980, AMPG, II. Abt., Rep. 70, No. 351; BArch, B 196/20.431. Nötzold (1990, p. 797) mentions a total of 35 ongoing or proposed projects for 1983, which were or were to be operated within the framework of the DFG-AS-SU agreement; 11 of these were by MPS; outside of the DFG-AS-SU agreement, there were 9 more cooperation projects in which MPIs participated. In addition to the already mentioned astrophysical and astronomical disciplines, quantum optics, nuclear physics, plasma physics, solid state research, metals research, biophysical chemistry, and commercial law were involved. See also Note Nickel from Jul. 8, 1984, AMPG, II. Abt., Rep. 70, No. 542.

in its foreign science policy stance, despite the mediation efforts of the BMFT, Lüst activated his personal contact with the Chancellor in the autumn of 1981. Schmidt asked him to formalize his thoughts in writing so he could refer to them when the Soviet head of state made a stop in Bonn on his way to the Geneva negotiations at the end of November. In his memorandum, Lüst noted a “stagnation, even a decline in contacts” that had been so successfully expanded at the beginning of the 1970s but had since fallen behind the levels of the late 1960s. This development was met with “increasing criticism and incomprehension” among MPS scientists, especially as French and American colleagues were “intensively collaborating with the Russians.” They themselves risked being “sidelined compared to scientists from other countries” due to politically enforced restraint. It was also not to be expected that “the Russians” would let this influence their stance on the Berlin issue, particularly as long as economic cooperation continued to expand and industrial research was included. The DFG and MPS should finally be allowed to decide in what manner they wanted to cooperate with Soviet scientists.²⁷⁰

Apparently, despite urgent disarmament and arms control issues, Schmidt and Brezhnev found time to discuss the scientific relations between their countries in November 1981.²⁷¹ Manfred Lahnstein, the head of the Chancellor’s Office, subsequently reported in a thank-you letter to Lüst that they had agreed to strengthen scientific and technological cooperation and to bring about “a mutually acceptable arrangement for the inclusion of Berlin’s scientific-technological potential.”²⁷² However, as long as that was not the case, the Federal Government did not want to release the DFG and MPS from their solidarity commitment to Berlin. The government had already cut the DFG’s special funds for exchanges with the USSR by 25 % in 1981 and showed no signs of increasing them the following year.²⁷³ Lüst was understating the issue when he replied that he was “a bit disappointed;” he felt thoroughly misunderstood and concluded his response with a civic rationale:

What is important to me is the recognition that collaboration among scientists, especially across system boundaries, is of fundamental importance. We Germans, precisely because of our historical experience, should take this into account, and that is why I feel obligated to advocate for the expansion of contacts with scientists in the Soviet Union.²⁷⁴

However, it was all for naught. In light of the imposition of martial law in Poland, the social-liberal Federal Government reaffirmed its rejection of Soviet co-flight

270 Manuscript “Wissenschaftliche Beziehungen zur Sowjetunion” (Scientific Relations to the Soviet Union), undated (Oct. 26, 1981), AMPG, II. Abt., Rep. 70, No. 541, fol. 183–184.

271 Regarding the meeting of the two heads of state, see “Schmidt drängt Breschnew,” *Der Spiegel*, Oct. 26, 1981.

272 Lahnstein to Lüst on Dec. 28, 1981, AMPG, II. Abt., Rep. 70, No. 541, fol. 143–144.

273 Schenk (DFG) to Genzel (MPI Solid State Physics) on Nov. 25, 1981, *ibid.*, fol. 158–161.

274 Lüst to Lahnstein on Feb. 3, 1982, *ibid.*, fol. 135–136.

offers for space experiments in the summer of 1982.²⁷⁵ The application from the MPI for Radio Astronomy for a further three-year extension of the previously universally well-reviewed cooperation program with the IKI was also set to fail in 1983.²⁷⁶ The DFG justified this with its worsened financial situation and the criticism of anonymous reviewers, whose qualifications the applicant Mezger doubted, especially since “practically all leading radio astronomers of both countries” had cooperated in this program. The outrage over the DFG following these assessments, perceived by him as entirely inadequate, without consulting the participating scientists was so great that both the Soviet coordinator Roman Sorotschenko and Mezger immediately resigned their positions and left the completion of the work to others.²⁷⁷

“Star Peace” or the Commercialization of Space Exploration

Nevertheless, contacts and collaborations between the MPIs—particularly the physics institutes—and the Academy Institutes did not cease. They even intensified again after the governmental change in Bonn in 1982, although not necessarily as a result of that change. Ironically, the impetus for this came from the U.S. Strategic Defense Initiative (SDI) (→ 2.4). It prompted Soviet space policy as early as 1983/84—aside from the initial but financially untenable attempt, abandoned by Gorbachev in 1985, to keep up with the U.S. in the development of space weapons or satellite-based defense shields—to promote the international exploration of space for peaceful purposes as a global counter-program under Soviet leadership: “Star Peace” instead of “Star Wars,” as it was formulated in the “public diplomacy” favored by the new Soviet leadership in television addresses and open letters to, for instance, the UN General Assembly.²⁷⁸ Concrete international research policy initiatives were to substantiate this vision. Research

275 Loosch (BMFT) to Hasenclever (DFVLR) on June 1, 1982, PA AA, BAV 164-MOSK/25085.

276 Mezger to Lüst on July 13, 1982 with attached memorandum, AMPG, II. Abt., Rep. 70, No. 540, fol. 3–5; DFG application Oct. 22, 1982, *ibid.*, fol. 27–53.

277 Sorotschenko to Mezger on June 8, 1983, AMPG, II. Abt., Rep. 70, No. 540, p. 10; Mezger to Sorotschenko on July 8, 1983, *ibid.*, p. 11; Mezger to Seibold (DFG-President) on July 8, 1983, *ibid.*, fol. 9–10. Table of cooperation projects, serial no. 10: The cooperation program was completed by 1985 with a quarter of the requested funding. On the MPS side, R. Wieblinski and I.I.K. Pauliny-Toth from MPI for Radio Astronomy and Kippenhahn from MPI for Physics and Astrophysics were responsible, and for the IKI of the AS-SU, L.I. Matwijenko, AMPG, II. Abt., Rep. 70, No. 541, fol. 24–31.

278 The Soviet Prime Minister Ryzhkov introduced the concept of “Star Peace” in his letter to the Secretary-General of the United Nations on June 10, 1986 (Note Jul. 3, 1986, PA AA, BAV 164-MOSK/25085). An internal AA memo dated Jan. 21, 1986 characterized Gorbachev’s foreign and security policy note of Jan. 15, 1986 as “public diplomacy.” Ambassador Semyonov brought this memo to the Federal Chancellery a day later, but it only paraphrased a previous television address and was also delivered in the same wording to the most important other NATO members. It was nevertheless subjected

institutes from Western countries, as well as from India and Brazil, were increasingly invited to fly their own or bi- and multilaterally developed experiments as payloads on Soviet satellites, probes, and space shuttles. In this way, the Soviets hoped to rally them behind their “peace power,” involve them in the costs, and maintain their own connection to international scientific developments.²⁷⁹ Their more ambitious goals, namely, to win over these countries for the project of an international space station and the creation of an international space organization, never gained much traction.²⁸⁰

Sagdeev, who as a scientific advisor along with the Vice President of the Academy, Yevgeny Velikhov, urged Gorbachev not to engage in the orbital arms race, also advocated for the internationalization and commercialization of space research. At a press conference, he primarily sought collaboration with the U.S., which was mobilizing so much research funding for SDI, something Soviet space scientists could only dream of. He pointed out existing collaborations with French and Dutch institutes, as well as the MPI for Physics and Astrophysics.²⁸¹ However, a space research agreement with the U.S. was unthinkable as long as U.S. President Reagan did not abandon the SDI program. This made collaboration with other Western countries all the more important, both geopolitically—corresponding state agreements could be presented as approval of the Soviets’ “peaceful” space policy and a distancing from the American Star Wars program—and economically, because the services of the Soviet space program for foreign customers were billed in foreign currency, which the collapsing Soviet economic system urgently needed.²⁸² Sagdeev continued to advocate

to a comprehensive analysis at the AA. (Note Jan. 17, 1986, PA AA, B 43-ZA/144754). A similar situation arose with another “verbal message” from Gorbachev in July 1986 (Federal Chancellery to von Schubert July 15, 1986; two notes from July 18, 1986, PA AA, B 43-ZA/144754). In mid-February 1986, the disarmament commissioner of the Federal Government, Friedrich Ruth, had Daniil Proektor, head of the Department of Military-Political Issues at the Institute for World Economics and International Relations (IMEMO), explain how to interpret the Gorbachev note from Jan. 15, 1986, namely as an “alternative program to SDI” to “save humanity from the atomic threat—without weapon systems using purely political means” (Note Feb. 19, 1986, PA AA, B 43-ZA/144754).

279 Lüscher observed a similar internationalization strategy for Soviet nuclear energy cooperation, especially with non-aligned countries in the 1950s and 1960s, see Lüscher, *Nuklearer Internationalismus*, 2021, pp. 125–157, pp. 178–186.

280 Moscow Embassy to AA on Dec. 27, 1985 regarding Soviet proposal to establish an International Space Organization; Note (AA) from July 9, 1987; von Wagner (AA) to Federal Ministries of Finance and Economy, BMFT, Federal Chancellery July 16, 1987, PA AA, BAV 164-MOSK/25085.

281 Note Kastl (Moscow Embassy) Feb. 14, 1986, PA AA, BAV 164-MOSK/25085; for the officer, the “purpose and meaning of the press conference were not recognizable,” especially Sagdeev’s focus on the USA, whereas the most extensive space cooperations were with France and the MPIs.

282 Note July 3, 1986, PA AA, BAV 164-MOSK/25085. On Oct. 30, 1987 (*ibid.*), the Moscow Embassy reported on space agreements being prepared between the USSR and Austria, Britain, Italy, Australia, and Canada. On July 4, 1988 (*ibid.*), the AA reported to the

for payload experiments among his colleagues at the MPS, but also in other Western countries, until in the fall of 1985, GLAVKOSMOS—essentially a spin-off from the military apparatus responsible for the Soviet space program—took over the international marketing of services for non-military oriented space exploration.²⁸³

The shift in the importance of space exploration due to the new Soviet foreign and economic policies had a downside for Sagdeev and his Institute for Space Research (IKI): as the focus shifted from politics to economics during Perestroika, they had to assert the importance of their costly non-commercial research projects against the revenue-generating space industry. Therefore, Sagdeev played the foreign policy card and urged his scientific collaboration partners in the West to work towards high-level state agreements in their countries. This was also the case with his long-standing collaboration partner Mezger from the MPI for Radio Astronomy, on the occasion of a German-Soviet workshop on “Interstellar Medium and New Developments in Radioastronomy” in the fall of 1987, which the science attaché of the Moscow embassy informed the Federal Foreign Office about:

Sagdeev [emphasized] [...] once again the strong interest of the IKI in initiating German-Soviet negotiations on an agreement in the field of space research. Previous cooperation with German research institutes under the umbrella of the DFG-AS-SU agreement had been very good and beneficial for both sides but could be significantly expanded. [...] To assert himself against the numerous Soviet entities involved in the peaceful use of space, and particularly against the Soviet “Space Industry” with larger and more costly projects than the existing joint German-Soviet ones, he needed a “higher-ranking” agreement that would commit the governments of both sides to the parties involved in the project.²⁸⁴

Moscow Embassy on framework agreements between the Soviet Union and Finland, Brazil, Britain, USA, and Austria; negotiations were still ongoing with Italy, Greece, Australia, India, Norway, and Canada.

283 Moscow Embassy to AA on Jan. 17, 1984, PA AA, BAV 164-MOSK/25085. Sagdeev was the primary source of information for the embassy consultant who researched the motives behind Soviet efforts to secure a space agreement with the Federal Republic. Moscow Embassy to AA on Dec. 27, 1985, *ibid.*; Memo AA to Moscow Embassy regarding “Soviet efforts for an agreement with the Federal Republic of Germany for cooperation in space,” July 4, 1988. Glavkosmos, <https://www.glavkosmos.com/en/history/>, last accessed on Mar. 25, 2020; *Cosmos 1900*, 1989, pp. 92; Sagdeev, *The Making of a Soviet Scientist*, 1994, pp. 272–273.

284 Nocker (Moscow Embassy) to AA, BMFT, and DFG on Sep. 7, 1987, PA AA, BAV 164-MOSK/25085. Already half a year earlier, at the request of the Soviet Foreign Ministry, Sagdeev had invited several embassy officials to IKI, reported on cooperation projects especially with the MPIs in Heidelberg, Mannheim, and Garching, and hinted in confidential conversation that “an agreement at the government or department level would facilitate financial support for cooperation from the Soviet side” (Nocker to AA and BMFT March 19, 1987, *ibid.*) Dunaev, the head of GLAVKOSMOS, presented in the AA and explained his offers (Memo Menniken [AA] Feb. 25, 1988, *ibid.*)

At this point, the political prerequisites for such a bilateral space agreement were in place: The West German side had finally achieved full inclusion of West Berlin with the STC framework agreement signed in July 1986 and enacted in 1987. Three specific departmental agreements on nuclear, agricultural, and health research had simultaneously been put into effect, all naming Berlin research institutions as well as the IPP (Pinkau) and the MPI for Psychiatry (Hans Dieter Lux) as cooperation partners.²⁸⁵ For the Soviet side, Sagdeev expected “an extremely favorable climate for intensive cooperation” also in space research, especially after the West German government had come to terms with the “double-zero option”—meaning the complete withdrawal of all nuclear medium and short-range missiles, including Pershing 1a from Europe—and the impending signing of the Intermediate Range Nuclear Forces Treaty (INF) between the USA and the USSR. The latter actually took place three months later, in December 1987.²⁸⁶ The Federal German-Soviet space agreement was signed a year later in October 1988 during the state visit of Chancellor Kohl to Moscow by the Federal Minister of Research Riesenhuber and the acting President of the AS-SU, Guri I. Marchuk. It was scheduled to come into force during Gorbachev’s return visit in 1989 to Bonn.²⁸⁷

Until then, as with the previous departmental agreements, a list of planned cooperation projects had to be negotiated, and here political, scientific, and economic interests of all parties from both sides became entangled again. It started with the surprising arrival of not just representatives of the AS-SU but also of the Soviet space industry, including the orbital travel agency GLAVKOSMOS, at the first round of talks in Bonn in February 1989. The main point of contention became the political prestige project of the Federal German Government, specifically sending a West German astronaut to the Soviet space station MIR. For the entire flight operation, especially for manned space flights, and even more so for those involving foreign clients, the responsible agency was no longer AS-SU but GLAVKOSMOS, which operated them under “commercial conditions.”²⁸⁸ For the Federal Government—although not for the West German space research community, which considered expensive manned space travel, whether with ESA, NASA, or the Soviets, scientifically obsolete (→ 2.4)—their man on the MIR embodied the living representation of the new “German-Soviet scientific and technological cooperation,” and not merely an object of crude

285 BGBl. 1988/II/394–412. König and Rembser, “Wissenschaftlich-technische Zusammenarbeit,” 1988; Nötzold, “Wissenschaftsbeziehungen,” 1990, p. 800.

286 Moscow Embassy to AA on Sep. 7, 1987, PA AA, BAV 164-MOSK/25085.

287 Nocker (Moscow Embassy) to AA on Oct. 28, 1988, PA AA, BAV 164-MOSK/25088. Agreement from Oct. 25, 1988 between the Federal Ministry of Research and Technology of the FRG and the Academy of Sciences of the USSR on scientific cooperation in the field of exploration and use of space for peaceful purposes in: *Akten zur Auswärtigen Politik* 1989, 2020, pp. 1640–1641.

288 Memo BMFT from Feb. 17, 1989, PA AA, BAV 164-MOSK/25086.

commerce, especially as “in Germany, government and business circles are strictly separated.”²⁸⁹

The Soviet delegation leader, a high-ranking official from the Ministry of Foreign Affairs, remained firm: an “entry fee,” like in a casino, must be paid, as GLAVKOSMOS needed a guarantee of cost coverage before the flight device could be ordered from the industry; with the “entertainment ticket,” the costs for the experiments could be negotiated and divided according to the mutual scientific interests if necessary. The “commercial conditions” also allowed for payment in goods or services instead of cash.²⁹⁰ This provided the West German government, whose negotiation leader had initially rejected this “social tariff” with indignation, with the opportunity to maintain the scientific character of the project and the dignity of the West German astronauts as equal partners of the Soviets through the delivery of “as sophisticated experiments and devices as possible.”²⁹¹ However, the details still had to be negotiated with the GLAVKOSMOS representative but were shifted to the “working level” in the BMFT and removed from public attention.²⁹²

The directors of the Max Planck Institutes engaged in extraterrestrial research, as well as their colleagues at the IKI saw their prospects dwindling. Those who had laid the foundation for the space agreement with their now more than ten-year-long collaboration and who now expected the expansion of their cooperative projects—and their financing—were snubbed. The BMFT did not prioritize their funding applications but rejected them in favor of the politically prioritized astronaut co-flight, the experiments linked to it on the MIR, and a technologically and financially particularly high-quality TV stereo camera as the “entertainment ticket.” None of the projects that the MPIs for Aeronomy, Chemistry, Nuclear Physics, and Physics and Astrophysics had developed in collaboration with the IKI for the recently launched Soviet Mars research program—and whose financing of 10 million DM would not have made up even one percent of the BMFT’s billion-strong budget for space research—made it onto the BMFT’s

289 AA to BMFT on Jan. 9, 1989, *ibid.* The fact that the separation between politics, economy, and knowledge was not so strict was also known to the Soviet negotiators: After all, Bavarian Prime Minister Strauß advocated for the disposal of the nuclear waste of NUKEM, which was to build the Wackersdorf reprocessing plant, in the Soviet Union based on the STC agreement from 1986 (Ambassador Meyer-Landrut to AA on April 22, 1988; Memo AA-StS Lautenschläger from May 4, 1988, PA AA, BAV 164-MOSK/25087). Also, Haerendel from MPI for Physics and Astrophysics used his good contacts with Sagdeev and IKI to get a new customer for the Munich-based company Kayser-Threde, which manufactured measuring devices for spaceflight and whose sales in the U.S. had plummeted after the Challenger disaster of 1986. Kayser-Threde then successfully did business with GLAVKOSMOS (Memo March 1, 1988; Memo Nocker [Moscow Embassy] from March 18, 1988; AA to Moscow Embassy on July 4, 1988, p. 4, PA AA, BAV 164-MOSK/25087).

290 Memo BMFT from Feb. 17, 1989, PA AA, BAV 164-MOSK/25086.

291 AA to BMFT on Jan. 9, 1989; Memo BMFT from Feb. 17, 1989, *ibid.*

292 Memo BMFT from Feb. 17, 1989, *ibid.*

initial list of proposals. Rosenbauer from the MPI for Aeronomy and Heinrich Waenke from the MPI for Chemistry, who had traveled to Moscow for further planning on the occasion of the Soviet Phobos probe entering the planet Mars' orbit at the end of February 1989, had to inform their colleagues at the IKI that they would have to withdraw their jointly conceived bids for subsequent Mars missions.

Ambassador Andreas Meyer-Landrut was presented with their "great concern and disappointment." Albert Galeev, who had succeeded Sagdeev as IKI Director at the end of 1988, also expressed "deep disappointment" to the embassy, emphasizing that his institute "placed great importance on incorporating the scientific achievements and prestige of the MPIs into Soviet Mars research." He also argued for cutting back on manned space research, which "brought much less scientifically than unmanned research when expenditures were compared," and argued instead for putting the MPI projects on the list.²⁹³ Sagdeev's election to the Supreme Soviet, where he was providing his expertise as a government advisor, might have also played a role.²⁹⁴ Meyer-Landrut, who could probably assess the scientific and space-policy sentiments in Moscow better than the BMFT, repeatedly advocated for the interests of the MPI and the IKI in telegrams to the Foreign Office.²⁹⁵ In the end, more than a dozen MPI projects did make it onto the BMFT list for the draft program, although they had to be financed mostly from institute budgets without additional funds from the space program.²⁹⁶ Before this project list was ready for signature, another year passed with extraordinary events that pushed the government interest in West German manned space travel into the background. About four weeks after the fall of the Berlin Wall, the then-involved foreign ministers Genscher and Shevardnadze agreed to still include the astronaut flight in the space agreement but to decouple the negotiations on the conditions, so that it could finally come into effect in the summer of 1990.²⁹⁷

293 Meyer-Landrut to AA on March 1, 1989, *ibid.*

294 Nocker (Moscow Embassy) to AA on Sep. 15, 1988, *ibid.*

295 Meyer-Landrut to AA on March 1, 1989, March 23, 1989, Mar. 31, 1989, *ibid.*

296 AA to Embassy Moscow on March 30, 1989 with project list attached, *ibid.* The project list, which was finally signed on June 13, 1990, containing 33 individual projects included 13 collaborative projects of the MPI for Aeronomy, for Physics and Astrophysics and for Chemistry, mainly with the IKI as well as a project of the MPI for Molecular Genetics with the AS-SU-Institutes for Protein Research and for Crystallography, PA AA B 41- ZA/151754.

297 Note by Wagner (AA) on Dec. 21, 1989 about talks of the Federal German Foreign Minister with Foreign Minister Shevardnadze on Dec. 5, 1989, PA AA BAV 164-MOSK/25086. *Bundesgesetzblatt* 1990 II, pp. 801: German-Soviet Agreement on Scientific and Technical Cooperation in the Field of Exploration and use of Space for Peaceful Purposes (Space Agreement) from Oct. 25, 1988, come into effect on July 5, 1990; Article 3 refers to the separately to be agreed conditions of the astronaut flight. After the East German Sigmund Jähn, who already flew on the Soyuz 31 in 1978, Klaus-Dietrich Flade and Ulf Merbold were the first all-German guests on the MIR in 1992 and 1994 respectively.

What did this mean for the MPS and its scientists engaged in long-term collaborations with Soviet colleagues? The physicists, chemists, and astronomers conducting extraterrestrial research, like their colleagues in other disciplines, had certainly benefited from the framework agreement for German-Soviet scientific-technical cooperation of 1986/87. Since then, they were not confined to the “narrow channel” of the DFG-AS-SU agreement but could collaborate on a broader, albeit by no means unregulated level.²⁹⁸ Most notably, the elephant in the room—the Berlin issue that had blocked many cooperation agreements—had been removed. However, the “extraterrestrials” had gained little or nothing through the space agreement of 1988/90. They could have implemented their projects, mostly financed from institute budgets, in direct consultation with the IKI, as before.

In contrast, their broader project plans risked getting lost in the labyrinth of economic and political interests of the negotiators—on the one side the BMFT and the scientific, economic, political space complex on the other. While the West German government did count on the scientific significance of the MPI-IKI collaboration projects to assert its propaganda and prestige project of participating in manned space research vis-à-vis its Soviet negotiating partners and to reduce its existing dependency on U.S. space power, it saw no reason to provide additional funding for these projects. It took the pressure from colleagues at the IKI, who wanted to use the prestige of extraterrestrial research at the corresponding MPIs to elevate their own international scientific standing—especially in times of Perestroika—just to get the joint projects included in the German-Soviet space agreement. And it required a West German ambassador in Moscow to translate the Soviet desire for Bonn’s politics.

Science and Diplomacy Before and After the Collapse of the Soviet Union

Once more, in the lingering aftermath of the Cold War, a conflict had broken out between West German foreign science policy and an MPS policy that sought to maintain its scientific relations with the Soviet Union as unencumbered as possible by the foreign policy directives of the Federal Government. For this, the term ‘science foreign policy’ seems apt, especially since no intentions formulated in-house or represented on behalf of foreign cultural or even geopolitical policy toward the Soviet Union are documented. In the case of the South and Southeast European institutes or institute-founding initiatives from the KWS era, and extending even further to the Bibliotheca Hertziana, as well as in relations with Spain up to the present, the generally compatible, if not identical, interests of state foreign policy and those of the KWS/MPS in bilateral scientific cooperation

298 Note from Nickel on Nov. 14, 1986 regarding the assessment of the STC Agreement, AMPG, II. Abt., Rep. 70, No. 542, fol. 294–296.

combined to form a predominantly coherent and relatively conflict-free foreign science policy. In the case of the Soviet Union, however, the foreign science policy of the Federal Government and the science foreign policy of the MPS repeatedly came into conflict.

Primarily, the allure likely stemmed from the exceptional appeal of the Soviet research landscape for specific fields within the MPS. This was particularly true for the study of freshwater ecosystems and for those who tackled ecological issues from diverse academic perspectives, ultimately founding the Earth System Research cluster within the MPS.²⁹⁹ (→ 4.5) These researchers found a wide range of geographical terrains within the Soviet Union's continental expanse. These areas had been made accessible by a robust network of biological research stations and a host of field-experienced peers. In the realm of physics, the prospects of collaborating with Soviet researchers became increasingly attractive, especially when compared to or complemented by relationships with U. S. research institutions. For example, theoretical quantum physicists—like Hans-Peter Dürr, who was not keen on large-scale experimental physics and instead favored theoretical work—found it easier to build long-lasting, meaningful dialogues with their Soviet counterparts than they did with American scientists.³⁰⁰ For researchers in all fields of extraterrestrial research who increasingly relied on advanced instruments and technologies, the Soviet Union presented multiple advantages: They met with highly skilled peers who had access to much-needed space exploration equipment. These collaborations allowed for an equivalent swap of high-quality instruments and innovative experiments on Soviet spacecraft, followed by joint data analysis. Unlike collaborations with NASA, where one often felt like a paying supplicant, partnerships with Soviet institutions were more balanced and based on mutual benefits. Moreover, MPS scientists were often sought after, even if not only for “purely scientific” motives. While the Soviet co-flight offers couldn't have and shouldn't have replaced collaborations with NASA and the European Space Agency (ESA), they provided an invaluable alternative that enhanced negotiating power. The ensuing transfer of technological know-how from West to East, occasionally questioned by the Federal Government, was deemed insignificant by MPS scientists since, by their very definition, all MPS-affiliated activities were categorized as basic research and would be published sooner or later.

In reality, the attractive scientific relationships that the MPS had with the Soviet Union were more politically constrained than with any other country—

299 Cf. Lax, *Von der Atmosphärenchemie zur Erforschung des Erdsystems*, 2018; Lax, *Wissenschaft*, 2020.

300 Discussion Dürr (Devillard) 2013, pp. 97–100. Already in 1967, Dürr presented in Dubna what Heisenberg considered a “very important work” on the indefinite metrics and non-local interaction: Heisenberg to Weisskopf on Nov. 13, 1969, protocol of the session of the CPTS on Nov. 7, 1969 in Heidelberg, AMPG, II. Abt., Rep. 62, No. 1757, fol. 30–33). Dürr's extensive USSR contacts are documented in AMPG, III. Abt., ZA 116, K 58; Dürr to Marsch on Sep. 8, 1970, AMPG III. Abt., ZA 116, K 64.

and that in a double sense. No country in the Eastern Bloc, except for the GDR, imposed such strict travel and collaboration restrictions, when directed to the West, on its scientists. And as if that wasn't enough political paternalism, West German foreign policies, colored by Berlin-centric concerns and bureaucratic hurdles, further complicated these intended collaborative projects. Trapped in this predicament, the MPS's Administrative Headquarters often debated—and ultimately rejected—the idea of securing more flexibility through a special agreement with the AS-SU, just to match the level of engagement that French, British, and American colleagues had in scientific exchanges with the Soviet Union.

It's striking how steadfastly the MPS maintained the concept of purely knowledge-driven scientific collaboration and the demand for complete institutional autonomy in shaping such collaboration, particularly in the special case of the Soviet Union. This stance persisted even if the MPS couldn't fight the bloc and Berlin political idiosyncracies of the time. On the other hand, it's surprising how little loyalty the MPS showed to the Federal Governments of Germany in terms of foreign policy. Repeatedly, various governmental bodies—be it the respective federal ministry responsible for research, the Foreign Office, or even a Federal Chancellor—had to explicitly call for this loyalty.

During the period following Telschow, the Administrative Headquarters of the MPS increasingly viewed its International Relations Unit as a service unit, intended to support the organizational and administrative aspects of cooperative ventures initiated by its institutes. It occasionally played the role of mediator, attempting to bridge the gap between the foreign policy mandates from the government or relevant ministries and the aspirations of its institutes. While the Administrative Headquarters prioritized maximizing the institutes' autonomy in their Soviet Union relations, they had to be careful not to offend the Federal Governments too frequently, which was their main source of funding. The MPS had to find a balance between its collective institutional goals and the specific scientific interests of its members in collaborating with Soviet peers.³⁰¹ In this situation, research projects with Soviet counterparts, invariably based on direct personal relationships, seldom aligned smoothly with the foreign science policy of the Federal Government. More often, these initiatives had to be navigated around the government's policy, sometimes taking advantage of differing priorities among the Chancellor's Office, the Ministry of Education and Research, and the Foreign Office. Allies were switched as needed—sometimes it was the Federal Chancellor personally, sometimes the responsible State Secretary in the ministry, and sometimes the Federal German ambassador in Moscow.

The guiding principle of a politics-free science and corresponding scientific exchange was not only subject to disputes with federal ministries and the

301 How cautiously the Administrative Headquarters operated here towards all sides is shown by the handling of a complaint by Weidenmüller (MPI for Nuclear Physics) regarding the invitation of a Soviet and a Chinese scientist, which Secretary-General Ranft only wanted to clarify orally in the end: Ranft to Weidenmüller/draft letter Kühner on April 5, 1982 with notes by Ranft, AMPG, II. Abt. Rep.70, No. 285, fol. 453–456.

Moscow Embassy, but also influenced the (lack of) interaction with political dissidents among Soviet colleagues. During one of his Moscow visits in the summer of 1982, radio astronomer Mezger met with Leonid Ozernoy, “one of the most well-known theoretical astrophysicists of the younger generation,” a close associate of Ginzburg. Ozernoy informed him that he would soon go on a hunger strike because his application to emigrate to Israel for himself and his family had been denied. As a result, he was socially and professionally isolated, unable to teach or travel abroad. Ozernoy asked for support from West German astronomers and handed Mezger an open letter to the upcoming General Assembly of the International Astronomical Union (IAU). DFG’s Soviet Union officer, Schenk, advised Mezger against launching a signature campaign, suggesting instead a discreet intervention by the MPS President with his AS-SU counterpart. On Mezger’s query to Lüst, MPS’s international relations officer Nickel tersely noted in the margin: “President will only act if the opportunity arises.”³⁰² Also, in the widespread international campaign for the release of the nuclear physicist and human rights activist Andrei Sakharov from his exile in Gorky, which reached an unsuccessful climax in 1983, only Hans-Peter Dürr of the MPS engaged in an openly public fashion. He offered Sakharov a position at the MPI for Physics as soon as he was able to leave the Soviet Union (→ 4.4). This offer was not coordinated with MPS leadership and thus did not meet Sakharov’s desire for a more high-profile invitation from the Federal Government or at least the MPS President, which might have more effectively supported his emigration request.³⁰³

The significant increase in the number of Soviet or Russian guests after 1989/90 (1988: 18; 1990: 64; 1991: 125; 1992: 178) peaking at 248 individuals in 1993, likely had more to do with new travel freedoms than with political openness in Gorbachev’s Soviet Union. The primary cause was rapidly deteriorating work conditions, particularly in Academy Institutes, which soon curtailed the willingness of Soviet scientists to travel, as they feared losing their jobs upon return. After 1995, only about a dozen Russian guests came annually to the MPIs.³⁰⁴ At the same time, the long-term collaboration partner of the MPI for Astrophysics, Raschid Sunyaev, was appointed as its new director. Sunyaev maintained his leadership role at IKI and continued to expand decades of collaboration

302 Mezger to Lüst on July 13, 1982 with Ozernoy’s open letter attached, AMPG, II. Abt., Rep. 70, No. 540, fol. 3–7. Regarding Ozernoy, who was only allowed to leave in 1986 and then went to the USA, cf. Fridman and Usov, “Ozernoy,” 2002.

303 Dürr’s commitment in the Sakharov campaign is documented in: AMPG, III. Abt., ZA 116, K 51. For the invitation to the MPI for Physics see *Münchener Merkur* of Nov. 30, 1983 (newspaper clipping, AMPG, III. Abt., ZA 116, K 51). *Akten zur auswärtigen Politik* 1983, 2014, 663–664, FN 16. For Dürr’s renewed intervention with Gorbachev in 1986, which set a significant impulse for Sakharov’s eventual release, see Chapter 4.4.

304 Nickel to King (BMFT) on Feb. 18, 1991, AMPG, II. Abt., Rep. 70, No. 110, fol. 2; Statistics Thoms, DA GMPG, Privatarchiv Sachse, ID 601104. Regarding the chaotic working conditions at Soviet or Russian research institutes in the early 1990s, cf. also Bonolis and Leon, *Astrophysics*, 2023, FN 300.

between both institutes.³⁰⁵ The dramatic and prolonged economic crisis following the failed Perestroika and its devastating impact on the Russian research landscape eventually led to a change in the strained relationship between Federal Germany's foreign science policy and MPS's science foreign policy with Russia.

For the first time since Butenandt had visited the Soviet Union in 1970 as part of Federal Research Minister Leussink's delegation, another MPS President, Hubert Markl, traveled to Russia in 1999. The trip of the delegation led by Markl was meticulously prepared for a year by Angelika Lange-Gao, who managed the newly established focus on Russia in MPS's International Relations Unit, in collaboration with DFG officer Doris Schenk.³⁰⁶ The report on their preliminary exploratory trip in the fall of 1998 painted a still bleak picture of the Russian research landscape, filled with empty labs, unpaid and underemployed scientists, dusty instruments, unheated offices, bureaucratic arbitrariness, corruption, aging presidencies, and a lack of young talent.³⁰⁷ Other travel reports, such as those from Federal Research Minister Edelgard Bulmahn or Berlin's Secretary of State for Science Ingolf Hertel, as well as the annual report from the embassy in Moscow, confirmed these impressions—sometimes articulated a bit more cautiously.³⁰⁸ MPS Secretary-General Barbara Bludau wondered, after reading the reports, whether “a trip by the president under these conditions was even advisable at this time.”³⁰⁹

However, Markl and his delegation were not deterred. They even accepted the proposal to not only visit the European science agglomerations in Moscow and St. Petersburg but also the Siberian centers in Novosibirsk and Irkutsk, which were also in the scope of the TACIS program established by the European Union in 1991.³¹⁰ The delegation did not travel empty-handed in September 1999. Whether in Moscow, Novosibirsk, or Irkutsk, Markl consistently presented the new tools for bilateral collaboration, partially designed for the East German *Länder* but mainly for China: “research partnerships” and “partner groups”

305 Cf. Bonolis and Leon, *Astrophysics*, 2023, pp. 447–449; Max Planck Institute for Astrophysics, *50th Anniversary*, 2008.

306 Travel preparations and follow-ups are documented in AMPG, II. Abt., Rep. 70, Nos. 514, 515, 674.

307 Memo by Lange-Gao on Nov. 20, 1999, AMPG, II. Abt., Rep. 70, No. 673, fol. 391–404.

308 Protocol of the conversation between Bulmahn/Filippov on Feb. 18, 1999, AMPG, II. Abt., Rep. 70, No. 514, fol. 196–198; Report of StS's visit for Science, Research, and Culture of the Land Berlin, Hertel, on June 16, 1999 as well as the Annual Report 1998/99 on research, technology, and nuclear policy in the Russian Federation, AMPG, II. Abt., Rep. 70, No. 515, fol. 142–156, fol. 253–277.

309 Marginal note by Bludau on Dec. 11, 1998, AMPG, II. Abt., Rep. 70, No. 673, fol. 404.

310 Protocol of the meeting for the preparation of the delegation trip to Russia on Feb. 16, 1999, *ibid.*, pp. 359–371. The TACIS program (Technical Assistance to the Commonwealth of Independent States) was intended to support the establishment of a market economy and democracy in Eastern Europe and Central Asia: Europäische Kommission, Technische Hilfe der EG, Sep. 14, 2014, https://ec.europa.eu/commission/presscorner/detail/de/MEMO_92_54, last accessed on April 5, 2020.

aimed to encourage young visiting scientists to return to their homeland and to continue their research there with the necessary instruments or even establish their own research group. In “virtual labs,” ongoing collaboration would be facilitated using new media after mutual visits to MPIs and Russian research institutions. Jointly organized “summer schools” and possibly even newly established “International Max Planck Research Schools” at Russian universities were intended to address Russia’s severe lack of young talent. Additionally, specific assignments “for solving scientific-technical or engineering problems at the Max Planck Institutes” were to be given. All these offers were by no means intended as one-sided gifts but aimed to reestablish “long-term partnerships in successful cooperation projects” between MPIs and Russian research institutions, as had been possible in the times of the old Soviet Union and the Cold War, despite all political adversities.³¹¹

The ongoing science infrastructure crisis in Russia, despite various failed reform attempts, increasingly drew the attention of Western foreign science policy in the late 1990s. The reason was not that they wanted to secure the most promising scientific “potentials” of the fallen Soviet Union—these had already independently flowed into Western, and preferably U.S., universities and research institutes. Sagdeev also followed the call to the University of Maryland in 1990, after marrying Susan Eisenhower, the granddaughter of Ike. The aim was rather to stop this unregulated brain drain and, in particular, to prevent the poorly or entirely unpaid scientists who remained in the former closed military science towns from monetizing their experiences in the development of nuclear, chemical, and biological weapons of mass destruction in the “rogue states,” as American President George Bush called them, and instead to show them alternatives in conversion research. The goal was, as Rose Gottemoeller, the U.S. diplomat, security policy expert, and Deputy Secretary-General of NATO until 2019, once formulated, “[to] wrap Russian and Ukrainian scientists in a web [so that] they would not go elsewhere.”³¹² In the MPS *Jahresbericht* for 1992, there was—remarkably enough, but appropriate to the turning point of 1989/90—an explicit foreign science policy motive for the increased invitations of Eastern European and Russian scientists to Max Planck Institutes:

The objective was to minimize the impending brain drain, particularly from the former Soviet Union, through short-term stays by scientists at German institutes, equipment donations, and the establishment of cooperative projects.³¹³

311 Report on the MPS’s delegation trip to Moscow, Novosibirsk, and Irkutsk on Nov. 9, 1999, AMPG, II. Abt., Rep. 70, No. 515, fol. 21–40 (quotes fol. 23–24); MPS press release from Sep. 28, 1999, AMPG, II. Abt., Rep. 70, No. 514, fol. 4–5.

312 Quoted from Sher, *From Pugwash to Putin*, 2019, p. 127.

313 *MPG-Jahrbuch* 1992, p. 96. This policy also extended to the other Eastern European states: The number of guests from Bulgaria (1989: 13; 1993: 30) and Czechoslovakia (1985: 7; 1989: 30; 1993: 64) increased again after the *Wende*, while the number of Polish and Hungarian guests, who probably feared for their local jobs just like their Russian col-

This security-policy-driven foreign science policy, primarily of the USA but also including Western allies such as the Federal Republic and the EU, was—unlike during the Cold War—compatible with a new science foreign policy of the MPS. At least in relation to Russia, this was no longer understood as a political maintenance of bilateral scientific collaborations. Instead, the MPS, guided by a globalized understanding of science, wanted to contribute to the reconsolidation of the Russian scientific landscape and test its approaches to science (re)building, previously developed in post-Cultural Revolution China, one more time.

3.4 Scientific Ping-Pong Diplomacy: China

At the end of September 1972, a staff member of the MPS's International Relations Unit informed the Federal Foreign Office via a brief telephone call that seven Chinese scholarship holders had stayed at Max Planck Institutes in the previous year. Of these, four were from "Formosa/National China" and two from Hong Kong. Additionally, there was a "refugee from Shanghai" who had entered via the Philippines; however, there were "no Red Chinese in our institutes."³¹⁴ Her information was urgent because, less than two weeks later, on October 11, 1972, Foreign Minister Scheel and his Chinese counterpart Ji Pengfei were set to announce the establishment of diplomatic relations. These details, however, were not suitable for Scheel's speech in the Great Hall of the People in Beijing. Nevertheless, the MPS and the Chinese Academy of Sciences (CAS) were to play a role in scientific relations between the Federal Republic and the People's Republic (PR) of China similar to that of the national table tennis teams in MAO's and Nixon's Ping-Pong diplomacy a year earlier.³¹⁵ In fact, the MPS found itself just a few months later in a role it generally sought to avoid: It became the main actor in a new foreign science policy initiated by the social-liberal government to advance the Federal Republic's primarily economic interests towards this potential, yet initially hardly assessable, trading partner. The MPS took on this role with remarkable commitment, particularly appreciated by the Chinese side,

leagues, declined from 1992 onwards (Statistik Thoms, DA GMPG, Sachse Privataarchiv, ID 6011049).

314 Memo by Helga Peter on Sep. 29, 1972, AMPG, II. Abt., Rep. 70, No. 128, fol. 389; the data referred to 1971, apparently no updated data was available for the current year.

315 About the incidental establishment of Sino-American friendship games as a prelude to the establishment of bilateral relations reported on the occasion of the 40th anniversary in several media: Teuffel, "Ping-Pong-Diplomatie," *Der Tagesspiegel*, Mar. 27, 2011. Regarding the historiography of Sino-American relations in the 1960s and 1970s, see Fardella, "Sino-American Normalization," 2009; with further literature references Millwood, "(Mis)Perceptions," 2019. On the Sino-American scientific relations, Millwood, "Exceedingly Delicate Undertaking," 2021.

and tailored it over the years so that its own interests in collaborating with the rapidly developing East Asian scientific landscape increasingly came to the fore.

Geopolitics in Motion

Around the year 1970, the Cold War downshifted a gear or two, offering various actors an opportunity to reposition themselves geopolitically and simultaneously occupy contentious domestic political terrain. In the United States, Nixon had won the 1968 presidential election, in part by promising to withdraw American troops “honorably” from Vietnam. His National Security Advisor, Kissinger, had since been on secret diplomatic missions in Hanoi, Beijing, and Moscow to moderate the new war strategy on the international stage. His goal was not to end the conflict, but rather to initiate the “Vietnamization” of the ground war, initially with continuing American air support. Following the Sino-American Ping-Pong friendship matches in Shanghai and Beijing in the fall of 1971, he prepared Nixon’s trip to China for May 1972, positioning him once again as a peacemaker for re-election. At the same time, Kissinger ended the exclusive bipolarity in the West-East power struggle between Washington and Moscow.³¹⁶

In China in 1969, MAO had declared the first terrorist phase of the Cultural Revolution, launched three years earlier, to be over. He had sent the out-of-control Red Guards to fields far from urban centers and appointed revolutionary committees made up of more disciplined party and military members in schools and universities (in case they were reopened), enterprises, and communes—although intra-party power and directional struggles remained unresolved.³¹⁷ His loyal comrade-in-arms, the European-educated, polyglot Mandarin ZHOU Enlai, who had set up the European group of the Chinese Communist Party in the early 1920s in Paris and had also spent a few semesters in Göttingen and Berlin, continued to handle foreign and economic policy since 1949 through all of MAO’s campaigns and purges.³¹⁸ The Soviet invasion of dissident Czechoslovakia in 1968 and the military clashes a few months later in the Ussuri conflict on its own northeastern border with the Soviet Union prompted him to seek a way out of the double ideological and geopolitical confrontation with the two superpowers and the self-isolation China had maintained since its falling out with its communist fraternal power in 1959/60.³¹⁹

316 “Nixons Weg,” 1971. On Nixon’s ‘Madman Theory’ see Greiner, *Krieg ohne Fronten*, 2007, pp. 70–73. Also see Berman, *No Peace*, 2001.

317 Leese, “Kulturrevolution in China,” 2016.

318 Krüger, “Der rote Star,” *Die Zeit*, July 15, 1954. Lee, *Pioneers of Modern China*, 2005, p. 120. For an overview of Chinese foreign policy, see Möller, *Außenpolitik der Volksrepublik China*, 2005, pp. 80–92.

319 The reason for this estrangement was, on the one hand, Khrushchev’s détente policy, which was interpreted by the Communist Party in China, but also in some African and Asian countries, as a betrayal of the common revolutionary cause, and on the other hand,

Until 1972, a West German policy towards China was hardly noticeable and was not meant to be. Although there could have been points of connection for bilateral relations, such as the trade contacts that several companies, some of whom had been engaged in China since colonial times, had resumed in the early 1950s. Under the conditions of communist autarky and American embargo policies, their modest 1972 volume of 900 million Deutsch Marks was sufficient to make the West German economy an important business partner for the PR China.³²⁰ Furthermore, every federal government had great sympathy for Beijing's One-China policy—be it due to their conviction of the indivisibility of the nation, a realistic acknowledgment of mainland China's long-term dominance, or political reservations against JIANG Kai-shek's dictatorship in Taiwan. Accordingly, they avoided, despite occasional initiatives from the United States, the Republic of China (ROC), or even dissenting voices within the Federal Republic, establishing diplomatic relations with Taiwan. According to the historian and former Consul General in Guangzhou, Wolfgang Runge, the One-China policy had even served as a “model” for Bonn's Hallstein Doctrine.³²¹

Subsequently, diplomatic relations with the PR China were naturally also prohibited, which, after its break with the Soviet Union, had by no means closed its embassy in East Berlin. To avoid open contradiction with American policy towards China, the Federal Republic also refrained from other internationally visible official relations with the People's Republic and conducted bilateral trade without state agreements via the *Ostausschuss der Deutschen Wirtschaft* (German Eastern Business Association) at the “Voice of German Industries” (BDI, Bundesverband der Deutschen Industrie). With Nixon's shift in Sino-American policy, the re-admission of the People's Republic to the UN, and the associated exclusion of Taiwan, as well as the Federal Government's distancing from the Hallstein Doctrine, these considerations could have been set aside. Some Western countries, including Italy and Canada as well as Japan, quickly responded to China's diplomatic offers; France and the United Kingdom had maintained diplomatic relations with the People's Republic since the 1950s. However, at this point, the now Social Democratic-led Federal Government feared provoking the Soviet Union and thus endangering its own *New Ostpolitik*. Conversely, China also viewed West Germany's rapprochement with their common archenemy with suspicion and even momentarily, albeit unsuccessfully, offered itself to GDR as a new communist protectorate. But as soon as the Moscow agreement

the genocidal forced collectivization and industrialization through MAO's “Great Leap Forward,” which was condemned as adventurous by Moscow. See recently: Li and Xia, *Mao and the Sino-Soviet Split*, 2018; Shen and Xia, *Mao and the Sino-Soviet Partnership*, 2015; Li, *Mao's China*, 2014; Lüthi, *Sino-Soviet Split*, 2008.

320 Runge, “Kooperation im Wandel,” 2002, quote: 4. According to Runge, until about 1970/71 the FRG was even China's most important trading partner; however, Möller, *Außenpolitik der Volksrepublik China*, 2005, p. 86 assigns this role to Japan since the 1960s.

321 Runge, “Kooperation im Wandel,” 2002, p. 4.

was ratified by the *Bundestag* in the summer of 1972, everything moved quickly, especially since the respective foreign policy essentials, the Taiwan issue and the Berlin question, required no negotiation between Bonn and Beijing.³²² After only five weeks, the documents were ready for signature, and the first Chinese expert delegation for nuclear energy technology arrived in the Federal Republic in December 1972, followed in the first months of 1973 by others for the energy sector and color television systems.³²³

The quick pace of these developments was influenced by the fact that U.S.-China relations, after an initial boost through sports diplomacy in 1972/73, had already started to falter. This was mainly because the U.S. didn't want to abandon its alliance with Taiwan, and Kissinger sought to persuade his Chinese counterpart, ZHOU, to be more flexible on One-China policy by offering military-technological transfers. Even though ZHOU gave a diplomatically non-committal response, his party leadership criticized him for being overly conciliatory, causing a final rift with the Great Chairman. MAO, however, rejected ZHOU's offer to resign but forbade him from any future negotiations with the U.S. Only after the deaths of both key Chinese figures in 1976 did the new leaders, DENG Xiaoping in China and Jimmy Carter in the U.S., successfully normalize relations between the two countries in the subsequent two years.³²⁴ The Federal Republic was among those Western countries that benefited from the prolonged diplomatic impasse between China and the U.S., because in spite of everything, both sides wanted to keep doors open between China and the West. In just one year, from 1973 to 1974, the bilateral trade volume increased tenfold, and West Germany was swept up in the wave of Western enthusiasm for China.³²⁵

This development was likely aided by an economic delegation that visited Beijing and Shanghai in May 1973, marking the first-ever Federal German delegation to China.³²⁶ The delegation was led by East trade expert and MPS Senator

322 The above account is primarily based on Runge, "Kooperation im Wandel," 2002.

323 Note by Eikenberg (BMBW) from March 13, 1973, BArch B 138/44779.

324 Summarized after Millwood, "(Mis)Perceptions," 2019, especially pp. 897–904, who reconstructed Kissinger's misjudgments of internal Chinese power relations and his unfortunate contribution to the political isolation of ZHOU.

325 Runge, "Kooperation im Wandel," 2002, p. 7. However, this enthusiasm was viewed rather skeptically in BMBW: BAK B 138/44.779: Bente (Consulate General Hong Kong) to AA July 9, 1973; annotations by BMFT officers on July 13 and July 25, 1973 to this report and a press clipping ("Wie weit ist die 'gelbe Technik'? Erstaunliche Fortschritte Chinas in Wissenschaft und Produktion") from the *Frankfurter Rundschau*.

326 For comparison: From March or April to July 1973, 80 Japanese and 44 American "delegations of all kinds" visited the People's Republic of China; exchange with the EU was comparatively low; by the end of 1974, the USA hoped to become the second largest trading partner after Japan; thus, any previous leading position of Germany had disappeared despite the tenfold increase in trade volume from 1972 to 1973 shortly after China's foreign policy opening; cf. Embassy Beijing to AA (Political Biannual Report People's Republic of China) Oct. 3, 1973, BArch, B 138/44779.

Berthold Beitz, who had accompanied the science delegation of the then Federal Minister of Education to the Soviet Union as a special guest in 1970. Now, the roles of the two confidants were reversed. However, Leussink, who had joined the MPS Senate after resigning from his ministerial post in 1972, did not become the “uncrowned king” of this delegation as Beitz had in Moscow. However, he successfully communicated West Germany’s “interest in an equitable exchange of students, interns, scientists, as well as future joint scientific relations,” drawing attention to West German scientific organizations, particularly the MPS.³²⁷ He likely also benefited from the standstill in U.S.-China relations, which extended to scientific exchanges despite the efforts of a committee specially established for this purpose and affiliated with the National Academy of Sciences (NAS), known as the Committee on Scholarly Communication with the People’s Republic of China (CSCPRC)—an impasse that was only overcome in 1977/78.³²⁸

Leussink primarily visited institutes at Qinghua University and the Chinese Academy of Sciences (CAS) in Beijing and was surprised to note that about one-third of the experiment leaders in the physics labs were women as was CHEN Ping, the head of the Office for Foreign Relations. Nonetheless, Leussink insisted on speaking with the scientific director and vice president of the academy, WU Youxun, to whom he conveyed greetings from MPS President Lüst.³²⁹ He credited his own and Beitz’s insistence for receiving an invitation for an MPS delegation at the farewell dinner. This invitation had been quickly coordinated between the CAS, Qinghua University, and the Chinese Ministry of Foreign Affairs and was expected in about three months:

I attribute this encouragingly concrete conversation to intensive consultations on the Chinese side following my various discussions.³³⁰

The highlight of the trip was the subsequent midnight meeting with ZHOU Enlai in the Great Hall of the People. While there was talk of potential low-cost imports of Chinese food and textiles into the European Economic Community (EEC), which members of the West German delegation from large industry and finance hoped would put pressure on what they viewed as inflated prices set by European manufacturers, the discussion focused even more on the newly

327 Leussink, “Bericht über die Chinareise May 21—June 1, 1973—Wissenschaftliche Aspekte,” AMPG, II. Abt., Rep. 70, No. 292, fol. 77. The report was designed as an attachment to Beitz’s delegation report and is also found in the holdings of AA, BMBW, and BMFT. The delegation included, among others: Herbert Culmann (Lufthansa), Christian-Peter Henle (Klöckner), Konrad Henkel (Henkel), Alfred Herrhausen (Deutsche Bank), Ernst Wolf Mommsen (Krupp); see Käppner, *Berthold Beitz*, 2010, Chapter “In einem unbekannten Land. Die China-Reise 1973.”

328 Millwood, “Exceedingly Delicate Undertaking,” 2021.

329 Vice-President and physicist WU Youxun represented the scientific community, while President and historian GUO Moruo, who also served as Vice-President of the People’s Congress, represented the political leadership of the CAS; cf. Leussink, “Bericht über die Chinareise 21.5.–1.6.1973,” AMPG, II. Abt., Rep. 70, No. 292, fol. 95.

330 *Ibid.*, fol. 97.

established scientific contacts that Leussink had made. The Prime Minister considered these “absolutely necessary” and stressed that their intensification should be “seriously tackled as soon as possible,” possibly articulated in German by ZHOU.³³¹ In any case, after bidding farewell to the other members of the delegation and also Ambassador Pauls, ZHOU had a private conversation with Beitz about memories related to Berlin.³³²

Foreign Science Policy in Limbo

In the ensuing months, the scientific opportunities and political risks were examined on all sides. The “Group for Science and Education in the State Council,” directly under Prime Minister ZHOU and equivalent to a ministry, deemed scientific collaborations and long-term stays of Western scientists in China as premature, considering the inadequate housing and lab facilities by European standards. However, both the group and ZHOU personally were highly interested in student exchanges and, furthermore, in intensive reciprocal visits by specialized scientific delegations.³³³ In contrast, the CAS remained keenly interested in the exchange initiated by Leussink with the MPS, as Ambassador Pauls learned during his inaugural visit there in June 1973. Interpreting WU’s comment, Pauls conveyed that WU was far from satisfied with the recent “disempowerment” of the CAS, which had initially surged with the Twelve-Year Plan of 1956 and during the “Great Leap Forward,” but ultimately had to cede sixty percent of its institutes to regional authorities and industry:

[...WU’s) comments on the achievements of the Cultural Revolution were, at best, perfunctory. To elucidate the significance of connecting theory and practice, and the contributions of worker and peasant scientists, he even resorted to using a prepared script.³³⁴

Here, the ambassador saw a productive starting point for a West German foreign science policy that would strengthen the backs of Chinese critics of the Cultural Revolution during the phase of reopening universities and restructuring the science system. He recommended to the Foreign Office that, as soon as the

331 Ibid., fol. 77; Leussink quotes ZHOU “verbatim” here. GE Mingyi from the International Department of the CAS described the sequence of the conversation slightly differently in his contribution to the tenth anniversary of the Sino-German STC on Dec. 14, 1989, but confirmed ZHOU’s personal intervention in favor of cooperation between MPS and CAS, AMPG, II. Abt., Rep. 70, No. 91, fol. 79–89. On ZHOU’s role in Chinese science policy, see Wang, “Cold War and the Reshaping,” 2014, p. 358; Wang, “Chinese Debates,” 2018.

332 On the economic interests and the private conversation see Käppner, *Berthold Beitz*, 2010, chapter “In einem unbekannten Land. Die China-Reise 1973.”

333 Leussink, “Bericht über die Chinareise 21.5.–1.6.1973,” AMPG, II. Abt., Rep. 70, No. 292, fol. 77. Note by Wiercimok (DFG) from Oct. 4, 1973 and note by IIA5 (BMBW) from Oct. 16, 1973, BArch B 138/44779.

334 Pauls to AA on June 28, 1973 (copy for BMBW), BArch B 138/45509.

invitation from the CAS to the MPS was received, “an opportunity should be given to as many (prominent) German scientists as possible to participate in a delegation trip.” He then wanted to propose to the Chinese side a division into multiple groups “to visit as many individual institutes throughout the country as possible.” The Office forwarded this suggestion favorably to the Federal Ministry for Education and Research (BMBW).³³⁵

At that time, preparations were underway for the planned October 1973 trip to China by Leussink’s successor as Minister, Klaus von Dohnanyi. The Chinese Embassy in Bonn had courteously indicated in advance that the delegation should be kept as small as possible, including at most one journalist.³³⁶ Within the BMBW, there was a skepticism similar to that in the Federal Ministry of Research and Technology (BMFT), which had been responsible for the MPS since the division of the Ministry of Science in 1972. This skepticism towards the rampant China euphoria was reinforced, especially after learning from the Consul General in Hong Kong about the observations of a “US Science and Technology Mission.” It was reported that the “level of Chinese research and teaching was even lower than expected” and—apart from “astonishing individual achievements (e.g., insulin research, birth control)” —it was lagging three to twenty years behind international research.³³⁷ Dohnanyi ultimately took no scientists with him to China, but was accompanied only by his wife, a journalist, and a few ministerial officials, along with the Free Democratic Party’s educational policy spokesperson Hildegard Hamm-Brücher, who subsequently reported more with fascination than criticism on the success of the “Education Revolution,” into which the Cultural Revolution had been transformed, in the *Süddeutsche Zeitung*.³³⁸ In fact, the delegation primarily visited educational institutions ranging from kindergartens to universities.

Nevertheless, Dohnanyi had negotiating mandates and cooperation offers from all West German organizations active in international scientific exchange—DFG, DAAD, AvH, and MPS—in his luggage.³³⁹ Shortly before the trip, he was also informed about the expected resistance. The Taiwan issue played no role at the government level, thanks to the Federal Republic’s non-recognition of Taiwan. Still, it was relevant to subordinate or state, semi-state or state-financed

335 Pauls to AA on June 28, 1973 (quotes) BArch, B 138/44779; Marginal note by Nissen (AA) from July 6, 1973, BArch B 138/45509.

336 Memo from Klisch (BMBW) on June 28, 1973, BArch B 138/44779.

337 Bente (Consulate General Hong Kong) to AA on July 9, 1973 (duplicate for BMFT) with marginal remarks (quotes), BArch B 138/44779—Bente reported on a conversation with the delegation member Ezra Vogel (Harvard University) on June 25, 1973. Memo from Wiercimok (DFG) on Oct. 4, 1973 and memo regarding BMFT on Oct. 16, 1973, BArch B 138/44779.

338 Klisch (BMBW) to WANG Yu-tien (Embassy of PR China) on Oct. 11, 1973, BArch B 138/44779. Hamm-Brücher, “Chinas zweiter Sprung,” *Süddeutsche Zeitung*, Nov. 24, 1973.

339 Memo from Wiercimok on Oct. 4, 1973 (DFG), BArch B 138/44779; Memo from Sobotta on Oct. 12, 1973 (AvH, MPS, DAAD), *ibid.*

organizations, whose status were always (mis-)interpreted by one side or the other based on their own understanding of institutional policy. The Group for Science and Education in the Chinese State Council had learned over the summer that the “DAAD had connections with the ‘Taiwan Clique,’” and insisted on a “different executive organization.” Consequently, the first students from both countries were provisionally declared as “scholarship recipients of the Federal Government” until a more “insignificant organization” could be found for managing the exchange program.³⁴⁰ Similar reservations were to be expected for other scientific organizations if it was not possible to convey to the Chinese side the West German understanding of privacy in science policy:

Our cultural relations exist with all peoples and areas that desire contact, regardless of their respective domestic situation or international legal status. The measures serve people; they are not carried out by state organizations but by private ones. The Chinese government should understand this, as, for example, a table tennis team from Taiwan was invited to the People's Republic of China.³⁴¹

Thus, the goal was to find a sort of “ping-pong team” for Federal German foreign science policy. In the meantime, the BMFT had informed the MPS about the expected Chinese invitation.³⁴² The international relations officer Nickel immediately set about developing a negotiation strategy, especially since Leussink had invited representatives from all West German organizations and ministries interested in scientific exchange with China for a meeting with members of the Chinese Embassy at the end of July 1973.³⁴³ Two obstacles had to be navigated from the MPS's perspective: on the one hand, within German territorial waters there was the DFG's claim to exclusive representation in international scientific exchange. The experiences with the comparable agreement between the DFG and the Soviet Academy of Sciences were “very negative,” Nickel summarized in his strategic memo:

Ever since we have been conducting scientist exchanges through this agreement, the institutes have hardly been able to invite a scientist they value to their institution, and vice versa.³⁴⁴

So dependency on a new quota agreement with the DFG and a communist academy was to be avoided, if possible. On the other hand, in Chinese waters, Taiwan—where the rival foreign science policy institutions DFG and DAAD

340 Memos regarding DAAD and Taiwan or China on Sept. 5, 1973; Memo from Wiercimok (DFG) on Oct. 4, 1973; Telegram from the Embassy in Beijing to AA on Oct. 5, 1973 (quote), *ibid.*

341 Memo from Hellbeck (AA) on Oct. 10, 1973, *ibid.*

342 Pauls (Embassy in Beijing) to AA on June 5, 1973 (duplicate for BMFT), additional memo BMFT on June 24, 1973, *ibid.*

343 Protocol of the 76th Senate meeting on Nov. 23, 1973 in Düsseldorf, AMPG, II. Abt., Rep. 60, No. 76.SP, fol. 108.

344 Memo from Nickel on July 20, 1973, AMPG, II. Abt., Rep. 70, No. 128, fol. 383.

had already run aground —had to be circumvented widely if the MPS wanted to reach its goals.³⁴⁵ In fact, following the July meeting, the Chinese Embassy in Bonn inquired in writing about the MPS's Taiwanese scholarship recipients and demanded they be "subordinated" to them.³⁴⁶ After consultation with President Lüst, Nickel chose to resolve this unacceptable imposition over the phone, despite all linguistic challenges, rather than letting it become an issue. While the MPS did have Taiwanese guests and would continue to invite them "based on mutual agreements among scientists," the invitations were "based solely on scientific and not political considerations." The stays were funded in various ways, and "official contacts between Taiwan and the Max Planck Society" did not exist.³⁴⁷ The Chinese Embassy agreed to this language regime after another personal conversation between Lüst and Ambassador WANG and finally passed on the invitation from the CAS in early January 1974. President Lüst of the MPS accepted it immediately, expressing gratitude and reciprocating with a desired counter-invitation.³⁴⁸

So, what qualified the MPS to be the "ping-pong player" of Federal German foreign science policy? First of all, this was primarily due to its fundamentally preferred and, in the case of the Republic of China (ROC), actually practiced contract-free handling of exchanges at the institute level. This allowed the MPS to convincingly assert to the "Red" Chinese side that it had no formal relations with Taiwan that would oppose the One-China policy. Secondly, its research profile most closely resembled the post-Cultural Revolution CAS, which had had to relinquish many of its institutes founded from the mid-1950s onward to party organs, industrial ministries, or provincial administrations. The CAS was now primarily focused on less politically and industrially aligned research fields without, however, committing to basic research, as claimed by the MPS.³⁴⁹ Third, the remaining overlap in subject matter with the MPS was focused on the less ideologically suspect natural sciences. This aligned with China's

345 Due to the Taiwan issue, no cooperation agreements were concluded with DFG and AvH, Embassy in Beijing to AA on March 17, 1975, Appendix: Cultural Policy Annual Report 1974, p. 44, PA AA B 97-REF. 610/350.

346 Memo from Sobotta (BMBW) on Oct. 12, 1973 (quotation), BArch B 138/44779.

347 Memo from Nickel on Aug. 30, 1973 (quotations), AMPG, II. Abt., Rep. 70, No. 128, fol. 385. BArch B 138/44779: Memo from Sobotta (BMBW) on Oct. 12, 1973. Lüst himself has often emphasized in interviews that he did not give in to the Chinese impositions on the Taiwan issue: Lüst (Nolte) 2008, p. 196; Interview Lüst (Renn and Kant) on May 18, 2010, fol. 28–29.

348 Protocol of the 76th Senate meeting on Nov. 23, 1973 in Düsseldorf, AMPG, II. Abt., Rep. 60, No. 76.SP, fol. 108; Protocol of the 77th Senate meeting on March 25, 1974 in Munich, AMPG, II. Abt., Rep. 60, No. 77.SP, fol. 142. WANG Yu-tien (Chinese Embassy Bonn) to Lüst on Jan. 10, 1974, AMPG, II. Abt., Rep. 70, No. 303, fol. 315; Lüst to WANG on Jan. 21, 1974, AMPG, II. Abt., Rep. 70, No. 303, fol. 313–314.

349 Regarding the history of the Academia Sinica (AS) founded in 1928, which continued under this name after the civil war in Taiwan, and the Chinese Academy of Sciences (CAS) newly founded in Beijing in 1949 following the Soviet model, into which a part of

intent—unusually consistent with Eastern Bloc countries—to limit exchanges with the West to these fields.³⁵⁰ And finally, the informal approach to scientific exchange, as often practiced by the MPS, also suited the Chinese negotiators on a domestic level. During the mid 1970s, the ideological struggles between the radical Cultural Revolutionaries—the “Gang of Four” centered around MAO’s fourth wife, JIANG Qing—and moderate politicians like ZHOU Enlai and DENG Xiaoping were as yet unresolved. The future structures of the education and science system, including the CAS, which would be reorganized again in 1978, were also uncertain.³⁵¹ In such a phase of political instability, flexible, contract-free actions were more compatible with potential policy swings at any time.³⁵²

- the mainland institutes of the AS and the Academy of Sciences Beijing were integrated and which, confusingly, was called the Academia Sinica for a longer period of time just like its Taiwanese counterpart, see Kühner, *Chinesische Akademie der Wissenschaften*, 1986, pp. 1–43. According to this source (ibid. p. 27), there were 120 in 1966 and 71 CAS institutes in 1978. For an understanding of basic research in China before and during the Cultural Revolution, see Wang, “Chinese Debates,” 2018; Wang, “Physics in China,” 2010.
- 350 Report on the trip of the first MPS delegation to China from April 19 to 27, 1974, AMPG, III. Abt., Rep. 150, No. 62: The MPS had not been provided with a directory of institutes. Only upon request did they receive a hastily prepared list of the “Research Institutions of Natural Sciences of the Academia Sinica” (36 in all), ibid., fol. 256–257, of which 17 were “under direct jurisdiction of the Academia Sinica,” ibid., p. 257 and 19 were “under dual jurisdiction of the Academia Sinica and Province or Municipalities with the latter as the main leading body,” ibid., p. 257. Unfortunately, Kühner, *Chinesische Akademie der Wissenschaften*, 1986, which describes the CAS institutes as of 1984 in detail, does not have a directory of all institutes around 1974; their total number would likely have been below rather than above the 71 in 1978.
- 351 After 1978, most of the institutes that had been outsourced during the Cultural Revolution were reincorporated into the CAS, but the humanities and social science institutes were incorporated into the Chinese Academy of Social Sciences (CASS), founded in 1977, see Kühner, *Chinesische Akademie der Wissenschaften*, 1986, p. 18.
- 352 In the fall of 1973, the newly appointed cultural officer of the West German embassy in Beijing, Marianne Lapper, had a tale to tell: as soon as she had gained an initial overview of the “cultural-political situation of the host country” and identified the first opportunities for West German cultural presentations in China, there began the ‘Pi-Lin Pi-Kong’ campaign focusing on criticism of LIN Biao and Confucius) in 1974, which prohibited the “import of Western cultural goods into the People’s Republic of China,” nullifying all her preliminary work, while she could hardly control the abundant export of Beijing operas, acrobats, and Wu-shu groups to West Germany: Embassy Beijing to AA on March 17, 1975, Attachment: Cultural-Political Annual Report 1974, esp. fol. 3, fol. 45–47, PA AA B 97-REF. 610/350; Note “German-Chinese Cultural Relations” Sep. 29, 1975, PA AA B 94-REF. 621/613/774. Regarding the uahdisputes around the CAS in connection with ‘Pi-Lin Pi-Kong’: Teiwes and Sun, *The End of the Maoist Era*, 2007, pp. 324–348.

The Art of Informality

What informal negotiation à la Chinoise entailed was something the MPS delegation, led by President Lüst, learned during their eight-day stay in Beijing and Shanghai in April 1974, essentially through a field trial. This was documented in the travel diary of accompanying press spokesperson Robert Gerwin.³⁵³ According to Gerwin, the first “political conversations” did not actually begin in the airport lounge prepared for the delegation’s reception, adorned with obligatory pictures of MAO on one wall and Marx, Engels, Lenin, and Stalin on the opposite.

There, the highest-ranking individuals from both sides, Lüst and CAS Secretary-General YUE Zhijian, merely exchanged polite platitudes while all others remained silent. But, likely during the ride into the city, they began to cautiously feel each other out. When Lüst prematurely clarified MPS’s intentions for the planned scientist exchange at dinner, there was no discernible response, just as there wasn’t the next afternoon when he repeated them in the first official meeting at the Academy.

Instead, Vice President WU, interspersing MAO quotes, portrayed the ups and downs of the Academy since 1949 as a revolutionary learning process that had brought scientists closer to “contact with the masses.”³⁵⁴ In the evening, they met again for Peking duck. Here, at last, the rest of the delegation members could converse in English, French, or German with their mostly older Chinese counterparts, who had almost all been educated in Europe and the United States in the 1920s and 1930s. In his table speech, WU now at least cautiously hinted at the purpose of the whole undertaking: to strengthen scientific exchange. The next day, during a Sunday excursion to the Great Wall and the Ming Tombs,

353 The delegation included Vice Presidents Gentner, Lynen, and Zweigert; the by-now experienced traveler to China and MPS Senator Leussink; MPS Treasurer Klaus Dohrn; and the China specialist from the MPI for Comparative and International Private Law, Frank Münzel. The journey is extensively documented in an 81-page report compiled from the contributions of the delegation members titled, “Bericht über die Reise einer Delegation der Max-Planck-Gesellschaft unter Leitung ihres Präsidenten, Professor Dr. Reimar Lüst, in die Volksrepublik China zum Besuch der Akademie der Wissenschaften (Academia Sinica) vom 19. bis 27. April 1974” (Report on the trip of the first MPS delegation to China from April 19 to 27, 1974) (AMPG III. Abt., Rep. 150, No. 62). There are also the “diary notes” (ibid.) by Gerwin, to be published as “Reisebericht. Mit der ‚Roten Fahne‘ durch Peking” (Travel report: With the ‘Red Flag’ through Beijing) 1974, and a short outcome report also by Gerwin, “Wissenschaftler-Austausch mit China,” published in *MPG-Spiegel* 4, 1974, pp. 1–2. “Rote Fahne” here refers neither to the flag nor the German-language propaganda paper of the PRC but to the model name of the luxury limousines in which the MPS delegation was chauffeured around Beijing and Shanghai.

354 Report on the trip of the first MPS delegation to China from April 19–27, 1974, AMPG, III. Abt., Rep. 150, No. 62, p. 215.



Fig. 22: Visit of the MPS delegation in Beijing and Shanghai April 19–27, 1974; MPS President Lüst conversing with the Vice-President of the CAS, WU Youxun (2nd from right) and Gentner (2nd from left).

details were discussed in passing, and this continued in the evening at a reception at the German Embassy. Ambassador Pauls had transformed the planned banquet into a buffet, giving the assembled scientists the opportunity to converse in varying groupings. Lüst was seen solving physical equations on paper napkins with atomic physicist ZHOU Peiyuan, arguably China's most influential natural scientist in foreign science policy before and after the Cultural Revolution. Meanwhile, Gentner and the head of the CAS Institute for Nuclear Energy, QIAN Sanqiang, talked about their times at the Paris *Institut du Radium/Institut Curie*. Even WU acknowledged in his official speech that they had “found the common language of cooperation.”³⁵⁵

Before the planned concluding meeting, there were two more days during which the MPS delegation in Shanghai completed additional scientific and touristic agenda items. Meanwhile, deliberations likely took place behind

355 Travel report: “With the ‘Red Flag’ through Beijing,” *ibid.*, fol. 202 verso. Details of banquet diplomacy can be gleaned from the article by Grudinski, a correspondent accredited in Beijing for FAZ: Grudinski, “Schießpulver,” *Frankfurter Allgemeine Zeitung*, April 25, 1974. Regarding ZHOU Peiyuan's role, see Barrett, “Minding the Gap,” 2020, pp. 200–203.

closed doors in Beijing to determine the final objectives. Back in Beijing, it was intended that the following evening, within the official setting of the Academy and in the presence of Chinese government officials as well as the cultural attaché from the Federal German Embassy, a summary would be drawn up. Substantively, there was now agreement that, for the foreseeable future, each year five to ten senior scientists should be invited reciprocally for four-week visits involving lectures and institute tours. Additionally, one or two younger scientists should work in the host country for up to 24 months. Since the Academy did not yet consider its own infrastructural conditions suitable for longer stays by Western guests, they wanted to enable more short-term invitations for the time being, in keeping with the principle of reciprocity that they often emphasized. The technical details were to be sorted out during the return visit of CAS scientists to Munich. Above all, everything—including the selection of scientists—should be managed “directly or through the embassies,” and not, as MPS preferred, through a joint committee of MPS and CAS members. In this vein, “a written agreement was deliberately avoided by mutual consent.”³⁵⁶ Instead, this oral arrangement, which evidently met the Chinese negotiators’ expectations, was approved, given a somewhat official blessing by a surprise state reception for both negotiating delegations the next morning, attended by Deputy Prime Minister LI Xiannian and only joined at the last minute by Ambassador Pauls.³⁵⁷

However, the mutual agreement to manage all future exchanges without any further written arrangements was underpinned by very different understandings of informality. For the MPS, the aim was to avoid the involvement of state agencies and mandatory quota requirements. Instead, visits by their staff to Chinese institutes—considered scientifically meaningful by their own institutes—as well as the invitations from interesting Chinese colleagues to the MPIs should be directly arranged with the CAS. The relevant ministries, BMFT and the Foreign Office, should at best be informed about what had been arranged with CAS. On the other hand, while CAS also found it important not to commit contractually and to remain flexible according to the current domestic political situation, they would obviously not undertake anything that hadn’t been vetted by the revolutionary committees in the respective institutes and approved by the political leadership of the CAS and even higher political authorities.

The role and significance of the embassies in the respective host countries could not have been more different. The Chinese Embassy in Bonn acted as an extended domestic arm of their government. Even if it was denied control over Taiwanese scholarship recipients, it had those from the People’s Republic firmly in its grip. The coercion observed in several MPIs, and later criticized by the

356 Report on the trip of the first MPS delegation to China from April 19 to 27, 1974, AMPG, III. Abt., Rep. 150, No. 62, fol. 214.

357 Travel report: “With the ‘Red Flag’ through Beijing,” *ibid.*, fol. 204.

West German press, to regularly deliver part of the stipends paid by the MPS to the embassy, likely did not even rank among the most threatening control practices to which Chinese scholars in the Federal Republic were subjected.³⁵⁸ In contrast, the MPS saw the Federal German Embassy in Beijing more as a service facility that they kept more or less regularly informed; occasionally it was asked to make inquiries with the Chinese counterparts and to provide interpreting assistance. They were also glad to use it as the organizer of receptions. They occasionally used its diplomatic mail, in cases where they preferred not to deal directly with the Chinese Embassy in Bonn.³⁵⁹ In the embassy secretaries WU and YUAN Chengyu, Nickel had long found direct contacts to whom he turned for mediation in communication issues with the CAS.³⁶⁰

Ambassador Pauls was neither satisfied with this situation nor with the “rush by many German agencies to initiate contact with the People’s Republic of China” that started immediately after diplomatic relations were established. Ministries like the BMFT or the Federal Ministry of Health, “as well as individual German institutes and societies” like the Hartmann-Bund (a German organization of medical professionals) sent or received all sorts of delegations and made “uncoordinated arrangements” with Chinese parties. The embassy usually found out about these activities by chance, for instance, when the MPS delegation in Beijing freely expressed their “discontent” “within internal circles” about BMFT’s simultaneous activities. In the fall of 1974, the Ambassador emphatically urged his superiors to take on “the role of coordinator and director,” especially to bring BMFT and MPS to the same table and ensure that the postponed written agreement between MPS and CAS would soon be completed, in order to “steer

358 Seeger (MPI Metal Research) to Lüst on Oct. 31, 1979, AMPG, II. Abt., Rep. 70, No. 286, fol. 20–21; more on the scholarship deductions below. How intrusive the controls by the Chinese embassies could be in individual cases is described by CHANG Jung, who came to London as a scholarship holder in 1978, in the epilogue to her family biography: Chang, *Wilde Schwäne*, 2015, pp. 714, 718–724. YANG Dawei, a member of a Chinese delegation in Munich, wrote a desperate letter by hand and in German to Nickel and his assistant Peter on Nov. 16, 1979: He had left his wallet, including a travel check for 5,000 DM for the delegation, in a taxi: “I can only ask you both for help and don’t dare to let anyone from our delegation know [...] I ask you both to keep it all secret until we find the wallet or at least the check isn’t collected by other people from the bank. Help me with this. I’m eagerly awaiting the results.” AMPG, II. Abt., Rep. 70, No. 379, fol. 201.

359 For example, the MPS preferred to send the gift on the occasion of its Beijing visit, the 268-volumes *Gmelin Handbook*, via the Chinese embassy to the CAS, rather than sending it with the Federal German diplomatic post and having it presented by the ambassador himself. See Gerwin (MPS) to MA Jin-wen (PRC Embassy in Bonn) on May 10, 1974, AMPG, II. Abt., Rep. 70, No. 303, fol. 271–272; MA Jin-wen to Gerwin on Jun. 20, 1974, *ibid.*, fol. 270. Protocol of the meeting on Nov. 26, 1974 in the BMFT, 4–5, PA AA B 94-REF. 621/613/618.

360 Memo from Nickel dated Nov. 6, 1974, AMPG, II. Abt., Rep. 70, No. 303, fol. 254.

clear of general confusion about sponsors and recipients of invitations, research projects, and study stays:"

Given the Chinese side's pronounced sense of coordinated planning via government channels and their very specific understanding of "using the foreign to improve one's own lot," [...] there could very easily be an imbalance to the detriment of the German side.³⁶¹

The Foreign Office shared this view, particularly the criticism of MPS, who insisted on operating "without involving official bodies" in China, which could not be accepted given the "foreign policy importance of all contacts with the People's Republic of China."³⁶² It promptly called for a departmental meeting and passed the baton to BMFT, which in turn invited the scientific organizations, including the WRK, the DAAD, and the MPS, to the next departmental meeting at the end of November 1974.³⁶³ Only after representatives of other organizations and ministries (including BMBW, AA, BMFJG) had sufficiently lamented their difficulties in even identifying a Chinese counterpart, and from the lack of West German coordination, did MPS representative Nickel speak up and take control: the comprehensive official travel report of the MPS delegation could immediately be sent to anyone; the first phase, which was the orientation phase, of the two phases in the expansion of scientific relations had commenced; it also extended to areas like health care and jurisprudence, whose later treatment need not be confined to the MPS; moreover, they maintained direct contact with the Chinese embassy. When the young representative of the Foreign Office, Hans-Bodo Bertram, whose first overseas assignment in Beijing was imminent, politely inquired to what extent the German embassy "could already engage in activities in this context," Nickel informed him that he should please ascertain "how far the Chinese ideas for collaboration with MPS had progressed." For the future, all parties pledged to provide the earliest possible notification about planned China initiatives and entrusted the MPS with the lead within the 'Holy Alliance' of science organizations. Through their Committee for the Coordination of Foreign Relations (AKA, Ausschuss zur Koordinierung der Auslandsbeziehungen), it would inform the BMFT, and the BMFT would, in turn, inform the other ministries; conversely, the BMFT would communicate all measures of the Federal Government to the AKA through the MPS.³⁶⁴

361 All the above quotes: Pauls to AA Oct. 4, 1974. On the delegation of the Hartmann-Bund; note on the interdepartmental discussion in the BMFT on Nov. 4, 1974, PA AA B 94-REF. 621/613/618.

362 Memo from Department 414 (AA) dated Oct. 14, 1974, *ibid.*

363 Note on the interdepartmental discussion in the BMFT on Nov. 4, 1974, *ibid.*

364 All quotes: Protocol of the meeting on Nov. 26, 1974 in the BMFT, pp. 4–5, *ibid.*; regarding Bertram: Köbler, "Wer ist weiter," <http://www.koeblergerhard.de/weristweiterwer.htm>, last accessed June 30, 2024.

The Foreign Office and the BMFT thus failed in the case of China not only in their goal of incorporating the MPS into a government-coordinated foreign science policy. Both ministries had to accept the MPS's unique special role until the end of the 1970s.³⁶⁵ Until then, as the embassy's annual cultural reports repeatedly conceded, the delegation visits and individual trips negotiated annually between the MPS and the CAS remained the real driving force behind West German-Chinese scientific and cultural exchange. From the embassy's perspective, however, the advantages lay exclusively on the Chinese side, which could unilaterally skim off scientific knowledge and technical know-how, even if the exchange was more or less balanced when measured in person-months.³⁶⁶ In contrast, all attempts by FRG's China policy, similar to those of other Western European countries, to move towards an intergovernmental STC agreement or even a cultural agreement came to nothing—even beyond MAO's death, the official end of the Cultural Revolution, and the arrest of the "Gang of Four" in 1976. Even state visits by Chancellor Schmidt in 1975, Research Minister Matthöfer in 1976, or Foreign Minister Genscher in 1977 did not change the situation very much.³⁶⁷ Only with the rehabilitation of DENG Xiaoping, who had been removed from office multiple times and most recently in 1975 by MAO, would not only economic but also foreign science policy directions be reset. At the beginning of his political resurgence in 1977/78, the early Paris party comrade of the by then deceased ZHOU Enlai primarily focused on the fourth of ZHOU's "four modernizations," namely the development of science and technology, and later also dropped Taiwan-related reservations against other West German organizations active in scientific exchange, such as DAAD, DFG, Fraunhofer Society, and Humboldt Foundation.³⁶⁸

365 Memo (AA Ref. 621) dated Feb. 27, 1975, PA AA B 97-REF. 610/450; status report Sep. 29, 1975, PA AA B 94-REF. 621/613/774.

366 Cover letter Pauls to AA on March 17, 1975 regarding the Kulturpolitischer Jahresbericht 1974, PA AA B 97-REF. 610/350; Pauls to AA on Mar. 10, 1975; cover letter Pauls to AA on Mar. 18, 1976 regarding the Kulturpolitischer Jahresbericht 1975, PA AA B 97-REF. 610/450. Kulturpolitischer Jahresbericht 1976, fol. 42, PA AA BAV 190-PEKI/7658.

367 Regarding the Chancellor's visit and the failure of a months-long prepared cultural dialogue, see the letter from the frustrated cultural attaché Lapper in Beijing (Lapper to Schmid on Nov. 24, 1975, PA AA B 97-REF. 610/450; Schmid to Lapper on Dec. 5, 1975, *ibid.*) Max Frisch and C. F. v. Weizsäcker, who accompanied Helmut Schmidt, did leave reflections on their journey but did not leave any mark on the political agenda (C. F. v. Weizsäcker, "Reflexionen nach vier Tagen in China 29.10.–2.11.1975," AMPG, II. Abt., Rep. 70, No. 302, fol. 118–127); Frisch, "Nein, Mao habe ich nicht gesehen," 1976. Report on the journey of BM Matthöfer to the People's Republic of China Mar. 1–12, 1976, BArch B 138/45509.

368 Vogel, *Deng Xiaoping*, 2011, pp. 197–200. Cultural Annual Report 1977, sheet 10, PA AA BAV 190-PEKI/7658.

Staying on Course Abroad: Basic Research!?

Until then, it was only through mutual scientific delegation visits between the MPS and the CAS that it was possible to go beyond tourist activities and superficial institute visits to reach the places of research in China and to establish working contacts with Chinese colleagues.³⁶⁹ Personal contacts, like those with ZHOU Peiyuan, QIAN Sanqiang, and last but not least his colleague and wife HE Zehui—who had lived with the Gentner family during her research stay in Heidelberg at the Physics Institute of the KWI for Medical Research from 1943 to 1945—were helpful but far less frequent than contacts with Soviet colleagues.³⁷⁰

They did little to mitigate the impact of the experience of foreignness, which compelled almost all MPS travelers to China well into the 1980s to write extensive travel reports to make sense of their impressions, filling binder after binder in the Administrative Headquarters.³⁷¹ The experiences linked with discrepant perceptions were thus disconcerting on three levels. On the level of *Lebenswelt* observations in scientific institutions, which were at least comparable with one's own, even if often sorted by degrees of backwardness measured in years, differed from impressions of everyday social life, whose otherness could only be observed with astonishment. On the communicative level, collegial technical discussions were often experienced as open, but the hidden political decision-making processes concerning possible future cooperations or even short-term changes in the travel program—and the corresponding (non-)communications—could not be deciphered. Finally, on the epistemic level, one encountered scientific practices in the visited institutions that—whether backward or not—were largely familiar but were embedded in a system of societal knowledge production that seemed exotic to them.³⁷²

369 The first four scholars went to the MPI for Solid State Physics in Stuttgart and to the MPI for Biophysics in Frankfurt/M., see Nickel, "Aufbruch ins Ungewisse," 1994, p. 27.

370 HE had received her PhD in 1940 from the Technische Hochschule Berlin and initially worked for Siemens; after the war, she researched for another three years with QIAN at the Nuclear Chemistry Lab of the Collège de France in Paris before she returned to China with him and their young daughter. There, both continued their research in nuclear physics and also worked in the Chinese atomic bomb program. See Kant, "Lichttherapie," 2008, pp. 90–91. For the reunion of HE and Gentner in 1974, see Ruge, "Spektographen," *Die Welt*, May 18, 1974.

371 See, among others, AMPG, II. Abt., Rep. 70, No. 187–189, 213–214, 292, 302, 304, 471–475. Barbara Spielmann, China expert for the MPS since 1987, reviewed around 400 travel and expedition reports received by 1994 on the occasion of the 20th anniversary of the China program and wrote a concise, occasionally ironic ethnographic analysis: Spielmann, "Einmal Peking-Ente," 1994.

372 Summary based on travel reports collected and partially used by Heinz Staab for a magazine article: Travel report Gierer (China trip Aug. 17–Sep. 14, 1975), fol. 163–196; Travel report Genzel/Roth/Hüfner/Wagner (China trip November 1975), fol. 132–162; Travel report Haelen/Kleihues/Straub/Wenzel (China trip Sep. 5–16, 1976), fol. 16–34;



Fig. 23: Visit of the MPS delegation to the CAS Institute for Atomic Energy (Beijing) on April 26, 1974. From right to left: HE Zehui, Wolfgang Gentner, MPS President Lüst, QIAN Sanqiang (institute director), far left probably ZHOU Peiyuan.

In their search for collaboration opportunities, MPS travelers to China were focused on basic research, in keeping with the long-established institutional understanding in West Germany. They were puzzled when shown in-house workshops where delicate instruments, already available on the global market or at least from specialized firms, were being manufactured. They could still understand the political rationale that after the shock of 1960—when they had to deal with incomplete installations and missing equipment parts following the withdrawal of Soviet advisors—China never wanted to rely on foreign experts and suppliers again but to trust in its own strengths, in line with MAO's mantra. Be that as it may, to Western visitors, the labor effort of the technicians, who often made up a large part of the institute's staff, appeared to be sheer waste. This was especially true when, for instance, multiple institutes each assembled their own gas chromatographs instead of centralizing their production. Yet, they considered it possible that this, too, was intentional, reflecting the cultural revolutionary mandates to connect theory with practice and to bring science

Travel report Kreyenberg (China trip Oct. 17–31, 1976), fol. 378–416, III. Abt., Rep. 150, No. 62, fol. 65–127. See also Staab's handwritten notes (China trip Aug. 17–Sep. 14, 1975), *ibid.*, fol. 65–127; and his article: Staab, "Klassenkampf," 1976; WANG, "Chinese Debates," 2018.

to the masses, or vice versa. Each institute's leadership would inevitably claim this in their welcoming speeches. These "Mao-thoughts" also explained other observations: factories connected to universities where, for example, physics students in Shanghai produced switching elements for commerce; or short-term students presented as farmers learning the breeding of haploids in multi-week courses in Beijing. They also understood the still-obligatory rural and production semesters for students, whose school and study times—hardly since schools and universities had reopened—had been drastically shortened and reduced in content during the educational revolution and the *Pi-Lin-Pi-Kong* campaign that began in 1974 to criticize LIN and Confucius.³⁷³ They attributed it to the primacy of politics over economics and science that the social status of scientists hardly differed from that of other employees in the research institutes and that academic titles and entrance and final examinations had been temporarily abolished. Individual authorship in scientific publications, even in internationally outstanding works such as the X-ray structural analysis of bovine insulin, was taboo. Scientific breakthroughs were presented as successes of the Cultural Revolution and the ongoing *Pi-Lin-Pi-Kong* campaign. Obviously, these campaigns had achieved at least one of their goals, namely breaking the dominance of intellectuals.³⁷⁴

Heinz Staab, who had visited primarily biological and chemical institutes in China in the summer of 1975 along with Georg Melchers and Alfred Gierer, attempted to clarify these observations for his readership in a report for *Nachrichten aus Chemie und Technik*. He found it quite "reasonable" that a country as huge, impoverished, and politically turbulent as China would now aim for sustained growth "determined by investments generated through its own strength." The resulting slow pace would be utilized to "gradually prepare the predominantly agriculturally active population for the demands of a more industrialized society by familiarizing them with technical problems and tasks."³⁷⁵ This was a monumental challenge in a nation with a population of over 800 million, given that there were not even 120,000 Chinese university graduates in 1975, of which just 8,000 were in the natural sciences.³⁷⁶ In this context, the abandonment of entrance qualifications, the drastic shortening and specialization of university education, and the focus on broad-based promo-

373 Embassy Beijing to AA March 17, 1975, appendix *Kulturpolitischer Jahresbericht*, 1974, esp. 3, 45–47, PA AA B97-REF. 610/350; note "Deutsche-Chinesische kulturelle Beziehungen," Sep. 29, 1975, PA AA B 94-REF. 621/613/774.

374 Staab, "Klassenkampf," 1976, p. 72 refers to the English publication of the Peking Insulin Structure Research Group, "Insulin Crystal Structure," 1974.

375 Staab, "Klassenkampf," 1976, p. 73.

376 Rounded figures according to Kühner, *Chinesische Akademie der Wissenschaften*, 1986, p. 35; Kühner refers to official statistical data, which may be uncertain for the 1970s but still reveal the magnitudes; in the early 1970s, far fewer graduates left the universities reopened around 1970, but even before the Cultural Revolution, there were a maximum of 200,000 p.a. See also Staab, "Klassenkampf," 1976, p. 74.

tion rather than the peak scientific and technological achievements of a tiny intellectual elite seemed plausible. This situation demanded, as their official interlocutors repeatedly emphasized, rapid investigation of practical problems and quick development of technical solutions. But what could the MPS, with its highly specific understanding of basic research and its corresponding research agenda, do in this scenario? And why did it remain a sought-after, albeit not the only, West German cooperation partner throughout all the ongoing turmoil in Chinese science policy?

There were two points of connection that presented themselves to the MPS or that the Chinese side could capitalize on. Firstly, there were the relatively easy-to-reactivate or newly established personal contacts with natural scientists who had studied or researched in Europe or North America. These individuals, if they had come through the Cultural Revolution without too much damage, were now again in leading positions within academy institutes. Secondly, there was the pragmatic-autarkic understanding of science likely shared by this group of people. While they upheld the societal obligation of the utility of any scientific research, they also permitted or even demanded the examination of what the West termed basic research for its applicability to Chinese conditions, possibly adapting it, but never letting it pass them by—especially not the knowledge produced by the MPS, which was occasionally worthy of the Nobel Prize.³⁷⁷

The embassy in Beijing was not wrong in its assessment that the Chinese side was not too concerned with reciprocity in scientific exchange and primarily wanted to acquire knowledge, at least for the first four years of the informal agreement between the MPS and the CAS. Although more people traveled to China (52) between 1974 and 1978 than in the opposite direction (41), Chinese delegations were usually content to have selected institutes shown to them. Only the female chemist and deputy delegation leader YU Weile is known to have given lectures there.³⁷⁸ In contrast, MPS scientists regularly presented at Chinese institutes, held smaller seminars there, and were all the more satisfied the more questions came from the audience. However, their repeated requests to spend at least two or four continuous weeks at a Chinese institute to gain insight into discussion styles and workflows were not met.³⁷⁹ In contrast, the first four

377 During his 1975 trip to China, Gierer noted “that Chairman Mao’s demand for unity of theory and practice is surprisingly often interpreted in favor of promoting basic research” (Gierer to Lüst Sep. 19, 1975, AMPG, III. Abt., Rep. 150, No. 62, fol. 164.)

378 Nickel, “Aufbruch ins Ungewisse,” 1994, p. 26 could not help but compliment, in the circle of the MPS, the very rare appearance of a woman in a distinguished scientific-professional role: “with a lot of charm and great skill” she fulfilled her official duties. Numbers given *ibid.* p. 27.

379 Telegram Nickel to Berendonck (Peking embassy) on Sep. 5, 1975, AMPG, II. Abt., Rep. 70, No. 303, fol. 188; Peking embassy to MPS Munich on Aug. 28, 1975, *ibid.*, fol. 111–112; Gierer to Lüst on Sep. 19, 1975, *ibid.*, fol. 131–134; Lüst to GUO Moruo (CAS President) on Oct. 13, 1975, *ibid.*, fol. 182–183. Travel report Genzel/Roth/Hüfner/Wagner (November 1975), AMPG, III. Abt., Rep. 150, No. 62, fol. 132–162.

Chinese scholars who were trained at the MPIs for Solid State Research and for Biophysics from 1976 for two years could report precisely how things worked there, either already at the Bonn embassy or upon their return home.³⁸⁰

Great tactical skill was also needed to extend the exchange to the humanities, even if only slightly. Following diplomatic interventions, Ulrich Drobniig from the MPI for Comparative and International Private Law was allowed to travel to China in the fall of 1976 with an otherwise physicist-dominated MPS delegation. Along with MPS international relations officer Nickel, he laid the groundwork at the administrative level for future expansion and intensification of West German-Chinese scientific exchange, also beyond the MPS. Otherwise, Drobniig was amazed at the “unfathomably low role” of law, the “almost entirely missing legal consciousness of the population,” and the “meagerness of legal sources;” nowhere else, he argued, had the disappearance of law in communism predicted by Marx progressed as far as in China.³⁸¹

The MPS’s pedagogical investments into an uncertain future would soon pay off: Even before the 11th Central Committee of the Communist Party was to announce the new economic course at its historic third session in December 1978, China’s National Science Conference set itself the following goal: “Surpass England, catch up with the USA!” This goal proved to be as illusory as it had twenty years earlier during the “Great Leap Forward,” but it nonetheless set a sustainable impulse for China’s international scientific relations with the Western world, and thus for German-Chinese scientific cooperation.³⁸² The MPS would benefit from this in two ways: On the one hand, it could assert its autonomy among the institutions of Federal German foreign science policy active in China. On the other hand, its scientists were in a pole position when the scientific reconstruction in China actually began with ambitious projects.

The MPS in the Booming China Business of the Federal Republic

By 1978, the MPS was no longer the sole West German actor in the unregulated field of scientific and technical cooperation with China. Other scientific organizations like the DAAD, Humboldt Foundation, and Fraunhofer Society were also making their presence felt, despite initially being frowned upon in the People’s Republic due to their connections with Taiwan. In October 1978, a formal government STC agreement was signed, and its conclusion was broadcast live on Chinese state television via satellite. The Carl Duisberg Centers (CDC) followed

380 Nickel, 1994, p. 27.

381 Report on the trip of a MPS delegation to the People’s Republic of China Sep. 26–Oct. 17, 1976, AMPG, II. Abt., Rep. 70, No. 457, pp. 123–199. Quotes from Drobniigs’ part of the report, *ibid.*, pp. 174–180.

382 Kühner, *Die Chinesische Akademie der Wissenschaften*, 1986 pp. 16–18. Peking embassy to AA Nov. 29, 1984, AMPG, II. Abt., Rep. 70, No. 287, fol. 72–83. Kraus, *Wirtschaftliche Entwicklung*, 1979, pp. 508–512.



Fig. 24: Visit of the CAS delegation to the Institute for Extraterrestrial Physics (MPI for Physics and Astrophysics) in 1978. Dr. Leo Haser (left) explains the functioning of the balloon telescope for infrared observations, next to him HE Zehui (semi-hidden), FANG Yi (middle), Chinese Deputy Minister President, as of 1979 CAS President.

in the mid-1980s with a scholarship program funded by West German industry. Major research facilities like DESY and KFA, as well as various ministries, were already active.³⁸³ The BMFT supplemented the government agreement with seven specific departmental agreements with Chinese ministries, focusing on areas like raw material and materials research, metallurgy, and civilian radio navigation systems.³⁸⁴ It made no secret to its Chinese negotiating partners that it wanted to see the still one-sided scientific and technological transfer from the German perspective, including MPS's early contributions, as an entry ticket

383 Report on BM Matthöfer's trip to the People's Republic of China (Mar. 1–12, 1976) from Mar. 25, 1976, p. 9, BArch B 138/45509. Cultural Policy Annual Report 1977 China, fol. 9–13, as well as the cultural policy program plans for 1977 and 1978, PA AA BAV 190-PEKI/7658. Lambsdorff's (AA) note on scientific exchange with the People's Republic of China (undated, beginning of May 1986), in which the AA once again advocated for the establishment of a clearing house modeled on the U. S. system. This would provide an overview, coordinate the numerous initiatives, and counter the scholarship siphoning by the Chinese side: BArch B 138/56203. Regarding AvH's engagement in China, see Jansen, *Exzellenz weltweit*, 2004, pp. 173–178.

384 In 1978, the STC agreement was concluded at the government level (BGBl Dec. 30, 1978, Part II, No. 58, 1527); further agreements followed. Also, see note: Scientific Exchange with the People's Republic of China, undated, approx. 1985/86, BArch B 138/56203.

for a privileged position in future economic and industrial cooperation.³⁸⁵ In the MPS Senate, the Chairman of Mannesmann, Egon Overbeck, and the former President of the Deutsche Bundesbank, Karl Klasen, similarly recognized the role of the MPS in training the next generation of Chinese scientists. They saw it as a way to “promote the receptivity for products and technologies from the Federal Republic.”³⁸⁶ The BMFT early on tried to awaken China’s desire not just for research, but also for the use of nuclear energy and space, in the interests of the West German reactor and aerospace industries, despite concerns from the Foreign Office. The latter was especially skeptical about atomic science cooperation with a country that had not signed the NPT, and wanted to limit it to basic research, whatever that might mean for the “peaceful use of nuclear energy.”³⁸⁷ Nevertheless, both the space and the nuclear energy agreements were signed in 1984; European firm Eurosatellite led by MBB/Erno, Siemens, and the Kraftwerk Union were already champing at the bit. It would be another eight years, and two years after the end of the Cold War, that China would join the NPT.³⁸⁸

On the occasion of the tenth anniversary of the intergovernmental STC agreement in 1988, the BMFT’s press release compared its own expenditures to date, which amounted to 94 million DM for projects spanning its entire range of specialty programs for China, with those of the MPS for projects with the Chinese Academy of Sciences (CAS) totaling 5.3 million DM, as well as 10 million DM allocated for financing delegations and scientific exchanges. The Ministry mentioned both program tracks—its direct funding for scientific and technical cooperation and the scientific collaborations managed and primarily financed by the MPS from its own budget—in the same breath.³⁸⁹ Accordingly,

385 For example, StS Haunschild spoke to Vice Premier Minister FANG Yi during the first two sessions of the STC Commission (Report on the 2nd meeting of the Joint Commission for STC between the Federal Republic of Germany and the People’s Republic of China Oct. 22–23, 1981, Summary Evaluation, BAArch B 138/44766). In an evaluation of the first six years after the conclusion of the STC Agreement in 1978, the science attaché of the Federal German embassy in Beijing concluded that the STC had brought high reputation and trust to the FRG. For instance, in the metallurgy sector, it facilitated “the market access of German companies.” However, it was also noted that one should ensure that “the interests of the German economy in the STC with the People’s Republic of China are not neglected;” a “generous STC” is a suitable “advance service” to also compete with financially stronger American “companies such as Exxon, Occidental, Bechtel, or Fluor” (Nölle, Embassy Beijing, to AA on Nov. 29, 1984, AMPG, II. Abt., Rep. 70, No. 287, fol. 82).

386 Protocol of the 91st Senate meeting on Nov. 24, 1978, AMPG, II. Abt., Rep. 60, No. 91. SP, p. 271.

387 AA to Embassy Beijing on Aug. 10, 1977; Bertram’s note (German Embassy Beijing) from Sep. 6, 1977; Wickert (Embassy Beijing) to AA on Sep. 9, 1977, PA AA BAV 190-PEKI/7658.

388 Hahn’s (AA) note on Sep. 12, 1984: Status and conversation proposal for the visit of the Federal Chancellor to the People’s Republic of China (Oct. 7–13, 1984), AMPG, III. Abt., Rep. 150, No. 63, fol. 72–77.

389 BMFT press release from Dec. 14, 1988, AMPG, II. Abt., Rep. 70, No. 91, fol. 40–43. This folder comprehensively documents the anniversary event. The MPS financed collabora-

the anniversary celebrations in Bonn were staged as a state event. The Secretaries of State from the BMFT and the Foreign Office opened the ceremony, joined by the Deputy Chairman of China's State Commission for Science and Technology (SCST) and the Chinese Ambassador. While numerous representatives of the MPS were invited, they were not slated to speak—not even during the ten specialized presentations on topics like ocean research, manufacturing technology, or environmental technology, none of which were being worked on at the MPS. The first to speak was Hans Frewer from Siemens/KWU, discussing the ongoing—albeit lagging behind German expectations—reactor projects in China. Afterward, representatives from specialized Chinese academies and research institutes alternated with project leaders from Federal German universities and major research facilities.³⁹⁰ The speakers would still occasionally mention MPS's pioneering role, but in the larger German-Chinese STC business, it was no longer needed.³⁹¹

West Germany had risen to become China's largest trading partner in Europe; in overall Chinese foreign trade, it occupied the fourth position, having increased the German-Chinese trade volume sixteen-fold from 1972 to 1988. As a host country for Chinese students and researchers, it took the third place behind the United States and Japan.³⁹² Chinese Ambassador MEI Zhaorong explained this success:

[...] between the PR China and the Federal Republic of Germany, there are no fundamental conflicts of interest, nor do any unresolved issues linger from history that would need to be addressed. On the most important international issues, the views of our two countries coincide or are similar.³⁹³

In terms of dealing with the past, Germany benefited once more from the fact that the victorious powers of World War I, by taking over Germany's colonies,

tions between its own institutes and CAS institutes from its own budget; lecture and information trips by MPS scientists to China, which were not assigned to an MPS-CAS project, could also be funded from the special funds managed by the MPS of the BMFT if necessary. See note by Nickel on the conversation with Schiel on Nov. 8, 1982, AMPG, II. Abt., Rep. 70, No. 128, fol. 395–396; Schiel to Ranft on Oct. 28, 1982, *ibid.*, fol. 397–399; Ranft to Schiel on June 14, 1982, *ibid.*, fol. 400–404 and AMPG, II. Abt., Rep. 70, No. 137, p. 100. A comprehensive evaluation of the extensive files on the financing of the China program could not be provided within the scope of this study.

390 MPS invitation list, no date, AMPG, II. Abt., Rep. 70, No. 91, fol. 48–50; Program of the anniversary event on Dec. 14, 1988, *ibid.*, fol. 44–45.

391 Probst's (StS-BMFT) address from Dec. 14, 1988, *ibid.*, fol. 40–43; the head of the International Department of the CAS, GE Mingyi, went into more detail about the MPS in his expert lecture on 'Basic Research' (GE Mingyi, expert lecture "Grundlagenforschung," anniversary event on Dec. 14, 1988, *ibid.*, fol. 79–89.)

392 RUAN Chongwu's (SCST) speech from Dec. 14, 1988, AMPG, II. Abt., Rep. 70, No. 91, p. 61 verso; Lautenschlager's (AA) address from Dec. 14, 1988, *ibid.*, fol. 71 and p. 72 verso; MEI Zhaorong's (Chinese Embassy Bonn) speech from Dec. 14, 1988, *ibid.*, p. 78.

393 MEI Zhaorong's address from Dec. 14, 1988, *ibid.*, p. 78.

were also ultimately given responsibility for the post-colonial consequences. The foreign policy alignments mentioned by MEI primarily concerned the issue of national unity.

By now, the understanding of science, as reflected in the speeches of both German and Chinese speakers, had converged from both sides: science and technology were considered by all to be the most potent productive force; basic research was no longer an esoteric or elitist pursuit of knowledge but was woven into a network that connected it with applied research, technological development, production, and marketing. It was increasingly conducted not in ivory towers or self-sufficient lab workshops, but rather in bi- or multinational, project-oriented networks involving universities, institutes, large research facilities, and not least, companies, which the BMFT spokesperson saw as guarantors that “primarily those projects that have a reasonable chance of realization are taken up.”³⁹⁴ Moreover, scientific networks had multiplied—still uncoordinated, as the Foreign Office and its embassy in Beijing internally lamented time and again. Every self-respecting West German university was now signing its own contracts with Chinese partner universities; the *Länder* sought partner provinces for regional STC agreements; the DAAD managed, like everywhere in the world, the exchange of students and teachers, pre- and postdocs, lecturers with China; and the Fraunhofer Society had maintained its own cooperation agreement with CAS for mutually prioritized applied research since 1979.³⁹⁵

So what remained for the MPS to do? The task was to secure the achievements made during the turbulent final years of the Cultural Revolution and to mark the domains of the MPS in the now abundant landscape of Sino-German scientific relations. Encroachments from the BMFT, which wanted to include the cooperation projects of all West German research institutions, including the MPS, in its STC negotiations with the Chinese SCTC, had to be fended off. Sinologist Hans Kühner, who strengthened the MPS’s International Relations Unit personnel from 1980 to 1982 and again in 1994, emphatically rejected such intentions: the CAS was not, like other Chinese research centers, under the SKWT, but was directly subordinated to the State Council, and its president held

394 Probst’s address from Dec. 14, 1988, *ibid.*, p. 52 verso.

395 For further details on the turbulent development following the STC agreement of 1978 and the cultural exchange program of 1979, which involved numerous other West German program carriers (GTZ, DSE, Goethe Institut, and political foundations, among others), refer to a comprehensive note by Nikolaus Graf Lambsdorff (AA) from spring 1986. In this, the “painful absence of a coordinating instance” is lamented, capable of directing the “irrational use of intellectual and material resources,” the “travel enthusiasm and missionary consciousness” of many university lecturers, BArch B 138/56203. Regarding the agreement between the Fraunhofer Society and the CAS, see Trischler and Bruch, *Forschung für den Markt*, 1999, p. 275, who see the FhG here “in the wake of Bonn’s foreign policy,” as well as note by Nickel on Jan. 12, 1979, AMPG, II. Abt., Rep. 70, No. 286, fol. 633–634; Blaesing (BMFT) to Reichel (FhG) on Nov. 5, 1979, AMPG, II. Abt., Rep. 70, No. 379, fol. 130–132.

ministerial rank. It was only for this reason that it was “relatively autonomous in its decisions” and could “flexibly respond to our ideas:”

It is precisely this relative autonomy and flexibility that have contributed to the successful handling of our cooperation program so far.³⁹⁶

This delicate offshoot of scientific autonomy, which the MPS had nurtured over the years in China, was not to be suppressed in governmental negotiations.

Next, the relationship with the DFG had to be clarified.³⁹⁷ Following the preliminary talks that Nickel and Drobniig had conducted in Beijing in the fall of 1976, which suggested an expansion of the exchange beyond the MPS’s research fields, the two organizations had reached an agreement in 1977. Contrary to the usual representation of West German science abroad, the MPS would also represent the interests of the DFG, which meant primarily those of West German universities.³⁹⁸ In the agreement concluded between the MPS and the CAS in September 1978, both sides committed to considering the exchange interests of scientists from other institutions, particularly universities and their respective research fields, and, if necessary, to act as mediators.³⁹⁹ However, the circle of interested external parties and the number of Chinese institutions they wanted to visit rapidly expanded. Despite its commitment to the China program, the MPS’s International Relations Unit neither had the capacity nor the intention to act as an agency for all China trips by West German scientific communities, regardless of discipline. The DFG, whose Taiwan connections were now accepted in Beijing, would have welcomed the experienced MPS taking over all dealings with the People’s Republic, or, if it was not willing to do, instead to completely transfer the business, including the trained administrative staff, to the DFG. Neither was an option for the MPS. It wanted to continue to manage the exchange between

396 Ullerich (BMFT) to various research institutions on July 22, 1982, fol. 203, and Kühner (MPS) to Ullerich on Aug. 18, 1982, AMPG, II. Abt., Rep. 70, No. 285, fol. 197 (quotes). Documents for the MPS delegation’s trip to China from Oct. 16–31, 1983, attachment “The Chinese Academy of Sciences” (regarding the political status of the CAS), AMPG, II. Abt., Rep. 70, No. 292, fol. 124–125. The China officers of the MPS were: Hans Kühner 1980–1982 and 1994, Thomas Harnisch approx. 1983–1995, Barbara Spielmann 1987–2013 and, as a substitute in 1994/95, Angelika Lange-Gao.

397 AMPG, II. Abt., Rep. 70, No. 285 and No. 287: The following representation summarizes the extensive correspondence between MPS and DFG from 1979–1984.

398 Note by Nickel from Jan. 12, 1979 referencing the corresponding correspondence between MPS and DFG from Feb. 18 and Nov. 28, 1977, AMPG, II. Abt., Rep. 70, No. 286, fol. 635–642.

399 The agreement on scientific cooperation between the MPS and the CAS was signed in Beijing on Sep. 15, 1978, by the General Secretaries Ranft and YU Wen: AMPG, II. Abt., Rep. 70, No. 460, fol. 23–27. Note by Nickel from Jan. 12, 1979, AMPG, II. Abt., Rep. 70, No. 286, fol. 635–642 and from April 6, 1979, *ibid.*, fol. 630–632. Agreement on scientific cooperation between the MPS and the Academia Sinica (CAS) from Sep. 29, 1981, AMPG, II. Abt., Rep. 70, No. 287, fol. 14; implementation regulation for this agreement from Aug. 28, 1984, *ibid.*, fol. 18.

its institutes and the “relatively autonomous” CAS institutes independently.⁴⁰⁰ Moreover, it wanted to continue overseeing those research fields in geosciences, biosciences, and humanities—which often involved extensive field research in remote Chinese regions—with additional BMFT funds. While these topics were not pursued within the MPS, they were covered by relevant CAS institutes and might become interesting for the MPS at some point.⁴⁰¹ Everything else, the MPS wanted to leave to the DFG.

The talks with the DFG dragged on for several years, occasionally with a tense tone, but in the end yielded precisely the result the MPS had desired. During the 1981 renewal of the MPS-CAS contract, the DFG initially agreed to have its concerns in the natural sciences represented by the MPS on a transitional basis for another three years. By 1984, it came to terms with this arrangement as a permanent solution.⁴⁰² In the meantime, the DFG itself had entered into contracts with the Chinese Academy of Social Sciences (CASS), founded in 1979, as well as with the Chinese Ministry of Education responsible for universities; further contracts with newly emerging Chinese sub-academies, such as those for medicine and agriculture, followed. In the end, the DFG oversaw the humanities and social sciences, as well as all other academic and university exchange and cooperation requests, as long as they were not directed towards the CAS and thus the responsibility of the MPS.⁴⁰³ For internal West German coordination, a parity-based China Coordination Committee (CKA, China-Koordinationsauausschuss) was established, covering all relevant disciplines. This

400 Note by Nickel from June 26, 1980 in preparation for the Alliance meeting on June 30, 1980; Excerpt from the Alliance meeting on June 30, 1980, AMPG, II. Abt., Rep. 70, No. 86, fol. 39–54.

401 Note by Nickel for Lüst’s conversation with DFG Secretary-General Schiel on Nov. 8, 1982, AMPG, II. Abt., Rep. 70, No. 128, fol. 395–396; Note by Kühner for Ranft from Nov. 12, 1982, AMPG, II. Abt., Rep. 70, No. 285, fol. 33–35: The CAS, like Chinese foreign policy, which was keen on formal reciprocity, could thus deliver its counter-performance by organizing and largely financing the elaborate expeditions of West German or mixed teams within China. The expeditions of the field researchers were, so to speak, the compensation for the training of the Chinese scientific offspring, not only, but preferably at the Max Planck Institutes or by MPS scientists with their lecture series and seminars at CAS institutes. The CAS institutes initially had little to offer in return.

402 Ranft (MPS) to Schiel (DFG) on Oct. 30, 1980, AMPG, II. Abt., Rep. 70, No. 86, fol. 366–367. Agreement between DFG and MPS from Dec. 5, 1980, AMPG, II. Abt., Rep. 70, No. 128, fol. 405; Note by Nickel for Lüst from Aug. 3, 1984, AMPG, II. Abt., Rep. 70, No. 287, fol. 153–160; Ranft (MPS) to Schiel (DFG) on Nov. 7, 1984, *ibid.*, fol. 363–366.

403 DFG report on the trip of the DFG delegation to the PR China from April 6–21, 1981, AMPG, III. Abt., Rep. 150, No. 63, fol. 1–44 verso; Documents for the MPS delegation’s trip to China from Oct. 16–31, 1983, attachment “Die Chinesische Akademie der Wissenschaften” (on the contracts of the DFG with Chinese institutions and the contracts of the CAS with other German research organizations), AMPG, II. Abt., Rep. 70, No. 292, fol. 130–134.

committee convened regularly until 2004, examining incoming applications and deciding on the annual updates to the exchange program.⁴⁰⁴

All in all, the MPS achieved in its exchange with China precisely what it had vainly wished for in the case of the Soviet Union: it was able to shape its cooperative relations with the maximum level of autonomy possible with a socialist-authoritarian partner, without having to bend to the foreign policy directives of its own country. In the case of China, these directives were quite flexible in favor of economic cooperation anyway. Moreover, the MPS was not subjected to DFG procedures. Given that the MPS remained responsible for the exchange requests from colleagues in the natural sciences at German universities directed towards the CAS until 2011, it also kept an eye on developments in German-Chinese cooperation in those fields of natural sciences where Max Planck Institutes were not yet active.

A Lane for Basic Research in China

With the CAS, the MPS had partnered with the leading research institution in the Chinese science system. However, following the disruptions of the cultural revolution, this institution was reconstructed to be more hierarchical than ever. Moreover, the post-Maoist economic course did not allow this academic flagship organization to soar into the skies of limitless research freedom. It might have been elevated in 1978 to one of the pillars of the “Four Modernizations,” but it was also expected to contribute significantly to the fourfold increase (*fan liang fan*) in industrial and agricultural annual gross production “on its own” by the turn of the millennium. This goal had already been set by DENG Xiaoping in 1979, and the 12th Party Congress of the Communist Party of China (CPC) reaffirmed it in 1982.⁴⁰⁵ However, progress needed to be accelerated as the opening-up policy and increased tourism to China had produced undesired effects: growing foreign debt, a rising awareness of Western consumer standards among the population, and an emerging social movement demanding democracy as the fifth modernization. Prime Minister ZHAO Ziyang tasked science

404 Note from Nickel on Jan. 12, 1979, AMPG, II. Abt., Rep. 70, No. 286, fol. 635–642; template for the discussion of vice-presidents on April 6, 1979, *ibid.*, fol. 630–632; Ranft (MPS) to Schiel (DFG) on May 3, 1979, *ibid.*, fol. 547–547A; Schiel to Ranft on June 11, 1979, *ibid.*, fol. 546. The distinction between MPS and DFG and the responsibilities of the CKA were repeatedly contentious (e.g., communications between Ranft and Schiel in 1982) and confused the Chinese side, which quickly learned to use this competition to its advantage (note from Kühner on Dec. 29, 1982 about the CAS delegation’s visit, AMPG, II. Abt., Rep. 70, No. 285, fol. 11–16). Since 2011, MPS no longer manages any external China cooperations (written information from Sabine Panglung on Feb. 18, 2022.)

405 Li, *Glossary*, 1995, p. 90. Vogel, *Deng Xiaoping*, 2011, pp. 450–453; concerning the consequences for post-Cultural Revolution elite formation, see Andreas, *Rise of the Red Engineers*, 2009.

with addressing “topics that are central to economic construction and promise the greatest economic benefits”—a stance one could have heard similarly from the BMFT (Federal Ministry for Research and Technology) at the time.⁴⁰⁶ In an interview with the *MPG-Spiegel* at the end of 1982, President LU Jiaxi saw his academy “facing heavy tasks”:

To put it bluntly: We might be able to double the annual gross production of industry and agriculture through improved organization or increased productivity. But the essential responsibility for the second doubling rests with us scientists and technicians, and therefore the burden on our shoulders is very heavy, especially the load that the Academia Sinica must carry. It is possible that the share of basic research will only stabilize at its current level and can only be very gradually strengthened. Application-oriented research will be reinforced and its development possibly accelerated. This will not be without consequences for international cooperation. However, and this is my personal opinion, if we better organize the cooperation, we can also offset the negative factors.⁴⁰⁷

What was needed, then, was a creative approach to political directives and a flexible understanding of basic research. Both sides, the MPS and the CAS, were well-practiced in this and were determined to continue cooperating accordingly, especially in light of the encouraging developments of previous years.

Melchers had already been impressed by large-scale breeding experiments in the botanic institutes scattered across multiple provinces during his first trip to China in 1975. However, he was also reluctant to dismiss talk from a Revolutionary Committee Chairman about breeding “masses” in communes as “nonsense.”⁴⁰⁸ Three years later, he was upset again—this time over the overly uniform condemnation of the rebranded “Gang of Four” from left to right dissenters by his interlocutors and their unconditional support for the new government. But he also noted their greater professional openness: this time, they willingly explained to him the “Chinese methods for the recognition of new species,” which no longer involved “masses” but rather used a multi-tiered process via “seed inspection offices.” The “maintenance of scientific relations with foreign countries” had also become “virtually an obligation.” He found the substance of “what was offered by the Chinese, particularly at the boundary of basic and applied research,” to be “so good” that he invited HU Han, the director

406 ZHAO Ziyang in his speech at the 12th Party Congress of the CPC (Sep. 1–12, 1982), cited in: Documents for the official MPS delegation trip from Oct. 16–31, 1983, Historical Overview, AMPG, II. Abt., Rep. 70, No. 292, p. 120. This overview was composed by the sinologist Thomas Harnisch, who succeeded Kühner as the China expert after Kühner’s move to Ruhr University Bochum in 1983.

407 Interview with LU Jiaxi (Kühner) on Nov. 9, 1982, published version from 1983, p. 21 (quotations).

408 Travel report by Gierer from Aug. 17 to Sep. 14, 1975, AMPG, III. Abt., Rep. 150, No. 62, fol. 163–196 (quotation on p. 171); Melchers to Lüst on Oct. 2, 1975, AMPG, II. Abt., Rep. 70, No. 303, fol. 127–130.

of the Genetic Institute of CAS in Beijing and an expert in haploid breeding, to join the editorial board of the journal *Theoretical and Applied Genetics*.⁴⁰⁹ Staab, who again traveled to Beijing and Shanghai for lecture series in 1979 and was allowed to spend several days in the local CAS chemistry institutes for the first time, reported that “personal contact with the scientists was completely free and unrestricted this time.” Without the watchdogs from the ousted Revolutionary Committees, they spoke “soberly and factually” about the setbacks that the science system had suffered during the last one and a half decades, especially the nearly complete lack of young scientists in the “age group from the late 20s to around 40,” which Staab also noticed in his audiences. What he found “shocking” was “what he learned in great openness about personal fates during the Cultural Revolution.”⁴¹⁰

Starting from 1978/79, when the repeatedly demanded deepening of cooperation finally got underway, MPS scientists had a head start thanks to the comprehensive view they had gained during numerous delegation trips to the—as selected by the CAS to be presentable—beacons in the Chinese scientific landscape. By the end of 1979, the MPI for Metals Research in Stuttgart had considerable experience with Chinese scholars; there alone, eight scholars were active, typically for two-year periods. MPI Director Alfred Seeger knew that preparing them for their work at the MPI required a substantial effort, including several months of language courses both in China and then in Germany. Only after about a year could one “expect an independent and valuable scientific contribution” from them.⁴¹¹ In fact, a four-member team led by the internationally renowned physicist GE Tingsui from the CAS-Metal Research Institute in Shenyang advanced a research project to its first publications within a year. Ludwig Genzel from the neighboring MPI for Solid State Research, who had expected “a balanced scientific exchange in the not-too-distant future” even after his first trip to China in 1975, reported his “extraordinarily positive experiences with young Chinese guest researchers” to the MPS Senate in 1980. This countered the concerns of DFG President Seibold against expanding the exchange program.⁴¹² Since then, guests regularly came to Stuttgart for one to two years, while MPI staff occasionally made shorter reciprocal visits. Collaboration with Chinese colleagues in both Stuttgart MPIs became commonplace over the next two decades.⁴¹³

409 Melchers to Lüst on Jul. 11, 1978 (quotations), AMPG, II. Abt., Rep. 70, No. 302, fol. 328–331. The magazine was founded in 1929 as “Der Züchter” and renamed in 1968; HU accepted the invitation, see Götze, *Springer-Verlag*, 2008, p. 149.

410 Staab to Lüst on Nov. 26, 1979, AMPG, II. Abt., Rep. 70, No. 304, fol. 103.

411 Seeger to Lüst on Oct. 31, 1979, AMPG, II. Abt., Rep. 70, No. 286, fol. 16.

412 Travel report by Genzel/Roth/Hüfner/Wagner (November 1975), AMPG, III. Abt., Rep. 150, No. 62, fol. 14. Protocol of the 95th Senate meeting on Mar. 7, 1980, AMPG, II. Abt., Rep. 60, No. 95.SP, fol. 167.

413 Roth, “Stuttgart,” 1994. Roth lists over 130 long-term guests from China between 1974–1994. For further development, see, for instance, the report on collaboration in

The collaboration between the MPI for Polymer Research, founded in 1983, and the Institute for Chemistry of the CAS and its Joint Laboratory for Polymer Science and Materials, began soon after. It started when CAS scientist QIAN Renyuan sent his doctoral student ZHU Lilan to polymer researcher Gerhard Wegner at the University of Freiburg in the late 1970s. ZHU and her advisor reciprocated with a counter-invitation for Wegner to China, where he was able to establish contacts with relevant research centers. Shortly thereafter, as a newly appointed MPI director in Mainz, he established a stable West German-Chinese network in polymer research.⁴¹⁴ ZHU herself was appointed the first Chinese Minister of Science in 1998. In her inaugural interview, she linked the primacy of applied research with a research policy strategy that could have also been formulated by an MPS president in these times of scarce resources:

As a developing country, we need to concentrate our resources in order to make strategic breakthroughs. We can't afford to scatter our investments thoughtlessly.⁴¹⁵

Since the early 1980s, collaboration in various fields of astrophysical research also developed continuously and intensively, following a similar pattern as in Stuttgart. Initially, MPI scientists, mostly institute directors, went on lecture tours through the relevant Chinese research centers. Subsequently, doctoral students from suitable Chinese institutes came to the MPIs. This was followed by smaller workshop series alternately in the Federal Republic and in China, ideally leading to one or another joint research project. For example, the MPI for Radio Astronomy closely collaborated with the CAS observatories in Beijing, Shanghai, and Nanjing in interferometric observations.⁴¹⁶ The MPI for Extraterrestrial Physics also cooperated with these observatories, as well as with the CAS Institute for High Energy Physics in Beijing and the University Center for Astrophysics in Hefei in the development of the X-ray satellite ROSAT, and after its launch in 1990, in data evaluation.⁴¹⁷ Common to these projects was also the development of devices such as a mm-radiometer, X-ray mirrors, or satellites, as well as data evaluation programs, which could possibly be used beyond the specific project in the context of Chinese space flight plans, thus falling under an expanded concept of applied research.

the study of nanostructured materials between MPI for Metals Research, especially Manfred Rühle, and the corresponding CAS Institute in Shenyang, where in 1999 an MPS-CAS partnership group was established under the leadership of LU Ke; see Lu, *Nanostructured Materials*, 2004 and about a dozen reports in this issue on MPS-CAS collaboration projects and partner groups, which mostly started around the turn of the millennium.

414 Wegner, "25 Years," 2004.

415 Cited in: Swinbanks, "New Chinese Premier," 1998.

416 Schwartz, "Radiohimmel," 1994. This collaboration also led to a partnership group in 2000, see Han, *Radio Astronomy*, 2004 and the jointly published works therein by HAN Jinlin and Richard Wielebinski from MPI for Radio Astronomy.

417 MPI for Extraterrestrial Physics, "Chronologie," 1994.

Whether this also applied to the nuclear-physical probing of primitive meteorites that had fallen over China in the 1970s and from which insights into the structure of the Earth's upper mantle were expected, remains an open question. In this area, the research group of Ahmed El Goresy at the MPI for Nuclear Physics worked with the two academy institutes for Geochemistry in Guiyang and Guangzhou, as well as the University of Geosciences in Wuhan. Presumably, their doctoral students conducted the chemical analyses of the meteorites on-site, as such objects and samples could not be taken out of the country.⁴¹⁸ However, HUA Qin, a doctoral student from Wuhan who was a scholarship recipient with El Goresy in Heidelberg in the early 1980s, continued her career at Arizona State University.⁴¹⁹

Not everything progressed in a straightforward manner. The cooperation between the MPI for Quantum Optics and the Institute for Optics and Precision Mechanics in Hefei, which had originated from a military-technical establishment in 1970, proved to be difficult. In 1978, although it was assigned to the newly established CAS Branch Academy in Anhui, it continued to carry its military-technical tradition, coupled with the problems of the Cultural Revolution. From the West German perspective, the scientists in Hefei who participated in the molecular beam and relaxation experiments that began jointly in 1980 were both "tenfold" too numerous and not sufficiently qualified, showing little interest in further training.⁴²⁰ The young researchers who had been trained in Garching would sit idly after their return to Hefei, lacking suitable equipment while also being "sidelined."⁴²¹ Qualified scientists from other CAS institutes were not willing to move to Hefei. In general, experiments in Hefei only advanced as long as colleagues from Garching were on-site. The staff in Hefei, long oriented more towards technology than science, could envision "also producing optical parts for the German institute" in the future, an idea about which MPI Director Karl-Ludwig Kompa was not particularly enthusiastic.⁴²²

The leadership of the Academy in Beijing was clearly shown, through the example of this institute, not only the financial and infrastructural limits but also the sociocultural boundaries of their reformist influence. During a joint visit to the institute in Hefei in October 1981, CAS Secretary-General YU Wen did not disagree with his MPS colleague Ranft, but attributed the problems identified

418 The shipment of scientific objects, from rock samples to blood samples from China to the Federal Republic of Germany—even for examination purposes and in the context of collaboration projects—was a matter of dispute for many years (Note from Nickel on Aug. 3, 1984, AMPG, II. Abt., Rep. 70, No. 287, fol. 157).

419 El Goresy, "Meteoriten," 1994.

420 Note from Kühner on Dec. 29, 1982, AMPG, II. Abt., Rep. 70, No. 285, fol. 15; see also Kühner, *Chinesische Akademie der Wissenschaften*, 1986, pp. 142–143.

421 Note from Kühner on Dec. 29, 1982, AMPG, II. Abt., Rep. 70, No. 285, fol. 15.

422 Report from Kühner on May 3, 1982 about the China trip of the MPS delegation from Sep. 19 to Oct. 9, 1981, AMPG, II. Abt., Rep. 70, No. 292, fol. 193, 196.

by him to inadequate organization and administration.⁴²³ CAS President LU, during his visit to the MPI for Quantum Optics in December 1981, even hinted that “the decision to bring the experiments to Hefei [Hefei] was wrong.”⁴²⁴ In an interview with the *MPG-Spiegel* a year later, he made this even clearer: the institute still had “somewhat the character of a Pre-Development Institute” and now stood “quite puzzled” before the requirements of basic research.⁴²⁵ He took care of partially relocating the experiments to the Institute for Chemical Physics in Manchurian Dalian, which was well-positioned in the field of laser spectroscopy and molecular beam scattering and had already collaborated on projects with Taiwanese-American chemist Yuan T. Lee from the University of California, Berkeley, which were understood as “highly application-oriented” at least from the Chinese side.⁴²⁶ In fact, this collaboration was to develop excellently in the coming years, particularly in the field of laser chemistry, from which “great benefit” was expected in Beijing, and despite the Tiananmen incidents of 1989, it was continued with only a brief interruption.⁴²⁷

This also applied to the collaboration of the MPI for Astrophysics with Academy institutes in Beijing and Nanjing, as well as with the Chinese University for Science and Technology, which was subordinate to the CAS and had been moved from Beijing to Hefei in 1969/70. From difficult beginnings emerged conference series on high-energy astrophysics, joint doctoral training, and publications.⁴²⁸ A regular participant in these conferences and a promoter of the exchange programs and resulting cooperation projects was the head of the astrophysics department in Hefei, FANG Lizhi, who himself mainly collaborated with partners in Arizona and with Remo Ruffini in Rome. FANG had already been expelled from the CPC in 1958 due to critical protests as a student, was first put under house arrest during the Cultural Revolution, then sent to work in mining, and finally transferred to the university in Hefei in 1969. There, he rose

423 Ibid., fol. 196.

424 Note by Kühner from December 29, 1982, AMPG, II. Abt., Rep. 70, No. 285, fol. 16.

425 Unauthorized rough draft of the interview with LU Jiaxi (Kühner) on November 9, 1982, for internal use only, Kühner Dec. 17, 1982, Ibid., fol. 24–25. In the printed version in *MPG-Spiegel* 2 (1983), pp. 19–22, some critical passages about the situation in Hefei, but also about the neglect of Tibet in research funding and the lack of social integration of Chinese researchers into their host institutes, were omitted.

426 Kühner, *Chinesische Akademie der Wissenschaften*, 1986, p. 71.

427 Note by Kühner from November 18, 1980 about his trip to China from October 20 to November 4, 1980 (quote), AMPG, II. Abt., Rep. 70, No. 86, fol. 497. Wanner, “Molekulare Dynamik,” 1994.

428 Börner, “Gemeinsamer Blick,” 1994; Kühner, *Chinesische Akademie der Wissenschaften*, 1986, pp. 149–150: Originally, four other elite universities were assigned to the CAS, but they were then subordinated to the Ministry of Education or other ministries; these were Zhejiang University, Harbin University of Science and Technology, Shanghai University of Science and Technology, and Chengdu University of Science and Technology. I thank Gerhard Börner and Barbara Spielmann for hints about this cooperation.

to Vice President after 1978 but was sent back to the observatory in Beijing in 1986 after being held responsible for student unrest in December of that year.⁴²⁹ Meanwhile, Gerhard Börner from the Garching MPI for Astrophysics developed statistical methods for calculating galaxy distribution on large scales with LI Qibin, the later director of the observatory in Beijing, and young scientists, among others, also from Hefei. With this, they hoped to gain insights from the early phase of the universe and to be able to connect further projects.⁴³⁰

Despite all of these projects, which were repeatedly emphasized in MPS reports, the training of pre- and postdocs remained a priority for the Chinese side in the still unbalanced collaboration with the MPS.⁴³¹ This was also reflected in the numbers: By 1982, a total of 172 Chinese guests had stayed at MPIs for short periods and 146 fellows for longer than 12 months. In contrast, there were 333 short trips of up to three months but only eight long-term stays in China by West German scientists during the same period.⁴³² These ratios were unlikely to change much in the following years, especially since the number of Chinese guests at the MPIs rose to 50 to 65 annually by 1986 and was expected to double again afterward.⁴³³

Laboratory Explorations in the Far East: “It Can Be Done Another Way, But This Way Works, Too”

Hardly any MPS scientist dared to move his or her center of life and research to China for an entire year or even longer in the late 1970s and early 1980s. Yet, as observed by MPS international relations officer Nickel during his trips to China, guests there were offered “an unusual amount of freedom in shaping their work”:

Specifically, even highly qualified young scientists have a unique opportunity here to participate in the conception of research projects. However, only outstanding qualified young scientists should be sent to the PR China, who are, on the one hand, willing

429 Börner, *High Energy Astrophysics*, 1988, V; Fang, “Fractals,” 1988; Fang, *Bringing Down*, 1990.

430 Börner, “Gemeinsamer Blick,” 1994. LI and Börner continued their cooperation until LI’s early death in 2003, cf. Börner’s obituary for his colleague and friend: Börner, Travelling with Li Quibin, DA GMPG, Privataarchiv Sachse, BC 600021; written information from Gerhard Börner, Feb. 22, 2022.

431 Note by Kühner from Nov. 18, 1980 about his trip to China from Oct. 20 to Nov. 4, 1980, AMPG, II. Abt., Rep. 70, No. 86, fol. 497.

432 Note by Kühner from October 28, 1982, AMPG, II. Abt., Rep. 70, No. 128, fol. 524–527; the statistics by Thoms, DA GMPG, Privataarchiv Sachse, ID 601104, list 176 Chinese scholarship holders at MPI from 1973 to 1981 inclusive.

433 Statistik Thoms, DA GMPG, Privataarchiv Sachse, ID 601104 (1987: 90; 1988: 120; 1989: 119 and 1990: 119); see also Nickel, “Aufbruch ins Ungewisse,” 1994, p. 31.

to accept not insignificant personal restrictions and, on the other hand, capable of handling the freedom in shaping their work offered by the Chinese side.⁴³⁴

One of the few people attracted by these prospects was Wolfgang Ranke from the Berlin-based Fritz-Haber-Institute (FHI).⁴³⁵ He completed his dissertation there in 1973 and had been employed in Heinz Gerischer's department on a permanent basis since 1975. As early as 1978, three Chinese guests were working at FHI, including XU Yabo, who taught at Zhejiang University in Hangzhou and wanted to learn new methods of surface research in Berlin. XU worked closely with Ranke, was a frequent guest in his Berlin group of friends sharing a large Berlin flat and accompanied the active unionist to the May 1 demonstrations. He reinforced Ranke's idea of experiencing that fabled "distant land [...] with its socialism and its—then—nearly one billion people" firsthand, rather than spending the obligatory stay abroad for physics postdocs at a prestigious American university. Initially, Gerischer was not at all in favor of this "leftist idea from the leftist Ranke," but was convinced otherwise by the MPS's International Relations Unit. Thus, Ranke and his then-partner, for whom a position had been arranged as a German teacher for future exchange researchers, began learning Chinese in the fall of 1979 and set off on the Trans-Siberian Railway a year later.⁴³⁶

Ranke's destination was the CAS Semiconductor Institute Beijing, led by HUANG Kun, one of the centers where surface research had started around 1978.⁴³⁷ There, as well as at other institutes, they had just purchased a \$700,000 ultra-high vacuum (UHV) system from the American company Physical Elec-

434 Report by Nickel from September 14, 1979 about his trip to China from August 23 to September 9, 1979, AMPG, II. Abt., Rep. 70, No. 304, fol. 124 (quote); Speaking notes by Nickel for the meeting between the MPS Secretary-General and his CAS colleague YU Wen on November 13, 1979, AMPG, II. Abt., Rep. 70, No. 379, fol. 187–198.

435 On Feb. 5, 2020, I had an initial long conversation with Ranke and on Mar. 4, 2020, another one with him and his wife Liv, who also worked as an "expert," namely as a Swedish lecturer for the magazine *China im Bild*, which was produced in many languages in Beijing and distributed internationally. Ranke had met her there. Ranke had previously answered a preparatory questionnaire in writing (Interview Ranke [Sachse] Dec. 21, 2019), and he also gave me a 38-page excerpt from his memories recorded in 2008, partly based on the correspondence at that time with family, friends, colleagues, and superiors: "In China. September 1980 bis Januar 1982" (DA GMPG, Privataarchiv Ranke, ID 601105). Wolfgang Ranke also handed over a copy of his extension request to the director of FHI Gerischer dated May 25, 1981 (Private documents Ranke). All these documents are quoted with his consent in the following.

436 Ranke, "In China," 2008, DA GMPG, Privataarchiv Ranke, ID 601105, pp. 3–4.

437 Report on my stay so far and application for an extension of three months until December 1981, Private documents Ranke. The other centers for surface research were at the University of Science and Technology in Hefei, the Fudan University and the CAS Institute for Metals Research in Shanghai as well as the CAS Institute for Chemical Physics in Dalian. Cf. Kühner, *Chinesische Akademie der Wissenschaften*, 1986, pp. 71–72, 130–131, 134–135.

tronics, equipped with so many additional instruments that Ranke referred to it as the “hedgehog.” Almost everything a surface researcher could wish for could be done with this setup, Ranke wrote to XU in Berlin. However, the apparatus was only used “to take routine depth profiles of samples of the whole institute and also from outside.”⁴³⁸

Ranke, on the other hand, had set out to show his Chinese colleagues how to conduct surface experiments as basic research with this advanced equipment.⁴³⁹ He brought his project idea from Berlin: he wanted to measure the varying oxygen adsorption capacity of the continuously varying crystallographic orientations on the outer surface of a hollow cylindrical gallium arsenide single crystal using Auger electron spectroscopy and evaluate it comparatively. He succeeded in convincing his skeptical new colleagues, who would have preferred to compare several flat samples of different orientations, about the new experimental setup. Here, he benefited from the skill with which the technician in the materials lab tackled the challenge of producing a small crystalline hollow cylinder. Together with the two physicists assigned to him for the entire duration of his stay, XING Yirong and SHEN Guangdi, he designed the special sample holders needed to retrofit the “hedgehog” for the new experimental measurements. The repeated measurements and data evaluations extended into the fall of 1981; they were to be documented in several joint publications by the Chinese-German team, which is why Ranke extended his stay by a few months.⁴⁴⁰

The institute leadership in Beijing valued, as they explained to an MPS delegation in 1981, more the functional benefits of Ranke’s presence in the lab. For them, he was a highly welcome support in implementing the scientific-technical aspect of the Four Modernizations and in establishing “real basic research” within the originally military-industrial-oriented semiconductor institute. This basic research was to make up approximately 20 percent of the institute’s activities going forward. In their eyes, Ranke was the one who trained their own people on the expensive UHV facility, which in the future was to be used only half the time for service tasks, and otherwise for basic research.⁴⁴¹

Ranke had arrived with the “unacknowledged notion” that “the basic principles and structures in Chinese research operations should be roughly the same for him to be successful”:

438 Ranke to XU on Nov. 10, 1980, excerpted in: Ranke, “In China,” 2008, DA GMPG, Privataarchiv Ranke, ID 601105, p. 10.

439 Ranke, *ibid.*, p. 31.

440 Report on my stay so far and application for an extension of three months until December 1981, private documents Ranke. Ranke, “In China,” 2008, Privataarchiv Ranke, DA GMPG, ID 601105, 10–12, 31, 33, 36–37. The following publications resulted from this cooperation: Ranke, Xing and Shen, “Orientation Dependence,” 1982; Ranke, Xing and Shen, “Orientation Dependence I,” 1982; Ranke, Xing and Shen, “Orientation Dependence II,” 1982.

441 Report from Kühner on May 3, 1982 about the China trip of the MPS delegation Sep. 19–Oct. 9, 1981, AMPG, II. Abt., Rep. 70, No. 292, fol. 189.

Either the structures were similar, in which case one could simply get started, or they were different, in which case they would have to be changed.⁴⁴²

Now he practiced daily at the Semiconductor Institute the humble recitation of the mantra: It can be done another way, but this way works, too. This began with the peculiar hierarchical communication style. Hierarchical decision-making structures were not new to Ranke; he was familiar with them back home. There, he discussed his ideas with the boss, who usually made quick and clear decisions. Here, his suggestions were received warmly, but then nothing happened for a long time. Even follow-up questions were kindly brushed aside until, weeks later, he either received approval or did not; rejections were never conveyed. In the meantime, his suggestions had been passed up and down a hidden multi-tiered hierarchy or had been filed away somewhere. Local lab, project, and department heads fared no differently; on the contrary, the wishes of the foreign guest were expedited. The more limited the personal decision-making scope was, the narrower were the specializations of the colleagues, and particularly sharp were the boundaries between scientists, lab managers, and technicians. This went so far, as Ranke observed with astonishment, that scientists would hand their samples over to technicians in the lab and “were not even always present when their samples were measured.”⁴⁴³ That a scientist would prepare his own samples, adapt instruments, and observe the measurements—“qualifications that every good doctoral student must acquire with us”—was not envisaged in the local system of scientific labor division.⁴⁴⁴

Things became tricky when the most important instrument for Ranke’s experiments, the Electron Energy Analyzer, broke down. Although he could quickly identify the fault without significant but still necessary approvals, he also felt confident enough to fix it. However, delving into the interior of the expensive machine, which no one else in the lab had ever opened, was going too far; his technical explanations also didn’t help, especially since the American manufacturer still provided a warranty. Waiting for a technician to be sent over the Pacific would have taken weeks. Instead, Physical Electronics allowed the institute leadership—and subsequently Ranke—to attempt the repair without affecting the warranty. Surrounded by the lab staff, he began to disassemble the faulty part, found the suspected error, restored the broken contact with some aluminum foil, and reassembled everything. By doing so, he had “grounded the sanctuary that this marvel of an analyzer represented for my Chinese colleagues.”⁴⁴⁵

In his interim review after twelve months, Ranke was quite critical of himself and the Western arrogance that recognizes only its own lifestyles, thought

442 Ranke, *In China*, 2008, DA GMPG, Privataarchiv Ranke, ID 601105, p. 28.

443 *Ibid.*, p. 30.

444 *Ibid.*

445 *Ibid.*

patterns, and ways of working as “normal.” He conceded: “Many things were different here. But I had to admit: it also worked this way.” Within a year, according to his self-observation, he had made the journey “from this theoretical insight to a felt understanding.”⁴⁴⁶ However, in his soon-to-begin second winter in Beijing, in cold 15-degree (60 degrees Fahrenheit) offices, wearing double long underwear, multiple padded jackets, and with publication pressure weighing on him, he lost both curiosity and patience. In his letters home, the differences came to the forefront:

Here there are hardly any rights. Rules and laws, to the extent they exist at all, seem to me, who comes from regulation- and law-rich Germany, to be more like non-binding advice. The Ganbu (cadre) and the Lingduo (leadership) appear to be omnipotent and unassailable. The tradition of individual powerlessness in 2,000 years of feudal-bureaucratic history and the personal experience of that same powerlessness during the Cultural Revolution are probably the reasons for what we call the “Meiguanxi mentality,” the “it-doesn’t-matter mentality.” People believe nothing until it has happened; enthusiasm hardly arises, people first see what others do before doing something themselves. At least that’s the case with my colleagues, who due to the educational gap of the Cultural Revolution are all over 40, mostly 45 to 50 years old. Since the first young university graduates will only start infiltrating the dull greenery [sic] of the labs from 1982 onwards, I must therefore continue to put up with the sluggishness and—particularly obstructive at the current stage of evaluations and discussions—with the broken to stammering English skills of my colleagues. I understand all this and know the reasons, but that doesn’t make it any less frustrating. So, you see, I’d rather be at home.⁴⁴⁷

Two months later, in January 1982, he left. And contrary to what his Chinese boss had hoped, he never returned to observe the progress of the work he had guided. Ranke’s conclusion was that he had “shown how to conduct surface research,” but in the end, he felt “little interest in this type of basic research” at the Semiconductor Institute. He continued to cooperate and publish only with his closest colleague XING Yirong, who later came to Berlin twice for extended research stays. Overall, he saw his field of research better represented by XU Yabo at Zhejiang University in Hangzhou and at the CAS Institute for Chemical Physics in Dalian.⁴⁴⁸

The reform of the Institute for Optics and Fine Mechanics in Hefei had failed, as seen, despite the joint efforts of the CAS leadership and the MPI for Quantum Optics. Therefore, the expectation that a single MPS researcher in the

446 Ibid., pp. 30–31.

447 Ranke to “die Thalmänner und (hauptsächlich)-frauen” on Nov. 22, 1981, cited in: Ibid., p. 38.

448 Ibid., p. 31 (quotes). For further publications see: Xing and Ranke, “Accurate Analysis of AES,” 1983; Ranke, “Oberflächenforschung,” 1984. Report from Kühner on May 3, 1982 about the China trip of the MPS delegation Sep. 19—Oct. 9, 1981, AMPG, II. Abt., Rep. 70, No. 292, fol. 189.

Semiconductor Institute in Beijing could bring about lasting changes in established scientific work and thought patterns could only be illusory. Especially since there was no shaking the opaque hierarchical-institutional structures, and mutual language skills were only sufficient to communicate on the technical data, measurements, objects, and equipment involved in the joint work. All the more remarkable is the willingness to learn and adapt shown by those Chinese scientists who ventured westward and to the Max Planck Institutes. Until the early 1980s, they too mostly came from the older generation, trained before the Cultural Revolution. Unlike Ranke, they had to leave their families behind and lived modestly in the Federal Republic of Germany, by local standards, and under embassy supervision. Nevertheless, reports consistently stated that, with few exceptions, they were able to successfully carry out their own projects or be integrated into institute projects after the appropriate preparation and training period. But here too, sustainability was at risk.

This began with the embassy's long-standing practice in Bonn of "skimming off" scholarships paid by the MPS, as well as the Humboldt Foundation or the DAAD, effectively requiring the Chinese scholars to hand over a certain sum to the embassy.⁴⁴⁹ While the press scandalized this as an overreaching dictatorial grip by the Chinese regime on its citizens abroad to bolster its foreign currency reserves, the MPS Administrative Headquarters countered primarily with budgetary regulations and threatened to make its own cuts or "in-kind restitution." Seeger from the MPI for Metals Research already pointed out the consequences for the scientific work of the "skimmed off" scholars in 1979: they could not participate in late-evening lecture events because the taxi ride home was too expensive, couldn't pay conference fees or buy books, and instead would block the Institute's photocopier; overall, they were prevented from participating in normal social life in Stuttgart with its high rents and living costs, thus becoming socially isolated and excluded from informal exchanges of ideas.⁴⁵⁰

In Beijing, CAS representatives confirmed to the MPS international relations officer that the scholarship skimming was indeed happening: The home institutions needed the foreign currency to purchase the equipment that the returnees would use back in China; the amounts would be refunded to them once they were back in China. However, as was evident from those who returned to Hefei

449 Note by Kühner from Jun 29, 1981, AMPG, II. Abt., Rep. 70, No. 199, fol. 220. It was uncertain what amounts were involved, possibly the difference between the amounts paid by the West German side and the Chinese government scholarships. Ranke, In China, 2008, DA GMPG, Privatarchiv Ranke, ID 601105, p. 34 overheard at a reception in 1981 in Beijing that it was customary to "pinch everything from MPS scholarship holders except for 250 DM a month."

450 Report by Nickel from Sep. 14, 1979 about his China trip from Aug 23 to Sep 9, 1979, AMPG, II. Abt., Rep. 70, No. 304, fol. 111–112. Seeger to Lüst on Oct 31, 1979, AMPG, II. Abt., Rep. 70, No. 286, fol. 20–21. Note by Kühner from Nov 18, 1980 about the China trip from Oct 20 to Nov 4, 1980 (Quote: marginal note Nickel), AMPG, II. Abt., Rep. 70, No. 86, fol. 498.

and sat idle, the lack of equipment was a significant issue, but skimming the scholarships was not a solution—neither for accounting practices modernized along Confucian lines nor for those following traditional fiscal cameralistics. Therefore, the International Relations Unit initiated an equipment program: The Chinese institutes were to create a wish list, and the MPS would offer them suitable used equipment for purchase; furthermore, they would apply to the VW Foundation for the funds needed to acquire equipment essential for future collaborations; finally, they would support the training of Chinese specialists in equipment construction, perhaps with a summer school.⁴⁵¹

Despite all efforts, nothing helped: On the one hand, the equipment program failed due to the export ban on electronic devices to China and other shipping complications.⁴⁵² On the other hand, the scholarship skimming also involved “domestic political conflicts and intra-bureaucratic competitive thinking” in China, as well as social disruptions caused by the enormous income disparity—foreign scholarships were approximately twenty times higher than domestic salaries.⁴⁵³ Ultimately, the CAS needed a disproportionate share of the funds available for scientific exchange to meet China’s foreign policy claim of reciprocity and the expectations of foreign partners, which led to envy from other scientific administrations. Moreover, it was not within the Academy’s power to prevent the skimming. The CAS leadership’s suggestion that the MPS should offer regular employment contracts to Chinese scientists, similar to the practice in the United States, revealed a similar ignorance of the labor-law sensitivities of the West German scientific community in the lean years following the boom and was promptly “talked out of it” by Nickel. It was only in the course of negotiations for the annual program of 1982 that a contract formulation was found that did justice to the political and labor-law peculiarities of both sides; after that, the practice of skimming was no longer mentioned.⁴⁵⁴

The problem that the inadequate facilities the returning fellows found in their home labs compromised the sustainability of the MPI’s investment in education remained, however. Added to this was the low scientific initiative observed in several MPIs among the young Chinese guests, or more precisely, their fear of confronting their superiors with their own ideas. It was here that Uli Schwarz from the MPI for Virus Research and international relations

451 Results of the discussions between the Academia Sinica and the MPS during the visit of the Academy’s Secretary-General YU Wen in Nov/Dec 1979 from Jan 14, 1980, AMPG, II. Abt., Rep. 70, No. 379, fol. 114–115.

452 Note by Nickel from Aug. 3, 1984, AMPG, II. Abt., Rep. 70, No. 287, fol. 158.

453 The sinologist Kühner learned this during his discussions in Beijing without an interpreter at the desk officer level: Note by Kühner from Nov. 18, 1980 about the China trip from Oct. 20 to Nov. 4, 1980, AMPG, II. Abt., Rep. 70, No. 86, fol. 498.

454 Ibid. (Quote: marginal note Nickel); Report by Kühner from May 3, 1982 about the China trip of the MPS delegation from Sep. 19 to Oct 9, 1981, AMPG, II. Abt., Rep. 70, No. 292, fol. 180–181. On the question of the fixed-term scientific employment contracts in the MPS see Scholz, “Partizipation,” 2019.

officer Nickel had the idea in 1982, after a meeting of the Biology & Medicine Section, to adapt an instrument of bilateral scientific cooperation that had been developed under the BMFT or BMBF-funded and MPS-administered Minerva Program for Israel, to fit Chinese conditions.⁴⁵⁵ Since the late 1970s, the first of today's 24 research centers—Minerva Centers—had been founded at Israeli universities.⁴⁵⁶ Something similar, Schwarz suggested, could emerge in Shanghai, where “relatively good research” was already being conducted at the CAS institutes for cell biology, physiology, and biochemistry. Many factors argued for a “guest lab” on this promising campus: Unlike in the fields of physics and mathematics, where “the Americans were already very active,” Germany could still make a name for itself in China by supporting biology. Among the “leading” Chinese biologists who were now training the new generation, some had worked as PhD students or postdocs in Germany before the war and “liked to think back on it,” such as developmental biologist ZHUANG Xiaohui, who had trained in the 1930s as a Humboldt fellow in Freiburg and Munich. A well-equipped lab in the future building of the institute for cell biology led by ZHUANG would attract German guests to work there for extended periods with Chinese colleagues, and particularly with returnees from Germany, especially since Shanghai, compared to other Chinese locations, offered “better quality of life.” The CAS would provide the space, basic equipment, and a guest apartment, and the MPS would, if necessary, finance the additional instruments needed for “modern developmental biology combined with molecular biology” with funds from the VW Foundation; Schwarz estimated the cost at approximately 285,000 DM.⁴⁵⁷ The idea was approved on all sides, but again financial hurdles, mostly due to budgetary regulations, got in the way. In the end, the Krupp Foundation stepped in, whose chairman Beitz had paved the way for the MPS to China as early as 1973. Additional funds came from the Humboldt Foundation and from the always helpful “President’s Fund” of the MPS, which made many things possible that public budget keepers would not allow.⁴⁵⁸

A “model character” was hoped for from this “interesting experiment,” which was launched in the fall of 1984 on the occasion of the tenth anniversary of the

455 Written information from Nickel to CS on April 4, 2022.

456 Minerva, <https://www.minerva.mpg.de/minerva-centers>, last accessed on Feb 18, 2022. See also Steinhäuser, Gutfreund, and Renn, *Turning Points*, 2017, pp. 80–82 and above in chapter 2.2.

457 Schwarz to Nickel on March 30, 1982, AMPG, II. Abt., Rep. 70, No. 128, fol. 351–352. Regarding ZHUANG see Kühner, *Chinesische Akademie der Wissenschaften*, 1986, p. 111 and on the total of seven bio-scientific academy institutes in Shanghai see pp. 109–117.

458 Note by Nickel from April 26, 1982, AMPG, II. Abt., Rep. 70, No. 128, fol. 530; Note by Kühner from Oct. 28, 1982, *ibid.*, fol. 524–527. Note by Kühner from July 5, 1982 about a conversation at the VW Foundation, AMPG, II. Abt., Rep. 70, No. 285, fol. 47–49.

cooperation between the MPS and the CAS.⁴⁵⁹ The Max-Planck Guest Laboratory, opened in 1985 in the new building of the CAS Institute for Cell Biology in Shanghai, was still functioning in 2020 as an innovative beacon in the MPS's self-presentation of its China cooperation.⁴⁶⁰ Until then, as its initiator Schwarz reported on the occasion of the 20th anniversary of the cooperation between the MPS and CAS in 1994, it had been continuously used by German-Chinese teams and individual MPS scientists for joint symposia, seminars, and doctoral schools and had been structurally adapted time and again to new political developments. In 2005, it was finally integrated as a service facility into the newly founded Partner Institute for Computational Biology, which was until the end of 2020 jointly operated by the CAS and the MPS and was renamed the Uli Schwarz Laboratory after the death of its initiator in 2008.⁴⁶¹ Whether it truly served as a model, and for what, is a more difficult question.

Permanent Academy Reform and the Role of the MPS

During the Cultural Revolution, the Academy had been reduced to half of its institutes; the remaining institutes had been forced to comply with the demands for the unity of theory and practice, for a science for and by the masses—in whatever way possible. After MAO's death and the elimination of the “Gang of Four,” it wasn't simply a matter of bringing the disbanded institutes back under the Academy's umbrella and picking up where things had left off in 1966. MAO's revolutionary experiments were considered, as DENG Xiaoping had already assessed in 1978 and as the Chinese leadership continues to reiterate, to be 30 % bad, but 70 % good—and this also applied to science and academia. The Cultural Revolution had left its marks on the institutional structures, the staff, the understanding of science, and scientific practices. For a decade, virtually no scientific talent had been trained, and this generational gap was now felt in the

459 Note by Nickel from Aug. 3, 1984 for the President on the visit of the CAS Secretary-General GU Yijuan in Munich (Aug. 26–30, 1984), AMPG, II. Abt., Rep. 70, No. 287, fol. 158.

460 See the MPS website: Max Planck Society, Max Planck Society: China, <http://www.mpg.de/de/international/china>, last accessed on July 3, 2024.

461 Note by Peter from Nov. 22, 1994 regarding the joint colloquium on the occasion of the anniversary in Martinsried on Oct 10, 1994, AMPG, II. Abt., Rep. 70, No. 219, fol. 215; Spielmann (MPS) to Abel (BMFT) on April 18, 1989, AMPG, II. Abt., Rep. 70, No. 221, fol. 88–92. Written notification from Panglung (MPS) to CS on July 17, 2020; written notification from Spielmann to CS on July 14, 2020. In the obituary of the CAS for the deceased Uli Schwarz in 2006, it was stated that to date over 1,000 returning students and postdocs from abroad had continued their research in the guest laboratory. Chinese Academy of Sciences: “Prof. Uli Schwarz, a diligent promoter of Sino-German STC Partnership,” https://english.cas.cn/newsroom/archive/china_archive/cn2006/200909/t20090923_42025.shtml, last accessed on July 15, 2020.

research institutes. Ten years of international scientific developments had been missed, but as MAO had clarified two decades earlier in relation to the Soviet Union, the goal now, in relation to the West, was not to “blindly imitate” but to “analytically examine what is good about capitalism.”⁴⁶² For the CAS, this meant a continuous series of reforms in which the specifics of the MPS, too, were repeatedly evaluated for their usefulness.

In the fall of 1979, the head of the International Relations Unit, Nickel, traveled to China for the second time to prepare the contractual cooperation agreements for the coming year.⁴⁶³ Almost everything had changed compared to 1976. The idea of “sciences for the masses” no longer existed, at least for the two academies, the CAS and the CASS. Instead, they now represented the pinnacle of a reformed science and education system that was designed to be even more hierarchical than it has ever been in the FRG: The scientific talent for the research institutes of the academies was to be primarily trained in four elite universities—directly under CAS, the Chinese University of Science and Technology in Hefei, as well as Qinghua University, Beijing University, and the University of Science and Technology in Shanghai. About two dozen other universities, including the Tongji University in Shanghai, which originated from German foundations in 1907, were to be developed into research-focused universities. The “masses,” on the other hand, were to be trained as urgently needed professionals in the remaining existing and newly created universities. Science administrator Nickel no longer dealt with revolutionary committees and their primarily politically qualified chairpersons. Instead, he spoke directly with the vice presidents, who were the scientifically authoritative leaders of the academies, and their foreign affairs representatives. He noted—more so with the CAS than its social science sister organization—a willingness to “largely follow Western models in building their research structure and to abandon ideology in favor of the desired maximum efficiency of research institutes.” He particularly sensed “an interest in the rebuilding of German science after World War II,” which was considered a “model for their own development.”⁴⁶⁴

In fact, when CAS Secretary-General YU Wen and his delegation traveled to Munich at the end of 1979, they had more than just the signing of the CAS-MPG annual program for 1980 on their agenda. They also spent three weeks traveling and learning about West German research structures. At the BMFT, they were briefed on the German understanding of basic research, applied research, and development, and were shown the top figures that West German expenditures for basic research achieved in comparison with the OECD and the European

462 Cited from: Schmidt-Glintzer, “70 Percent,” Aug.1, 2017, <https://www.ipg-journal.de/schwerpunkt-des-monats/geschichtspolitik/artikel/detail/70-prozent-gut-30-prozent-schlecht-2198/>, last accessed on July 25, 2024.

463 Report by Nickel, dated Sep 14, 1979, on the trip to the People’s Republic of China (Aug. 23 – Sep. 9, 1979), AMPG, II. Abt., Rep. 70, No. 304, pp. 105–125.

464 Ibid., page 107.

Community.⁴⁶⁵ MPS Secretary-General Ranft then gave them some essential advice for their future research management as they departed. Specifically, that “scientific policy decisions in the Federal Republic are prepared by the scientists themselves and that the involvement of both domestic and foreign scientists in preparing such matters plays a crucial role.” This was not a “German peculiarity,” but “a basic prerequisite for the successful development of a country’s research” and therefore also “the first and decisive step for the scientific policy reorientation in your country.”⁴⁶⁶

In May 1981, the CAS adopted its “Provisional Statute,” in which one could recognize some structural elements of the MPS but neither its primacy for basic research nor its claim for scientific autonomy.⁴⁶⁷ The CAS divided itself into five sections (Physics, Chemistry, Biology, Earth and Technical Sciences), which did not reflect the typical interdisciplinarity of the MPS but did integrate technology, applied, and development research.⁴⁶⁸ The highest governing body was the General Assembly of the sections, similar to the Scientific Council but meeting only biennially to possibly revise the statute and discuss long-term research planning. The remaining decision-making power was delegated to the 29-member Presidium, which was elected but not necessarily selected by the Assembly. At least, not a third of its members, who were not part of the sections but were leading cadres proposed by the Party and the State Council. The Presidium, in turn, appointed the President and Vice Presidents from among its members. The statute strengthened the position of the institutes, which were to set their own research programs and plans and consult an academic commission of internal and external experts for advice, only partially resembling the Boards of Trustees and Advisory Boards of the MPIs. The CAS statute said little about the appointment procedure for institute directors, an idiosyncratic feature crucial to MPS’s scientific dynamism, other than that the Presidium appointed or dismissed all key leadership personnel, including institute directors.

465 Note by Unger (BMFT) dated 16 Nov 1979 for the conversation with the CAS Secretary-General, AMPG, II. Abt., Rep. 70, No. 128, page 552: Accordingly, West Germany contributed 22.3 % (1975) or 21.7 % (1977) of its total R&D spending to basic research—compared in the OECD to France (1975: 21.4 %; 1977: 21.2 %), UK (1975: 14.5 %), USA (1975: 12.9 %; 1977: 12.7 %) and Japan (1975: 11.2 %). Draft by Nickel dated Nov. 8, 1979 for a conversation with YU Wen on 13 Nov 1979, AMPG, II. Abt., Rep. 70, No. 379, fol. 187–198.

466 Proposal by Nickel dated Dec. 3, 1979 for Ranft’s address on Dec. 4, 1979 on the occasion of the farewell to the Chinese CAS delegation, AMPG, II. Abt., Rep. 70, No. 379, fol. 172.

467 Documents for the China trip of the MPS delegation from Oct. 16 to 30, 1983, attachment: Provisional constitution of the CAS dated May 18, 1981, AMPG, II. Abt., Rep. 70, No. 292, fol. 135–144.

468 The lack of interdisciplinarity of his own institutes was particularly regretted by the chemist and CAS president LU Jiaxi during his visit to Munich in December 1982: Unauthorized rough draft of the interview with Jiaxi (Kühner) on Nov. 9, 1982, for internal use only, Kühner 17 Dec 1982, AMPG, II. Abt., Rep. 70, No. 285, fol. 24, 26 verso.

The MPS's cultural-political efforts to transfer their concept of scientific autonomy and distinctive research personalities to China were of little help. For instance, they planned to showcase an exhibition developed on the occasion of the 100th birthdays of Albert Einstein, Max von Laue, Otto Hahn, and Lise Meitner in 1978/79, with financial support from the Foreign Office, in Beijing in 1980.⁴⁶⁹ The plan was ill-fated. First, the exhibition had to be postponed by a year due to budget constraints; then, the embassy in Beijing wanted to postpone it further to prioritize an exhibition of German Expressionist art. MPS President Lüst, briefed by Nickel, could prevent this in a personal conversation with State Secretary Hildegard Hamm-Brücher; neither the Federal Republic nor the MPS could afford another loss of face, especially since "priority was given to cooperation with the MPS over all other organizations abroad by the Academy":

For two years, the Academy's organization has been restructured according to the German model, specifically the Max Planck model (organization of sections, a scientific council, increased independence of the institutes and scientists in shaping their scientific work).⁴⁷⁰

This was undoubtedly an overstatement, but it served its purpose. Despite the extended lead time, however, there was neither enough time nor money to translate the catalog; they settled for brief explanations of the exhibits in Chinese.⁴⁷¹ And finally, the opening was on the verge of being canceled. The MPS delegation, led by Secretary-General Ranft and keynote speaker Hans-Peter Dürr from the MPI for Physics, had already arrived in Beijing. The cargo ship carrying the panels and exhibits to China was still anchored among many other freighters off the port city of Tianjin; its cargo would hardly be unloaded before the planned closing ceremony. Here, the ministerial status of the CAS came in handy—a single call from their Secretary-General to the port authorities was enough to prioritize the ship. After overnight extra shifts led by China officer Kühner, the exhibition was actually opened with only a two-day delay on September 26, 1981.⁴⁷² The Chinese partners, for their part, would have welcomed another delay if it meant that they could greet the experienced but busy science manager Lüst at the opening.⁴⁷³

469 The exhibition was curated by the Berlin science historian Jost Lemmerich in collaboration with the German Physical Society (DPG) and the MPS: Physikalische Gesellschaft Berlin e. V., *Physics*, <https://www.pgzb.tu-berlin.de/index.php?id=278>, last accessed on July 18, 2020.

470 Note by Nickel dated May 13, 1981 for the president regarding a conversation with Hamm-Brücher, AMPG, II. Abt., Rep. 70, No. 326, fol. 511.

471 Max Planck Society, *Gedächtnisausstellung* (Commemorative Exhibition), 1979. Note by Peter (MPG) dated May 22, 1980, Nickel to Lemmerich on May 28, 1980, AMPG, II. Abt., Rep. 70, No. 326, fol. 459–461, fol. 516.

472 Interview Nickel (Sachse) April 12, 2018.

473 Note by Kühner dated Nov. 18, 1980 on the results of his discussions with the CAS, AMPG, II. Abt., Rep. 70, No. 86, p. 497.

In his opening speech, Ranft articulated a message that was not only untimely in 1980s Beijing but also globally: the task of a scientific organization like the KWS/MPS was to “give top-notch researchers the opportunity to pursue their work free from all obligations and external constraints.” “Peak performances in research” were only possible where “the principle of quality and liberality” was maintained; it was always “the achievement of the individual [...] that broke new ground”; however, it thrived best in an environment “full of scientists with extraordinary abilities in various fields.” Creating such an ambiance required a consistent policy of “conscious elite formation,” unaffected by public opinion and economic fluctuations.⁴⁷⁴ Ranft was invoking the pre-war myth of a German Oxford in Dahlem, a notion that might only stir memories among physicist HE Zehui and one or another of her older colleagues, reminding them of their postdoc days at a Kaiser Wilhelm Institute.

Dürr, who was introduced as the “Director of the former Einstein Institute,” but who by the early 1980s was long at odds with his institutional environment within the MPS, went back even a few decades further in his lecture. He made no mention of Hahn and Meitner, celebrated in the exhibition, nor of their discovery of nuclear fission; he spent just a few sentences on von Laue and his theory of X-ray diffraction. Instead, he focused on the young Einstein, who with his four publications in 1905 had initiated a new physics beyond Newtonian mechanics.⁴⁷⁵ Dürr lauded Einstein as an example of “creative thinking” from a “strong-willed personality,” who needed only an encouraging “atmosphere” to make a “leap” to new insights “in the play of free association from concrete experience, which must be acquired with diligence and patience, and pictorial intuition, which is drawn from deeper sources.”⁴⁷⁶ Ironically, Einstein spent his *annus mirabilis* in the atmosphere of the Bern Patent Office, had never seriously built up his later KWI in Dahlem, and from 1933 in Princeton dedicated himself without any directorial obligations to the conception of unified field theory while continuing to comment on global political events. His scientific working style thus served neither the myth of Dahlem nor was it suitable for the largely project- and team-based research of the MPIs in the 1980s.⁴⁷⁷ Whether this unintentional irony was noticed by the guests at the opening ceremony in Beijing or was lost in translation remains untraceable. Ambassador Schödel, however, felt he had heard an “impressive lecture” about all “four physicists,” but criticized the exhibition in his report to the Foreign Office: it had only shown books and documents in German and English, and the brief explanations in Chinese didn’t

474 Speech by Ranft undated (Sep. 26, 1981), AMPG, II. Abt., Rep. 70, No. 326, fol. 34–35.

475 Einstein, “Erzeugung und Verwandlung des Lichtes,” 1905; Einstein, “Theorie der Wärme,” 1905; Einstein, “Elektrodynamik,” 1905; Einstein, “Trägheit eines Körpers,” 1905.

476 Lecture manuscript Dürr, “Über das wissenschaftliche Werk von Albert Einstein und Max von Laue,” dated Sep. 24, 1981, AMPG, II. Abt., Rep. 70, No. 326, quote: p. 29. The lecture took place two days later.

477 Renn et al., *Zurich Notebook*, 2007; Renn and Schemmel, *Gravitation*, 2007.



Fig. 25: MPS exhibition in memory of Albert Einstein, Otto Hahn, Max von Laue and Lise Meitner, Beijing in September 1981.

even summarize their content. The exhibits, he argued, remained “inaccessible” to the “average Chinese, even those with a scientific background.”⁴⁷⁸

The CAS leadership didn’t have the time or inclination to delve into the epistemology of genius; their primary duty was to support socialist modernization as “the fourth column.” When they traveled again to the Federal Republic in the fall of 1982 for the annual update of the exchange program with the MPS, they indicated corresponding needs: they wanted to learn about science administration in various types of research institutions, the connection between basic and applied research, patent protection, and the application of research results in production. They were sent to the BMFT, the Society for Mathematics and Data Processing, to DESY, and to the Technical Center of the Bosch company in Stuttgart. This could be most sensibly combined with a visit to the local MPIs, which had long been cooperating with CAS institutes:

At the Max Planck Institutes for Solid State Research and for Metals Research, it makes sense to discuss mainly the relationship between basic research, application-oriented research, and development, as well as the contacts between research and industry.⁴⁷⁹

478 Schödel to AA on Oct. 9, 1981, AMPG, II. Abt., Rep. 70, No. 326, fol. 293.

479 Note by Kühner dated Oct. 28, 1982 for the President and Secretary-General regarding conversations with CAS President LU Jiaxi and his delegation on 8 Nov 1982, AMPG, II. Abt., Rep. 70, No. 128, fol. 524–527.

Finally, as the embassy in Beijing observed, these institutes contributed “especially in the field of metallurgy” to “facilitating market access for German companies”—“often much to the chagrin of our European partner countries.”⁴⁸⁰

In the concluding discussion at the Munich Administrative Headquarters, in addition to preparing new cooperation projects, questions of science management were also addressed. CAS President LU envied the MPS for its decision-making freedom in founding and closing institutes and had the experienced MPS President explain in detail how he solved problems primarily during closures. LU was probably thinking not only about his problem child, the Institute for Optics and Precision Mechanics in Hefei. Lüst also outlined the new paths that the MPS was taking with its recently reorganized subsidiary, Garching Instruments GmbH (GI), to commercially exploit research results—specifically, discontinuing the deficit-ridden production of instruments for the market and instead generating patents and selling licenses.⁴⁸¹ Within the realms of scientific autonomy and emphatically understood basic research, the MPS did indeed have experiential knowledge to offer that could help the CAS meet the demands of the *fan liang fan* program aimed at quadrupling annual gross production.

In the subsequent two years, the leadership bodies of the CAS were radically downsized and rejuvenated: instead of six, there were only three, two of whom were newly appointed, younger vice presidents. Like the president, from 1984 on they were designated by the Prime Minister and approved by the National People’s Congress. The General Meeting of the sections, the analogue to the Scientific Council of the MPS, was disempowered, and the fledgling beginnings of academic self-governance were cut off after just three years.⁴⁸² On the institute level, actions were just as stringent, if not more: 98 percent of all leadership posi-

480 Nölle (Embassy Beijing) to AA on Nov. 29, 1984, 11, AMPG, Abt. II, Rep. 70, No. 287, fol. 82. This was not intended to be a one-way relationship, as Secretary-General Hasenclever reported in 1995 (Transcript Ringberg-Colloquium May 15/16, 1995, 102, AMPG, Abt. III, ZA 188, No. 56): A CAS exchange researcher at the MPI for Metals Research had, in the context of the “industry-close work” there, got to know an employee of the Daimler Research Lab, maintained close contact with him over the years, and after both had risen in their respective institutions, was able to acquire research contracts from Daimler for his Academy Institute.

481 Note from Harnisch on Dec. 10, 1982, regarding a conversation with the CAS delegation on Nov. 8, 1982, AMPG, Abt. II, Rep. 70, No. 285, fol. 17–22. Regarding the Garching Instrumente GmbH, see Balcar, *Instrumentenbau—Patentvermarktung—Ausgründungen*, 2018. It would be interesting to know how profitable and for how long the factories maintained by CAS continued, given the 1981 charter (Sec. IV/26) which stated their responsibility to “research scientific equipment, systems, or their components, to manufacture them as prototypes, and to produce them in series” (Documents for the China trip of the MPS delegation Oct. 16–30, 1983, Attachment: Provisional Charter of the CAS from May 18, 1981, AMPG, Abt. II, Rep. 70, No. 292, fol. 143).

482 Kühner, *Chinesische Akademie der Wissenschaften*, 1986, p. 42. The position of the Scientific Council of the CAS, which existed alongside the general meeting of the sections, was strengthened. It was established in 1955 and was considered the highest

tions in the institutes were now only temporarily filled for three-year terms, and the average age was rapidly reduced from 60.7 to 51.2 years.⁴⁸³ Even though the decision-making powers and responsibilities of the directors were strengthened, this radical approach certainly did not suggest a convergence with the Harnack Principle.⁴⁸⁴ The lower level of the institute staff was not so easy to reform. Attempts to increase the job mobility of scientific and technical personnel encountered similar problems in the CAS as in the MPS. While in Germany, federal labor laws imposed limits on the scientific reorientation or dissolution of institutes, in China it was the principle of the “iron rice bowl.” This principle guaranteed employees in Chinese state enterprises a secure job and made it easier for them to resist the politically desired mobility between academic institutes, universities, and companies—thus resisting the transfer of research personnel expertise—at least as long as the incentives were unconvincing and methods reminiscent of the Cultural Revolution were avoided. This was a central issue in the comprehensive structural reform of the Chinese science system, which President LU also had to face in 1984 with his new leadership team. The goal of this new reform was to more closely intertwine science and the economy and to “break the hermetic separation between military and civilian research,” while at the same time securing painstakingly rebuilt basic research.⁴⁸⁵

For this, there were planning guidelines: 25 percent of CAS funds should go into basic research, 35 percent into the exploration of natural resources and the environment, and 40 percent into applied research, which in turn should closely cooperate with industry and gradually finance itself through contract research, licensing, and patents, much like the Fraunhofer Society. Unlike Garching Instruments GmbH, which LU and his delegation may have been inspired by but which could never contribute significant amounts to the MPS budget even after its successful restructuring, this worked surprisingly well: some academy institutes generated two to six times their basic state funding with their ongoing production enterprises—a “quite impressive independence from state funds,” as noted in the margins of a 1991 embassy report from Beijing by the BMFT.⁴⁸⁶

decision-making body of the CAS, representing the entire Chinese science system and was most similar to a Western national academy. The appointment of its members was organized bottom-up, with the political administrations of the various scientific institutions playing a significant role in drawing up the nomination lists from which the Council then selected its new members; cf. *China aktuell*, December 1990, 921 (copy in AMPG, Abt. II, Rep. 70, No. 291, fol. 17.)

483 Note by Harnisch on Sep. 25, 1984, AMPG, Abt. II, Rep. 70, No. 287, fol. 7.

484 Nickel saw in this a strong adaptation of the position of the CAS directors to that of the MPS directors (Note from Nickel on Aug. 3, 1984, *ibid.*, fol. 160.)

485 Nölle (Embassy Beijing) to AA on Nov. 29, 1984, AMPG, Abt. II, Rep. 70, No. 287, fol. 74.

486 Mann (Embassy Beijing) to AA on Feb. 8, 1991, AMPG, Abt. II, Rep. 70, No. 291, fol. 95–100 (quote: p. 2); other operations remained an unproductive burden for the

This reform was complemented on the personnel policy front by a certain liberalization of the existing job assignment system, which, while maintaining the employment guarantee, offered both the institutes and the scientists options for choice. Special attention was paid to those who had studied abroad and were now to be deployed effectively. While in the realm of applied research it was hoped that collaboration with the industry would provide sufficient financial incentives for mobilizing the scientific staff, a different approach was needed in the field of basic research. Here, “open laboratories” were established at institutes with highly qualified, scientifically active staff and appropriate technical infrastructure. These were open to scientists from other institutes and universities, and particularly to international guests. They were meant to be sufficiently appealing, especially for returnees from abroad for whom a special scholarship program was launched. Two-thirds of all researchers there were to work only temporarily for the duration of their projects but with salaries that were twice as high; particularly “proficient young scientists” had prospects for leadership positions.⁴⁸⁷ A committee mainly made up of external scientists assisted them. The promising young talents were not as free in choosing their research topics because the labs were only set up in fields that ranked at the top of the national research plan. By 1988, there were already 40 such labs, and more than two dozen more were on the verge of being founded. The new Secretary-General of the CAS, HU Qiheng, who had replaced YU Wen, specifically emphasized this during her visit to Munich in 1988 to the then MPS President Staab, as future scientific exchanges with the MPS and joint projects were to focus on these labs.⁴⁸⁸

The often-highlighted role model function of the MPS is primarily mentioned in polite speeches and acknowledgments by Chinese partners, or in the self-presentations of the MPS and its China program to other West German science organizations and federal ministries. Nevertheless, the structures of the MPS were thoroughly studied by regularly visiting CAS delegations, as well as those of other science organizations, such as the DFG, Fraunhofer Society, large research institutions, and not least, industrial research facilities. Naturally, the same applied to other countries with whom China had intensive scientific exchanges, particularly the United States, Japan, and the United Kingdom. Elements from all these science systems were presumably copied, adapted, and incorporated into

institutes, which probably led to the plan around 1990/91 to transfer all CAS operations into a state holding company. Also summarized according to the note from Harnisch on Sep. 25, 1984, AMPG, Abt. II, Rep. 70, No. 287, fol. 6–10; and Nölle to AA on Nov. 29, 1984, *ibid.*, fol. 72–83; Note from Spielmann on Jan. 27, 1988 regarding the structural reform of the CAS, AMPG, Abt. II, Rep. 70, No. 91, fol. 13–16; Kühner, *Chinesische Akademie der Wissenschaften*, 1986, pp. 41–42.

487 GE Mingyi, lecture on “Grundlagenforschung” (Basic Research) during the anniversary event on Dec. 14, 1988, AMPG, Abt. II, Rep. 70, No. 91, fol. 88.

488 Note by Spielmann on Jan. 27, 1988 regarding the structural reform of the CAS, *ibid.*, fol. 13–16; summarizing note from Spielmann on Aug. 3, 1988 about the president’s conversation with HU Qiheng on April 13, 1988, *ibid.*, fol. 1–4.

the Chinese system, which has been continuously in reorganization since 1978. The ultimate aim remained the acceleration of economic “modernization.”

What the MPS had contributed was clearly stated by the CAS spokesperson when he invited the science attachés of the U.S. and German embassies to a “briefing” following the CAS annual meeting in January 1991. The focus of the meeting had been on human resources policy until 2003, aiming to use the impending age-related staff turnover to “thin out personnel in ineffective institutes and to intensify mobility and the principle of competition.” Overall, the staff numbers were to be reduced from the current 90,000 to 55,000 and there would be “increased use of temporary staff” in the future. As an organizational model, he referred to the existing “open labs.” But he also “explicitly” highlighted the MPS as the “model for effectiveness and the realization of the principle of competition.” In the trilateral setting of this briefing with science attachés, without any MPS representatives at the table, there was no need for polite platitudes; the CAS spokesperson likely meant what the German embassy attaché recorded.⁴⁸⁹ From the science policy instructional materials that the MPS had been offering for nearly 17 years, their Chinese partner organization cherry-picked “effectiveness” and “competition” to integrate into their system. In contrast, “pure basic research” took a backseat. The “autonomy” of science, its institutions, and researchers was interpreted in a way that did not question the primacy of politics and economics. The MPS was fine with this and was quick to guide the CAS on another personnel issue.

Tiananmen—What Was It?

Lack of mobility among research personnel was one issue; too much mobility in the wrong direction was another. This became more pronounced as more young university graduates, trained after the Cultural Revolution, were sent to Western countries to advance their dissertations at the most prestigious universities and research institutions. Unlike the forty- and fifty-year-old exchange scientists of the early years, they were not yet professionally established in China and had fewer family ties. They began their scientific careers in the Western world; why shouldn't they continue them there—just like their similarly mobile peers in host countries, who oriented themselves in varied directions in the 1980s because they couldn't find adequate academic positions at home or wanted to try something completely different? When DENG Xiaoping conceived the plan in 1978 to send tens of thousands of students abroad to “learn from foreign countries,” he wasn't concerned about the potential brain drain. Perhaps he relied on old cultural adhesive forces; in any case, he saw the equally old Chinese

489 Mann (Embassy Beijing) to AA on Feb. 8, 1991, AMPG, Abt. II, Rep. 70, No. 291, fol. 95–100 (quotes: p. 3.)

communities in many parts of the world not as traitors to the communist cause but as China's footholds abroad, counting on their willingness to support their homeland from a distance.⁴⁹⁰

Ten years later, the brain drain could no longer be denied. The "open labs" were also an attempt to make returning home more attractive for overseas students and exchange scientists. But it was not enough. The highly qualified young Chinese scientific talents, much like their West German counterparts in previous years, were primarily drawn to the U.S. in the late 1980s. The most prestigious research institutes were still located there, and there was a wide range of scholarships to bridge the time until more attractive living and research conditions would finally be offered in China—if one even wanted to return. After all, every major city had a Chinatown whose social networks welcomed newcomers from the Chinese mainland. Precisely countering this brain drain was, as MPS's China expert Barbara Spielmann realistically assessed, the reason why CAS increasingly wanted to send *prae-docs* to the Federal Republic and had pushed for an agreement on a Ph.D. program with the MPS—signed in 1987—that they considered at least as important as bilateral research projects.⁴⁹¹ This alone was of little help because, just like the young meteorite researcher HUA Qin at the MPI for Nuclear Physics, others also continued to move in a westerly direction after earning their Ph.D. To make this more difficult, CAS insisted on limiting scholarships to two years—well aware that neither a dissertation nor a Federal German Ph.D. procedure would be completed in this time. Extension requests from the MPIs or universities were handled very restrictively, much to the annoyance of local Ph.D. doctoral fathers, and perhaps one or two mothers.⁴⁹² The Ph.D. procedures were to be concluded in China, and scholarship recipients were thereby compelled to return to China.

And again, developmental biologist Uli Schwarz had an idea about this. Although its highly selective approach was not suitable for increasing the mobility of overseas students, it did understand how to leverage the young talent dilemma in the Chinese science system to strengthen the already existing foothold of the MPS in Shanghai, that vital agglomeration of bioscience institutes. At the guest laboratory, one of those junior research groups would initially be established, similar to those that had been introduced in the MPS at

490 Vogel, *Deng Xiaoping*, 2011, pp. 455–456. Surprisingly, Vogel considers it a success—based on the numbers given in the international edition of *People's Daily* on June 26, 2008 (6)—that out of a million Chinese who studied abroad between 1978 and 2007, "about a quarter of them already returned to China;" of the remaining 750,000, most probably finished their studies by this time and did not return. Cf. also Wang, "Cold War and the Reshaping," 2014, pp. 358–363.

491 Spielmann, "Rückblick und Ausblick," 1989, p. 32; Nickel, "Aufbruch ins Ungewisse," 1994, p. 31.

492 Bothe (University of Cologne) to Spielmann on Feb. 8, 1989, AMPG, Abt. II, Rep. 70, No. 221, fol. 65–66; Fax MPS to GE Mingyi (CAS) on Feb. 15, 1989, *ibid.*, fol. 63–64; GE to Spielmann on April 1, 1989, *ibid.*, fol. 3–5.

the end of the 1960s. For the group leadership, the plan was to attract a younger leading scientist—possibly also a female scientist—of Chinese nationality with a convincing project proposal through an international search. This person would go to Shanghai for a term of five years to form a team of German and Chinese, local and returning pre- and postdocs. Together, they would undertake a project that would offer both the project leadership and the young team members the chance to qualify themselves for higher positions within the Chinese science system and simultaneously for future collaborations with bioscience MPIs.⁴⁹³ Unfortunately, this idea, which was also well-received on the Chinese side, came at the wrong historical moment.

Even before the funding was secured, HU Yaobang, the former Secretary-General of the Communist Party of China (CPC), passed away on April 15, 1989. The reformist politician, who was especially esteemed in intellectual circles for his moderating interventions against anti-liberal campaigns like the one “against spiritual pollution” of 1983, had been ousted as CPC Secretary-General following the student unrest of 1986. The day after his death, hundreds of students gathered in Tiananmen Square—much like they had upon the death of ZHOU Enlai in April 1976—to commemorate the former leading party cadre, whose unjustly perceived demotion had once again dashed their hopes for political and cultural liberalization. This memorial event triggered the largest mass protests in the history of the People’s Republic, where student frustrations as well as existential fears from broader segments of the population about the socially polarizing effects of economic liberalizations came to the forefront. The student leaders articulated demands for curbing corruption, societal democratization, and student self-organization. Key elements of the party leadership, including DENG Xiaoping himself, interpreted this as a public challenge to the Chinese party and state system that needed to be promptly suppressed.⁴⁹⁴ On June 3/4, 1989, young men and women around Tiananmen Square were beaten up, run over by tanks, and shot by the People’s Liberation Army; hundreds lost their lives in other parts of the city. If the extensive science policy support from Western countries for China had ever been linked to liberal democratic goals and not just global market-economic interests, their Chinese torchbearers were violently and lastingly disillusioned that night.⁴⁹⁵

493 Spielmann, “Rückblick und Ausblick,” 1989, p. 33; Spielmann to Abel (BMFT) on April 18, 1989, AMPG, Abt. II, Rep. 70, No. 221, fol. 88–92.

494 Regarding HU’s role in Chinese reform politics, his dismissal, the causes of the uprising, and the internal party decision-making process, see Vogel, *Deng Xiaoping*, 2011, pp. 576–587, 599–603; Lim, *People’s Republic*, 2014.

495 On the failing de-escalation attempts of the divided party leadership and the further escalation surrounding Gorbachev’s state visit to Beijing, with which DENG wanted to overcome the Sino-Soviet rift at the end of his political life, see Vogel, *Deng Xiaoping*, 2011, pp. 595–639.

The reaction of the West came quickly, remained ambivalent, and was short-lived.⁴⁹⁶ A month after the Tiananmen Massacre, the G7 Economic Summit in Paris cut economic aid, loans, and technology transfers. However, education and science were excluded from the sanctions, and the European Community's policy of continuing corresponding bi- and multilateral relationships at the working level was confirmed. Against this backdrop of finely tuned realpolitik, the celebrations of the 200th anniversary of the French Revolution provided the setting for a symbolic political signal: instead of the originally planned Chinese acrobat troupe, Parisian students from China wearing black mourning bands took the honorary position in the parade on the Champs-Élysées. Be it in the USA, Japan, Great Britain, France, or the Federal Republic—everywhere, aid programs were set up for Chinese exchange students and residence permits were extended; Canada even offered its Chinese students permanent resident status. These exchange students became, in a way, the mascots of a Western foreign science policy that otherwise fluctuated between two poles in all these countries: Should the scientific relations be suspended, thus increasing the pressure on the Chinese government to improve political conditions in favor of the protesters? Or should collaborations continue, to avoid further isolating and making the scientific communities in China even more vulnerable?

The Federal German foreign science policy opted for the second position without much debate. In mid-June 1989, the China coordinators from West German science organizations (MPS, DAAD, DFG, AvH) met in Bonn with YUAN Chengyu, the former Science Attaché of the Chinese Embassy and later head of the CAS's foreign affairs department. He had since moved back to Cologne, where he was building relations with the Carl Duisberg Society on behalf of the CAS, but was no longer willing to "comment on the incidents over the phone in any form." Spielmann, the China coordinator, also expected "valuable insights" from this "old acquaintance" and "trusted man of the MPS."⁴⁹⁷ Whatever was discussed there—and possibly not recorded out of caution—it is certain that Spielmann soon afterward informed the BMFT both by phone and in writing that the MPS would continue the scientific exchange with the

496 The following presentation, unless otherwise stated, is based on Bullock, "Effects of Tiananmen," 1991. The Sinologist at the Woodrow Wilson Center in Washington was commissioned by the U.S. Congress in 1989/90 to conduct interviews in the most important countries for scientific cooperation with China (USA, UK, France, West Germany, and Japan) with representatives of the relevant science institutions and ministries and to comparatively present their reactions to the Tiananmen events. She also interviewed the China expert of the MPS, Spielmann, and her unit head Nickel (Bullock to Spielmann on June 24, 1990 and Oct. 30, 1990, AMPG, II. Abt., Rep. 70, No. 291, fol. 151–159, 164–165; Spielmann to Bullock on Nov. 27, 1990, *ibid.*, fol. 147–148).

497 Travel application Spielmann from June 13, 1989, AMPG, II. Abt., Rep. 70, No. 221, fol. 1. YUAN had studied in the GDR in the 1950s and as an embassy secretary in Bonn in the 1970s had "behind the scenes" promoted the CAS-MPG cooperation (Note Nickel from Aug. 3, 1984, AMPG, II. Abt., Rep. 70, No. 287, fol. 153–160; phone message from Nickel to CS on April 8, 2022).

CAS “in accordance with the annual plan” and would also—coordinated with the DFG—proceed with a Tibet expedition planned within the China program for August to October 1989.⁴⁹⁸ The request that the CAS had made to the MPS just a few days after the clearing of Tiananmen, to not send their scientists to China “for security reasons,” was soon withdrawn.⁴⁹⁹ The Tibet expedition was now seen by the German side as an opportunity to temporarily remove Chinese participants, especially young scientists, some of whom were at risk due to their involvement in the Tiananmen protests, from the scrutiny of the security agencies for at least a few weeks.⁵⁰⁰

A few days after that meeting with YUAN, the BMFT in turn informed 14 other research institutions and major research facilities engaged in China with BMFT funding about the “ideas for further procedures” that had been coordinated within the Federal Government: A “business as usual” was initially ruled out, but the “basis for scientific contacts” was to be maintained. Specifically, this meant that Chinese guest researchers could still come to the Federal Republic of Germany, delegations could be received, and ongoing projects could continue as planned. Travel in the opposite direction should rather be postponed, “spectacular and publicity-generating measures” were canceled, but not the eye-catching Tibet expedition. The exploration of new projects was possible, but “no undue haste” was required in preparation. If new Chinese contact persons were involved, one should investigate “whether the previous partners had not fallen victim to political measures.” Also, guest researchers whose stay had ended were not to be sent back to China against their will; funds for a few extra months would be made available. DAAD lecturers, however, had already returned to China over the course of July, as had embassy staff and their families, and representatives of German companies; DAAD scholarship holders were to arrive on time for the start of the semester, and the German school would reopen after the summer holidays.⁵⁰¹ All in all, these were rather cosmetic measures that distinguished the post-Tiananmen procedure from business as usual in the scientific exchange between the FRG and China; at most, they threw a bit of a wrench into its previously well-oiled machinery.

This was especially true for the MPS as the natural science institutions and their staff fared better in the political screenings, persecutions, and purges that began immediately after the Tiananmen Massacre than did institutions like the Chinese Academy of Social Sciences (CASS).⁵⁰² This was in part because CAS

498 Spielmann to Abel (BMFT) on July 17, 1989 referring to the previously held phone call, AMPG, II. Abt., Rep. 70, No. 221, fol. 149–152.

499 Spielmann to Meyerhoff on June 14, 1989, *ibid.*, fol. 341 (quote).

500 Written communication from Spielmann to CS on Jan. 6, 2022.

501 BMFT to 14 recipient institutions on July 21, 1989, AMPG, II. Abt., Rep. 70, No. 221, fol. 144–148; the participants in the conversation with YUAN on June 15/16, 1989 were not on the distribution list.

502 Heintzig (Federal Institute for East European and International Studies, BiOst) to Spielmann on Nov. 2, 1989, AMPG, II. Abt., Rep. 70, No. 199, fol. 73; protocol of a conversation

Secretary-General YU Wen, a pragmatic science manager and former comrade-in-arms of MAO from the days of the Long March, was able to successfully protect “his people” from persecution.⁵⁰³ However, the claim by international relations officer Nickel in his contribution to the special section of *MPG-Spiegel* on the occasion of the 20th anniversary of the MPS-CAS agreement, stating that none of the MPI’s cooperation partners were affected, is inaccurate.⁵⁰⁴ It’s more likely that such cases were not publicly discussed even in 1994; not even the fate of the prominent cosmologist FANG Lizhi, who had long supported the cooperative relations of the MPI for Astrophysics with partner institutes of the CAS, was mentioned.⁵⁰⁵ After the violent clearing of Tiananmen Square, he and his wife had taken refuge in the U.S. embassy, where they had to stay for a year before being allowed to travel to the United Kingdom through the mediation of President George W. Bush. FANG then taught at various British and American universities, most recently in Tucson, Arizona.⁵⁰⁶ The “Chinese Sakharov,” as he was dubbed by international media, even rejected the idea of scientific isolation of China by foreign countries while in exile.⁵⁰⁷

Instead of focusing on persecuted colleagues, the MPS preferred to refer to the CAS President ZHOU Guangzhao, who had been in office since 1987 and whose skillful leadership had largely shielded the academy from political pressures.⁵⁰⁸ According to MPS’s China officer Spielmann in retrospect, he had

held on Oct. 17, 1989 at the Federal Institute for East European and International Studies on the current situation in the scientific institutes of the People’s Republic of China, *ibid.*, fol. 74–76. Spielmann to Eikenberg (BMFT) on Aug. 27, 1990, AMPG, II. Abt., Rep. 70, No. 291, fol. 143–146.

503 This is how the international relations officer Nickel describes it (written communication to CS on April 4, 2022; oral communication to CS on April 8, 2022), while also highlighting the close personal contact between YU and his counterpart at the MPS, Secretary-General Ranft.

504 Nickel, “Aufbruch ins Ungewisse,” 1994, p. 31.

505 Börner (“Gemeinsamer Blick,” 1994) also mentioned FANG in his commemorative contribution only as the one who had significantly advanced cosmology in China from Hefei, but not his persecution, escape, and exile. Nevertheless, they remained in contact, as FANG was still a frequent guest at the MPS-CAS workshops, as long as they took place in Germany (written communication from Börner to CS on Feb. 22, 2022). See also the corresponding proceedings: Fang, “Quasar Clustering,” 1993; Deng et al., “Quasar Clustering,” 1993; Bi et al., “Jeans-Type Instability,” 1995; Fang, “Large Scale Bulk Velocity,” 2001.

506 Britannica, Fang Lizhi, <https://www.britannica.com/biography/Fang-Lizhi>, last accessed on May 10, 2022; Schell, “Introduction,” 1992; Vogel, *Deng Xiaoping*, 2011, pp. 385, 576–579, 653.

507 FANG in an interview with *Spiegel* correspondent Tiziano Terzani: FANG (Terzani) on Aug. 2, 1990, Fang, *Bringing Down*, pp. 284–285.

508 This is reflected in a letter plea by MPS-President Zacher to the Fritz-Thyssen Foundation for funding after the reduction of BMFT funds for the China program post-reunification: Zacher to Merkle and Coing (both from the Thyssen Foundation) on June 3, 1991, AMPG, II. Abt., Rep. 70, No. 291, fol. 311–313.

also “personally protected his employees and scientists who had participated in the demonstrations,” providing them with the “certificate of no objection” needed to continue participating in international congresses.⁵⁰⁹ ZHOU had also indicated in a timely manner that the academy would approve if the MPS extended the scholarships of their Chinese guests who requested a postponement of their return journey by initially three months, and would re-invite endangered scientists in China who had reached out for help to their former West German host institutes.⁵¹⁰

Where the MPS was diplomatically compelled to make a statement, they found informal solutions with the CAS, as in the early days. A planned international conference in Dalian for 1989 had to be canceled, which was particularly unfortunate as the MPI for Quantum Optics and the local CAS Institute for Chemical Physics intended to select exchange candidates for the following year during this event. In order not to let the “hitherto gratifying cooperation” break off, they quickly created a “re-invitation program” and invited familiar colleagues for a second time.⁵¹¹ An official meeting to extend the MPS-CAS cooperation agreement, which was due every three years and was also up for renewal in 1990, would have appeared too much like business as usual from the West German perspective. Therefore, CAS President ZHOU paid a personal visit to his colleague Staab in March 1990, deliberately not at Staab’s presidential Munich office but at his MPI for Medical Research in Heidelberg. It was agreed to simply extend the old contract by letter without the usual program details for the next period.⁵¹² This practice was further simplified under the direction of MPS President Zacher; thanks to the long-standing experience and the mutual trust that had grown with the program, automatic annual extensions sufficed from

509 Note by Spielmann, undated (approx. end of September/start of October 1997) about discussions with the CAS, a conversation with the former President ZHOU Guangzhao, and the China trip of MPS-President Markl (Oct. 6–11, 1997), AMPG, II. Abt., Rep. 70, No. 150, fol. 24–30. As early as 1987, ZHOU, who previously, as a member of the CPC Central Committee, executed FANG’s expulsion from Hefei University and his transfer to the Beijing Observatory, still allowed him to attend conferences abroad (Schell, Introduction, 1992, xxix–xxx). To what extent he influenced FANG’s asylum in the U.S. embassy and his subsequent departure to the UK and the USA in 1989/90 remains to be verified.

510 Nickel to Haffner (BMFT) on Oct. 9, 1989, AMPG, II. Abt., Rep. 70, No. 221, fol. 73–75. The requested additional funds of 50,000 DM for the extension of the scholarships were modest compared to the BMFT’s China budget of approximately 100 million DM.

511 Wanner, “Molekulare Dynamik,” 1994, p. 56. In external communications, it was highlighted in 1989/90 that they would avoid official contacts and major events and would advise German scientists against trips to China, cf. Peter (MPS) to Korn-Riedlinger (Liaison Office for Electronics and Information Technology Beijing/Berlin) on Aug. 17, 1989, AMPG, II. Abt., Rep. 70, No. 221, fol. 279; Spielmann to Eikenberg (BMFT) on Aug. 27, 1990, AMPG, II. Abt., Rep. 70, No. 291, fol. 143–146.

512 Staab to ZHOU on May 2, 1990, AMPG, II. Abt., Rep. 70, No. 291, fol. 36; ZHOU to Staab on May 26, 1990, *ibid.*, fol. 33.

then on. This was pointed out by Spielmann to the subsequent MPS President Hubert Markl before he followed the by then usual routine in the fall of 1997 and flew to Beijing to explore new projects with ZHOU and his successor LU Yongxiang:

In spite of all the naysayers, this very personalized trust, especially in President Zhou and his colleagues, enabled the MPS to survive the most difficult stage of cooperation, the time after the events of June 4, 1989, without damage.⁵¹³

ZHOU's informal travel diplomacy in the spring of 1990 was certainly not limited to the MPS or to West Germany. As early as January 1990, the nuclear physicist—a member of the U.S. National Academy of Science (NAS) since 1987—had flown to the USA to persuade NAS President Frank Press and other politically influential colleagues that it was time to relax sanctions against Chinese scientific institutions. Indeed, in the following months, both the NAS and the National Science Foundation (NSF) resumed their China programs. ZHOU was also able to continue the stalled negotiations with Japan's Ministry of International Trade and Industry (MITI) on an environment research center in Beijing to be funded by Japan. By mid-1990, essentially all of China's major Western partners in scientific and technical cooperation had returned to business as usual, albeit with some symbolic restrictions.⁵¹⁴

The disappointment over the violently recalibrated Chinese reform project, however, continued, particularly among the actual actors of bilateral scientific cooperation. Within the MPS, there were institute directors, caricatured by the China coordinator Spielmann as “naysayers,” who disapproved of the unceremonious extension of the MPS-CAS agreement in the spring of 1990 and pointed to the waning China enthusiasm among their staff. It became increasingly difficult to motivate young professionals for an extended stay in China. There was less reservation when engaging with highly motivated young students from China. ZHENG Qingyi had not left China “after the suppression of the unrest as a certified physician,” as was assumed, but had already followed her older brother from Shanghai to Hamburg in 1988. She wished to continue her studies here and, instead of medical practice, sought to specialize in researching the causes of diseases.

In 1994, she completed a second degree in biology in Hamburg, financing it by cleaning lab equipment in Eckhard Mandelkow's Max Planck Cytoskeleton group, which focused on Alzheimer's disease. The spokesperson for the Max Planck working groups for structural molecular biology at DESY, who had already supervised her diploma thesis, supported her desire to pursue a Ph.D. and advocated to the MPS president for a scholarship paid “from MPS funds

513 Note by Spielmann, undated, on the China trip of MPS-President Markl from Oct. 6 to 11, 1997, AMPG, II. Abt., Rep. 70, No. 150, fol. 206–207.

514 Bullock, “Effects of Tiananmen,” 1991, pp. 616–617, 625–628.



Fig. 26: ZHENG Qingyi after receiving her PhD on Nov. 28, 1997 in Hamburg, together with Eckhard and Eva-Maria Mandelkow.

for work abroad, or otherwise from private funds,” so she could continue her research on an Alzheimer-specific antibody.⁵¹⁵ The International Relations Unit eventually found a bookkeeping-correct solution outside the MPS-CAS agreement, which didn’t address such cases in the first place. After her dissertation that was assessed as “very good”, she remained with Mandelkow’s working group at DESY as a postdoc for several years before moving to Klaus Willecke at the Genetic Institute of the University of Bonn.⁵¹⁶

515 Note by Meinecke (MPS) from Aug. 3, 1994 on the visit of the president in Hamburg on July 14, 1994, AMPG, II. Abt., Rep. 70, No. 218, fol. 59. Oral communication from ZHENG Qingyi to CS on Feb. 19, 2022. I would like to thank Hanna Worlizcek for her extensive research that preceded this personal contact and for the subsequent source references. Zheng-Fischhöfer, *Sequenzielle Phosphorylierung*, 1997.

516 Note by Kühner from Aug. 18, 1994, AMPG, II. Abt., Rep. 70, No. 218, fol. 57. Zheng-Fischhöfer wrote to Zacher on Jan. 24, 1998; Zacher to Zheng-Fischhöfer on Jan. 29, 1998, AMPG, III. Abt., Rep. 134, No. 138, fol. 324–326. Zheng-Fischhöfer got married in 1991 and in the early 2000s followed her husband to his changing locations as a career soldier in the *Bundeswehr*; they had two children, and she currently teaches biology in various academic and vocational training contexts.

Globalized Elite Development

Dramatic repercussions were evident in the regular doctoral program, which the MPS—unlike the VW Foundation, which had reduced its China scholarships in view of its impending obligations in East Germany—continuously expanded.⁵¹⁷ If the initially barely observed brain drain had already become noticeable in the second half of the 1980s due to the increasing proportion of doctoral students among the Chinese guests at the MPIs, it became a challenge after the Tiananmen events. While these young people often did not stay in Germany after their scholarships ended, they increasingly sought subsequent positions in the United States.⁵¹⁸ Among those who had directly earned their doctorates in the USA, even more remained there. For the first time, the return rate from Japan also declined: while in 1988, 90 percent of the expected university graduates had returned to China, in 1989 only 10 percent did; Japanese companies seized the opportunity to recruit the Chinese graduates trained in their country in natural and engineering sciences.⁵¹⁹ On the other hand, the CAS found itself “in increasingly greater difficulty finding qualified candidates for leadership positions”; by now, talk there was of a “second lost generation of scientists.”⁵²⁰

Nevertheless, the Tiananmen events and their immediate consequences for China’s scientific exchange with the Western world were not a reason for DENG Xiaoping, who was responsible for the violent crisis management as Chairman of the Standing Committee of the CPC Politburo and who, well into the early 1990s, held the reins as an almost ninety-year-old grey eminence, to roll back the reform and opening policy. Stopping doctoral and exchange programs was not up for debate.⁵²¹ The Academy had to come up with other means to regulate the brain drain without blocking the barely paved ways to mobilizing, increasing efficiency, and making the Chinese science system internationally competitive. It had to enhance its attractiveness to its own internationally competitive scientific talent. In doing so, it could neither entice with political liberalization, which had just been relegated back to the realm of utopia, nor could it bring back the ‘iron

517 Bullock, “Effects of Tiananmen,” 1991, p. 621; Spielmann to Bullock on Nov. 27, 1990, AMPG, II. Abt., Rep. 70, No. 291, fol. 162–163, wherein she approved Bullock’s text passages, which were based on interviews with her and Nickel, albeit with minor formal corrections that could not be incorporated into the printed version due to deadline overruns.

518 Note by Peter from Nov. 22, 1994 (protocol of the colloquium on the 20th anniversary of the MPS-CAS Agreement), AMPG, II. Abt., Rep. 70, No. 219, fol. 212.

519 Bullock, “Effects of Tiananmen,” 1991, p. 625.

520 Mann (Embassy Beijing) to AA on Feb. 8, 1991 (3–4), AMPG, II. Abt., Rep. 70, No. 291, fol. 97–98. According to the Research and Technology Annual Report PR China 1995/96 from the German embassy dated Jan. 2, 1997, out of the 230,000 students who went abroad since the early 1980s, only 75,000 had returned by this point, AMPG, II. Abt., Rep. 70, No. 150, fol. 185.

521 Vogel, *Deng Xiaoping*, 2011, pp. 643–644.

rice bowl' from the storeroom. It had to content itself with genuinely scientific and economic incentives, which it subsequently combined in a meritocratic manner similar to how things worked in the West and which were familiar to the sought-after, internationally-experienced young talents. These incentives, however, were tailored to Chinese conditions and linked to cultural-historical memories of the civil service examination system that had been practiced for millennia and was only abolished in 1905.

Only scientific qualification, not political compliance or seniority was to be the determining factor in appointments, especially since the Cultural Revolution had left a gap in the middle-aged ranks of adequately qualified scientific personnel. For this reason, the minimum age for the appointment of Associate Professors (previously 35 years) and Professors (previously 45 years) was abolished; as early as 1991, the youngest professor at CAS was just 29 years old. Every two years, the best young scientists were individually recognized and rewarded, among other things, with allocated housing and better travel opportunities; in 1990, there were 19 who were promoted in this way. Additionally, the CAS President now had a fund to directly support talented graduates. The older generations, who had developed and led the collaborative projects on the Chinese side but were no longer financed for trips abroad after crossing the age limit of 50 or 55, bore the cost. The number of "open labs" with their temporary and project-based employment contracts continued to increase; by 1991 there were already 85, by 1996 around 100, and 150 more were planned. Financing for research programs and projects, which would henceforth be a growing part of institute budgets, was to be subjected to a strict competitive process.⁵²² However, the State Education Commission still imposed limits on the "open door policy" and professional freedom that CAS wanted to pursue. Perhaps due to the intervention of this commission, the CAS Institutes continued to reject extension requests from their scientists abroad and demanded from those leaving either a "notarial confirmation of their willingness to return" or a "compensation payment."⁵²³ Furthermore, the Chinese Embassy in Bonn pressured German authorities to no longer grant Chinese students and scientists residence permits for humanitarian reasons that were associated with a work permit after their scholarships ended. The embassy forced its own citizens to voluntarily give up this privileged

522 Mann (Embassy Beijing) to AA on Feb. 8, 1991, AMPG, II. Abt., Rep. 70, No. 291, fol. 95–100. The science attaché recorded this set of measures from the CAS speaker's remarks during a meeting on Feb. 6, 1991, following the CAS Annual Conference from Jan. 15–18, 1991. On the open labs, see also: Protocol of the MPS/DFG-China Coordination Committee (CKA) meeting on Feb. 15, 1995, AMPG, II. Abt., Rep. 70, No. 219, fol. 157 and report Peter (MPS) from May 10, 1996, on the China trip April 1–11, 1996, *ibid.*, fol. 6. On the maximum age limit: Kühner to Walther (MPI for Quantum Optics) et al. on Oct. 7, 1994, AMPG, II. Abt., Rep. 70, No. 121, fol. 272.

523 Kühner to Walther (MPI for Quantum Optics) et al. on Oct. 7, 1994, AMPG, II. Abt., Rep. 70, No. 121, fol. 272; Protocol CKA from Feb. 15, 1995, AMPG, II. Abt., Rep. 70, No. 219, fol. 163.

residence status if they wanted to renew their passports or register a newborn child; the affected individuals had only the choice of either returning to China immediately or applying for political asylum in Germany.⁵²⁴

The success of all these carrot-and-stick measures did not have an immediate impact. Therefore, MPS expected a difficult discussion on the “lack of willingness of scientists to return” during the 20th anniversary of the cooperation with CAS in autumn 1994, which had been downgraded from a state ceremony in the Berlin Reichstag, as CAS would have preferred, to an academic celebration in Munich. This is what China officer Kühner prepared the German participants for in the concluding round-table discussion with their Chinese colleagues in Martinsried:

From my point of view, there is no easy solution. Administrative coercion is out of the question; the only practical approach seems to lie in enhancing the attractiveness of a return to China through partnerships, joint projects, young investigator groups, and the like.⁵²⁵

This scientific-political situation in China was the backdrop against which Uli Schwarz's proposal from the late 1980s to enrich the guest lab in Shanghai with young investigator groups was revisited. Similar to the German MPIs, these groups were to be initially limited to three years and, following an evaluation, extended to a total of five years. To make them particularly attractive for Chinese people living abroad, the regular monthly salary of 1,500 Renminbi (300 DM) paid by CAS was supplemented by an astonishing fivefold monthly allowance from MPS (7,500 Renminbi/1,500 DM); an additional 1,500 DM was made available to the group leadership every month to also enhance the salaries of the group members; 75,000 DM were provided annually for equipment and materials, also by MPS.⁵²⁶ In this regard, one could say that no expenses were spared. CAS was

524 Wenke, “Streit über Aufenthaltsbefugnis,” *Frankfurter Rundschau*, Oct. 11, 1994.

525 Kühner to Walther (MPI for Quantum Optics, CKA Chairman), Ziegler (Senckenberg Museum), Trümper (MPI for Extraterrestrial Physics), and Schwarz (MPI for Developmental Biology) on Oct. 7, 1994, AMPG, II. Abt., Rep. 70, No. 121, fol. 270–278, quotations: fol. 273. Note Kühner from April 22, 1994, *ibid.*, fol. 361; Program for Oct. 14, 1994, *ibid.*, fol. 291; Note Kühner (schedule planning) from Aug. 10, 1994, *ibid.*, fol. 352–353. The downscaling of the ceremony is documented in a note by Nickel from Nov. 2, 1993, annotated extensively by Marsch (Head of Abt. I), Secretary-General Ranft, and Zacher, *ibid.*, fol. 375–377. Ranft felt that a state act would not fit the political landscape and was reluctant to coordinate with the BMFT and the AA; Marsch was opposed to giving such prominence to cooperation with China compared to other more important countries like the USA. Overall, a treaty that was not actually necessary was celebrated, along with the difficult partnership, while successful partnerships without contracts went unmentioned. Zacher preferred Munich, from where the China cooperation had been fought for 20 years, over the capital of reunified Germany as the venue.

526 Note for the president for the Senate meeting on Oct. 19, 1994, AMPG, II. Abt., Rep. 70, No. 121, fol. 267. Protocol of the joint German-Chinese committee meeting for the selection of the head of the second junior research group at the Institute for Cell Biology,

willing to disturb the balance of its social structure to gain a competitive edge in the international market for highly qualified Chinese emerging talent.⁵²⁷

In collaboration with MPS and with an eye on the upcoming anniversary, CAS did something unthinkable for both itself and the entire Chinese science system up to that point: in early 1994, they posted two group leader positions internationally, including in *Science*, *Nature*, *China Daily*, and *Chinese Science News*; Chinese individuals both from within the country and abroad were invited to apply. Several dozen applications from the USA, Canada, the United Kingdom, Sweden, and China were received. A German-Chinese commission appointed by both presidents of CAS and MPS—an innovation for the Chinese side as well—initially invited a group of five postdocs to Shanghai for public hearings, which were also a novelty in China. The fact that the Chinese partners in difficult negotiations “stepped outside their comfort zone” multiple times and eventually agreed to these novel procedures and the associated loss of control was due to their personnel issue following the opening-up policy, coupled with a simultaneous rejection of political liberalization.⁵²⁸

The selection committee ultimately chose biochemist and addiction researcher PEI Gang, who had earned his Ph.D. in 1991 in Chapel Hill (NC, USA) and had since then been researching opium receptors as a postdoc at the Duke University Medical Center. Born in 1953 into a family of academics, he was—something neither mentioned in MPS’s press releases nor in its files—an equally perfect and probably rare refutation of the talk about the first “lost generation of scientists.” A committed Red Guard from the outset, he had worked in rice fields and tool factories during the Cultural Revolution, simultaneously self-educating in languages and natural sciences. As soon as universities reopened in 1976, he began his studies in pharmacy; he joined the Communist Party while still a student and remains a member to this day. Following his studies, he spent some time in 1986 at the Karolinska Institute in Stockholm and subsequently went to the USA.⁵²⁹ Whether he showed solidarity with his fellow students at Tiananmen

Shanghai, on April. 9, 1996, AMPG, II. Abt., Rep. 70, No. 219, fol. 12. Among the total of 11 junior group leaders appointed by 2018, only the German molecular biologist Frauke Gräter, now at the University of Heidelberg, was a woman; nine of her ten colleagues were from China, and one from Russia; written communication from Sabine Panglung (MPG-GV) to CS on July 17, 2020. More information on the groups can be found in the two anniversary issues of the *Bulletin of the Chinese Academy of Science: Networking for Scientific Excellence* (2004, Feb. 18) and *Networking for Science* (2014, Feb. 28).

527 The German sources provide no information on how this imbalance was managed internally.

528 Spielmann, “Nachwuchsgruppen,” 1997, p. 35 (quote). Schwarz similarly reported to the CKA (protocol of CKA Meeting from Feb. 15, 1995, AMPG, II. Abt., Rep. 70, No. 219, fol. 155–170).

529 Berg, “Professor Rastlos,” *Berliner Zeitung*, Nov. 8, 2010; Wikipedia, Pei Gang, https://de.wikipedia.org/w/index.php?title=Pei_Gang&oldid=221643011, last accessed on Jul. 30, 2020.

is not known. In 1994, however, he read the job advertisement, which, as he told in an interview for the *MPG-Spiegel* in 1997, seemed tailor-made for him:

Of course, I always wanted to return to China because I am Chinese and China is my home. But I never wanted to do it just for the sake of returning; I wanted to make a difference in China. When I saw the ad in *Science*, I couldn't believe my eyes. Here was a job that allowed me to do both: to return and to initiate change.⁵³⁰

And he did just that. Unlike some of his competitors, PEI was not deterred by the frictions and delays that arose from the structural integration of this unfamiliar model of a time-limited, largely MPS-funded, and independently operating research group into the Chinese scientific, labor, and social system—issues that ruined the planned opening in time for the anniversary of the MPS China program in the fall of 1994.⁵³¹ Starting in 1995, he quickly built his Laboratory of Receptive Biology with ten people, including four pre- and postdocs each. He won two Chinese early-career awards in the first year and, following his early-career group, took over the management of the regional bio-scientific academy institutes consolidated in the Shanghai Institutes for Biological Sciences in 2000. In 2007, he became President of Tongji University and attempted to fulfill his vision of combining communism, democracy, scientific autonomy, and creativity—a task he probably accomplished less successfully as a government advisor, which he also was. As a university president, he could offer “good professors” “top salaries,” but was annoyed by “the selfishness of students” who expected only a “great salary” from a Tongji degree, while PEI wanted to first and foremost address the widespread “cheating, forging, deceiving” within academia.⁵³²

His stance would have found only limited understanding from his colleague ten years younger, molecular geneticist HU Gengxi, who was selected for the second early-career group leadership in 1996. HU began his studies at home without any delays due to the Cultural Revolution, went to the Massachusetts Institute of Technology (MIT) for his master's degree, and was lured to Shanghai

530 Spielmann, “Nachwuchsgruppen,” 1997, p. 36.

531 Kühner to Walther et al. on Oct. 7, 1994, Attachment, 7, AMPG, II. Abt., Rep. 70, No. 121. Schwarz extensively reported to the CKA about problems due to time limitations, ranging from social insurance to housing allocation, which took a very long time, to the right to confer doctorates: records of CKA Meeting from Feb. 15, 1995, AMPG, II. Abt., Rep. 70, No. 219, fol. 162.

532 As quoted by Berg (“Professor Rastlos,” *Berliner Zeitung*, Nov. 8, 2010) who already saw him as the next Minister of Science; however, PEI withdrew from all offices in 2016 at the age of only 63, shortly after he had opened the largest German-speaking library in Asia at Tongji University with the DAAD President Margret Wintermantel: Expansion of the German-Chinese Network in Biotechnology, *Innovations Report*, <https://www.innovations-report.de/fachgebiete/biowissenschaften-chemie/ausbau-deutsch-chinesischen-netzwerks-biotechnologie-161496/> last accessed on Jul. 31, 2020. Cf. also “Pei Gang—Portrait,” 2004.

by the MPS/CAS offer in 1996. He used his Laboratory of Genome Stability and Modification as a start-up and founded the start-up *Health Digit* in 2000, still during its MPS funding period. The company soon made Western pharmaceutical companies fearful as it initially produced protein chips and diagnostic devices, including those for cancer screening, with around 300 employees and quickly generated millions in sales. At the “Biotechnology Meeting,” the first such alumni meeting of the DAAD in 2004 in Shanghai, intended to solidify the networks that had been created, HU presented his company with appropriate advertising material. In each of his glossy brochures, according to a *FAZ* reporter, the present Western competition suspected patent violations, such as in the use of twelve tumor markers protected worldwide except in China. The fact that HU now also wanted to expand abroad fully enraged Thomas Meyer, head of the Medical Proteome Center at the University of Bochum:

If this is the result of our collaboration, one has to say: “This is not how we imagined it.”⁵³³

Today, HU is the Chairman of Zhejiang Wolwo Bio-Pharmaceutical Company Ltd. and in 2020, thanks to revenues from several biotech companies, he and his family ranked 1,613 out of 2,095 billionaires worldwide on the Forbes list.⁵³⁴

Both the CAS and the MPS viewed these two careers as success stories, justifying the establishment of the junior research group model in China on a serial basis. First at the CAS- Institute for Biochemistry and Cell Biology, and later at the newly founded CAS-MPS Partner Institute for Computational Biology (PICB), two and sometimes three Max Planck-CAS Research Groups were continuously operating until 2018. The attempt to also establish this model at the Zoological Institute in Kunming, with its focus on biodiversity and ecosystem research, had to be discontinued after the first round in 2002/03 due to a politically induced change in leadership and the institute’s thematic direction. The last Population Genomics Group led by XU Shuhua in Shanghai was integrated into the PICB as a regular research group in 2018, where XU also served as an assistant to the director.⁵³⁵

533 Cited according to: Müller-Jung, “Pendler, Promotionen, Plagiate,” *Frankfurter Allgemeine Zeitung*, May 12, 2004. Expansion of the German-Chinese Network in Biotechnology, *Innovations Report*, <https://www.innovations-report.de/fachgebiete/biowissenschaften-chemie/ausbau-deutsch-chinesischen-netzwerks-biotechnologie-161496/>, last accessed on Jul. 31, 2020.

534 *Forbes*, “Billionaires,” <https://www.forbes.com/consent/?toURL=https://www.forbes.com/billionaires/>, last accessed on Jul. 30, 2020. Regarding the personnel HU, see also: Transcript of the meeting of the joint German-Chinese committee for the selection of the head of the second junior group [...] from April 9, 1996, AMPG, II. Abt., Rep. 70, No. 219, fol. 11–14. Cf. also “Hu Genxi—Portrait,” 2004.

535 Written communications from Panglung to CS on Jul. 17, 2020 and from Spielmann to CS on Jul. 16, 2020. “Population Genomics,” PGG, <https://www.picb.ac.cn/PGG/>; CAS-MPS Partner Institute for Computational Biology, About Us, <https://www.picb.ac.cn/picben/#/channelData/e9366501bbb94bfaaac94c906be1a52>, both links last accessed on Jul. 31,

As early as 1996, within the context of its ongoing structural reforms and under its sole administration, the CAS established twenty junior research groups; another twenty were planned for 1997, and at least sixty more were to follow by the turn of the millennium. These were preferably attached to the “open labs” and the research centers for life sciences in Shanghai and for Earth sciences in Beijing that were set up a bit later. These centers aimed for more interdisciplinary research compared to traditional academy institutes and also offered lab spaces to compatriots abroad during their semester breaks.⁵³⁶ To what extent they actually followed the Max Planck model—be it in the selection process, in paying far beyond the usual Chinese salary scale, or mainly in the degree of autonomy given to the group leaders—would need to be checked in the CAS archives. Only then could it be determined whether this tool of transnational junior research promotion actually contributed to dismantling the hierarchies in the structures of scientific work within the CAS—a change many MPS visitors to China had deemed overdue well into the 1980s.

What remains is to clarify for whom and for what purpose the guest lab and the junior research groups, that is, the two original instruments of bilateral scientific cooperation in the collaboration between the MPS and the CAS up to that point, served as a model. On the occasion of the Bonn celebration for the 20th anniversary of the STC agreement between the Federal Republic and the PR China in 1998, the by then retired CAS President ZHOU Guangzhao strongly encouraged the return of the young Chinese exchange scientists in the audience. He emphasized, ostensibly to the German hosts, the role of the MPS as a model for the “currently in-depth conducted” structural reforms in the CAS. The focus would be on what makes the MPS successful, namely, that it “continuously sheds the old, strives for the new, while trying to preserve the creativity of its scientists.” Procedures for nurturing talent, personnel selection, evaluations, and term limits on employment contracts would be adapted; “greater freedom” would be granted to those “engaged in basic research” to awaken their “initiative and creativity.” Young scientists from abroad would be favored in terms of

2020. Cf. also the research report of the Max Planck-CAS Research Group led by XU in: “40th Anniversary of CAS-MPG Partnership,” Special Issue—*Bulletin of Chinese Academy of Sciences*, vol. 28, No. 2, 2014, pp. 188–191. The contractual commitment of MPS to the PICB ended in December 2020: <https://www.mpg.de/15290773/china-historie>, last accessed on Aug. 19, 2022.

536 Note by Lange-Gao from Oct. 12, 1995 on the China trip of Krull and Lange-Gao, AMPG, II. Abt., Rep. 70, No. 218, fol. 5; Note Peter from Nov. 22, 1994 regarding the colloquium on Oct. 10, 1994, AMPG, II. Abt., Rep. 70, No. 219, fol. 215–216; Transcript CKA meeting from Feb. 15, 1995, *ibid.*, fol. 162; Report Peter from May 10, 1996 on the China trip of the MPS/DFG delegation from April 1–11, 1996, *ibid.*, fol. 8; Note by Spielmann from March 11, 1997, “Vorschläge zur künftigen Gestaltung der Beziehungen zwischen MPG und CAS,” AMPG, II. Abt., Rep. 70, No. 271, fol. 303; Report Spielmann from Nov. 5, 1997 on the China trip of the president from Oct. 6–11, 1997, AMPG, II. Abt., Rep. 70, No. 150, fol. 9, 11.

income and living conditions so that they can “establish themselves on Chinese soil and advance science and technology in China [...] on their path towards internationalization.”⁵³⁷

However, in two respects, the CAS did not follow the MPS. With its ongoing structural reform, the CAS was never focused solely on concentrating its scope on basic research. Instead, the goal was always, as ZHOU emphasized again in 1998, to optimize the “connection between science, technology, and the economy,” whether through increased commissioned research at the academy institutes or through the new founding of innovative enterprises. The idea was to get Chinese society to invest more money in research, including basic research. However, ZHOU—this being the second point of difference—did not want to proceed as radically in restructuring the Chinese science system as he had observed in 1991 during his visit to the new *Länder* in Eastern Germany. There, West German science policy, with significant participation from the MPS, had not hesitated to make “painful cuts,” paired with high investments and the transfer of trained West German personnel. For China, it was “not possible to simply adopt the German approach.”⁵³⁸

However, the learning process associated with the establishment and long-term continuation of junior research groups was no longer a one-way street from Western European economic and scientific power to an East Asian developing country, as China still liked to describe itself, especially after 1989.⁵³⁹ Instead, the positions of MPS and CAS converged: perhaps not necessarily in the field of international politics but certainly in the scientific job market, which had become increasingly globalized since the collapse of the Soviet regime and the dissolution of the Eastern Bloc. It was not only the CAS that was concerned about regaining its scientists trained abroad; for the MPS as well, the mobility of this jointly trained elite group of emerging Chinese scientists served as something of a compass for locating its own position in this market. At the aforementioned Bonn celebration in 1998, MPS President Markl pointed out with satisfaction—just like speakers at earlier anniversaries—that about a third of the leadership positions in the CAS were occupied by scientists who had been

537 Address by ZHOU from Oct. 1, 1998 for the ceremonial event in Bonn, AMPG, II. Abt., Rep. 70, No. 121, fol. 177–179 verso (quotations fol. 178–179).

538 “Mit ‘Marschällen’ und ‘Generälen’ ins 21. Jahrhundert? Fragen an den Präsidenten der Chinesischen Akademie der Wissenschaften,” in: *MPG-Spiegel* 5/1994, pp. 45–48, p. 47 (quotes); the interview with ZHOU Guangzhao was designed and translated by Barbara Spielmann (Interview ZHOU [Spielmann] in the fall of 1994). Cf. also note Spielmann, undated, on the China trip of MPS President Markl from Oct. 6–11, 1997, AMPG, II. Abt., Rep. 70, No. 150, fol. 207: ZHOU made it clear in 1991 that “the radical upheaval in East Germany, especially the pace at which it was implemented, cannot be a model for restructuring in China.”

539 The former CAS President ZHOU said the same in his speech on the 20th anniversary of the Sino-German STC Agreement on Oct. 1, 1998, AMPG, II. Abt., Rep. 70, No. 121, fol. 177–179 verso.



Fig. 27: China trip of MPS President Oct. 6–10, 1997; Hubert Markl in a conversation with CAS President LU Yongxiang.

trained in Germany and now formed the basis “that ultimately positively influences the economic development of both countries.” But with his next sentence, he poured vinegar into the festive wine:

[...] we observe with concern that it is becoming increasingly difficult for our Chinese partners to attract students and scientists for study or research stays in Germany. The enormous allure of the United States poses extraordinary competition for us.⁵⁴⁰

Against this powerful competitor in the contest for the brightest minds in China and elsewhere, the MPS and the CAS now stood side by side. Moreover, both were able to test in China the instruments they hoped would enable them to thrive in a globalized scientific landscape. All the tools that now characterize MPS’s international scientific cooperation, particularly beyond Europe—bilateral junior groups, later partner groups at foreign research institutions, and most recently partner institutes in other countries—were first trialed in China, at Chinese research institutes, with Chinese junior scientists. In collaborating with the CAS, the MPS paved its research policy path into the globalized future (→ 5).

540 Address by Markl from Oct. 1, 1998 for the ceremonial event in Bonn, *ibid.*, fol. 39–50 (quotes: fol. 44). Spielmann to Bandel (BMFT) on Aug. 28, 1991, AMPG, II. Abt., Rep. 70, No. 291, fol. 72–74. Report Spielmann Nov. 5, 1997 on the president’s China trip, Oct. 6–11, 1997, AMPG, II. Abt., Rep. 70, No. 150, fol. 1–12.

What began in 1974 as ‘science for diplomacy’—plus ‘economy,’ it should be added—and in its early years was more development aid than scientific-technical cooperation, found itself after about two and a half decades “in a phase of normalization.”⁵⁴¹ The exchange with China increasingly approached the MPS’s ideal conception of bilateral scientific cooperation. It was driven by a growing intrinsic scientific momentum and could be managed with increasing autonomy from foreign policy guidelines, at least on the German side. That this was by no means equally true for the Chinese side is hinted at by the exclusively German sources cited here but cannot be further specified solely on that basis. What remains to be noted is that the MPS has significantly contributed to the remarkably rapid international adaptability of Chinese natural sciences. However, neither the MPS nor other Western science organizations have promoted any political liberalization, let alone democratization, in China. Nor could the rise of the (natural) sciences as such achieve this. If any proof is still needed that modern sciences can adapt to any political system, as long as the latter adopts the principles of science-based modernization and accepts universal methodological standards of scientific research, it can be found in China. Moreover, that science organizations—even those whose portfolio is limited to basic research—can effectively operate under both democratic and authoritarian governance is evidenced by the highly efficient cooperation between the MPS and the CAS.

3.5 International Relations in Comparison

What can be said based on these four case studies about MPS’s handling of unique, foreign policy-induced problem situations, and its role in the foreign science policy of the Federal Republic? What historical continuities and discontinuities can be identified, and what do they tell us about the constancy and change of MPS as an actor in the field of international politics?

Let’s start with the similarities: All the bilateral scientific relationships considered here were—hence the selection—significantly shaped by foreign policy interests. These stemmed consistently from the historical and geopolitical contexts in which the involved nation-states found themselves at the end of World War II and the subsequent Cold War between blocs, and which set the overall tone for their bilateral relations. In contrast, the MPS as an institutional actor, and in particular the Administrative Headquarters, strove for pronounced

541 Note Spielmann, *Vorschläge zur künftigen Gestaltung der Beziehungen zwischen MPG und CAS*, March 11, 1997, AMPG, II. Abt., Rep. 70, No. 271, fol. 303. Regarding the scientific progress in China, see the “Jahresbericht Forschung und Technologie VR China 1995/96” of the German embassy from Jan. 2, 1997, AMPG, II. Abt., Rep. 70, No. 150, fol. 180–189.

political neutrality—or even indifference—toward all sides in shaping each scientific cooperation. This was true whether dealing with the dictatorial regime and its clerical-Francoist scientific circles in Spain, or the Soviet and Chinese party dictatorships. It maintained a restrained attitude even when dealing with dissidents from these countries; some cooperated with Max Planck Institutes, while others sought support in vain from the MPS for their concerns. As neutral as the MPS was toward the political conditions in the respective partner countries, it was pragmatically guided by its own credo, formulated in the early 1970s, of a science foreign policy that should be as free from politics, autonomous, and flexible as possible, serving only epistemically intrinsic interests. Both stances were advisable if as many desired scientific bilateral cooperations as possible were to come about in the here and now, defined by bloc and security politics, regardless of adverse political conditions.

In the course of the bilateral scientific relationships, their formal shaping in all the cases studied here tended toward normalization, meaning a reduction of foreign policy directives and considerations. The focus was on fostering cooperation that was mutually desired by the involved researchers, balanced in terms of institutional effort, and took place on a scientifically collegial level. However, this trend began at different times in the cases examined, depending on specific, changing political circumstances and/or personal-biographical contingencies.

This began with the Roman Bibliotheca Hertziana, which should not be misunderstood as representative for the otherwise direct cooperative relationships of MPS researchers with their Italian colleagues. Rather, as the only surviving foreign institute of the KWS, it testified to the commitment of MPS's predecessor to a cultural imperialism stretching back to the 19th century, which had not fully dissipated even with the end of the "Third Reich." However, MPS sought to distance itself from this. In the case of the Hertziana, which was transferred to the MPS only after long diplomatic efforts at all levels, the research program of the first post-war director in the mid-1950s marked this withdrawal at the epistemic-art historical level. But it was only with his departure in 1962 that the MPS could for the first time appoint a director based on its own criteria of scientific excellence—free from patron-driven stipulations and foreign science policy interventions, be it from the Nazi regime or from the federal government in response to the Allied Powers. Up into the 1970s, the Roman Hertziana saw itself as a West German representation at a highly symbolic location of occidental cultural understanding. Only gradually did it transform into a research institute that corresponded to the MPS's understanding of science—or better: scholarship—as basic research.

In the case of Spain, the old cultural imperialism continued for a few more years within the MPS, with the goodwill of the Foreign Office, but not under its direction. In a grotesque twist, the Franco regime exploited the surviving cultural-political reminiscences of some MPS protagonists during the 1960s, foremost among them MPS President Butenandt himself. The regime had the MPS finance a scholarship program that, for a decade, exclusively benefited

young Spanish scientists. It was only with the appointment of MPS President Lüst in 1972, supported by a reformed Administrative Headquarters, that reciprocity and participation in the selection of scholarship recipients were insisted upon. At the same time, Lüst ensured that Spanish claims for reciprocity in the use of the observatory on Calar Alto were minimized in a scientifically important cooperation project for the MPS.

Also, in the China program that was launched in 1974, where the MPS effectively took over sole leadership on the West German side at the behest of the Federal Government and with significant additional federal funds, cultural-political considerations played a role—albeit in a completely different manner and distribution of roles. For the federal government, the focus was on foreign economic calculations, aiming to open a new market for high-tech products made in Germany through scientific and technical development aid, and to bind future customers to West German technologies and relevant know-how. The additional cargo of Western-democratic values, packaged in humanities and social science projects, was either rejected or disposed unused by the Chinese recipient. For the MPS, taking on this task offered a unique opportunity to explore the realm of Chinese science and research, which was just gradually beginning to open up. Moreover, in China, they could position themselves independently, as far as possible in the context of a communist party dictatorship, rather than being constrained by the DFG, as was the case in Eastern European countries and especially the Soviet Union. The opportunity to reduce the original, thematically broader foreign science policy mandate to areas of interest for the MPS and its institutes, while securing a privileged position in collaboration with the most important research institution in China—the CAS—became available at the end of the 1970s with the consolidation of DENG Xiaoping's power in China. His new economic policy promoted a more pragmatic approach to the One-China Policy and opened the realm of Chinese research and science to other West German actors such as the Fraunhofer Society, the DAAD, and the DFG, despite their previous prohibitive engagements in Taiwan. This new domestic power constellation and the linked greater foreign policy flexibility on the Chinese side allowed the MPS to retreat to its preferred research fields, without reducing its gained independence as the FRG's foreign science policy pioneer in China and without having to step back behind the DFG, as was the case with the Soviet Union.

It would take almost another decade for the normalization of scientific relations between the MPS and the Soviet Union. This only became possible when the new General-Secretary of the CPSU, Gorbachev, was willing to make concessions on the Berlin issue in favor of a Federal German-Soviet framework agreement on scientific and technical cooperation, which finally came into force in 1987 as part of his disarmament-oriented initiative for European research collaboration. Until then, the Soviet case practically served as a negative template for the MPS's ideas on how fruitful bilateral scientific relations should be organized. This was not just due to the political restrictions of the Soviet system,

but primarily due to the extremely unfortunate role that had been envisioned for the MPS by the Federal Republic's foreign science policy. In contrast to the case with China, scientific cooperation with the Soviet Union was not seen as a welcome precursor to new business relations. On the contrary, the varying levels of restrictions on scientific cooperation, especially concerning the MPS as the flagship of German research, were the last trump card that the Federal Government could play as long as it did not want to subordinate its economic relations to its Berlin policy. In this situation, MPS scientists, if they wanted to maintain their highly valued collaborations with Soviet colleagues and institutes, were often compelled to engage in 'science against diplomacy.' They tried, case by case, to extract approval from the Federal Government or ignored its stance, risking reprimands. At best, they operated below the radar of the Foreign Office and the embassy, who occasionally calibrated their radar screens so as not to register these activities, possibly keeping open a narrow channel for 'soft diplomacy.'

In the interplay of these diplomatic paradoxes during the Cold War, science and diplomacy—and right in the middle, the MPS—kept switching roles. Sometimes, the MPS relied on the assistance of Federal German and international diplomacy, and even had to subordinate itself to it in terms of personnel policy, as in the case of the return of the *Bibliotheca Hertziana*. In the Spanish context, it tried to restrain the overzealousness of self-empowered cultural politicians from its own ranks. The Administrative Headquarters had been trying to clean up such a hybrid foreign science policy, still infused with peculiar notions of German science's cultural missions abroad, since the early 1970s. The declared aim was now to focus solely on the interests of the Max Planck Institutes in the administrative shaping of international relations and to engage in collaborations with scientifically relevant foreign partners.

However, the MPS could not escape the geopolitical conditions of the Cold War. The politics of bloc power instead imposed its own rules for foreign science policy, within which the MPS had to try to pursue its own objectives. In this process, it found itself in opposing roles yet again: in the case of China, the MPS was pushed forward by Federal German diplomacy, while in the Soviet case it had to sneak past it at the same time. On both paths, the Administrative Headquarters nevertheless tried to maximize the interests of the Max Planck Institutes in scientific cooperation with Chinese and Soviet peers under the given external science policy conditions.

In none of the cases examined here did the MPS act as an institutional actor in the sense of overarching political values. Just as it initially sought to withdraw from historically obsolete and politically questionable cultural policies, it later avoided being pushed into the role of an ambassador for Western democratic ideals of freedom. At most, it sang the praises of scientific autonomy to its socialist and communist partners, no different than to the representatives of a cohesion-oriented EC/EU research policy—an autonomy it saw as being optimally institutionalized within its own organization. Nevertheless, we find

under the MPS's umbrella examples of science diplomacy in the emphatic sense, advocating for the prevention of nuclear war, the end of the Cold War, and the preservation of the planet's basic life-sustaining conditions. However, such engagement existed not at the level of the entire institution, but only in the geo- and environmental political actions of individual actors.

4. The Trail of Concern for World Peace and the Earth

Once an MPS scientist, always and everywhere an MPS scientist—at least for as long he (or nowadays a bit more often: she) is on the MPS payroll. The aura of the MPS as an elite institution of German basic research extended to its research members wherever they appeared in the world of politics or the media, and this could become a problem for both sides. As soon as one of their scientists or even a group of them spoke out on a politically relevant, potentially controversial, topic it could easily happen that the media identified their statements with the MPS in its entirety. Conversely, a MPS scientist could not speak out unbiasedly as a citizen and certainly not as a scientific expert on political problems, but always had to reckon with being quoted in the media as a representative of the MPS or being co-opted by one or the other political side, even if he tried to draw a line between himself as a private person and his respective professional institution—something not everyone did and some even deliberately avoided doing. As for his few female colleagues, this was, in principle also true, but did not become a reality until the end of the 20th century.

The tense relationship between scientific institution and private person, and occasionally also between the scientific and the political persona of the acting individuals, permeated almost all those conflicts that arose around political statements publicly articulated by MPS members.¹ This tension was perceived and addressed by the players involved, especially by representatives at the top of the reorganized MPS only after World War II. Until that time, at least the leading representatives and publicly active scientists of the Kaiser Wilhelm Society not only identified with their institution, but also with their roles as citizens and scientists. Indeed, whenever they positioned themselves politically and acted accordingly, especially in wartime, they mainly appeared as scientifically qualified backers of the respective imperial policy—from economic, agricultural and population policy to foreign, military, armament and expansion policy.² It was precisely this overlap of scientific elite and political power that had thoroughly compromised the KWS in the eyes of the occupying powers and kept alive the

1 On the changing conceptions of the scientific self, however, only until the end of the nineteenth century, see Daston and Galison, *Objectivity*, 2007, pp. 201–265.

2 From the book series of the research program on the history of the Kaiser Wilhelm Society in the Nazi era, see especially the volumes by Maier (*Forschung als Waffe*, 2 vols., 2007; *Gemeinschaftsforschung*, 2007), which hark back to the founding period of the KWS, as well as by Heim, *Kalorien*, 2003; Schmaltz, *Kampfstoff-Forschung*, 2005; and Schmuhl, *Grenzüberschreitungen*, 2005.

distrust on the part of some foreign colleagues—even once the top German research institution had long been reinstated in its idiosyncratic organizational form, albeit under a new name, and the Federal Republic had been integrated into the Western alliance system.

In this constellation, which was also a matter of foreign and past-related policy, it was not easy for the MPS to establish a new, uncompromising relationship with politics, especially in terms of its effect on other Western countries. Dispensing with any political activity might seem a tempting evasion, but, to the extent that it was not illusory per se, it was also complicated by new kinds of political challenges. Similar to World War I, World War II had been defined by new weapons, which, in the case of poison gas, had by no means been used only on the German side or, as in the case of the atomic bomb, not at all. However, prominent KWS researchers, including Lise Meitner, had played a major role in laying the ground for these weapons in a scientific sense. In the early 1920s, the political-moral dilemma of the development of poison gas could still be assuaged with the internationally shared patriotic paradigm according to which—as claimed by the relevant KWS expert Fritz Haber—the scientist was expected to serve mankind in peace and the fatherland in war.³ By the same token, the destructive power of atomic weapons could be contained neither patriotically, nor by the nation-state; rather, it confronted the scientists involved in laying the foundations and developing it—those who had formed the international elite of nuclear research in the 1940s—with the hardly justifiable consequences of their scientific activities, namely the potential destruction of mankind and the Earth.

Given their desire to establish a new relationship to politics after the crimes of the Nazi war and extermination policy, which they had helped to perpetrate, and to thus find their way back into the international scientific communities, the MPS as an institution and its scientists as responsibly acting individuals were faced with two irreconcilable options. On the one hand, a retreat into ‘pure basic research’ and a seemingly logical and harmonious political abstinence was called for. This was particularly the case in the field of life sciences, where, for example, clinical-medical research was cut back for a while or human genetics, demographic and agricultural studies were intermittently defined as applied research and removed from the MPS portfolio.⁴ On the other hand, there was the commitment of scientists to assume responsibility for the social and political consequences of their research, proclaimed especially by British and American colleagues as ‘pure’ or ‘fundamental’ as they were originally conceived to be. The juggling act of positioning oneself between these two options was rarely successful. Conflict was more common, with representatives at the top of the

3 Haber in his resignation letter dated Oct. 1, 1933, quoted in Szöllösi-Janze, *Haber*, 1998, p. 687.

4 Sachse, “Neugründung,” 2011. On the phasing out of agricultural sciences, see Schwerin, “Landwirtschaftswissenschaften,” 2024; on the erratic handling of clinical research, see Schlünder, “Medizinische Forschung,” 2024.

MPS and its Administrative Headquarters tending to opt for political abstinence. Since the 1950s a few prominent scientists, followed, two decades later, also by larger groups of scientific employees, had on various occasions seen themselves called upon to take a stand on political problems or to contribute to their solution, citing their social responsibility as scientists.

It was, above all, two intertwined complexes of problems, which arose at the end of the war and continued to appear in variously accentuated form until the 1990s, that had an impact from within the MPS on the field of international politics or vice versa.⁵ On the one hand, of course, there was nuclear war, which at times was perceived as more, at times as less of a virulent, but permanent threat until the collapse of the Soviet regime. Warning against its destructive potential was deemed an urgent task in the 1950s and early 1960s, especially by the prominent older nuclear researchers who, with the help of their British colleagues, had brought about the transformation of the KWS into the MPS. Later, less prominent MPS scientists, as self-initiated ‘scientists in diplomacy’, sought to counter this danger with scientifically derived military strategy developments that they incorporated into transnational and cross-bloc second-track diplomacy. At the same time, it was the dangers also associated with the non-wartime use of nuclear energy which first entered the consciousness of populations worldwide as fallout from above-ground nuclear weapons testing, but were then also perceived as risks associated with the operation of nuclear power plants and the disposal of nuclear waste in the regions affected by them.⁶ In the 1970s, opposition to this regional nuclear pollution was joined by criticism of the primacy of economic growth, whose projected steadily growing worldwide energy demand was to be ensured by means of an ever-increasing supply of nuclear power. This critique, which was publicly shared by many on the scientific staff of the MPS, expanded in the 1980s into a broader concern for the environment now increasingly understood as a complex and global ecological system. Such concern was matched by Gorbachev’s twin initiative launched in 1985 for nuclear disarmament and global security for the survival of mankind, in which, together with many other scientists from all parts of the world, some MPS scientists also became involved. By the same token, it led to the institutional expansion of Earth systems research within the MPS.

Viewed historically, the trail of this transnationally shared concern for world peace and the continued existence of the Earth leads out of the intellectual leadership circle of the MPS to that area where politics and science converge; here concerned scientists came into conflict with governing bodies, which wanted the political neutrality of the MPS to be preserved as long and as much as possible. This trail will be traced in the following five overlapping stages. The sequence is based on the history of social protests in the Federal Republic of Germany,

5 See Kraft, “Confronting the German Problem,” 2020; Sachse, “Max Planck Society and Pugwash,” 2018.

6 On this context, see Kraft, “Dissenting Scientists,” 2018.

with which the peace, environmental and global political commitment of MPS employees repeatedly overlapped, even if it did not merge with the protests.⁷

4.1 The Era of Memoranda: From Mainau via Göttingen to Tübingen

The conflict between the competing options of political abstinence and the social responsibility of MPS scientists manifested itself for the first time in a striking parallel action by Nobel laureates in 1955. This was prompted by the unchecked thermonuclear armament of the superpowers, the unexpectedly catastrophic fallout effect of the American Castle Bravo test in the Pacific Bikini Atoll in March 1954, and the formation of the military blocs of NATO and the Warsaw Pact in the wake of the Paris Treaties of 1955. Both partial actions have been described several times in the literature of contemporary history, social history, and the history of science, but how they relate to each other still gives rise to speculation.⁸

A Parallel Action by Nobel Laureates

In London, the philosopher, mathematician, and Nobel laureate in literature Bertrand Russell prepared a manifesto following his widely heard prime-time radio broadcast of “Man’s Peril” on the BBC Home Service just before Christmas 1954. Inspired by letters from physicists from several countries, including Max Born, he sought to bring together “eminent men of science” who were capable of assessing the dangers posed by the new nuclear weapons of mass destruction in a manner that could claim universal validity.⁹ They were to explain to the international public and the governments of the world that disarmament alone was not enough, and that “distasteful limitations of national sovereignty” were necessary to abolish war as such; only the supranationally secured global renunciation of the belligerent settlement of conflicts with whatever weapons could eliminate the “risk of universal death.”¹⁰

7 See, as an overview, Gassert, *Bewegte Gesellschaft*, 2018. Roth and Rucht, *Die sozialen Bewegungen*, 2008.

8 Butcher, *Russell-Einstein Manifesto*, 2005, pp. 21–22; Greenspan, “Max Born, 2005;” Nickerson, “Taking a Stand,” 2013.

9 Russell’s call on BBC, Dec. 23, 1954, is considered his most famous of many radio contributions: https://www.youtube.com/watch?v=oZzm6x_IMFE, last accessed Oct. 13, 2020. See Russell, *Man’s Peril*, 2003, 82–89; Butcher, *The Origins of the Russell-Einstein Manifesto*, 2005, pp. 5–11.

10 Butcher, *The Origins of the Russell-Einstein Manifesto*, 2005, pp. 25–26. On his world parliamentary considerations, see Russell, *Towards*, 1947.

The first and most prominent signatory was Albert Einstein, who had already expressed similar ideas regarding the necessity of a democratically legitimized world government in an open letter to the UN in 1947—ideas that were shared by a number of mainly US-American nuclear physicists.¹¹ He backed Russell's initiative with his dwindling strength, but died before the publication of the "Russell-Einstein Manifesto," which has since been named as such.¹² Among the nine other signatories, who, with the exception of the Warsaw physicist Leopold Infeld, all came from Western countries and tended to align themselves with the left-wing spectrum, there was also Frédéric Joliot-Curie. As a member of the newly resurrected Grande Nation and a member of the French Soviet-loyal CP, he had two reasons to oppose world parliamentary restrictions on national sovereignty.¹³ But it was his idea not to limit it to an appeal, as Russell had originally preferred, but to invite eminent natural scientists of every political hue from all over the world to a conference which, unlike the 'World Federation of Scientific Workers' (WFSW), which he himself presided over, could not immediately be rejected in the West as a communist front organization.¹⁴ The 'Pugwash Conferences on Science and World Affairs' (PCSWA, Pugwash), which started in the Canadian fishing village of Pugwash two years after the Russell-Einstein Manifesto was published on July 9, 1955, did have to contend with this suspicion until the end of the Cold War. But the scientists and scholars involved there—mostly men until the 1980s and predominantly British, U.S., and Soviet—learned to deal with it over the years and devised ways and means of second-track diplomacy that helped a few times to prevent the Cold War from turning into a hot one. Their informal activities, which the public took little note of and were hardly documented in the archives, were honored with the Nobel Peace Prize in 1995.¹⁵ Russell, however, withdrew from the Pugwash

11 Einstein, To the General Assembly of the United Nations. October 1947. *United Nations World New York Archive*. <https://web.archive.org/web/20130510174259/http://neutrino.aquaphoenix.com/un-esa/ws1997-letter-einstein.html>, last accessed Oct. 15, 2020, 1947. See Holton, *Thematic Origins*, 1988. On the history of ideas and movements of world government, world parliament, and world federation and their more liberal democratic proponents, especially in the United States, Britain, and other Anglo-Saxon countries, see Boyer, *Bomb's Early Light*, 1994, pp. 27–45; Mögle-Stadel, *Unteilbarkeit*, 1996, pp. 122–134; Baratta, *World Federation*, 2004, pp. 301–314, pp. 505–526; Slaney, "Eugene Rabinowitch," 2012, p. 123, p. 128.

12 On April 11, 1955, Einstein had signed Russell's draft; his signature and an accompanying letter arrived at Russell's home on the day of his death, April 18, 1955. For the preceding correspondence between Born, Einstein, and Russell, see Butcher, *Russell-Einstein Manifesto*, 2005, pp. 11–15.

13 The other signatories were Hideki Yukawa (Japan), Hermann Joseph Muller, Linus C. Pauling, Percy Williams Bridgman (all USA), Cecil F. Powell, Józef Rotblat (both Great Britain). Max Born also signed as a British citizen.

14 Roberts, Science, "Peace and Internationalism," 2020, pp. 63–65.

15 Half of the awardees were the PCSWA and half its longtime Secretary-General, Józef Rotblat. See Kraft and Sachse, *Science, (Anti-)Communism and Diplomacy*, 2020. Rotblat's

conferences after a few years. In this informal diplomacy of scientific authorities who, instead of working to promote world government, were content with the “less ambitious” goal of abolishing the bomb, he did not see himself as a world parliamentarian and instead concentrated on the socially broad-based and publicly active Campaign for Nuclear Disarmament (CND).¹⁶

In the spring of 1955, at the same time as Russell was working on the manifesto, and also following an initiative by Born, a small group of MPS scientists—Hahn, Heisenberg, and Carl Friedrich von Weizsäcker—set to work. In 1954, after retiring from Edinburgh, Born had returned to the FRG from British exile in 1954, together with his wife, and received the Nobel Prize in Physics that same year. In this personal transitional situation, spurred on by the late honor, Born may have felt motivated, surrounded by his colleagues from the exile period, above all Russell and Einstein, and those Göttingen colleagues who had remained in Germany and with whom he had worked so closely until 1933, to mediate, to give them an understanding of the British and American reflections on the social and moral responsibility of scientists after Hiroshima and Nagasaki, and to include them in his still vague plans for an initiative of Nobel laureates. Hahn agreed more quickly than expected, since in February 1955 he himself had warned of the dangers of nuclear war in a radio speech broadcast as far away as Denmark, Austria, Norway, and Great Britain, calling on the “responsible parties in big politics” to come to the negotiating table.¹⁷ A few weeks later, Born and the three MPS colleagues sat down to prepare a declaration for which they wanted to collect signatures at the Lindau Nobel Laureate Meeting in the summer. This declaration was then to be read out by the Swedish Prince Bernadotte on the quasi-exterritorial island of Mainau in Lake Constance.

Born initially sought to coordinate the two actions and communicated the Mainau plan—both the substance as well as the scheduling—to London, but soon abandoned this intermediation. Thus, in July 1955, two declarations by international Nobel laureates, which at first glance appeared to be quite similar, were finally announced within a few days of each other. Various considerations of the actors on both sides may have led to this infelicitous outcome (at least for Hahn and his comrades-in-arms.) Thanks to his distanced stance regarding National Socialism, which was well known among his international colleagues, Hahn was regarded as perhaps the most upright representative of German atomic research and at the same time as the “father” of nuclear fission, MPS president and Nobel laureate, in short, as the highest scientific eminence. He was the

estate is housed at the Churchill Archive Center (CAC) in Cambridge (U.K.); while it is immensely comprehensive concerning the organization of the global enterprise, the informal diplomatic activities of the Pugwashites, by essence, left few written traces.

16 Sachse, “Patronage Impossible,” 2020, pp. 104–105. On the PCSWA’s rejection of the futurist idea of world government in the early 1960s, see Wittner, *Struggle Against the Bomb*, vol. 2, 1997, 465. Here a remark made by Rotblat in 1960 is quoted.

17 Hahn, *Cobalt 60*, 1955.



Fig. 28: Otto Hahn (with cigar) at the “Bavarian Breakfast” on the occasion of the 5th Lindauer Nobel Laureate get-together in July of 1955, together with Kurt Alder, Leopold Ružička, Richard Kuhn and spouse as well as the initiators of this get-together Franz-Karl Hein and spouse; Gerhard Domagk and spouse in the background.

natural contact person, if one wanted to involve West German researchers at all in a transnational action of prominent international scientists against nuclear weapons. However, Hahn balked at any initiative that may have appeared in any way to be Communist-driven or influenced. Thus, in the spring of 1955, he turned down, as he had done before on several other occasions, an invitation from WFSW President Joliot- Curie to join the planning committee for the conference announced in the Russell-Einstein Manifesto. Born, who while personally appreciating his British and French colleagues involved in the WFSW, described them to Weizsäcker as “workhorses for the Russians,” followed Hahn’s example.¹⁸ Born, however, was still willing to sign the manifesto of the avowed anti-communist Russell and his late friend Einstein. Hahn, on the other hand, after some correspondence with Russell, refused to do so because of the “one-

18 Quoted from Greenspan, “Max Born,” 2005, 37. See also the correspondence between Joliot-Curie and Hahn in January 1951, reprinted in: Hahn, *Otto Hahn*, 1988, pp. 242–243; Hahn, “Persönliche Erinnerung,” 1958.



Fig. 29: Bertrand Russell reading the Russell-Einstein manifesto at the press conference on July 9, 1955 at the London Caxton Hall.

sided leftist tendency” of the manifesto and, above all, of the other signatories.¹⁹ However, Born, whose letters to Russell went unanswered, may have been prompted to abandon his coordinating efforts with another intervention. Infeld, who had worked with Born at Cambridge in the 1930s, then with Einstein at Princeton, but who had given up his professorship in Toronto in the early 1950s because of presumably unfounded accusations of espionage and returned to Poland, recommended that Born and Hahn, as signatories of the Mainau Declaration, address only decidedly non-communist Western Nobel laureates; only then would they be taken seriously by Western governments. They thus decided to proceed separately with their Mainau Declaration.²⁰

Russell was satisfied all the same since he had enough to do with opposing Joliot-Curie’s insistent requests for corrections to the footnotes of the manifesto, pointing out that after Einstein’s death no substantial changes could be made

19 Quoted in Hahn, *Otto Hahn*, 1979, p. 249. See Sachse, *MPS and the Pugwash Conferences*, 2016, pp. 28–29; Sachse, “The Max Planck Society and Pugwash during the Cold War,” 2018, pp. 181–183.

20 Born to Russell, April 1955 (date incomplete in original), AMPG, III. Abt., Rep. 14, No. 3663, fol. 5–6; Greenspan, “Max Born,” 2005, 37.

anymore to the declaration he had already signed.²¹ Russell, who indeed had trouble rallying Western signatories beyond the leftist spectrum, and who above all regretted Niels Bohr's refusal to sign, nevertheless took advantage of the tactical opportunity that presented itself: He hurried to read out his manifesto on July 9, 1955, that is, six days before the Mainau Declaration, in a press conference at London's Caxton Hall that, thanks to the discreet support of the *Observer*, was widely advertised and thus, accordingly, overcrowded.²² Thanks to this mise-en-scène, which was taken note of and commented on worldwide, Russell succeeded in casting "Einstein's shadow" (as the headline of a *Le Monde* article on the subject read) over the first Geneva Summit Conference, which was scheduled to begin on July 18:

La lutte contre la bombe atomique cesse ainsi définitivement de passer pour un monopole de la propagande communiste.²³

When Hahn, Heisenberg and Born (Weizsäcker was unable to sign since he had no Nobel Prize to show) submitted the Mainau Statement with another 15 signatures of Western Nobel laureates—including Adolf Butenandt and Richard Kuhn, two further MPS members and three signatories of the Russell-Einstein Manifesto—on July 15, 1955, they could only underscore this effect, which was also highly desired by the East and the Communists. However, the international press took little notice of this abbreviated epilogue with its characteristic omissions, namely the curtailing of nation-state sovereignty demanded by Russell and Einstein in favor of supranational peacekeeping, the identification of the conflict-driving system competition "between Communism and anti-Communism," the concrete nuclear risks on this side of an abstract threat to humanity, and, last not least, the convening of a transnational conference of scientists.²⁴

21 The manifesto contains three such footnotes, one of which relativizes Russell's core concern, namely the restriction of the sovereignty of nation-states in favor of supranational peacekeeping (reprinted in Butcher, *Russell-Einstein Manifesto*, 2005, p. 26). See also *ibid.*, pp. 11–12; Nickerson, "Taking a Stand," 2013, p. 66 (FN 6); Roberts, "Science, Peace and Internationalism," 2020, pp. 62–69.

22 Butcher, *Russell-Einstein Manifesto*, 2005, pp. 16–21.

23 "L'ombre d'Einstein," *Le Monde*, July 12, 1955.

24 Quoting from the manifesto (Butcher, *Russell-Einstein Manifesto*, 2005, 25). Both declarations were signed by Hideki Yukawa and Hermann Joseph Muller, as well as Born, whose explicitly upheld signature Russell had initially omitted and only submitted a few weeks later in a corrected version of his manifesto; see Greenspan, "Max Born," 2005, 39; Nickerson, "Taking a Stand," 2013, 66 (FN 6.) The other signatories of the Mainau Declaration came from the Federal Republic (Adolf Butenandt, Richard Kuhn, Kurt Alder, Gerhard Domagk, Hermann Staudinger), Switzerland (Paul Hermann Müller, Leopold Ružička), and the United States (Arthur Compton, Frederick Soddy, Wendell Stanley) or had emigrated from the German-speaking realm of science or the Nazi rule to the United States or Scandinavia (Hans von Euler-Chelpin, George de Hevesy, Fritz Lipmann.).

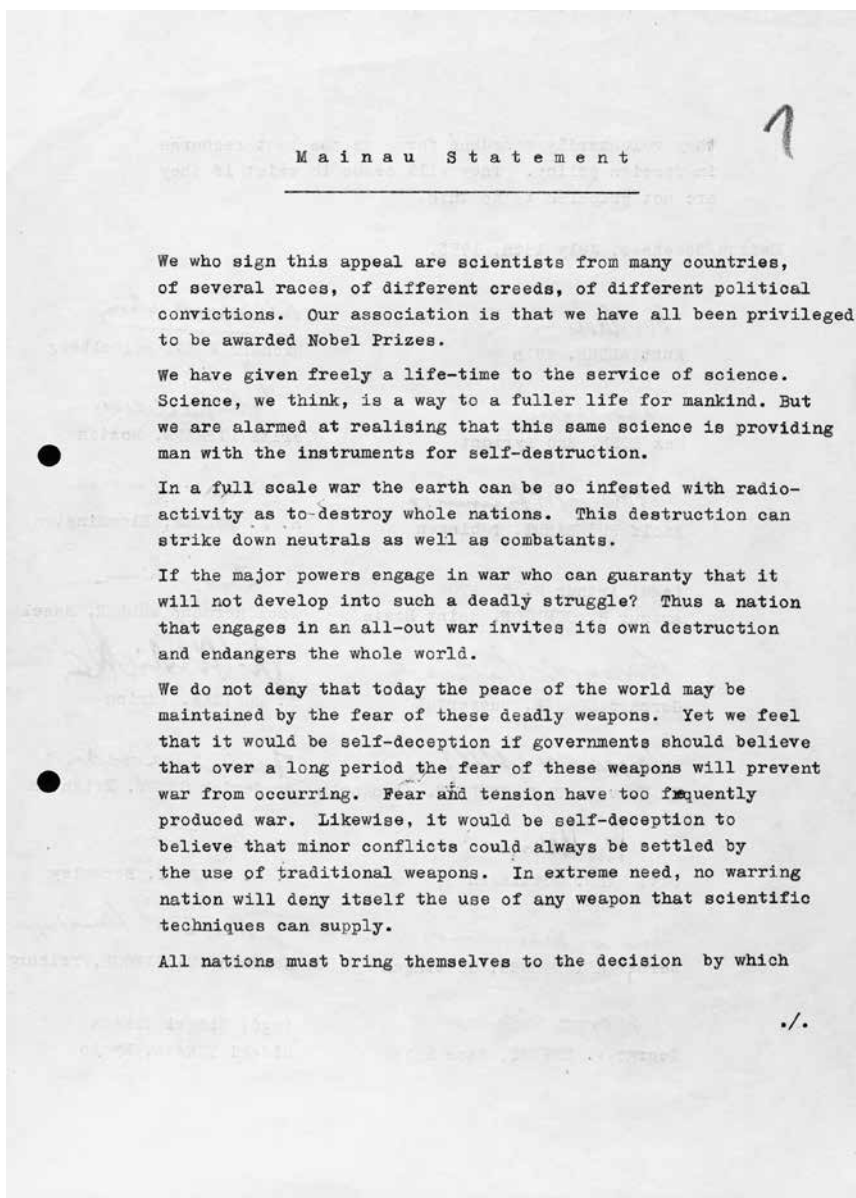


Fig. 30: Facsimile of the Mainau Statement of July 15, 1955 with the original signatures.

they voluntarily renounce force as the last recourse
in foreign policy. They will cease to exist if they
are not prepared to do this.

Mainau/Bodensee, July 15th, 1955.

Kurt Alder
Kurt ALDER, K81n

Max Born
Max BORN, Bad Pyrmont

Adolf Butenandt
Adolf BUTENANDT, Tübingen

(sgd) Arthur H. COMPTON
Arthur H. COMPTON, Saint Louis

Gerhard Domagk
Gerhard DOMAGK, Wuppertal

Hans von Euler
H. K. von EULER-CHELPIN, Stockholm

Otto Hahn
Otto HAHN, Göttingen

Werner Heisenberg
Werner HEISENBERG, Göttingen

George Hevesy
George H. HEVESY, Stockholm

Richard Kuhn
Richard KUHN, Heidelberg

Fritz Lipmann
Fritz LIPMANN, Boston

H. J. Muller
H. J. MULLER, Bloomington

Paul Hermann Müller
Paul Hermann MÜLLER, Basel

L. Ruzicka
L. RUZICKA, Zürich

Frederick Soddy
Frederick SODDY, Brighton

W. M. Stanley
W. M. STANLEY, Berkeley

Hermann Staudinger
Hermann STAUDINGER, Freiburg

(sgd) Hideki YUKAWA
Hideki YUKAWA, Kyoto

If it was already hardly possible for contemporaries to escape the (anti)communist conundrum, it is also difficult, in retrospect, to discern who was playing whose game with whom, knowingly or unknowingly. Only this much can be said: the three MPS authors—unlike Born—were not too disappointed by the restrained public response to their Mainau Declaration. They had satisfied their conscience; now it was up to the politicians to act accordingly.²⁵ For Russell and his comrades-in-arms, on the other hand, especially for Józef Rotblat, who was to hold the threads of the Pugwash network together over the next decades, the work was just beginning with the preparation of the international conference of eminent scientists which they had announced. And it was precisely here—and not in the almost identical assessment of the atomic dangers and the condemnation of war—that the difference between the two declarations lay: The “Mainauers” voiced warnings from the heights of their Noble-Prize-studded lectern and then left the politicians to their dirty work. The Pugwashites, as they were to call themselves soon after their first meeting in Pugwash, Canada, helped to drill the thick boards of international politics with the help of their transnational and cross-bloc scientific networks, learning in the process, through sometimes painful lessons, how to deal with communist attempts at appropriation as well as anti-communist misrepresentations.²⁶

“Paths in Danger”²⁷

But history also held some lessons for the ‘lectern physicists’ from the MPS. First, they had to learn that the Mainau Declaration was not only of little use internationally but was also not taken seriously by their own government. Notwithstanding all highly scientific warnings, Chancellor Adenauer and Franz Josef Strauß, who had risen from nuclear affairs minister to defense minister in the fall of 1956, flirted with the nuclear armament of the newly installed *Bundeswehr* and the aspired rise of the Federal Republic from a country undergoing political recovery to an equal partner within NATO and the political West. The newly installed advisory body, the German Atomic Energy Commission (Deutsche Atomkommission, DAK), which included Hahn as vice president as well as Heisenberg and Weizsäcker, was not included in the government’s deliberations. After these and other members of the DAK’s nuclear physics working

25 Carson, *Heisenberg in the Atomic Age*, 2010, pp. 318–320, arrives at a similar assessment of the ineffectiveness of the Mainau Declaration and especially Heisenberg’s role in it. However, she underestimates the leeway that their international colleagues already granted Hahn and Heisenberg at this time, but which the two did not use with their refusal to sign the Russell-Einstein Manifesto and later to participate in the PCSWA.

26 On the further history of the PCSWA, see Kraft and Sachse, *Science, (Anti-)Communism and Diplomacy*, 2020; Kraft, Nehring, and Sachse, “The Pugwash Conferences and the Global Cold War,” 2018.

27 This was the title of Weizsäcker’s widely acclaimed book, *Wege in der Gefahr*, 1976.

group had failed to convey their concerns in a discussion they had sought with Strauß in January 1957, and Adenauer had wanted to popularize future tactical nuclear weapons in a press conference in early April 1957 simply as further developments of artillery, they felt compelled to publish their criticism of the Federal Government's military policy plans.²⁸ Under Weizsäcker's leadership, the eighteen signatories deviated in two points from the mode of urgent but politically noncommittal warnings preferred until then by West German nuclear scientists. On the one hand, they interfered in national defense policy and gave a security policy assessment contrary to the opinion of the government, namely that "a small country like the Federal Republic [...] still protects itself best today and is most likely to promote world peace if it expressly and voluntarily renounces the possession of nuclear weapons of any kind." On the other hand, they voiced their refusal to "participate in any way in the production, testing, or use of nuclear weapons."²⁹

The story of this "Göttingen Declaration," handed over to the press by the MPS Administrative Headquarters a few days after Adenauer's "artillery statement," which is still cited today, has already been written in many variants; they range from the resistance epic of the eighteen upright professors to the conspiracy thriller about fans of nuclear weapons in disguise.³⁰ Here, no further narrative is to be offered, it should simply be noted that the declaration had little influence on West German armament policy, especially since the Allies did not even think of giving up the nuclear scepter, but still insisted on installing NATO's nuclear New Look also and especially on the territory of the Federal Republic. All the more significant were the unintended effects of this unsuccessful descent of West German nuclear scientists, including eight prominent MPS members, from their academic posts to the lowlands of national and supranational western security policy.³¹

Initially, they triggered a vehement public debate about the role of scientists as impartial experts or as political advisors. As was hardly to be expected, they antagonized the Federal German government and especially Adenauer and Strauß, who forbade any interference by political dilettantes in their sphere of action and only wanted to give the scientists the floor behind closed doors and when they believed they really needed their technical expertise. Adenauer, mean-

28 See Carson, *Heisenberg in the Atomic Age*, 2010, pp. 320–330.

29 "Erklärung der 18 Atomwissenschaftler" (Declaration of the 18 atomic scientists) dated April 12, 1957, reprinted in: Albrecht et al., *50 Jahre VDW*, 2009, pp. 15–16.

30 Stölken-Fitschen, *Atombombe und Geistesgeschichte*, 1995; Rese, *Wirkung*, 1999; Kraus, *Von der Uranspaltung zur Göttinger Erklärung*, 2001; Lorenz, *Protest der Physiker*, 2011; Hanel, *Die Bombe als Option*, 2015.

31 In addition to Hahn, Heisenberg, and Weizsäcker, MPS members Max von Laue, Josef Mattauch, Friedrich-Adolf Paneth, Fritz Straßmann, and Karl Wirtz signed. The signatories Fritz Bopp, Rudolf Fleischmann (AWM), Otto Haxel (AWM), Hans Kopfermann, Wilhelm Walcher and Heinz Maier-Leibnitz had worked temporarily in the KWS/MPS. The other signatories were Max Born, Walter Gerlach, Wolfgang Paul, and Wolfgang Riezler.

while, was backed by one of their close colleagues, the quantum field theorist and CDU member of the *Bundestag* Ernst Pascual Jordan, who flatly denied his former Göttingen colleagues the ability to make political judgments, which, in view of his own earlier Nazi utterances, did not convince all commentators and feuilleton writers. In any case, it was more serious that even the leading moral-philosophical authority of the post-war period in the Federal Republic, Karl Jaspers, took issue with the “cluelessness of their political thinking” and their self-assumed high position in taking a stand as atomic scientists instead of sticking to the role of an ordinary citizen.³²

Criticism regarding their stance also resounded from the other side of the Atlantic, namely from American atomic researchers who had done everything possible in the Manhattan Project to forestall Hitler’s atomic bomb and who may still have been active in the development of atomic weapons, as they had adopted the logic of the policy of deterrence. They considered it moral bigotry that the former members of the Nazi Uranverein, of all people, would get up on the high horse of scientific responsibility to loudly proclaim their refusal to cooperate, which no one had asked them to do, in the production of weapons that were not even allowed to be designed and produced on German soil.³³ Victor Weisskopf, a quantum physicist of Austrian-Jewish origin who had emigrated to the United States in 1937 and who had previously worked with Born in Göttingen and Heisenberg in Leipzig, among others, gently pointed this out to Weizsäcker after the latter had sent him the Göttingen Declaration to Massachusetts:

Your paragraph in which you refuse to work on the bomb naturally caused some difficulty here. It was the only thing that most of the newspapers printed, and that gave it an importance that you had not intended it to have. I agree with you completely on this, of course (I did, after all, sign a similar statement in 1949 with regard to the H-bomb), but there are some among the physicists here who felt that this was a little too personal. The overall text, of course, makes it clear that you are in no way (at least not directly) criticizing the U. S. physicists working on the bomb. From the newspaper excerpts, that was not clear.³⁴

32 As early as October 1956 Jaspers spoke on Swiss Radio DRS about the cluelessness of the natural scientists (Karl Jaspers Foundation, *Atombombe*, <https://jaspers-stiftung.ch/en/karl-jaspers/die-atombombe-1958>); in his book he then fleshed out his reproach with regard to the Göttingen Declaration: Jaspers, *Atombombe*, 1958, pp. 268–277. Cf. Schirrmacher, “Physics and Politics,” 2007, 25; Beyler, “Demon of Technology,” 2003, pp. 232–236; Beyler, “Physics,” 2010, pp. 98–101; “Strickmann, Scientists as Intellectuals,” 2010; Carson, *Heisenberg in the Atomic Age*, 2010, pp. 320–330.

33 Kant and Renn, “Weizsäcker,” 2014, p. 238, show that the Göttingen Eighteen were all connected in one way or another to the Uranverein and to each other.

34 Weisskopf to Weizsäcker, May 6, 1957 (transcript; insertions in parentheses in original), folio 2, AMPG, III. Abt., Rep 111, No. 267. See also Carson, *Heisenberg in the Atomic Age*, 2010, p. 329 (FN 70). She reports related, but more vehement remonstrances by Ernst Lawrence against Wolfgang Gentner during a conference in Rochester (NY); this conference was taking place at the time the Göttingen Declaration was being finalized and published, so Gentner was unable to co-sign.



Fig. 31: General Meeting on May 30, 1958 in Hannover; from left to right: Siegfried Balke (Federal Minister of Nuclear Energy and Water Management,) Otto Hahn, Konrad Adenauer, Werner Heisenberg and Heinrich Peter Hellwege (Minister President of the Land of Lower Saxony).

Much applause, on the other hand, came from domestic opponents of the rearmament of the Federal Republic. Their movement, which had failed for the time being with the *Bundeswehr* being established, was now able to regroup under the slogan “Kampf dem Atomtod” (Fight nuclear death.)³⁵ They declared the Göttingen Eighteen to be their heroes of civil resistance and thus attributed a role to them, which hardly any of them, and certainly none of the MPS members among them, wished to assume. For the latter, it was now much more a matter of appeasing the anger of those in power and limiting the political damage to the MPS. The immediate summons of MPS members Hahn, Weizsäcker and von Laue as well as co-signers Walter Gerlach and Wolfgang Riezler to a confidential discussion with Adenauer and Strauß in Bonn provided the opportunity to do so, especially since Adenauer wanted to avoid an escalation of the nuclear weapons debate before the upcoming elections in the fall of 1957.

There, they sought to set the record straight that their statement was by no means one of the MPS, even if it had been published by its Administrative Headquarters, but was the personal responsibility of the signatories, who felt obliged

35 Forschungsstelle für Zeitgeschichte Hamburg, “*Kampf dem Atomtod!*,” 2009.

to do so as the professors of the next generation of physicists.³⁶ The government announcement about this meeting, however, in its all too conciliatory style, once again made them appear as politically inexperienced dullards who would have been better off remaining silent and instead seeking a personal conversation with Adenauer. Then they would have learned in good time that the government was only concerned with disarmament, that they were therefore closely aligned in terms of content, and that there would have been no need for this public outrage, which would only play into the hands of the GDR regime.³⁷

The lessons that the Göttingen Eighteen drew from this experience varied according to character, political self-positioning, and professional function. Karl Wirtz, for example, readily admitted that politics was beyond his expertise, at least as soon as it went beyond nuclear research and nuclear energy policy in the narrowest sense. He was no longer available for future interventions of a similar kind, but with Heisenberg's support he was all the more unbiased in advancing his discipline-related political interests, even if as an advisor on atomic policy to the Franco regime.³⁸ Hahn was relieved to accept Adenauer's strategy of endorsement, and did his part to smooth the political waters, and invited the Chancellor, who had been re-elected with the largest majority of his many terms in office, to speak at the tenth anniversary of the MPS, which was to be celebrated at the General Meeting at the end of May 1958. From then on, Hahn concentrated even more adamantly on his duties as president of the MPS, articulated his undiminished concern about nuclear war only—quite in the innocuous “Mainau” style—in general admonitions addressed to the world public and ventured beyond the science and research policy associated with his office only when he knew he was in agreement with the Federal Government, as in the case of the reconstruction aid for the Israeli science system (→ 2.2).³⁹ Heisenberg intended to continue exerting political influence and saw two ways of doing so, which he reflected on in retrospect on the occasion of Max Born's death in the spring of 1971:

The first is to go public with open criticisms of unfortunate developments, with the intent of moving people to resistance and exercising pressure on the government. In

36 Hahn had indeed emphasized this before (Kant and Renn, “Weizsäcker,” 2014, 229), but with the publication of the declaration by the MPS he again blurred this distinction.

37 Dokumente zur Deutschlandpolitik III, 3, pp. 597–604, 618–620 (April 12, 13, and 17, 1957.) In fact, *Neues Deutschland* (ND) rushed to reprint the Göttingen Declaration but omitted the signers' explicit commitment “to freedom as represented today by the Western world against communism.” ND ran articles on the Göttingen Declaration on its front page for several days, see the issues of 4/13–21/1957: <https://www.nd-archiv.de/ausgabe/1957-04-13>, last accessed July 9, 2022. Cf. Wittner, *Struggle Against the Bomb*, vol. 2, 1997, 104; Carson, *Heisenberg in the Atomic Age*, 2010, pp. 323–325.

38 Carson, *Heisenberg in the Atomic Age*, 2010, 328, 226. On Wirtz's involvement in Spain, cf. chapter 3.2 above.

39 Steinhauser, Gutfreund, and Renn, *Turning Points*, 2017; Kraus, *Von der Uranspaltung zur Göttinger Erklärung*, 2001, pp. 255–262.

doing this one has to accept the fact that the government often faces this public activity with distrust and hostility. The other way is to try to gain a relationship of trust with the government and on this basis to influence the leaders in the right direction.⁴⁰

Unlike Born, Heisenberg had chosen the second path also outlined by Adenauer. The first time Heisenberg had distinguished these “two extreme paths” of scientists’ influence on politics was in April 1959. At that time, however, he had still conceived an “invisible” middle way, on which he wanted to send the Federation of German Scientists (Vereinigung Deutscher Wissenschaftler, VDW), which was just being founded, including a West German Pugwash group to be accommodated there and to be guided by his friend and colleague Weizsäcker.⁴¹

On Invisible Paths

One of the impulses for the founding of the VDW came from West German physicists who belonged neither to the MPS nor to the prominent circle of the Göttingen Eighteen. However, they shared the originally formulated concern and found in the VDW a forum in which and with which they could in future assert their social responsibility as scientists—similar to what their British and American colleagues had already been doing for years with the Federation of American Scientists (FAS) and the Atomic Scientists’ Association (ASA), respectively.⁴² Another impulse came from outside, namely from those Pugwash conferences that had formed following the Russell-Einstein Manifesto. All the MPS scientists whom Russell had emphatically invited to the first conference in Pugwash in the summer of 1957, i. e., Hahn, Heisenberg, Butenandt, Boris Rajewsky, and Weizsäcker, had cancelled their participation.⁴³ They no longer wanted to appear in public, and certainly not before the federal elections in the fall of 1957 and in a possibly communist-influenced international context.

Only in December 1957, and after he had been informed by British colleagues and those who had emigrated after being persecuted by the Nazis that the first

40 Heisenberg to Senffleben April 2, 1971, AMPG, III. Abt., Rep. 93, No. 1556. See here Carson, *Heisenberg in the Atomic Age*, 2010, p. 348; and Schirrmacher, “Mit der Verantwortung leben,” 2014.

41 For details on the relationship between VDW and Pugwash and on the role of MPS scientists in both overlapping groups in terms of personnel and content, see Sachse, *MPS and the Pugwash Conferences*, 2016; Sachse, “The Max Planck Society and Pugwash during the Cold War,” 2018.

42 On the FAS, see, among others, Wang, *American Science*, 1999; Moore, *Disrupting Science*, 2008. On the ASA see Laucht, “Atoms for the People,” 2012.

43 Russell to Hahn on Oct. 18, 1956, AMPG, III. Abt., Rep. 14, No. 3663, fol. 41–42; Hahn to Rotblat on June 19, 1957, AMPG, III. Abt., Rep. 14, No. 3631, fol. 5; Gottstein, “Die VDW,” 2009, 359; Sachse, *MPG und die Pugwash Conferences*, 2016, 11. On the PCSWA, see Evangelista, *Unarmed Forces*, 1999; Kraft, Nehring, and Sachse, “The Pugwash Conferences and the Global Cold War, 2018”; Kraft and Sachse, “Introduction,” 2020.

meeting in Pugwash had been so encouraging that follow-up ones could be expected, did Weizsäcker travel as a guest to the constituent meeting of the Continuing Committee of the PCSWA to London to get his own impression.⁴⁴ There he took the opportunity to present his ideas, agreed upon in the circle of MPS colleagues, of small, nonpublic meetings of eminent scientists, i. e., to promote Heisenberg's "invisible way." In doing so, he initiated a controversy about the future character of the PCSWA that lasted several years and in which he himself hardly became involved.⁴⁵ After all, Weizsäcker took part in the PCSWA in March 1958 and in June 1959, after he had been expressly encouraged to do so by the Minister of Defense Strauß, who remained in office, and after Hahn had recommended him as "the best man of our whole lot" to Russell. He officially participated in the second and fourth Pugwash conferences in Lac-Bauport, Canada, and in Baden, Austria, respectively, both of which actually had such an intimate character.⁴⁶

On the other hand, Gerd Burkhardt, Helmut Hönl, and Werner Kliefoth, three of those highly motivated but internationally largely unknown physicists who were still seeking an organizational framework for their commitment to peace and responsibility policy, traveled on behalf of the invited MPS scientists to the third Pugwash conference, now held in Vienna in the presence of the international press, including a major event for the enthusiastic Viennese audience. Born was the only one of the Göttingen Eighteen to accompany them. Not only was the Vienna Declaration adopted as the policy paper of the PCSWA, but there was also a call for the formation of national Pugwash groups. Precisely this now struck the newly selected West German Pugwashites to be the ideal form of organization for their peace policy concerns in their own country. Once again, they turned to the Göttingen Eighteen, who, if they intended to remain credible, could not withhold their support. And so, in the fall of 1959, they met on the fringes of the annual meeting of the Union of German Physical Societies (VDPG) to establish the VDW as a regular association and, embedded within it, the informal Pugwash Circle. A total of fourteen of the Göttingen Eighteen, including MPS scientists Hahn, Heisenberg, Weizsäcker, Max von Laue and Josef Mattauch, now joined by Wolfgang Gentner, were among the VDW founding members. However, in the following decades, only a few of them would appear on occasion as VDW members. The actual work of the association

44 He had been in discussion primarily with Weisskopf, Leo Szilard, Cecil F. Powell, and Rotblat; see the correspondence in AMPG, III. Abt., Rep. 111, No. 267, and Neuneck and Schaaf, "Geschichte und Zukunft," 2007, p. 33.

45 On these debates in the Continuing Committee, which extended into the early 1960s, see Sachse, "Patronage Impossible," 2020, pp. 102–115. Kraft, *From Dissent*, 2022.

46 Hahn to Russell on Jan. 16, 1958, AMPG, III. Abt., Rep. 14, No. 3663, fol. 49. See also Kraus, *Von der Uranspaltung zur Göttinger Erklärung*, 2001, p. 252; Kraus, "Vereinigung Deutscher Wissenschaftler", 2009; Sachse, *MPG und die Pugwash Conferences*, 2016, p. 11, p. 22. Weizsäcker did not participate again in a Study Group in Marienbad until 1967 and only rarely in Pugwash meetings from then on.

was taken over—under Weizsäcker’s supervision—by Burkhardt and Kliefoth, who regularly traveled to Pugwash meetings, and others of the soon more than one hundred association members from universities, research institutes and industrial research.⁴⁷

Much of the focus in these years was on Carl Friedrich von Weizsäcker, who, for his part, was in the process of reinventing himself and switching from physics to philosophy. At the University of Munich, he had the “preferred”, albeit controversial, position on the list for the appointment of a new chair in philosophy since the fall of 1956. He had already received a call to a corresponding professorship from the University of Hamburg, which he accepted in the winter semester of 1957/58, without, of course, relinquishing his MPS membership.⁴⁸ No sooner had the dispute over the Göttingen Declaration been publicly settled than the CDU’s deputy chairman Eugen Gerstenmaier, himself an avowed supporter of nuclear armament, pushed Adenauer’s strategy of cooptation further and in May 1957 offered the nonparty member a seat in the *Bundestag* on the CDU list for the upcoming elections—an offer that Weizsäcker considered, but nevertheless rejected.⁴⁹ Instead, he assumed the role of public intellectual, using his dual affiliation with Hamburg University and the MPS to underscore his independence from one or the other or both institutions, depending on the context. At the same time, he accepted Heisenberg’s assignment to put the just emerging VDW and its West German Pugwash group on the right “invisible” trail.

Weizsäcker had combined his participation in the second Pugwash conference in Lac-Beauport in the spring of 1958 with an extended trip to the United States, where he familiarized himself with the graduated deterrence approach in discussions with American colleagues and armament experts. In confrontation with the official NATO strategy of “massive retaliation,” this approach was first formulated on the British side by, for example, the Labour politician Denis Healey and Rear Admiral Sir Anthony Buzzard and further developed on the American side by Richard Leghorn, Edward Teller, and Henry Kissinger. On the one hand, they considered the limited use of nuclear weapons to be technically feasible,

47 On the founding process of the VDW, see Kraus, “Vereinigung Deutscher Wissenschaftler,” 2009, pp. 35–44. On the relationship between the VDW, Pugwash, and MPS, see Sachse, *Max-Planck-Gesellschaft und die Pugwash Conferences*, 2016, pp. 11–15. Initially, Kliefoth and Burkhardt took turns participating in Pugwash conferences; subsequently, Burkhardt represented the West German group there until his death in 1969; as early as 1962, Horst Afheldt, Weizsäcker’s staff member first in and for VDW affairs, later in Starnberg, also regularly participated in Pugwash conferences and meetings; cf. Boutwell, “Participants in the Pugwash Conferences,” 2007. See Gottstein, “Erinnerungen an Pugwash,” 2007; Kraft, “Confronting,” 2020.

48 Butenandt to Heisenberg on Dec. 13, 1956, Heisenberg to Butenandt on Dec. 14, 1956, AMPG, III. Abt., Rep. 84–2, No. 2379, fol. 4–5, fol. 6. Both correspondents made a concerted effort to pave the way for Weizsäcker to come to Munich University; they hoped that from there, rather than from Hamburg, he could continue to work at the MPI for Physics, whose move from Göttingen to Munich had been decided on in 1955.

49 Kraus, *Von der Uranspaltung zur Göttinger Erklärung*, 2001, p. 250, FN 431.

and on the other hand, they advocated refraining from the first use of nuclear weapons, making a strategic distinction between civilian and military goals, and devising other ways out of crises rather than either submission or nuclear war. In the Federal Republic, Helmut Schmidt, a social democrat and later the Federal German defense minister and chancellor, followed these considerations closely.⁵⁰ For Weizsäcker, by contrast, this approach to military policy was new but so convincing that he began to doubt the two central statements of the Göttingen Declaration. On the one hand, the demand for a nuclear-weapon-free zone on the territory of the Federal Republic seemed to him to be correct only “to a very limited extent;” such a zone had to be wished for, “if at all, then very big.” On the other hand, he regretted that, by hastily committing himself to abstain from any cooperation in the development and testing of nuclear weapons, he had now “excluded [himself] from working as a physicist on the technical preparation of graduated deterrence.” Weizsäcker cloaked his recantation in a travelogue that appeared in four installments in *Die Zeit* in May and June 1958 with the title “Living with the Bomb,” which soon became a bon mot.⁵¹

From the perspective of the Federal Government, he had thus finally rehabilitated himself and the MPS.⁵² Some of his colleagues from the MPS and co-signers of the Göttingen Declaration, such as Born, Hahn, and Laue, were initially very irritated by his “change of mind,” but then appreciated him even more as their political-philosophical mastermind and diplomatic networker in national and international contexts.⁵³ Only those who wanted to join the Göttingen Eighteen and had wished to broaden the social basis of responsibly and politically engaged natural scientists with the founding of a West German Pugwash group, no longer knew where they stood with Weizsäcker and were unsure whether he should be even included in the VDW. However, they had to listen to their more prominent colleagues who told them that Weizsäcker could not be dispensed with as an “authoritative” figure; he had “the many political connections that he constantly cultivates and also exploits” and was undoubtedly “on our side with all his conviction and with all his heart.”⁵⁴

50 See Coleman and Siracusa, *Real-World Nuclear Deterrence*, 2006, pp. 58–61; Soell, *Helmut Schmidt*, 2003; Freedman and Michaels, *The Evolution*, 2019, pp. 135–141.

51 *Die Zeit*, May 15, 22, 29 and June 5 1958. Later issues appeared as offprints, from which Weizsäcker, *Mit der Bombe leben*, 1958, p. 21, p. 14 is cited here; on Weizsäcker’s change of mind on nuclear weapons policy, see also Walker, “Mit der Bombe,” 2014.

52 Notes, undated (ca. May 23, 1958 and May 29, 1958); material for the Federal Chancellor’s address on May 30, 1958, BAArch B 136/6039. In preparation for Adenauer’s ceremonial address on the tenth anniversary of the MPS on May 30, 1958, the series of articles in the Federal Ministry of Atomic Energy and Water Management was immediately and carefully excerpted.

53 Hahn wrote to Born on July 24, 1957, that he, like “many people,” had initially believed that Weizsäcker “had had a slight change of mind,” quoted in Kant and Renn, “Weizsäcker,” 2014, p. 229.

54 Here the “Göttingen” Gerlach to Burkhardt on June 24, 1959, quoted from Kraus, “Vereinigung Deutscher Wissenschaftler,” 2009, pp. 40–41.

Although the Göttingen Eighteen and especially the MPS members among them had delegated the responsibility for the social consequences of scientific research to an association founded specifically for this purpose, they did not want to give up their influence on it and did not want to let the VDW stray from the invisible path. Weizsäcker, who as the one who had written but also revoked the Göttingen Declaration had qualified himself as a master of ambivalence, was to look after things at the VDW. Here he spent most of his time—according to his succinct summary after ten years of VDW work, including several years as chairman of the board—“preventing the association from making certain public pronouncements that seemed naïve to me.”⁵⁵ In this, the louder the criticism of the self-evident political and cultural matters of the CDU state, articulated primarily by students and young academics, became in the course of the 1960s and the more it penetrated the VDW, the less successful he was.⁵⁶

“Pastoral Care for *Bundestag* Members” or Telling the People the Truth

Weizsäcker and his circle of friends and colleagues, who were committed to responsible politics and networked through the natural sciences and humanities within and outside the MPS and into the Protestant Church of Germany (EKD, Evangelische Kirche Deutschlands), were soon able to get an idea themselves just how far the invisible path would take them.⁵⁷ It began in mid-June 1961, a few days before the renewed ultimatum with which Khrushchev had confronted the U.S. President Kennedy, who had been in office since the beginning of the year, at their first meeting in Vienna on June 4, thus heralding the final round of the Berlin crisis. It was against this backdrop that the three prominent representatives of the Protestant Institute for Interdisciplinary Research (FEST, Forschungsstelle der Evangelischen Studiengemeinschaft)—C.F. von Weizsäcker, Georg Picht, and Günter Howe—discussed together with Bishop Hermann Kunst, the EKD plenipotentiary at the seat of the Federal Government in Bonn, the idea of a critical statement on the “unilaterally defensive” policy of the Adenauer government, namely one that insisted on illusory German policy demands and was thus “inhibited” in its ability to act.⁵⁸

Concrete effects became apparent, for example, at the 10th Evangelischer Kirchentag (Protestant Church Congress,) which was slated for mid-July 1961

55 Weizsäcker, *Der bedrohte Friede*, 1983, p. 198. Cf. Sachse, *MPG und die Pugwash Conferences*, 2016, pp. 19–20.

56 On Weizsäcker and the VDW see, in particular, Bieber, “VDW,” 2009; Bieber, “Carl Friedrich von Weizsäcker,” 2014.

57 Kant and Renn, “Weizsäcker,” 2014, p. 217.

58 All quotations: “Tübinger Memorandum,” cited here in its last version of Nov. 6, 1961, reprinted in Becker et al., “Memorandum der Acht,” *Die Zeit*, March 2, 1962. On its history, see Strübind, “Tübinger Memorandum,” 2011, pp. 366–372.

with events in all sectors of divided Berlin, but was then at the last moment banned by the GDR regime in the eastern part of the city and was allowed to take place only in the western sectors. While several thousand GDR refugees arrived daily at the Berlin-Marienfelde reception camp that summer, the Kirchentag debated, among other topics, “Our Way to the Future—Guilt and Opportunity.”⁵⁹ Shortly thereafter, on July 25, U.S. President Kennedy’s “Three Essentials” pledged to defend Berlin’s freedom, accessibility, and viability, as well as the presence of Western Allied troops there, with nuclear weapons if necessary. On August 13, the GDR regime, with Soviet backing, sealed off West Berlin from all access routes, thus cementing a geopolitical state of affairs that would last for a long time to come. This took place under the eyes of the inactive Western Allies, who were satisfied with their “free zone,” to which alone they still had access, as a compromise. Weizsäcker had been able to recognize such an attitude on the part of the Allies as early as 1958 in a “very clever presentation” during the Pugwash Conference in Lac-Beauport. There, an unnamed speaker had “drawn the conclusion from the military-political situation [that] a de facto recognition of the status quo [...] is today the first unavoidable step toward stability, even where it seems unacceptable for legal and humane reasons; this sacrifice must be made by every nation for the security of the world.” At that time, Weizsäcker still felt compelled to point out to the transnational Pugwash Roundtable “what a danger to European stability the continuation of German division would pose.”⁶⁰ Now the building of the Wall had taught him that everyone else considered the continued existence of the German division to be a prerequisite for that very stability.⁶¹

Amid this chaotic situation in Berlin, Germany, and bloc policy, a somewhat expanded FEST circle met at Ludwig Raiser’s home in Tübingen at the end of July 1961 to develop a strategy for injecting “more truthfulness” into West German foreign policy, but also into federal policy as a whole. The authors did not want

59 In East Berlin, only church services and Bible study hours could take place, but no other types of events: https://www.kirchentag.de/service/archiv/berlin_1961#c22407, last accessed Nov. 8, 2020. Article titled “2. Kirchentag 1961,” *Die Zeit* 30/1961 (July 21, 1961). Archive of the German Protestant Church Congress (Fulda): “Vorbereitungsheft zum 10. Deutschen Evangelischen Kirchentag in Berlin vom 19.–23. Juli 1961,” pp. 56–61 (Arbeitsgruppe 3); “Deutscher Evangelischer Kirchentag Berlin 1961—Dokumente, Stuttgart: Kreuz Verlag 1961, pp. 218–290 (Arbeitsgruppe III. Politik).

60 Weizsäcker, *Mit der Bombe leben*, 1958, p. 18. The BMFT consultant evaluating Weizsäcker’s series of articles considered this passage to be remarkable, BAArch B 136/6039; excerpt from “Mit der Bombe leben,” part III, undated. ca. June 1958.

61 About the Pugwash Conference in Stowe (Vermont) in September 1961, which Weizsäcker himself had not attended, the consul in Boston reported to the AA that the “American professors present had shown themselves largely disinterested” in the Berlin crisis and that Eugene Rabinowitch had called “Kennedy’s hitherto proven firm position on the German question a ‘bluff’” (Schmidt-Schlegel to AA on Nov. 12, 1961, PA AA B 43-REF. 302/II8/UA IIB/12).

to appear, according to Picht, “as a club of individualistic intellectuals,” which is why this time they did not endow themselves with the authority of science, but with a “decidedly protestant character.”⁶² After initial considerations to the contrary, no new public declaration was to be issued, but rather a memorandum was to be written. This was to be sent to Protestant members of the *Bundestag* via the EKD office in Bonn in order to first seek personal discussion with them, sorted according to party affiliation, by no means before, but rather after the upcoming *Bundestag* elections in the fall of 1961.⁶³

It was thus possible to take one's time. Under Weizsäcker's and Raiser's leadership, several versions were produced.⁶⁴ At the same time, other prominent co-signers were solicited, and one would have liked to include personalities from the business world and other church representatives so to avoid the impression, as Weizsäcker conveyed to Butenandt, that “this is once again one of the well-known well-intentioned and unrealistic intellectual campaigns.”⁶⁵ In the end, however, it remained just that circle of eight protesting intellectuals and scientists who were well known to each other and who, starting from the Strasbourg intellectual colony, grouped themselves around the FEST after the war and also influenced the MPS in various ways: The four initiators (Weizsäcker, Howe, Picht and Raiser) were joined by the friends Heisenberg and Hellmut Becker as well as the director of Westdeutscher Rundfunk (WDR), Klaus von Bismarck, and the president of the Rhenish regional church, Joachim Beckmann.⁶⁶ MPS President Butenandt shared the concerns of this group of his intellectual peers, but, as he revealed to Weizsäcker, was “strongly torn between the personal desire to sign and the concern that this would harm the Max Planck Society.”⁶⁷ On the advice of his vice presidents Carl Wurster (BASF), Richard Kuhn (MPI for Medical Research) and Hans Dölle (MPI for Comparative and International Private Law), he decided not to sign the memorandum himself—as did Bishop Kunst and DFG

62 Picht to Hermann Josef Abs on Dec. 1, 1961, quoted here from Strübind, “Tübinger Memorandum,” 2011, p. 371.

63 In contrast to the abundant literature on the Göttingen Declaration, only two accounts from a church-historical perspective are available for the Tübinger Memorandum: Greschat, “Tübinger Memorandum,” 2000, and Strübind, “Tübinger Memorandum,” 2011. Carson, *Heisenberg in the Atomic Age*, 2010, pp. 333–336 focuses on Heisenberg's role in it, who probably had some conversations in the background but otherwise left it to enhance the memorandum with the signature of at least one Nobel laureate.

64 A total of six versions emerged, which Strübind, “Tübinger Memorandum,” 2011, pp. 372–383 compares on the basis of exegesis.

65 Weizsäcker to Butenandt on Oct. 10, 1961, AMPG, III. Abt., Rep. 84–2, No. 7691, fol. 1–2; Weizsäcker to Raiser on Oct. 12, 1961 and 6 Dec. 6, 1961, BArch N 1287/59.

66 A few high-ranking EKD representatives, academics, and a few politicians, including most notably Weizsäcker's brother Richard, still participated in the discussion of the first draft texts written by Weizsäcker and Raiser, but none of them signed. See Greschat, “Tübinger Memorandum,” 2000, pp. 493–494, pp. 502–503; Strübind, “Tübinger Memorandum,” 2011, pp. 374–376. On the Strasbourg ‘colony of intellectuals’ (Kuby), see chapter 2.2.

67 Weizsäcker to Raiser, Oct. 12, 1961, BArch N 1287/59.

President Gerhard Hess—in order to avoid any institutional association between the MPS and the memorandum. For that could have consequences.⁶⁸

The eight remaining signatories, as “citizens who are not themselves in active political life,” felt called upon to “point out urgent political problems” that politicians did not dare to address because they did not want to scare off their voters.⁶⁹ Rather, with freedom and growing prosperity, “fictitious positions” in all parties would harbor “political and social illusions, a lack of planning, and a lack of foresight.” The most dangerous illusion, however, was said to be in Federal German foreign policy. It did not want to admit “that the confidence of the Western world in Germany had also been completely destroyed by Hitler’s power politics and by the war” and that the Western Allies did not support the national claims for reunification and even restoration of the borders of 1937, which were exaggerated in view of this past. At best, it said, they were prepared to defend the status quo in West Berlin:

We are not saying anything new when we express the view that, while the freedom of the people living in Berlin is a right recognized by the whole world, the national concern for reunification in freedom cannot be asserted today and that we will have to give up the claim to sovereignty over the territories beyond the Oder-Neisse line.⁷⁰

This was perhaps nothing new in the winter of 1961/62, a few months after Kennedy presented his ‘policy essentials’ in Berlin and the Wall was built. But it remained an egregious breach of taboo, which overshadowed all the other “truths” expressed in the memorandum, which were also clear statements: the illusory notion that national or European nuclear armaments would make it possible to become independent of the United States; the dangerous refusal to inform one’s own population of possible acts of war by the great powers and to ensure its survival by appropriate civil defense measures to the extent possible; the renunciation of a fundamental reform of social security in favor of “haphazard electoral gifts;” and the abandonment of a thorough reform of education, which was Butenandt’s main concern, to the “cumbersome nature of our federal system of cultural administration.” It was precisely a “sensibly planned” social and educational policy, and not armaments policy, that could prove whether “our social order is up to the challenge of communism.”⁷¹ In early November 1961, the EKD office in Bonn sent fifty copies of the memo to Protestant politicians.

68 Ibid.

69 Raiser later explained this speaker’s position again in detail: Raiser, “Der Wahrheitsanspruch,” *Die Zeit*, April 20, 1962.

70 Tübinger Memorandum 1961/62, AMPG, III. Abt., Rep. 84–2, No. 7691, fol. 8.

71 All quotations: Ibid, fol. 6–13. Weizsäcker to Butenandt on Oct. 10, 1961, AMPG, III Abt., Rep. 84–2, No. 7691, fol. 1–2: Here Weizsäcker informed Butenandt that the latter’s suggestions for school reform had been incorporated into the final passage of the memorandum under the heading “cultural policy.”

The personal discussions, planned for later, that Weizsäcker described as “pastoral care for the souls of parliament members” were postponed.⁷² Apart from individual talks with Willy Brandt (SPD) and Gerstenmaier (CDU), for example, the discussions with the party groups did not take place until the new year. In private, but also in group discussions with CDU members of parliament, the Tübingen Eight received respect throughout, and occasionally even approval. Almost all of them were keen to continue the confidential dialogue; however, they unanimously warned urgently against publishing the statements on the Oder-Neisse line in particular. At this point, even the discussion with the Social Democrats, who had shared similar views on armaments, social policy, and education, turned confrontational. Following their spokesman Herbert Wehner, the comrades, as Howe reported on the meeting in mid-February 1962, were “so passionately anxious [...] to ward off any accusation of a lack of national sentiment that actually no rational argument helped any more against the underlying trauma here.”⁷³

Instead, as one would say today, a veritable shitstorm broke out, coming not only, but primarily from refugee organizations. It was triggered by a leak, still unexplained today, through which the manuscript reached the German Press Agency (dpa) in mid-February 1962.⁷⁴ However, because of the delay in the talks with the deputies, Raiser had already urged in December 1961 that the publication in *Die Zeit*, which was actually planned for later, be brought forward. In January 1962, Picht reasoned among colleagues that it would be more favorable if the memorandum were to reach the public not through their instigation but through an indiscretion on the part of their opponents.⁷⁵ Whoever launched it, the highly opportune indiscretion provided the Tübingen Eight with the occasion to publish the full text in the *Evangelischer Pressedienst* at the end of February 1962, and to do so without still having to incorporate the concerns of their interlocutors from the parties, and provided Raiser with what he himself considered a “successful” television appearance just a few days later.⁷⁶ As a fellow discussant and also part of the “Protestant Mafia” around the FEST, the *Die Zeit* journalist Marion Gräfin Dönhoff had earlier pleaded for public debate; now

72 Quoted here from Neuneck, *Nukleare Abrüstung*, 2014, p. 425. Original quote: Weizsäcker, *Der bedrohte Friede*, 1981, p. 576.

73 Howe to Beckmann on Feb. 20, 1962, quoted here after Greschat, “Tübinger Memorandum,” 2000, 506. In addition to Wehner, participants in the conversation included Adolf Arndt, Gustav Heinemann, Martin Hirsch, and Hans Merten, but not Brandt.

74 Dönhoff, “Lobbyisten” *Die Zeit*, March 2, 1962.

75 Raiser to Weizsäcker, Dec. 3, 1961, BArch N 1287/59; Greschat, “Tübinger Memorandum,” 2000, FN 1 and 2. Bismarck had warned several times against the premature publication of the original text and pleaded for a revised version.

76 *Evangelischer Pressedienst*, Zentralausgabe, No. 47, Feb. 24, 1962. Excerpts and reports appeared the same day in *Die Welt*, *Neues Deutschland*, *Tagesspiegel*. See *ibid.* quote: Raiser in a letter to Weizsäcker and to Kunst dated March 5, 1962, in which he also once again emphasized his satisfaction with the “indiscretion,” BArch N 1287/59.

she once again offered to reprint the memorandum in its entirety in *Die Zeit*.⁷⁷ In addition, as von Weizsäcker had suggested earlier, the signatories were to explain their concerns in more detail in a series of articles that would appear into the summer of 1962, thus probably contributing more to maintaining than to calming the debate.⁷⁸

The fact that the Tübingen Eight included Klaus von Bismarck, a veritable expellee who had been forced to give up his estates in Lower Pomerania, did not appease the expellee associations.⁷⁹ They went on the rampage, and those who had signed received letters of abuse and complaint, even death threats, and reports of church resignations. The EKD distanced itself from the “private” action of committed Christians, something the parties did too—at least as far as the recognition of the Oder-Neisse Line was concerned. The press also reported extensively, but consistently critically; there was talk of betrayal of the German East, even high treason.⁸⁰ In contrast, in private conversations and in correspondence, the Tübingen Eight received “lively approval and strong encouragement (...) from a wide circle of acquaintances and strangers.”⁸¹ There were also voices from individual church representatives and politicians, such as Brandt (SPD), Richard von Weizsäcker (CDU), and Werner Dollinger (CSU), who welcomed, at times emphatically, at times cautiously, the fact that “some uncomfortable and unpleasant things” were finally being discussed. Even though they distanced themselves in public speech from the statements on Eastern policy made by the Tübingen Eight, they appreciated the fact that the taboo had finally been broken and that the chancellor’s tattered clothes had been named as such.⁸²

77 In 1970, *Die Zeit* journalist Claus Grossner was the first to spread the word of the “Protestant mafia.” Grossner, Philosophenkönige, *Die Zeit*, March 27, 1970. According to Strübind, “Tübinger Memorandum,” 2011, p. 393, this referred primarily to committed intellectual members of the Protestant lay organizations such as the FEST, the Protestant Kirchentag, and the Protestant academies. On the FEST as the Protestant ‘think tank,’ see now Lepp, “Protestant Think Tank,” 2019.

78 Weizsäcker to Raiser on Dec. 6, 1961, BArch N 1287/59; Raiser to Weizsäcker on March 5, 1962, BArch N 1287/59; Greschat, “Tübinger Memorandum,” 2000, 505. Dönhoff, “Lobbyisten,” *Die Zeit*, March 2, 1962; Becker et al., “Memorandum der Acht,” *Die Zeit*, March 2, 1962; Weizsäcker, “Chance,” *Die Zeit*, March 23, 1962; Bismarck, “Bonn,” *Die Zeit*, April 6, 1962; Raiser, “Der Wahrheitsanspruch,” *Die Zeit*, April 20, 1962; Becker, “Politik und Wissenschaft,” *Die Zeit*, June 1, 1962.

79 At the 1954 Protestant Church Congress in Leipzig, Bismarck had acknowledged that he himself was affected by these events in a sensational speech as the will of God, of the Lord over history, cf. Strübind, “Tübinger Memorandum,” 2011, pp. 373–374.

80 Burkhardt, “German Scientists,” 1962. Newspaper articles and letters are extensively documented in: BArch N 1287/60 and BArch N 1287/61. Cf. Greschat, “Tübinger Memorandum,” 2000, pp. 507–513.

81 Quote: Raiser to Kunst on March 5, 1962, BArch N 1287/59; see also Greschat, “Tübinger Memorandum,” 2000, p. 507.

82 Quote: Brandt’s speech at the SPD party conference on March 24, 1962, quoted here from Greschat, “Tübinger Memorandum,” 2000, p. 508.

Whether unplanned or skillfully prepared, the Tübingen Eight had deviated from the invisible path at the right moment, namely when personal conversations ended in argumentative dead-ends or were broken off due to party-political tactics. With the “Sturm im Blätterwald” (storm in the papers) behind them and the shitstorm coming from the front, which they bravely weathered in equal measure, they succeeded—unlike the Mainau Nobel laureates and the Göttingen Eighteen—in pushing the boundaries of what could be said in the media public sphere in the long term.⁸³ At least from today’s perspective, their memorandum reads like the blueprint for the New *Ostpolitik* that Willy Brandt would initiate a few years later, establishing a lasting relationship based on trust between him and Weizsäcker.

4.2 Rethinking Science and Politics: the VDW and Pugwash

It was no coincidence that the Tübingen Declaration steered the concern of politically responsible and engaged natural scientists out of the MPS and away from it. But where did it lead to? Certainly not straight to the VDW, which had been founded specifically for this purpose. Rather, in a more confusing way, it split into several directions: One trail continued to lead to the FEST and the associated “Protestant Mafia” of the West German educated elite, which extended into the MPS but also far beyond it. This address was always used when seeking to communicate in a handpicked, familiar circle and to make joint statements on contemporary events, agreed upon there, in a not necessarily Christian transcendental, but still morally legitimized, non-partisan fashion. Yet another trail led to the VDW—to an association with an increasingly heterogeneous membership, whose momentum became less and less controllable by this elite. A third, more narrow and frequently interrupted trail pointed to the PCSWA, the transnational network that, after an initial phase of conflictual self-discovery, saw itself as a channel for informal diplomacy and offered to sound out the space that the great powers had for maneuvering behind the threatening backdrop of nuclear deterrence policy and to expand it wherever possible for a policy of disarmament and peacekeeping, be it through scientific-technical expertise for further developing the seismological monitoring of underground nuclear weapons tests and satellite-supported observation of enemy arsenals, be it through systems-theoretical reflection of military strategies, or through trust-building informal communication between Pugwashites from both sides

83 Raiser and Kunst, for example, agreed on the positive effects of the “Sturm im Blätterwald” (storm in the papers.) See *ibid.*, pp. 507–508.

of the Iron Curtain and/or from the various countries and powers involved in international conflicts.⁸⁴

All these trails crossed in the figure of Carl Friedrich von Weizsäcker, who himself had just moved from physical-theoretical research at the MPI for Physics to a philosophical chair at Hamburg University, but he continued to maintain closest ties to his colleagues at the MPS. In his new position, he had set out to do nothing less than revise the understanding of knowledge and power that historically reaches back to Francis Bacon. In view of the modern, science-driven further development of weapons of mass destruction, the use of which could no longer be legitimized under war law under any circumstances, it was no longer sufficient to “merely warn against abuses:”

[...] thus we simplify the problem for ourselves in a dangerous way. We are then at risk of curing a symptom. We need to rethink the whole concept of the role of science in the world. That we remain ineffective with politicians has largely to do with their also noticing whether or not we have thought this far ahead.⁸⁵

Carl Friedrich von Weizsäcker: Self-Education, Realpolitik, and Ambivalence

C.F. von Weizsäcker set about meeting these high expectations in his own idiosyncratic way. He made sure that the office of the newly founded VDW was located in Hamburg and that his scientific assistant (initially Eckehard Heimendahl and then, from the fall of 1961, Horst Afheldt), whom the MPS also financed during his time at Hamburg University to support his foreign and atomic policy research, assumed the soon frustrating job of managing the VDW. The VDW was supposed to facilitate the “self-education” of its members, including Weizsäcker himself, through newsletters and study groups, and to develop formats, such as interfaculty seminars and lecture series to inform the academic public about the “dangers of science.”⁸⁶ Both, however, were hampered by the insufficient commitment of the otherwise busy professorial members from universities and Max Planck Institutes. They contributed little in the way of content to the hardly read circulars; the prepared series of events only took place at three or four universities, and even there they did not happen on a regular

84 It was precisely the mutual monitoring of compliance with disarmament steps yet to be agreed upon by means of technical installations that would make it unnecessary for human inspectors of an adversary or even neutral authority to enter one's own territory; this gave rise to hopes of extending the 1963 Limited Test Ban Treaty (LTBT) to underground tests after all. Cf. Robinson, “Crucified on a Cross,” 2011; Kraft, *From Dissent*, 2022.

85 Weizsäcker to Klieforth on Oct. 28, 1959, BArch B 456/337.

86 Weizsäcker, *Der bedrohte Friede*, 1983, p. 197. Kraus, “Vereinigung Deutscher Wissenschaftler,” 2009, pp. 44–59.

basis; no similar events were documented in the MPS.⁸⁷ In Weizsäcker's view, the opportunity for the "political self-education of the scientists" was missed.⁸⁸ The study groups, too, were increasingly left to their own devices, i. e., to the young staff members, most of whom were recruited from the social sciences. They did not, however, lack political commitment, which, if it could not be prevented by Weizsäcker, they preferred to express in "anti-capitalist" or "anti-imperialist" resolutions—for example, in 1967 against the Federal German emergency laws or in the early 1970s against the late colonial project of the Cahora Bassa Dam in Portuguese-ruled Mozambique—instead of keeping to the invisible path that the VDW's founding fathers had marked out.⁸⁹

Weizsäcker's incessant "struggle against manifestos" also reflected what he admitted to be a "legitimate personal interest:"

I was publicly identified with the VDW and could not let my slowly and laboriously built credit for political expertise be jeopardized by what I considered to be ill-conceived manifestos by my colleagues.⁹⁰

If the VDW had perhaps not "failed" from the outset, his membership had certainly been "damaging" to both sides. Weizsäcker prevented the VDW from building up its own "image" and thus from having "a certain impact" in the public sphere; the VDW, on the other hand, disavowed him as a scientist.⁹¹ In this respect, it is not surprising that Weizsäcker preferred to publish his analyses of the times, which claimed to be informed by political realism and usually resulted in balanced ambivalence, either in the familiar circle of his colleagues around the FEST or only under his own name. In November 1964, for example, he wrote an introductory article for a series in *Die Zeit* on the construction of a nuclear Multilateral Force (MLF), a controversial subject among NATO partners.⁹² Brought into play by U.S. President Kennedy in 1962 in the wake of the Cuban Missile Crisis, the MLF was to be based on surface vessels and

87 Already early on Kliefoth voiced his "disappointment over the reaction, especially of physicists, to the invitation to our first members' meeting," (Kliefoth to Weizsäcker on May 6, 1960, BArch B456/337.) See for a general account of the formation and activities of the VDW: Kraus, "Vereinigung Deutscher Wissenschaftler," 2009, pp. 44–59; Bieber, "VDW," 2009; Sachse, *MPG und die Pugwash Conferences*, 2016, pp. 21–23.

88 Weizsäcker, *Der bedrohte Friede*, 1983, p. 197.

89 The study groups were merged in 1964 into a research unit—also initially under Weizsäcker's direction and Afheldt's management, as a result of which problems accumulated instead of being solved. The longstanding and fierce conflicts that led to the dissolution of this research unit in 1975 are reconstructed in detail by Bieber, "VDW," 2009.

90 Weizsäcker, *Der bedrohte Friede*, 1983, p. 199. cf. Bieber, "VDW," 2009, pp. 117–122; Kraus, *Von der Uranspaltung zur Göttinger Erklärung*, 2001, pp. 49, 63, 67.

91 Weizsäcker, *Der bedrohte Friede*, 1983, pp. 198–199.

92 Weizsäcker, Kitt oder Keil, *Die Zeit*, Nov. 13, 1964. See also MLF, *Die Zeit*, Nov. 13, 1964; Sommer, "MLF im Nebel," *Die Zeit*, Nov. 27, 1964. Freedman and Michaels, "The Evolution," 2019, pp. 367–372.

equipped by the United States with Polaris missiles, among other things. The U.S., in particular, but also the FRG, which would have been involved for the first time in the operational management of a joint nuclear arsenal, propagated the MLF as a step toward a European defense community, albeit still controlled by the U.S., while the other NATO partners very quickly backed away from this plan. That the MLF would contribute neither to European unification nor to the consolidation of the U.S.-European alliance became obvious when the two Western European nuclear powers—first France, followed by Great Britain—insisted on their nuclear military autonomy.⁹³ Weizsäcker now warned against a reduced U.S.-Federal German MLF. In view of the “outbursts of German irrationality” that all of Europe had suffered under and the fact that the Federal Republic “is at the same time the only country in the Central European area [that] openly makes territorial claims,” it could only be “that the whole world, including the Western world, reacts nervously to a rapprochement by the Federal Republic to a thermonuclear strike force.” This “psychological problem,” which was seen as existing in spite of all the assurances of the Federal Government that it only seeks to assert claims peacefully, was to be recognized as “real,” just like the world political developments since the end of the war. “Our own goals and modes of behavior” were finally to be adapted to this, i.e., the territorial claims beyond the Oder-Neisse line had to be abandoned as well as the “previous approach to reunification [based] on the non-recognition of the state of unfreedom that calls itself the GDR.” Only then would the Federal Republic be able to overcome its “isolation in world politics” and would no longer have to complicate the “American attempt to come to an agreement with Russia on European problems.” Then, and only then, could what Weizsäcker wrapped up at the end of his article as open issues, which nonetheless betrayed that he came from a diplomatic family, be resolved, namely “to exchange the MLF project for certain modest progress on the German problem.”⁹⁴

Between Informal Diplomacy and Government Loyalty

Weizsäcker's numerous letters to prominent federal politicians from all three parties represented in the *Bundestag* were replete with thought-provoking questions often resulting from conversations with foreign colleagues but also American politicians. Most of the addressees, among them the Social Democrats Willy Brandt and Egon Bahr, the Christian Democrats Eugen Gerstenmaier and Rainer Barzel, as well as Hans-Dietrich Genscher from the FDP and, as the only female politician, Hildegard Hamm-Brücher, responded not only with polite phrases, but often also with reasoned approval or criticism, sometimes even

93 In detail on the international debates surrounding the MLF: Armament, 11/3/1964. Freedman and Michaels, “The Evolution,” 2019, pp. 367–372.

94 All preceding citations: Weizsäcker, “Kitt oder Keil,” *Die Zeit*, Nov. 13, 1964.

with an invitation to engage in a personal conversation.⁹⁵ As a natural scientist, more specifically a nuclear physicist, of international standing and reputation, who was seen in and out of the offices of ministers and members of parliament in Bonn, and at the same time had friendly relations with Kissinger as well as with Edward Teller commonly referred to as the “father of the hydrogen bomb,”; Weizsäcker would have been the ideal West German Pugwashite. In fact, he was courted like no other MPS scientist by the Continuing Committee (later Council) of the PCSWA, which prepared the annual conferences and coordinated the study groups and workshops that met in the interim. He rejected the invitations time and again and instead sent his Hamburg assistants, initially Heimendahl, then Afheldt, to the international meetings of his prominent colleagues, among them quite a few Nobel Prize laureates, especially from the USA, Great Britain and the Soviet Union. Afheldt, by contrast, who after studying law had gone on to study philosophy, political science, and physics, had not even completed a doctorate by the 1960s. For decades, since the mid-1970s, together with Gottstein, he was to represent MPS in the West German Pugwash Circle and the latter at the PCSWA—much to the chagrin of the Foreign Office, which could at best signal personnel preferences but could not decide on the selection of conference participants.⁹⁶

The embassies in the respective host countries reported more or less regularly on the Pugwash conferences to Bonn. In 1960, for example, the West German embassy in Moscow noted with surprise “that this international gathering of, in part, distinguished scientists had retained a certain independence;” neither “the left-wingers among the participants nor the Soviet hosts were able to change anything” about this. Particular emphasis was placed on the fact that among the twenty U. S. participants were “a number of well-known disarmament and economic experts,” such as Richard Leghorn, Walt Rostow, and Jerome Wiesner, who had advised the newly elected President Kennedy during the election campaign.⁹⁷ They, who “will exercise no small influence in the future administration,” had taken the opportunity “to sound out Soviet ideas on disarmament”

95 From the nearly 300 correspondence boxes in C. F. von Weizsäcker’s estate, see here: AMPG, III. Abt. Rep. 111, No. 4, 15, 16, 236, 242, 243.

96 The AA, which was run by the CDU until 1966, considered all West German PCSWA participants to be distant from the government, including Burkhardt, Kliefoth, and Afheldt as well as the controversial Kiel international law expert Eberhard Menzel, who in the 1930s had attempted to integrate Nazi racial ideology into “contemporary German folk law thinking.” Note by Lahn, July 14, 1964, PA AA B 43-REF. 302/II8/UA IIB/12; Lahn to Burkhardt on Sept. 24, 1964, *ibid*; Menzel report of Dec. 15, 1964 on the Pugwash Conference in Udaipur India, Jan. 27 to Feb. 1, 1964, *ibid*; Giese and Menzel, *Vom deutschen Völkerrechtsdenken*, 1938; Stolleis, *Geschichte des öffentlichen Rechts*, 2002, p. 266. Menzel was followed as a regular PCSWA participant by the Hannover physicist Hellmut Glubrecht, who, however, like his experienced comrades-in-arms Afheldt and Gottstein, had to deal with the SPD- and FDP-led AA, which, at Brandt’s behest, was more sympathetic to the PCSWA.

97 Embassy Moscow to AA on Dec. 16, 1960, PA AA B 43-REF. 302/II8/UA IIB/12.

and had taken note in a confidential dialogue of the “sincere” concern of their Russian interlocutors about a nuclear armament of the *Bundeswehr*.⁹⁸ It was deemed all the more recommendable that “the Federal Republic send to the future meetings high-ranking personalities who can move safely on the ground of political reality.”⁹⁹ The West German Pugwashite Burkhardt, by contrast, not only “lacked a realistic assessment of Germany’s situation” in the view of the embassy, but also developed lines of thought “which practically point to a recommendation for the Rapacki Plan, the two-state theory, and Ulbricht’s Confederation project.”¹⁰⁰

Weizsäcker, whose ideas, as the Tübingen memorandum had shown, were not that far off, had again not been assuaged by the urgent pleas of his VDW colleagues to represent them in Moscow. He would also not travel to the Pugwash conferences in the following years.¹⁰¹ In an accompanying letter to Gerhard Schröder (CDU), the Federal German Foreign Minister, he described Afheldt’s report on the 11th Pugwash Conference in Dubrovnik in 1963 very precisely, the functioning of this “informal diplomacy” on the fringes of the official agenda, its advantages, which the governments of the United States, Great Britain, and the Soviet Union in particular knew how to exploit, and the significance of this non-binding “sounding of possibilities” for current disarmament policy:

The scientists’ talks, to the extent they are formally talks by private individuals who in fact, at least in Western countries, have and retain full freedom of their own opinions, appear to be a continuation of the possibilities of diplomatic probing in an area which by its very nature can no longer be amenable to official diplomacy. In some cases, e.g., the preparation of the Moscow Test Ban Treaty, it seems to me that this way of anticipatory probing has indeed brought diplomatic benefits.¹⁰²

Despite this praise, which at least resulted in Afheldt and Burkhardt being henceforth briefed in advance of Pugwash conferences at the Federal Foreign Office, Weizsäcker continued to refrain from involving himself in this transnational

98 Embassy Moscow to AA on March 3, 1961, *ibid.*

99 Embassy Moscow to AA on Dec. 16, 1960, *ibid.* The Boston consul, by contrast, had to observe that at the subsequent 1961 conference in Stowe (Vermont) no one expressed the view of the Federal Government and, accordingly, no one countered Soviet defamations such as “the ‘militaristic and fascist’ Federal Republic” and the insinuation of American indifference to the Berlin crisis (Schmidt-Schlegel to AA on Nov. 12, 1961; Embassy Washington memo dated Dec. 8, 1961 on Burkhardt’s conference report, *ibid.*).

100 Embassy Moscow to AA on March 3, 1961, *ibid.*

101 Embassy Moscow to AA on Sep. 18, 1959; Embassy Washington to AA on Jan. 26, 1961, *ibid.* Kliefoth to Weizsäcker on Aug. 12 and 22, 1960 as well as May 5 and 15, 1961, BArch B 456/337. Boutwell, “Participants in the Pugwash Conferences,” 2007.

102 Weizsäcker to Schröder on Dec. 4, 1963, PS AA B43-REF. 302/118/UA IIB/12. At issue was also the Limited Test Ban Treaty (LTBT.) A critical analysis of the role of American scientists in laying the ground for it is offered by Robinson, “Crucified on a Cross,” 2011; Robinson, *Redefining Science*, 2016.

forum of informal diplomacy.¹⁰³ Apparently, he himself did not trust the full freedom of opinion that he had as a private citizen. In any case, three years later he countered criticism by American Pugwashites of the hesitancy of prominent MPS scientists toward the PCSWA by asking the following:

But what happens—for instance in such a discussion on the German situation—when the scientist feels unable to adopt the attitude of his government? He cannot argue against his government in such a group.¹⁰⁴

He certainly could have learned from the American Pugwashites and even more so from the Soviet ones who were controlled by the KGB how to deal with such a situation.¹⁰⁵

Pressure from All Sides

Meanwhile, there was growing discontent over the insufficiency of the West German Pugwash presence. The Federal Foreign Office and the embassies criticized the lack of scientific prestige among the West German participants and, above all, the fact that they could not be committed to the Hallstein Doctrine, which, at least officially, could not be shaken until the end of the Christian-Liberal coalition in the fall of 1966.¹⁰⁶ This, of course, did not bother the U.S. colleagues and the representatives of the ruling Democratic administration in

103 Schröder to Weizsäcker on Jan. 9, 1964; Afheldt to AA disarmament unit on Feb. 8, 1964; Lahn (AA) to Afheldt on Feb. 26, 1964; note by Lahn on April 2, 1964; Afheldt to Diesel (AA) on April 13, 1964; Burkhardt to Lahn on Sep. 30, 1964, PA AA B 43-REF. 302/II8/UA IIB/12.

104 Transcript of the meeting on Jan. 20–21, 1967 with representatives of American science and science policy at the MPI for Physics and Astrophysics, Munich (hereafter cited as Verbatim Protocol Jan. 20–21, 1967), AMPG, II. Abt., Rep. 70, No. 359, fol. 57.

105 U.S. physicist Charles Townes expressed his conviction on the same occasion, the Munich meeting of January 1967 (→ 2.2): “Even the Russians are freely expressing their view in many fields—not all, of course,” Verbatim Protocol Jan. 20/21, 1967, AMPG, II. Abt., Rep. 70, No. 359, fol. 57.

106 This is how the Federal German government justified its refusal to send a message of greeting to the 10th Pugwash Conference in London in 1962, as Kennedy and his successor had done since 1961, among other things with the fact that the “conference leadership” regularly invited “scientists from the *Ostzone*,” regardless of the fact that they were not allowed to travel to the conferences held there anyway because of travel restrictions imposed by the Western states (citations: Preparation for a question by SPD deputy Menzel during a *Bundestag* Question Time, Dec. 5, 1962, PA AA B 43-REF. 302/II8/UA IIB/12), memo Lahn (AA) 14.7.1964, PA AA B 43-REF. 302/II8/UA IIB/12. Around the turn of the year 1965/66, the Embassy in London tried to influence Pugwash Secretary-General Rotblat to treat the two participants from East and West Germany admitted to the upcoming conference in Adis Ababa, Jürgen Kuczynski and VDW member A. von dem Bussche, as members of an “all-German representation,” Embassy London to AA 23 Dec. 1965, PA AA B 43-REF. 302/II8/UA IIB/12.

Washington—quite the contrary, they would have liked to see a higher-ranking and intellectually weightier representation of this government-critical position at the PCSWA.¹⁰⁷

The reason for taking a closer look at the West German presence at the Pugwash conferences was the negotiation of the Non-Proliferation Treaty (NPT), which began in 1965. For former Chancellor Adenauer, this was the “Morgenthau Plan squared;” for former Federal Defense Minister and later Finance Minister Strauß, there was the threat of a “new Versailles, and one of cosmic proportions,” namely the political “oppression of the nuclear have-nots,” followed by economic strangulation of the “atomless West Germans.”¹⁰⁸ That the NPT would also come up at the Pugwash conferences had already been announced around the end of 1965 in Addis Ababa. This first conference in Africa was to focus primarily on the role of science in development aid. The VDW had nominated Axel von dem Bussche, managing director of the German Development Service (DED, Deutscher Entwicklungsdienst) and thus one of the few non-scientists among its members.¹⁰⁹ In his working group on “Security Problems of Developing Countries,” he succeeded in watering down a draft resolution introduced by the Polish side, which declared the Federal Republic, with its territorial claims in Central Europe and its demand for nuclear weapons, to be the most dangerous security risk. With the support of an Israeli Pugwashite, he was at least able to ensure that “some enquiry into the methods of enriching weapon-grade uranium in the G.F.R. [...] by proper authorities” was not demanded. Instead, it was finally stated that the unquestioned enrichment of uranium in West German nuclear power plants did not fall “under any existing safeguard systems.”¹¹⁰ The planning staff of the Foreign Office was nevertheless upset that all other points,

107 Kissinger expressed his position accordingly at the Munich meeting with MPS scientists in January 1967, Verbatim Protocol Jan. 20/21, 1967, AMPG, II. Abt., Rep. 70, No. 359, fol. 56.

108 Adenauer in an interview with *Der Spiegel* (“Morgenthau Plan,” Feb. 26, 1967). Strauß in a furious attack on British Prime Minister Harold Wilson during his visit to Bonn, Feb. 15–16, 1967, quoted in: *Der Spiegel*, “Dagegen kämpfen,” Feb. 19, 1967. See also *Akten zur Auswärtigen Politik* 1967, 1998, documents 55–57, 271 ff. On the West German controversy over the NPT, see Schrafstetter, “The Long Shadow of the Past,” 2004.

109 Embassy London to AA on Dec. 23, 1965, PA AA B 43-REF. 302/II8/UA IIB/90. Von dem Bussche served as a chief lieutenant in the same regiment as his friend Richard von Weizsäcker and was active in the resistance circle around Count Stauffenberg in 1943/44; he later served on the presidium of the Deutscher Evangelischer Kirchentag and was an advisor to the World Bank, cf. Gedenkstätte Deutscher Widerstand, Axel Freiherr von dem Bussche, <https://www.gdw-berlin.de/vertiefung/biografien/personenverzeichnis/biografie/view-bio/axel-freiherr-von-dem-bussche/>, last accessed Dec. 4, 2020; Wiegrefe and Doerry, “Es war grauenhaft,” *Der Spiegel*, Aug. 23, 2009.

110 Embassy Addis Ababa to AA on Jan. 6, 1966, PA AA B 43-REF. 302/II8/UA IIB/90. The Israeli Pugwashites in Addis Ababa were Amos de-Shalit and Y. Peter. It is impossible to reconstruct who of them put forward the remarkable argument for the defense of the Federal Republic that one should not “accuse a young man of attempting rape merely because one could assume that he was physically capable of doing so.”

i. e., that the Federal Republic was striving for nuclear weapons, possessed an extensive war industry, manufactured medium-range missiles, and had ample fissile material, remained unchallenged.¹¹¹ For the follow-up conference to be held in Sopot, Poland, in September 1966, explicitly on the topic of “disarmament and security,” the worst image damage was feared, especially since von dem Bussche had once again made it clear in a follow-up discussion that it was “almost intolerable for the majority of people living in Eastern Europe” to know that Germany was even close to possessing nuclear weapons, let alone actually possessing them:

Germans will be told quite clearly at Sopot that the Federal Republic of Germany, without bias regarding any consequences for Europe, will be the first object of total annihilation unless it refrains from further efforts to acquire such weapons in the face of these historic sentiments.¹¹²

The Foreign Office probed all directions to see how the Federal Government’s position there could be made more effective “in terms of numbers and level.” The practice of briefing conference participants in preliminary talks had yielded little in the view of the Foreign Office. The German Institute for International and Security Affairs (SWP) and the German Council on Foreign Relations (DGAP, Deutsche Gesellschaft für Auswärtige Politik), although undoubtedly experts in the political field, did not feel responsible for the Pugwash conferences, which were still dominated by natural scientists, in particular physicists. Especially in Sopot it was, however, necessary to have “technically and factually qualified scientists who were not open to personal attack [...] and who also had an unbiased view of the attitude of the Federal Government.” Weizsäcker, whom one could have imagined as most likely to be there, was not available this time either. Young law professors like Horst Ehmke (Freiburg) and Walter Rudolf (Bochum), both blessed by the “grace of late birth,” came into the discussion. In the end, however, all considerations came to naught, because in view of the “private character” of the PCSWA it had to be accepted that only the Pugwash circle within the VDW itself proposed persons whom the organizing London Continuing Committee then invited. The only thing left to do was to contact the U. S. Embassy in Bonn “to find out more about the American stance regarding the Sopot conference and American participation.”¹¹³ The Federal Government’s disarmament officer and former embassy counselor in Washington, Swidbert Schnippenkötter, was able to report on this: Kissinger had asked him in a personal conversation to ensure a presentable Federal German presence in Sopot, and at the same time offered to intervene accordingly with Pugwash Secretary-General Rotblat and the Continuing Committee, where the previous Federal German presence was

111 Memo Müller-Roschach, Feb. 17, 1966, PA AA B 43-REF. 302/II8/UA IIB/90.

112 Note of Feb. 7, 1966, PA AA B 43-REF. 302/II8/UA IIB/90.

113 Note by Lahn of March 3, 1966 and note of March 29, 1966 (citations) with memos dated March 30 and April 5, 1966, *ibid.*

equally criticized. After consulting with Weizsäcker, former diplomat Albrecht von Kessel, who had been close to the resistance during the war and was now considered one of the pioneers of the New *Ostpolitik*—was mentioned to Kissinger who would pass on this recommendation to Rotblat.¹¹⁴ But this attempt, too, failed; the VDW did not allow itself to be talked into its nominations.¹¹⁵

In the end, the experienced but, in the Foreign Office's view, only moderately suitable Pugwashites went to Sopot, namely, in addition to Afheldt, the Kiel international law expert Eberhard Menzel, who was controversial because of his Nazi past, and a newcomer by the name of Ludwig Raiser. Raiser, as co-author of the Tübingen Memorandum, would hardly stand up for the position of the Christian Democratic-Liberal government, especially since he was "inclined to approach practical political questions with moral criteria and also to assess a tactical stance in moral terms," even though he was deemed as being "rather conservative." To be sure, the "informative exchange of ideas" with him and the others would be sought in advance, but little was expected of it—and rightly so, as it turned out in Sopot.¹¹⁶ There, the West German and American participants, including Kissinger, clashed over scenarios for overcoming the inner-European confrontation, the German question as an irredeemable prerequisite for a future European security system, and a non-aggression pact specifically aimed at this. Afheldt had previously argued at a meeting of the Pugwash Study Group on European Security for a peace treaty—most likely considered utopian by all sides—that would include the creation of a confederation of all European states west of the Soviet Union and a road map for German reunification through a plebiscite to be held in ten or twelve years in both parts of Germany.¹¹⁷ The United States, however, as Afheldt reported, did not want "to be confronted with new developments on the European arena at the present time." Kissinger rejected a clarifying discussion in Sopot, as Afheldt had offered several times:

114 Schnippenkoetter to Kissinger on May 26, 1966 and note of June 27, 1966, *ibid*: The two had discussed the upcoming Pugwash conference in Sopot at a meeting of the Ditchley Foundation in Ditchley Park (Oxfordshire, UK) in late April 1966. On von Kessel, see Conze et al., *Das Amt und die Vergangenheit*, 2010, pp. 623–624, p. 640; Vocke, *Albrecht von Kessel*, 2001.

115 Note by Lanke (AA) of Aug. 12, 1966, PA A A B 43-REF. 302/II8/UA IIB/90.

116 Notes of April 13 and 14, 1966 (quotations) and May 12, 1966, *ibid*.

117 Bluhm/Afheldt typescript: "Security in Europe" as an attachment to Afheldt's letter to Lankes (AA) on June 1, 1966, *ibid*; Georg Bluhm, postdoc with Menzel in Kiel, had been sent to the Institute for Strategic Studies in London on the recommendation of Kissinger and Weizsäcker; previously, the AA had tried to convey to him the Federal German positions on the NPT (note of Dec. 12, 1966, *ibid*.), see Bieber "VDW," 2009, p. 145. On the 16th PCSWA in Sopot in 1966, see Rotblat, *Pugwash*, 1968, pp. 200–208. The diplomatically and impersonally worded "Proceedings of the Sixteenth Pugwash Conference on Science and World Affairs. 'Disarmament and World Security, especially in Europe,'" Sopot, Poland, September 11–16th, 1966 (typescript 1966), do not reveal the conflicts between the West German and American participants. For background information see Jungk "Planetarier," 1966.



Fig. 32: Horst Afheldt at his desk at the MPI for Social Sciences in Starnberg in August 1980.

“[...] he was fed up with always having to stand up for German interests. The Germans should finally do that themselves.”¹¹⁸

Pedagogical patience with the obdurate democracy students, especially in the ranks of the MPS, nevertheless prevailed over Kissinger's displeasure. Still in Sopot, the U. S. Pugwashites offered their West German colleagues a preparatory talk or better extra lessons in scientific political consultancy to be organized in the form of a “round-table discussion.” This first attempt failed, as the MPS later admitted, “because of our unwillingness to improvise quickly.”¹¹⁹ But thanks to the persistence of the American Pugwashites, the round table meeting was

118 Note by Ramisch (AA) dated Sep. 29, 1966, PA AA B 43-REF. 302/II8/UA IIB/90.

119 Cramer and Eigen in their letter of invitation of Dec. 12, 1966, to MPS colleagues for a roundtable discussion in January 1967, AMPG, II. Abt., Rep. 70, No. 359, fol. 69–71.

held a few months later at the MPI for Physics in Munich, attended by nine high-ranking scientists and members of the Presidential Scientific Advisory Board (PSAC). The Starnberg MPI for the Study of the Living Conditions of the Scientific-Technical World (MPIL), which ultimately emerged from this intervention in 1969/70, may not have met U.S. expectations and those of many others, especially ones linked to a more prominent West German presence at the Pugwash conferences. (→ 2.2) But with Weizsäcker's backing, Afheldt was able to press ahead with his unconventional strategic thinking on securing peace in Europe and to become involved in the international disarmament discussion through the Pugwash network, in which he was gradually able to gain recognition even without the academic status of an MPS member.¹²⁰

4.3 Starnberg Strategy Games

It began with the debate on civil defense, which had gained momentum in connection with the Berlin crisis and Khrushchev's ominous allusion to the possibility that the Soviet Union could wipe out the Federal Republic with only eight hydrogen bombs. Previously, apart from marginal counter-positions, the West had placed its trust in the coherence of the logic of deterrence and had refrained from more extensive civil defense measures. Moreover, Adenauer had no desire to alarm his own people or other countries, which would interpret West German nuclear protection measures or even a bunker-building program as preparations for war. In the West, however, protection programs were being drafted by the time the Berlin Wall was constructed and the population was informed, in more or less serious leaflets, about individual precautions to be taken. These ranged from shopping lists for food supplies and the famous briefcase, which, according to an already satirized "duck and cover" recommendation from the U.S., was to be put over one's head in the event of an explosion, to the reinforcement of basement walls and fallout bunkers for the front yard.¹²¹

120 Interview Afheldt (Neuneck) June 25, 2007. Even as late as 1972, Karl Maier, the chairman of the board of trustees of the German Society for Peace and Conflict Research (DGFK), founded in 1970 on the initiative of President Heinemann, attempted to smear Afheldt to the AA, claiming that he was "hardly taken seriously" by Pugwash, but given that he was at the helm of the West German Pugwash group he harmed its reputation (Maier to Ambassador Roth [AA] on April 10, 1972, PA AA B 43-REF. 302/ II8/UA IIB/210). In the preparatory discussions for the founding of the DGFK, Weizsäcker was represented by his Starnberg staff member Klaus Michael Meyer-Abich (Meyer-Abich report on the formation of the support organization for peace research in the Federal Republic, June 17, 1970, BAArch B 456/483; I thank Alison Kraft for drawing my attention to this document).

121 For background information on the 1961/62 civil defense debate, see "Jeder hat keine Chance," *Der Spiegel* 21/1962, cover story (<https://www.spiegel.de/spiegel/print/index-1962-21.html>; accessed April 11, 2024; Kemper, "Atomschlag und Zivilschutz," 2012; Rose, "Atomschutzbunker," 2008; Garrison, *Civil Defense*, 2006; Geier, *Kriegsszenarien*, 2003.

Everyone Has (No) Chance: Civil Defense during the Cold War

In the U.S., the Federation of American Scientists (FAS) was critical of such government plans and there were voices in the VDW calling for it to immediately take a stance against any air protection measures, since such measures only served to trivialize the dangers of nuclear war and gave the population a false sense of security. Max Born had already clashed with Weizsäcker on this view in 1958. Given the latest developments in weapons and strategy, the latter still considered a limited nuclear war to be unlikely, but nevertheless conceivable, and therefore regarded it “as a simple imperative of humanity” to at least protect the people on the periphery of the nuclear-contaminated areas from the dangers of fallout in the event of an emergency. In his article that appeared in the March 23, 1962 issue of *Die Zeit*, which explained the corresponding passage in the Tübingen memo, Weizsäcker discussed the pros and cons of civilian nuclear protection programs, especially the leaflet that the Federal Government had just distributed to all households with the upbeat title “*Jeder hat eine Chance*” (Everyone has a chance): He saw it as ridiculing the citizens’ power of judgment and once again shying away from “making the population acquainted with the bitter truth.” In the end, he demanded, apart from the “truthful and thorough” education of the population and their training in first aid to the greatest possible extent, effectively equipped civilian technical assistance squads, the broad distribution of “radiation warning devices, certain medicine, people’s protective masks and battery receivers” that could receive radio warnings even in the event of a power failure, as well as state and private food stockpiling. Here, he preferred not to comment on bunker construction.¹²²

In this article, Weizsäcker anticipated the main findings of a VDW commission, which was also joined by Hans Friedrich-Freksa of the MPI for Virus Research and which, under Afheldt’s leadership, produced an expert report titled “Civilian Civil Protection Today,” the first serious study which the VDW wanted to use to present itself to the public.¹²³ When the report, backed by a recommendation for structural measures for fallout and debris protection, finally appeared in the summer of 1962, its public impact initially subsided, because the differences from the government position could only be found in too many details, despite a foreword by Hahn, Heisenberg, and Weizsäcker, who made it clear from the outset that ultimately only war prevention could safely protect the population. The debate only picked up again when, in October 1963, the authors, in a second edition, once again with the blessing of the “big three,” denounced

122 All quotations: Weizsäcker, “Chance,” *Die Zeit*, March 23, 1962. See also Bundesamt für zivilen Bevölkerungsschutz, *Chance*, 1961; Kraus, “Vereinigung Deutscher Wissenschaftler,” 2009, pp. 60–68.

123 Vereinigung Deutscher Wissenschaftler e.V., *Ziviler Bevölkerungsschutz*, 1962. See Afheldt, “Kalter Krieg,” 2009, pp. 299–301.

the shelter space program planned in the draft emergency legislation, which in the meantime had been updated as “not feasible.”¹²⁴ Discussions in the Federal Ministry of the Interior, more precise cost calculations by the Basel-based Prognos AG, and hearings of Weizsäcker and the Heidelberg physicist Otto Haxel in the *Bundestag*’s Interior Committee followed. Subsequent bills incorporated some of the VDW’s criticisms; ultimately, though, the Federal Government’s revised civil defense program came to naught due to lack of funding during the years of the flagging economic miracle.¹²⁵

The Consequences of War Study

By contrast, Afheldt, C. F. von Weizsäcker, and their VDW study group, which was to form the core staff of the Starnberg Institute in 1969/70, had found their subject. Although the hoped-for research contract from the Federal Government did not materialize, the Volkswagen Foundation stepped in and financed a multi-year project, which, at 400,000 Deutsch Marks, was exceptionally generous for social science research projects. The findings were presented at the end of 1970 in what was seen as the first important publication of the newly opened Starnberg Institute, even if the research had actually been conducted in the VDW.¹²⁶ The study was not just limited to the usefulness of the civil defense program, which had become obsolete in the meantime, and played out various war scenarios in Europe—structured according to the possible intentions of the attackers—in order to spell out what the consequences would be in each case for the territory and the population of the Federal Republic.

The physicist, programmer, and cyberneticist Philipp Sonntag, who had temporarily rented a room in a flat near the only sufficiently powerful main-frame computer in Hamburg so he could work there at night, was responsible for the mathematically complex model calculations. For this purpose, the entire territory of the Federal Republic of Germany was divided into 2,469 grid squares, each measuring 100 square kilometers, making it possible to calculate the respective physical destructive effects of pressure, firestorm, heat and radiation of nuclear weapon explosions of different magnitudes over different regions—such as large cities, rural areas, industrial centers, or peripheral locations close to

124 Both quotes taken from Kraus, “Vereinigung Deutscher Wissenschaftler,” 2009, 63, 65: missive from Helmut Ridder to Afheldt, Feb. 28, 1963; Vereinigung Deutscher Wissenschaftler e. V., *Ziviler Bevölkerungsschutz*, 1963, 42.

125 Kraus, “Vereinigung Deutscher Wissenschaftler,” 2009, pp. 64–65.

126 Weizsäcker, *Kriegsfolgen und Kriegsverhütung*, 1971. The approximately 700-page volume contains sixteen individual studies of varying length by eight authors (Afheldt, Philipp Sonntag, Utz-Peter Reich, Hellmuth Roth, Erwin Rahner, Alexander Pfau, Klaus Rajewsky, and Hans A. Künkel) that are not easy to read, as well as a concise introduction by Weizsäcker. See also Seefried, *Zukünfte*, 2015, pp. 332–336, for a description of this study.

borders.¹²⁷ Together with the economical, biological, medical, hygienic, and meteorological studies by the other authors, the calculations yielded devastating results. Even if a limited attack were to destroy little more than 20 percent of the country's infrastructure directly by bombing, there was the threat of extensive, if not complete, loss of function of the entire industrial infrastructure, and with it the socioeconomic collapse of society. Even if it would be possible to provide first aid to a considerable part of the injured survivors and contaminated population, it would not be possible to save them, since the necessary "second aid" could not be provided due to the lack of functioning hospitals. In short, according to the calculations of this group of authors, even a limited nuclear attack would threaten the Federal Republic with at least "political" if not "physical annihilation," regardless of which superpower would ultimately decide the outcome of the war in Europe in its favor.¹²⁸

This threat was to be in no way diminished by the official NATO strategy—and thus the authors' group expanded its original task from the calculation of possible consequences of war to the game-theoretical analysis of military strategies in the Cold War. Indeed, NATO had been relying on flexible response instead of massive retaliation since 1967/68, but here, too, the use of nuclear weapons is still included in the calculations at the end of a reaction, however graduated, to a conventionally conducted but unstoppable attack.¹²⁹ This strategy provides for the use of tactical nuclear weapons, which were only to be escalated in fine steps. But precisely with this way of thinking, the actual use of these weapons would become more and more probable, including the danger of a further escalation that could no longer be controlled. Flexible response, according to Afheldt and his co-author, *Bundeswehr* Colonel Hellmuth Roth, was nothing but the "mystification" of a basic political structure in which a limited nuclear war would certainly be waged in Europe. And Germany would be destroyed first, even if the superpowers might spare each other in the trade-off of self-destruction vs. surrender.¹³⁰ The arms race would threaten even this kind of self-restraint. Apart from local border skirmishes fought by conventional means, the idea of limited, conventional wars or ones waged with nuclear arms, would presuppose effective deterrence based on the mutually credible second-strike capacity of

127 Interview Sonntag (Sachse) March 6, 2018. Sonntag, "Mathematische Analyse," 1971; Sonntag received his PhD from the TU Hannover with this thesis.

128 Afheldt et al., *Durch Kriegsverhütung zum Krieg?*, 1972, pp. 106–108. Interview Sonntag (Sachse) March 6, 2018.

129 Pommerin, "Strategien Kalter Krieg," 1995; Freedman and Michaels, *The Evolution*, 2019, pp. 365–374.

130 Afheldt and Roth, "Verteidigung und Abschreckung," 1971, pp. 301–302 (quote); Afheldt et al., *Durch Kriegsverhütung zum Krieg?*, 1972, pp. 20–27. Since 1969 Roth had been disarmament officer in the Foreign Office. In 1972 Afheldt completed his doctorate with his analyses on security policy that became part of the War Consequences Study. See also the obituary that Otfried Ischebeck and Götz Neuneck wrote on Afheldt on the VDW website: <https://vdw-ev.de/nachruf-auf-horst--afheldt/>, last accessed on Jan. 23, 2021.

the adversary. According to a “system analysis” by Afheldt and Sonntag, it is precisely this political stability of mutual assured destruction (MAD) that would be endangered by the ABM and MIRV weapon systems developed in the 1960s.¹³¹ In general, the ongoing arms race, in which weapons systems are renewed in seven-year cycles, meaning that the second-strike capacity must always be balanced anew, never ceases to call into question its own goal, namely stability, especially given that it takes place under the condition of “hardly verifiable data” regarding the actions of the other side, i. e., in the mode of the classic prisoner’s dilemma. Such war prevention inevitably produces instability and thus endangers the peace it seeks to protect.¹³²

The dry technical seven-hundred-page tome full of diagrams, tables, maps, and formulas, usually referred to briefly as the “Weizsäcker Study” or “The Consequences of War Study,” was presented at the beginning of 1971 in what one of the numerous reviewers described as a “spectacular press conference.”¹³³ Two editions had to be reprinted in rapid succession.¹³⁴ Shortly thereafter, the paperback version, reduced to its core political theses, followed with the provocative title “Durch Kriegsverhütung zum Krieg?” (Through War Prevention to War?) It explicitly took issue with the strategy of flexible response publicly outlined in the second White Paper of the *Bundeswehr* for 1970, which had been published in the meantime.¹³⁵ Professional colleagues such as Ulrich Albrecht from the International Institute for Strategic Studies (IISS) or the Saarland political scientist Karl Kaiser and specialized journalists such as Claus Koch or Rainer Kabel praised the work as the first substantial contribution to the still nascent West German peace research, which until then, had contented itself with making announcements and processing foreign research findings. They also praised the interdisciplinary approach and defended the study against criticism from circles closer to the *Bundeswehr* or the Ministry of Defense. While the findings may not have surprised military strategists in the know, the thorough analysis of only publicly available sources and data made it possible for the public at large to understand what would otherwise only be articulated, calculated, and

131 Afheldt and Sonntag, “Stabilität und Abschreckung,” 1971. ABM: Anti-Ballistic Missiles Systems; MIRV: Multiple Independently Targetable Reentry Vehicles.

132 Afheldt et al., *Durch Kriegsverhütung zum Krieg?*, 1972, pp. 38–44.

133 Rainer Kabel: “Kriegsverhütung,” *Das Parlament* 14.8.1971, AMPG, III. Abt., Rep. 111, No. 360 (This file alone contains almost twenty reviews that appeared in rapid succession in the daily and specialist press.)

134 Weizsäcker, *Kriegsfolgen und Kriegsverhütung*, 1971. edition 1/1970 (5,000), 2/1971 (4,000), a third edition was already in preparation by mid-1971, cf. *VDW-Informationen* 1/August 1971, AMPG, III. Abt., Rep. 111, No. 360.

135 Afheldt et al., *Durch Kriegsverhütung zum Krieg?*, 1972. Weißbuch 1970 zur Sicherheit der Bundesrepublik Deutschland und zur Lage der *Bundeswehr*, *Deutscher Bundestag*, Drs. VI/765 dated May 14, 1970. NATO had already committed itself to its new strategy with its decision MC 14/3 of Jan. 16, 1968; see Gregory W. Pedlow, Historical Office, and Supreme Headquarters Allied Powers Europe: NATO Strategy Documents 1949–1969. *NATO Archives*. <https://www.nato.int/archives/strategy.htm>, last accessed Jan. 24, 2021.

translated into strategic decisions behind closed doors. One could only hope that the public, weary from the ongoing SALT negotiations, would be roused to action and, as Weizsäcker himself put it before the press, understand “that one’s own survival may depend on whether the structural transformation of the world leading to politically guaranteed world peace is the first priority of their own country’s policy.”¹³⁶

Nevertheless, the team of authors preached to the choir in political Bonn. The Ministry of Defense was not amused by the research work but was constantly kept abreast about what was unfolding. After all, the team had been assisted by the *Bundeswehr* officer Roth, an advisor, who, with his skepticism about flexible response, quickly mutated from “watchdog” to fellow combatant and was appointed by the new Brandt government as disarmament officer in the Federal German Foreign Office even before the study was completed.¹³⁷ Weizsäcker still did not miss the opportunity to personally send the paperback version, which had appeared in early 1972, to Federal Foreign Minister Scheel. In the accompanying letter, he emphasized the usefulness of this abridged edition for the ongoing debate on the ratification of the Eastern Treaties:

One of the arguments of many opponents of the Eastern treaties is the concern that these treaties could endanger our military security. This concern is based on an illusory overestimation of our security today. Our military security is essentially based on the Soviet Union having no political reason to test the difficult-to-calculate military risk that an attack on us would entail for it. [...] So long as our armaments remain within the bounds of mutually incalculable risk, our security depends predominantly on a viable political arrangement of our relationship with our eastern neighbors.¹³⁸

The immediate ratification of the Eastern treaties was therefore necessary to convince “the entire world” of the “intention of our *Ostpolitik*,” namely the “creation of a politically secured world peace.”¹³⁹ Scheel could only agree with him in his detailed letter of thanks with, in part, identical formulations.¹⁴⁰ However, there was no sort of implementation of the criticism of the flexible response, neither in the *Bundeswehr* nor in NATO. In his programmatic study

136 Quoted from Kabel, “Kriegsverhütung,” 1971. Cf. also, in particular, the reviews by Ulrich Albrecht (*Survival* 13/1971, vol. 10, pp. 355–356); Karl Kaiser, “Wasserstoffbomben auf die Saar,” *Saarbrücker Zeitung* (April 15 and 16, 1972); and the essay by Claus Koch, “Voraussetzungen und Konsequenzen,” *Merkur* 19/1971, H. 282 (October 1971), pp. 984–995. Critical and even dismissive reviews came, for example, from Lothar Rühl, “Eine Denkschrift wider den Atomtod,” *Die Welt* (Jan. 14, 1971); Wilhelm Meyer-Detring, “Schwachstellen in der Wehrpolitik,” *Wehrkunde* (May 1972), pp. 244–246; Albert Alexander Stahel, “Kriegsfolgen und Kriegsverhütung,” *Wehrforschung* 2 (1974), pp. 45–50. These and other reviews collected in AMPG, III. Abt., Rep. 111, No. 360.

137 Afheldt, “Kalter Krieg,” 2009, p. 304.

138 Weizsäcker to Scheel March 21, 1972, PA AA B 43-REF. 302/II8/UA IIB/209.

139 Ibid.

140 Scheel to Weizsäcker (signed draft, undated) *ibid.*

on the “Strategy of Equilibrium,” published during the 1969 election campaign and written at the same time as the *Consequences of War Study*, the future Federal Minister of Defense Helmut Schmidt did indeed reference Weizsäcker’s theses on world peace as a vital condition of the scientific-technical age and the need to politically stabilize this peace, but he sublimated them to philosophical justifications, for the elaboration of which his own book offered “no room.” Weizsäcker at best provided the background for Schmidt’s assessment of West Germany’s scope of action within Western defense policy as a combination of balance of power, arms control, and détente politics.¹⁴¹

In the GDR, the *Consequences of War Study* was read carefully. The Jena historian Dieter Fricke reflected on it thoughtfully but then criticized, true to party principles, that the group of authors, in spite of all the meticulous calculations of the effects of a nuclear war in Europe, failed to clearly abandon the theory of deterrence. As the “main weakness” of the book, he warned against the vision of a “world government” which, according to Weizsäcker, alone would be able to overcome precisely that evil of deterrence:

Without distinguishing between progressive and reactionary, pro-peace and anti-peace forces, it was claimed that a reliable way to prevent war “involves the abdication of power on the part of empires and nations.” [...]

Such an imperative was not only deemed “utopian”, it was also seen as leading “the forces of peace astray.” Nevertheless, the “more indirect but unmistakable indictment of Bonn’s armaments policy” was what made for the “great significance of this book.”¹⁴² Jürgen Kuczynski opened his damning review of the study similar in tone, but with even fiercer class struggle slogans against the Federal Republic as the “most aggressive imperialist power in Europe,” the *Bundeswehr* as the “military power of the monopolies,” and Weizsäcker as a “bourgeois peace advocate,” but in the end he was also able to extract something good from it: For all the “paucity [of] the political level,” the “interesting, scientific and technical explanations,” even if they only confirm what is already known, could impress the politically unsophisticated “expert” and “startle some circles.” In this respect, the book was “useful for the peace struggle in the FRG” in spite of its “decisive shortcomings.”¹⁴³

The Soviet Union was less interested in the ideological decontamination of the world-political approach than in Afheldt’s and Sonntag’s strategic model calculations, which the Moscow Academy Institute for U. S. and Canadian Studies was evaluating while preparing for the SALT negotiations on the ABM Treaty.¹⁴⁴

141 Schmidt, *Strategie des Gleichgewichts*, 1970, pp. 38, 70; Afheldt, “Kalter Krieg,” 2009, p. 308. On Schmidt’s equilibrium concept, see also Hansen, “Zwischen Staat und Straße,” 2012, p. 524.

142 All citations: Fricke, “Kriegsfolgen,” 1972, p. 358.

143 Kuczynski, “Weizsäckers Befürchtungen,” 1971.

144 Afheldt in an interview: Afheldt (Neuneck) on June 25, 2007.

Afheldt was able to establish and maintain connections with Soviet colleagues at the Pugwash meetings as well as in his cooperation with the transnational World Order Models Project (WOMP), which was launched in 1968 and based at the World Law Fund (WLF) in New York. Its initiator, the international law scholar Saul Mendlovitz, who was highly enthusiastic about the concept of “world domestic policy”, recruited Weizsäcker as an initial comrade-in-arms, who probably delegated the actual cooperation to Afheldt in this case as well.¹⁴⁵

Defensive Defense

At home in Starnberg, Afheldt’s “War Prevention” working group became the intellectual home of other *Bundeswehr* dissidents such as his cousin, Army Brigadier General Eckart Afheldt, and Lieutenant Colonel Alfred Mechtersheimer, who eventually drifted off in far-right circles after an erratic course through the changing West German party landscape in the 1980s.¹⁴⁶ Here they

145 Moscow primarily used an English translation prepared for WOMP: Afheldt and Sonntag, *Stability and Strategic Nuclear Arms*, 1971; Afheldt and Sonntag, “Stability and Deterrence,” 1973. Tätigkeitsbericht MPIL, June 21, 1971, AMPG, III Abt., Rep. 111, No. 78. Cf. McKeil, “Revisiting the World Order,” 2022; Mendlovitz, *On the Creation*, 1975. See here especially Weizsäcker, “A Sceptical,” 1975. See also Seefried, *Zukünfte*, 2015, p. 337.

146 Mechtersheimer (1939–2018) was assigned as a press and teaching officer in the 1970s and taught, among other things, at the Bundeswehrhochschule in Munich; in 1977 he received his doctorate under Kurt Sontheimer with a study of the Tornado program (Mechtersheimer, *Rüstung und Politik*, 1977). In 1979, he was denied leave of absence for a longer research stay at the MPIL despite a detailed petition by Weizsäcker (C. F. von Weizsäcker to Federal Defense Minister Apel on Jan. 16, 1979, AMPG, III. Abt., Rep. 111, No. 10). He then resigned from the service to initially work the Afheldt Research Group with a DFG grant. In the course of the dissolution of the MPIL, he founded the Forschungsinstitut für Friedenspolitik (FF, Research Institute for Peace Policy) in Starnberg (now Weilheim) together with Afheldt and five other MPIL colleagues. MPS paid their salaries until their temporary employment contracts with MPIL expired and financed the premises on a transitional basis. Afheldt remained in a permanent position at the MPS and stepped back from the FF after a few years. Mechtersheimer, who increasingly moved in national conservative circles, remained chairman of the board until 1989. The dissolution of the FF, which he had pursued, was prevented by the members, some of whom were prominent (Heinrich Böll, Luise Rinser, Sue and Hans-Peter Dürr, Franz Alt, and many others), who in 1990 appointed Erich Schmidt-Eenboom, who is still chairman today (oral communications from Marianne Zepp to CS dated Jan. 31, 2021 and from Schmidt-Eenboom to CS on Feb. 5, 2021; Archive FF: protocol of the founding meeting, Dec. 15, 1981; Forschungsinstitut für Friedenspolitik, <http://www.geheimdienste.info/satzung.htm>, last accessed Feb. 10, 2021). On Mechtersheimer, see also “Mechtersheimer, Alfred.” In: Munzinger Online/Personen—Internationales Biographisches Archiv: <http://www.munzinger.de/document/00000016411>, last accessed Feb. 10, 2021; and the Wikipedia article on Mechtersheimer: https://de.wikipedia.org/w/index.php?title=Alfred_Mechtersheimer&oldid=217063951, last accessed Feb. 10, 2021.

worked together on a military alternative to the strategy of flexible response and in the following years, they developed the concept of “defensive defense,” which was also discussed in international peace and conflict research in the 1970s and 1980s, using terms such as non-offensive defense or structural offensive non-capability. The idea was to redesign one’s own army and defense arrangements in one’s own country in such a way that they were neither capable of attacking or counter-attacking, but were nevertheless strong enough to make an enemy attack with conventional weapons appear hopeless from the outset. This would eliminate the risk that a war with limited intent and started with conventional weapons would escalate into a nuclear war, which many security strategists of those years saw as the greater danger than a direct nuclear attack, which, assuming mutual assured destruction (MAD), would, in any case, lead to mutual annihilation.

The core strategic and armament notion in Afheldt’s concept was the rejection of line defense, which, as simulations by the *Bundeswehr* and NATO repeatedly showed and as the Israeli advance in the 1967 Six-Day War actually demonstrated, could never withstand a surprise attack. In its place was to be a deeply staggered defense of space that would sooner or later wear out the attacker’s conventional arsenal of weapons and yet throw him back to the nuclear MAD logic. The most important instrument would be small “techno-commandos” distributed over the entire territory of the Federal Republic, which used remote-controlled defensive weapons from underground bunkers to hold back, if not stop the flow of invading tanks in order to gain time for negotiations. The concept was fleshed out and refined in cooperation with *Bundeswehr* officers; the Messerschmitt-Bölkow-Blohm (MBB) company, with whom Afheldt’s working group had personal contacts, developed the appropriate weapons systems and which in turn promoted the dissemination of Afheldt’s writings.¹⁴⁷

Even if the strategy of “defensive defense” was never implemented, it played a significant role in the intellectual branch of the international “arms control scene,” not least among Pugwashites, and was discussed in military circles at home and abroad.¹⁴⁸ Afheldt reported, for example, from a meeting in the

147 Interview Afheldt (Neuneck), June 25, 2007; Afheldt, “Kalter Krieg,” 2009, p. 306; Afheldt, *Verteidigung und Frieden*, 1976; Afheldt, *Verteidigung*, 1983. In the petition he submitted to the Federal Defense Minister Weizsäcker described in detail the close cooperation with the *Bundeswehr* officers, most of them retired, at his institute (Weizsäcker to Apel on Jan. 16, 1979, AMPG, III. Abt., Rep. 111, No. 10.)

148 Afheldt, “Kalter Krieg,” 2009, 306; Neuneck, “Deutsche Pugwashgruppe,” 2009, p. 385. Similar concepts were also developed by Emil Spannionocchi and Guy Brassollet: Spannionocchi and Brassollet, *Verteidigung*, 1976. C. F. von Weizsäcker wrote a preface to this volume. The defense strategies of Austria and Switzerland were partly based on these approaches. See the detailed article “Ein Heer für den Angriff,” *Der Spiegel* 21 (May 23, 1982), pp. 80–103, as well as the publications in various formats and languages in which Afheldt and Weizsäcker published their research (listed in the *MPG Jahresberichte 1975ff.* under MPIL and 1985ff. under Arbeitsgruppe Afheldt.)

late 1970s at the Stockholm International Peace Research Institute (SIPRI) that indeed the Soviet representative dismissed his approach with the remark that German armies were well known to always attack. But the Polish representative who first dutifully agreed, then took him aside at lunch and wanted to know more about this “interesting” strategy, because it was effective in both directions—the West and the East. A few years later, Polish Prime Minister Wojciech Jaruzelski brought up the concept of defensive defense within the Warsaw Pact until Gorbachev finally incorporated it into his negotiating strategy at the disarmament talks of the late 1980s.¹⁴⁹ In the meantime, however, a few more parameters in the dynamic system of politics, science, and MPS changed and contributed to the Starnberg strategy games finally being performed on the stage of international disarmament diplomacy in an adapted form.

Bifurcations

This was the magic word used by two intrepid individuals who moved in the realm where politics and science meet to revive the spirit of the Starnberg Institute (→ 2.3), which had just been tumultuously laid to rest. One was the director of the Werner Heisenberg Institute at the MPI for Physics and Astrophysics, Hans-Peter Dürr, who hoped in this way to bring his time-intensive peace policy activities, which were repeatedly reprimanded by the MPS President’s Office (→ 2.4), into line with his position as MPI director. The other was the young philosopher Albrecht von Müller, who, following his dissertation on “Time and Logic,” written in close exchange with C.F. von Weizsäcker, had become involved in the VDW study group on “European Security” and in 1982 had written a manuscript with the ambitious title “Outlines of a European Security Policy for the 1980s and 1990s.” Dürr not only worked hard and with some success to get it published.¹⁵⁰ He also sent his postdoc manuscript to all the major German and U.S. media, several federal ministers, the party leaderships of the SPD and CDU, and renowned scholars in the field of international politics such as George

149 Interview Afheldt (Neuneck), June 25, 2007. Afheldt’s unconventional ideas were appreciated more by the Federal Foreign Office than by the Ministry of Defense. In the early 1980s, the Foreign Office sponsored a series of seminars held at the Evangelische Akademie in Loccum, FRG, at which international theorists of non-offensive defense, including Afheldt and his cooperation partner Lutz Unterseher of the SPD-affiliated Studiengruppe Alternative Sicherheitspolitik, met with diplomats, including those from the Soviet Union, who were themselves involved in the ongoing Vienna negotiations on the disarmament of Conventional Forces in Europe (CFE). Evangelista describes these seminars as a conduit through which Afheldt’s concepts reached Moscow and Gorbachev; see Evangelista, *Unarmed Forces*, 1999, p.187.

150 Complemented by a foreword by the cofounder of the Club of Rome, Aurelio Peccei, it was finally published in 1984, after numerous cancellations by publishers, by Hanser Verlag, which had also published the *Consequences of War Study* and several other Weizsäcker volumes: Müller, *Kunst des Friedens*, 1984.

Kennan (Princeton Institute of Advanced Studies) and Ralf Dahrendorf (London School of Economics). Receipt was for the most part formally acknowledged, reactions more restrained and on the part of the CDU consistently critical.¹⁵¹ By contrast, in parts of the SPD, which since the fall of 1982 had not only been in the opposition but since the NATO- Double Track Decision for which it had been partly responsible as the former governing party had also been embroiled in an internal party dispute over rearmament, the security policy theses presented there met with a positive response.¹⁵²

The advertising campaign conducted by Dürr and his MPI secretariat had a twofold purpose, which was already indicated by the statesman-like title of the slim volume, which promised nothing less than the “Art of Peace.”¹⁵³ The young author and his mentor were not only interested in making a topical contribution to the security policy debates in the parliaments, the media and street-level debates about rearmament versus the creation of nuclear-weapon-free zones. It was, rather, a journalistic prelude to a large-scale interdisciplinary research program designed to analyze structural formation processes and phase transitions in highly aggregated social systems. Following the mathematical representation of status changes—or to use Henri Poincaré’s term: “bifurcations”—in non-linear dynamic systems, two characteristic phases of social systems were to be made distinguishable and, à la longue, politically controllable: those that were highly stabilized dynamically and in which changes of course would require a correspondingly high effort, and those that exhibited only a low degree of directional stability and whose course could therefore be redirected with little effort.¹⁵⁴ Security policy in the Cold War presented itself as a first, relatively simple model case insofar as, compared to other social systems, its main actors moved in a clearly structured bipolar bloc system and, moreover, followed the same game-theoretical logic and systems-analytical approaches. Moreover, the urgency of conceiving theoretical and possibly pragmatic ways out of the spiral of rearmament, which had accelerated again in the early 1980s, was obvious. At the end of 1983 and in early 1984, Dürr and von Müller had heated discussions in the snowy Austrian Alps about the identification of bifurcations in different kinds of dynamic systems and finally developed a project proposal

151 The extensive correspondence, including a list of about 130 addressees, is contained in: AMPG, III. Abt., ZA 116, K 38. In a letter to the Minister of State in the Federal Foreign Office, Alois Mertes (CDU), von Müller defended himself against accusations of anti-Americanism and the dissolution of the transatlantic security community, which he had received from various quarters (von Müller to Mertes, 3.5.1983, *ibid.*, folder 7).

152 On the rearmament dispute in the SPD, see Hansen, *Abschied*, 2016.

153 The allusion to the Chinese classic on “The Art of War” by Sunzi, written around 550 B. C. is striking and certainly not coincidental.

154 Poincaré, “L’Équilibre,” 1885; Müller, *Kunst des Friedens*, 1984, 22. My account is based on the study by Collado Seidel, *Durchbruch*, 2021, commissioned by the von Müller’s Parmenides Foundation; here especially the correspondence between Gottstein and von Müller in June and July 1984 (*ibid.*, pp. 54–56).

on “stability-oriented security policy,” which they submitted to the DFG in the summer of 1984.¹⁵⁵ Since in the meantime it had also been decided that the Starnberg interim provisional institution, the MPI for Social Sciences would be shut down, the project was to be based in the Afheldt Research Group whose director they brought on board as another applicant.¹⁵⁶

It was one of the more tedious approval procedures at the DFG.¹⁵⁷ More than a dozen experts and special reviewers from several disciplines were involved in it over fifteen months. The fact that the proposal was approved in a reduced format in October 1985 for a trial period of one year—with the possibility of extension after a new review—was primarily due to co-signer Afheldt, to whom all the reviewers attributed sufficient expertise and reputation so that they were able to give in to their moral feeling that they should not reject such an urgent project in these tense times. Moreover, the reviewers from the natural sciences were mostly sympathetically interested in seeing their modeling methods applied to social processes, but did not dare to predict the outcome of this experiment. Among the social scientists, skepticism prevailed throughout with regard to the methodological approach, which they nevertheless wanted to allow even if, or precisely because, the Ernst Jünger biographer and historian of the Adenauer Republic, Hans-Peter Schwarz, considered the project unworthy of DFG funding as a “trend-based research” allegedly initiated by the SPD’s Secretary-General and MPS Senate member, Peter Glotz, and detailed his strict rejection in long missives.¹⁵⁸

With the interim report, which arrived in the form of a six-hundred-page tome of papers just a few months after the project was launched, the patience of even the most well-meaning skeptics was exhausted. They neither grasped the

155 The full project title was “Stabilitätsorientierte Sicherheitspolitik. Eine integrierte Rahmenkonzeption für die Weiterentwicklung der Sicherheits- und Verteidigungspolitik der Bundesrepublik” (Stability-Oriented Security Policy. An Integrated Framework Concept for the Further Development of the Security and Defense Policy of the Federal Republic.) Project documents are in AMPG, III. Abt., ZA 116: folder 9, K 12, 38, 54, and 108.

156 The ‘AG Afheldt’ had remained as an independent unit within the MPS because its long-serving director could no longer be dismissed and—despite combined efforts by the BMFT and the Administrative Headquarters—it had not been possible to place Afheldt with an institution that they considered more suitable in terms of content, such as the SWP in Ebenhausen, the Hessische Stiftung Friedens- und Konfliktforschung (HSFK), or the Institut für Friedensforschung und Sicherheitspolitik an der Universität Hamburg (IFSH): Protocol of the 92nd Session of the Senate, March 16, 1979, Berlin, AMPG, II. Abt., Rep. 60, No. 92.SP, fol. 214, 217, 220; protocol of the 97th Senate meeting of Nov. 21, 1980 in Munich, AMPG, II. Abt., Rep. 60, No. 97.SP, fol. 111–112; note by Haunschild dated Jan. 18, 1980 on the MPS Senate meeting of Jan. 16, 1980, BArch B 196/20204.

157 The approval procedure, as well as the failed extension procedure, is documented in BArch B 277/102084 and BArch B 277/147220.

158 Expert opinion by Schwarz dated Sep. 3, 1984 and Feb. 12, 1985, BArch B 277/102084; in contrast, expert opinion by Nuscheler dated April 4, 1985, *ibid*; expert opinion by Schwarz dated Feb. 26, 1987, BArch B 277/147220.

context of the texts, nor did they see their calls for abridgement carried out.¹⁵⁹ The decisive factor, however, was the special evaluation by the newly consulted Stuttgart physicist Hermann Haken, whose work on synergetics had been cited by the project team itself as an important theoretical reference. He confirmed that the team had “familiarized itself well with the theories available here,” namely, in addition to its own, also with the theory of dissipative structures developed by Ilya Prigogine as well as with various catastrophe and chaos theories. However, to the extent these theories had only been developed for processes in the fields of physics, chemistry and biology and had been tested on corresponding model systems; one could “not be warned emphatically enough of the dangers that can arise when the results obtained [there] are transferred to the field of sociology.” For in contrast to the value-free results obtained “in the mathematical-structural field,” “in the case of a transfer to sociological processes [...] quite considerable questions of evaluation come into play.” “The politician” could certainly not adhere to analyses of sociological processes obtained by employing systems theory:

In most cases, it will be a matter of decisions in the political sense, where a choice has to be made between two or more possibilities on the basis of political considerations, where system-theoretical considerations are no longer sufficient as a criterion.¹⁶⁰

The recommendation of the two social science experts and the subsequent decision of the DFG to grant final funding only until the end of 1987 was based primarily on this physicist’s vote.¹⁶¹

This was by no means the end of the ambitious project and the project group, which at times numbered up to twelve people, four of whom were financed from the DFG funds that expired in 1987, especially since the VW Foundation also stepped in financially here, as it had with the Consequences of War Study.¹⁶² The mathematically guided modeling of social phenomena was soon abandoned,

159 AMPG III. Abt., ZA 116, K 108.

160 All quotations: Expert opinion by Haken, April 29, 1987, BACh B 277/147220. The physicochemist and Nobel laureate Prigogine (Brussels and Austin) was appointed External Scientific Member (AWM) in the MPI for Nutritional Physiology in 1984, cf. table paper for the MPS Senate meeting on June 28, 1984, BACh B 196/156207. Dürr and von Müller also cited the theoretical approaches of MPS members Eigen and Gierer to nonmechanical structure-forming processes as being “of the utmost importance, especially for the field of political-historical reality.” See Müller, *Kunst des Friedens*, 1984, p. 13.

161 Main Committee List 187/87, BACh B 277/147220. Expert reviewers were the Duisburg political scientist Franz Nuscheler and the director of the Frankfurt Institute for Social Research, Ludwig von Friedeburg. The special expert from the field of political science, Ernst-Otto Czempel, of the Hessian Foundation for Peace and Conflict Research, who had originally endorsed the application with cutback conditions, was also “disappointed” by the interim report and pleaded for an orderly termination of the project (expert opinion dated Feb. 10, 1987, BACh B 277/147220).

162 Collado Seidel, “Durchbruch,” 2021, pp. 132–134 and passim.

since, as was admitted in the report for the 1987 MPS Yearbook, in the specific case they “entailed great difficulties, especially due to the incomparably higher number of degrees of freedom in social systems and the often disappointing data situation.”¹⁶³ All these theories of dissipative structures and deterministic chaos, in which one was so well versed, were only suitable as stimulating “models of thought” but no longer as analytical tools.¹⁶⁴ The “Stability-Oriented Security Policy,” which here referred to conventional weapons arsenals in Europe and the avoidance of a nuclear escalation that might thus set in, no longer functioned as a model for a future broadly applicable “bifurcation-oriented process design” of social systems, but instead blossomed into a project *sui generis*.¹⁶⁵

Stability-Oriented Security Policy on the International Stage

It was here, at the latest, that von Müller, who had been in charge of this project from the beginning, came to blows with Afheldt who was the head of the working group named after him and a fellow applicant, not just personally but also regarding substantive matters.¹⁶⁶ To be sure, their strategic concepts differed in several not so insignificant respects—despite similar basic assumptions such as the primary danger of a conventional enemy attack on the ground and the nuclear MAD lurking in the background. Afheldt’s strategy of the defensive defense of space consistently dispensed with any offensive weapons or advance defense and concentrated on those “techno-commandos” that were distributed like a network over the entire territory of the Federal Republic in earth bunkers, which were to delay the enemy advance with their remote-controlled defensive weapons to make time for political negotiations with the aggressor. Its military critics liked to caricature this strategy as a guerilla tactic, but it was quite amenable to the not entirely fundamentalist quarters of the peace movement. Von Müller’s strategy of structural aggression non-capability, which now became the focus of the security-oriented stability policy aspired to, was based on an “integrated advance defense” (IVV, *Integrierte Vorneverteidigung*) in a three-tier border strip one hundred kilometers deep. The first two zones near the border, i. e., the 5-km-deep “fire belt” and the 25-km-deep “interception net”, remained compatible with Afheldt’s ideas, but not the 60-km-deep “reinforcement area”

163 *MPS-Jahrbuch* 1987, p.859.

164 Quote: *ibid.* In von Müller’s interview (Sachse) April 9, 2018, von Müller explained that, then as in the present moment, he was not interested in applying mathematical-physical models to social phenomena, but rather in a transfer of quantum mechanical and evolutionary biological “approaches” to political and social science analyses.

165 *Ibid.*

166 The mutual personal animosities were clearly articulated in both interviews (Afheldt [Neuneck] June 25, 2007 and von Müller [Sachse] March 6, 2018); see also Collado Seidel, “Durchbruch,” 2021, pp. 29–38.

of the third zone, where “mobile armored units” were to wait for “favorable constellations” to attack enemy forces already decimated in the first two zones.¹⁶⁷

With this “modified line defense,” as characterized by Carlos Collado Seidel, von Müller did not stand a chance in the peace movement, but did qualify as a source of inspiration for those strategists and politicians in the Federal Republic who conceded that flexible response in the event of deployment would amount to the annihilation of Germany and large parts of Central Europe, whether with conventional and/or nuclear weapons, and who were seeking alternatives.¹⁶⁸ Dialogue partners were found primarily in the SPD around Egon Bahr, Dieter Lutz, Peter Glotz and Erhard Eppler. However, Kurt Biedenkopf of the CDU and even the Inspector General of the *Bundeswehr*, General Wolfgang Altenburg, who was elected Chairman of the NATO Military Committee in 1986, and several other military officials considered von Müller’s less radical defensive strategy worthy of discussion.¹⁶⁹ Together with the Institute for Systems Analysis and Operations Research at the *Bundeswehr* University in Munich, a “higher-aggregated combat simulation system” was developed and the IVV concept was tested in an extensive planning exercise. Last not least, the industry, above all Messerschmitt-Bölkow-Blohm (MBB), could identify itself with the programmatic slogan “through conversion to disarmament” and hope for new business.¹⁷⁰

In general, the “consulting-pragmatic implementation of the Starnberg efforts” represented the “project component” that developed most dynamically since 1985.¹⁷¹ The project was, in fact, in line with the geopolitical trend of the time, which von Müller was well able to exploit. In 1982, the independent international “Palme Commission” on Disarmament and Security Issues, which

167 From Müller to Zimmermann (DFG) Dec. 14, 1984, enclosure “Übersichtsschema zur ‚Integrierten Vorneverteidigung‘“(IVV), BACh B 277/102084.

168 Collado Seidel, “Durchbruch,” 2021, p. 34.

169 On Jan. 21, 1985, C. F. von Weizsäcker, Dürr, and Afheldt met with Glotz, Biedenkopf, and Altenburg as well as MBB representatives Prof. Bölkow and Dr. Kroy for an Institute Discussion on Future Perspectives of German Defense Policy (Dürr to Staab, Feb. 22, 1985, AMPG, III sec., ZA 116, K 65; cf. Collado Seidel, “Durchbruch,” 2021, 52). Afheldt’s more far-reaching defensive concept, on the other hand, met with, as the *MPG-Jahrbuch* 1986 (800) put it, “strong reverberations above all in value-conservative and church-oriented circles, as well as in green-alternative circles.” See also Neuneck, “Deutsche Pugwashgruppe,” 2009, 385; Hansen, “Zwischen Staat und Straße,” 2012, pp. 541–542; Hansen, *Abschied*, 2016.

170 Müller, *Kunst des Friedens*, 1984, pp. 57–62; Lutz, “Stabilität und Abrüstung durch Umrüstung,” 1987. At MBB, there was cooperation in particular with Dr. Kroy’s research group, which worked on the use of microelectronics and data processing in passive munitions and precision fire. On cooperation with MBB and the Bundeswehrhochschule see also the contributions of the Afheldt Research Group to the *MPG-Jahrbüchern* 1985 (771), 1986 (799–800), 1987 (859–860).

171 *MPG-Jahrbuch* 1986, p. 800.

had been created in 1980 in response to the threat of new intermediate-range missiles being deployed in Europe, had presented its recommendations for further disarmament negotiations to the second UN General Assembly Special Session. That same year, the VDW proposed to the Pugwash Secretary-General, Martin Kaplan, a corresponding Pugwash Study Group; this group was to pursue the issue, which, because of Reagan's SDI initiative was launched a few months later, only became more urgent the more hopeless it appeared in official diplomacy.¹⁷² Weizsäcker supported this concern during one of his rare visits to a Pugwash workshop in the summer of 1983, and Kaplan made it a top priority at the PCSWA.¹⁷³ Crucial to its success, meanwhile, was von Müller's effective networking, recalled years later by one of his fellow members of this study group, British economist and SIPRI founding director Robert Neild:

Albrecht von Müller is amazingly successful in bringing together people who matter to explore new policies of this sort.¹⁷⁴

His Starnberg adversary Afheldt later also conceded, albeit with an ironic quip, that this "Felix Krull of security policy," as he had been called in the "arms control scene," had succeeded in anchoring his variant of a defensive security policy, structural aggression non-capability, internationally.¹⁷⁵

The driving force were the Pugwash Workshops on Conventional Forces in Europe, launched in March 1984 in Vedbæk, Denmark, which von Müller co-organized for almost seven years, together with Neild and the co-founder of the Danish Institute for Peace and Conflict Research, Anders Boserup, as well as with Andrzej Karkoszka of the Polish Institute for International Affairs, later Poland's deputy defense minister and a member of NATO's Council of Experts.¹⁷⁶

172 Fischer (VDW) to Kaplan (Pugwash) on Nov. 10, 1982, Kaplan to Fischer on Nov. 12, 1982, CAC RTBT 5/5/2/66 (2).

173 This was the VIII. Workshop on Nuclear Forces, which, like the other workshops in this series, was held at Kaplan's Geneva residence on June 11–12, 1983, and ended with a public appeal for postponement of the missile deployment date—much to the chagrin of the AA's deputy disarmament commissioner, Klaus-Jürgen Citron, who had also been invited and who in no way wanted to be identified with it. In fact, it was not a coordinated statement by all participants from West and East, but only one by the Pugwash Executive Committee; this subtle difference was ignored by the press, as Kaplan explained to him, not for the first time, Citron (AA) to Kaplan on June 23, 1983 with attached dpa message dated June 21, 1983, Kaplan to Citron on April 7, 1983, CAC RTBT 5/5/2/64 (1).

174 Neild to Ruth Adams (Pugwash, MacArthur Foundation) on Oct. 9, 1990, quoted here from Collado Seidel, "Durchbruch," 2021, p. 58.

175 Interview Afheldt (Neuneck), June 25, 2007.

176 The workshops took place a total of eleven times between 1984 and 1991, Boutwell, "Participants in the Pugwash Conferences," 2007. At the 45th Pugwash Symposium (March 17–19, 1984, Vedbæk), later counted as the first workshop, both von Müller and Afheldt gave papers, but the latter soon withdrew from this circle. The proceedings of the meeting are contained in: CAC RTBT 5/2/8/1 (11, 10, 1, 2, 7). See also Collado Seidel, "Durchbruch," 2021, pp. 56–65.

The link to American disarmament experts was maintained by Frank von Hippel (Princeton), who had moved from theoretical physics to public and international affairs, served on the Pugwash Executive Committee, and participated in some workshops. Soviet scientists and military officers regularly attended these workshops from 1985 on and reported to the new Secretary-General of the CPSU, Gorbachev, who welcomed the new approaches with as much interest as Jaruzelski who in turn addressed them in the Warsaw Pact.¹⁷⁷ In order to have an even greater impact on Western European countries as well, the 4th Pugwash Workshop on Conventional Forces in Europe, which Kaplan was particularly devoted to, was held in Stockholm in April 1986. In the run-up to the OSCE's upcoming Stockholm "Conference on Confidence- and Security-Building Measures and Disarmament in Europe" in September 1986, the aim was to influence the accredited ambassadors of the participating countries and their delegations.¹⁷⁸ Finally, at the end of 1986, NATO, which until then had always parried Gorbachev's nuclear disarmament offers with the demand for a priority disarmament of the Soviet overcapacity of conventional weapons in Europe, managed to accept Gorbachev's corresponding negotiation offer in its Brussels Declaration.¹⁷⁹

The issue was thus on the agenda of the U.S.-Soviet disarmament negotiations. At von Hippel's behest, Gorbachev's scientific advisor, longtime Pugwashite Evgeny Velikhov, invited the three initiators of these Pugwash workshops to the Moscow international forum "For a Nuclear Free World, for Survival of Humanity" in February 1987, to which over a thousand people from science, politics, business, and culture from over eighty countries were invited. There, Gorbachev himself presented his disarmament proposals, which closely followed Egon Bahr's and the Palme Commission's ideas of a broad corridor free of offensive weapons along the Iron Curtain.¹⁸⁰ In the scientific subforum devoted to the scientific and technical aspects of disarmament, Boserup, Neild, and von Müller made such a good impression with their more far-reaching concept of structural aggression non-capability that they were invited back to Moscow in April 1987, where they were asked by security advisors Andrei Kokoshin

177 Collado Seidel, "Durchbruch," 2021, pp. 65–67. At least since the 33rd PCSWA in Venice in August 1983, Gottstein and Dürr had been in discussion with the physicist and vice president of the AS-SU Evgeny Velikhov, about scientifically based disarmament strategies and planned meetings between MPS scientists (Afheldt, Dürr, Gottstein, von Müller, von Weizsäcker, among others) and AS-SU colleagues, especially the Committee of Soviet Scientists for Peace and against Nuclear Threat: Gottstein to Velikhov on Nov. 15, 1983, AMPG III. Abt., ZA 11, K 24 (2). Dürr, "Die Verantwortung des Wissenschaftlers," 1986, pp. 44–45.

178 Kaplan to Ambassador Carlsson Jan. 23, 1986, CAC RTBT 5/2/8/4 (5). Pre- and post-preparations are documented in *ibid* (4 and 5); CAC RTBT 5/2/8 (1). *MPG-Jahrbuch 1987*, p. 860.

179 Bruns, NATO, 1987. Cf. Collado Seidel, "Durchbruch," 2021, pp. 67–68.

180 Gorbachev, *Unsterblichkeit*, 1987. The forum itself is extensively documented in: AMPG, III. Abt., ZA 116, K 78.

and Lev Mendelevich to draft a preparatory paper for Gorbachev's further negotiations.¹⁸¹ In a paper sent to Gorbachev in October 1987, they, together with von Hippel, presented their theoretical considerations and explained why even a disproportionately greater reduction of conventional weapons on the part of the Soviet Union would nevertheless bring it more security. They also formulated some concrete proposals for the ongoing Vienna MBFR negotiations on mutual and balanced force reductions, which were to culminate in the Treaty on Conventional Armed Forces in Europe (CFE) in 1990. Gorbachev assured them in his reply letter: "we will pay great attention to the concrete ideas laid out in the memorandum you attached to your letter."¹⁸² And the then chief scientific coordinator in the Soviet Foreign Ministry, Vladimir Shustov, also attested that the "civilian analysts" had considerable influence on the Soviet negotiations.¹⁸³

But the MPS Does Not Play Along

Within the MPS, all these strategy games were viewed with increasing alienation, even though, or precisely because, Weizsäcker described them in retrospect as the most valuable and influential work produced by his Starnberg Institute, which had ceased to exist as of 1979/80.¹⁸⁴ For MPS President Lüst, by contrast, the mere fact that, in the course of the dissolution of the MPIL, it was not possible to outsource the Afheldt Working Group to one of the relevant institutions of peace research proved here that "the reputation of the Max Planck Society is being used for certain defense policy views that have not been clearly proven scientifically."¹⁸⁵ The requested expert opinions also considered this work misplaced; Afheldt recalled remarks to the effect that the MPS was not, after all, there to "learn how to kill people;" it would be better if it worked for "general and total disarmament in the world."¹⁸⁶

Dürr and von Müller fared no better with their bifurcation-oriented systems analyses.¹⁸⁷ Dürr had initially hoped that his own time-intensive peace policy

181 *MPG-Jahrbuch 1988*, 738. On the influence of this team of authors, which also came to include Frank von Hippel, on Gorbachev's negotiation strategy see Evangelista, *Unarmed Forces*, 1999, pp. 312–315.

182 Gorbachev on Nov. 16, 1987, quoted here from Evangelista, *Unarmed Forces*, 1999, 313.
183 *Ibid*, 315.

184 Götz Neuneck in his interview with Afheldt: Interview Afheldt (Neuneck), June 25, 2007. C. F. von Weizsäcker to Apel (Federal Minister of Defense) on Jan. 16, 1979, AMPG, III. Abt. 111, No. 10. See also Drieschner, "Verantwortung der Wissenschaft," 1996.

185 Protocol of the 97th meeting of the Senate, Nov. 21, 1980 in Munich, AMPG, II. Abt., Rep. 60, No. 97.SP, fol. 113.

186 These were the reminiscences of Afheldt in his interview (Neuneck) on June 25, 2007 and in Afheldt, "Kalter Krieg," 2009, p. 307, FN 11.

187 On the part of the Administrative Headquarters, Edmund Marsch rejected the proposal of Wolfgang Lempert (MPIB) to report on von Müller's "Denkschrift" in the *MPS-Spiegel* by pointing out that this work was by no means work from the Gottstein Research

activities as part of the DFG project “Stability-Oriented Security Policy” would also be recognized as official tasks, and even that the Afheldt Research Group, where it was affiliated, would be renamed “Research Group Social Systems”; he then wanted to devote thirty percent of his working time to this. But his hopes were dashed once again. The conversation he had asked Staab, Lüst’s successor in the presidency, to have immediately after Staab took office in the summer of 1984, did not take place until he asked for it again nine months later, and came to naught.¹⁸⁸ Dürr did not have such an intimate enmity with Staab as he had with his colleague in the field and former colleague at the Institute, Lüst; but he could not expect any support for his intellectual and political interests beyond theoretical physics from this president either. On the contrary, after learning in the summer of 1987 of the failed renewal application for the project, Staab hastened to make clear to DFG President Hubert Markl that the reviewers’ impression that “the Max Planck Society was funding the Starnberg Group on a larger scale,” even with twelve staff positions, was completely false. There was phase-out funding only for von Müller and for Afheldt until his retirement in 1989; the other staff members, if not funded by the DFG, worked on a voluntary basis at best with short-term contracts for work or fees, and Dürr had other tasks.¹⁸⁹

He reminded Dürr of this personally in an informal warning disguised as a congratulatory letter, handwritten on private stationery, which spelled out for the overambitious colleague the separation of science and politics, work, and private life, which had become the norm at the MPS:

Dear Mr. Dürr, you have just received the “Right Livelihood Award” in Stockholm, with which your efforts in peace and disarmament policy have found a widely visible recognition. The award was not given for your scientific work, but for your private, very personal commitment, so that the Max Planck Society—as in other similar cases—has not commented on this publicly. Personally, however, I would like to congratulate you; because you know that I follow your off-duty activities with interest and to a certain extent also with sympathy—although not without reservations regarding your role and duties as a scientific member and current Executive Director of the Werner Heisenberg Institute. To say this requires the openness that I believe I also see in you and that prompts me to write these lines [sic].¹⁹⁰

Center in the MPI Physics and Astrophysics, to which von Müller was assigned at that time, but was instead prepared on behalf of a VDW study group, “but then published on Mr. von Müller’s own responsibility”; Lempert to Gerwin (MPS Press Office) on Sep. 7, 1983, Marsch to Lempert on Sep. 14, 1983, AMPG, II. Abt., Rep. 1, No. 625, fol. 49–50, fol. 51.

188 Dürr to Staab on Sep. 14, 1984 and Feb. 22, 1985, AMPG, III. Abt., ZA 116, K 65; speaking note for a conversation with President, Prof. Staab on March 22, 1985, 5 p.m. (citation), *ibid.*

189 Staab to Markl on Aug. 26, 1987, BArch B 227/147220.

190 Staab to Dürr on Dec. 12, 1987, AMPG, III. Abt., ZA 116, K 65. The Right Livelihood Award, founded in 1980 by Jakob von Uexküll, is often described as an “alternative

Even if these lines could have hardly lifted the mood, MPS member Dürr did not have to fear any material consequences.

The post-doctoral researcher von Müller, conversely, knew that his time at the MPS was limited and made the best of it. Since 1987, he had been pursuing the idea of a European Center for International Security (EUCIS), which would consolidate the approaches pursued in the DFG project and continue them on a larger scale. Things were difficult at first. Attempts to incorporate EUCIS within the MPS failed despite the support of Senate members Glotz and Biedenkopf; the Foreign Office and the Federal Ministry of Defense could not be persuaded to provide institutional support, nor could Daimler-Benz AG, which was increasingly active in armament. Nor did the locations planned with colleagues Neild and Boserup in London, Copenhagen, Paris, and Venice materialize. In the end, EUCIS remained a small, independent think tank in Starnberg, which lived on the meager rations of project-based third-party funding. Nevertheless, it succeeded over the years in bringing together the international arms-control VIPs in workshop series and in designing ever new security-policy models, simulations, and strategies for shaping the rapidly changing geopolitical constellations since 1989—partly complementing, partly competing with the PCSWA, which struggled to redefine its *raison d'être* beyond the bloc confrontation.¹⁹¹

Unburdened by the postwar Pugwash legacy, the nuclear physicists' commitment to world politics and to peace, von Müller successfully mastered the end of the Cold War with flexibility. Bifurcation-oriented process design could be modeled particularly well on the example of a security policy caught in the zero-sum game of bloc politics, but it was not only Cold Warriors who had to make decisions under conditions of uncertainty and complexity. The models of thought, simulation concepts, visualization techniques, with which complex situations in their components, structures, interactions, and dependencies could be represented and made manageable, were also suitable for other actors and especially for those who were willing and able to pay for them. With the end of the Cold War, von Müller made his "Think Tools" ready to be sold as a product. In 1997, he presented the Think Tool Suite software at the World Economic Forum in Davos, and three years later he took Think Tools AG to the stock market in Switzerland. The success was amazing: The management consulting

Nobel Prize;" Dürr received it in 1987. See Right Livelihood, <https://rightlivelihood.org/de/who-we-are/>, last accessed on Feb. 27, 2021. Journalist Peter Brügge commented on the MPS's failure to honor this award, describing it as an institution "that has so far only appreciated dealing with those sheer Nobel Prizes that do not aim at a junction of research and conscience:" Brügge, "Vom Gefühl her," *Der Spiegel* 49, Nov. 30, 1987, p. 226.

191 The Joint Analysis of Conventional Stability (JACOS) and Joint Simulation (JOSIM) workshop series accompanied the CFE negotiations in 1989–1991; they brought together disarmament experts and high-ranking military officials primarily from the United States and the Soviet Union, but also from other NATO countries and the Warsaw Pact, which was in the process of dissolution. Cf. in detail Collado Seidel, "Durchbruch," 2021, pp. 129–152.

firm Arthur D. Little (ADL) committed its consultants worldwide to using this software, which they were to market to their potent customers. South African President Nelson Mandela and German Interior Minister Otto Schily used the Think Tools to modernize public administration, and Deutsche Aerospace AG (DASA) to develop the Airbus. Among its global customers were EU Commission President Romano Prodi and UN Secretary-General Kofi Annan. The share price shot up from 270 to 1,050 Swiss francs on the first day of issue (March 24, 2000), but quickly peaked at a company value of 2.52 billion Swiss francs. By January 2003, the share price had fallen to eight Swiss francs and, along with it, the reputation of major shareholder Klaus Schwab, founder of the Davos World Economic Forum. After all sorts of transactions and mergers, Think Tools AG disappeared from the market in 2004, while the Parmenides Foundation, also founded by von Müller in 2000, flourished—thanks to the fortune he had nevertheless gained from the unsuccessful IPO, and to Think Tools, which he had bought back at a dumping price.¹⁹² Today, the foundation resides in a villa in Pullach under the leadership of von Müller as chairman of the board and Julian Nida-Rümelin as the executive director, and is dedicated to transdisciplinary research into human thinking, especially its handling of complexity. As the sole owner of Parmenides AG, it continues to benefit from the thinking tools that are now marketed as Parmenides-Eidos-Software. Von Müller still likes to refer to his years at the MPS and his later membership on the advisory boards of the MPI for Neurobiology and the MPI for Biochemistry. In the statutes of his charitable foundation, he named MPS as the ultimate beneficiary.¹⁹³

192 Even shortly before the IPO, *Managermagazin* had fueled the buying mood: Kröher, “Achten Sie auf,” 2000. The spectacular IPO left many traces in the international business and financial press, which can easily be found on the Internet. Here I rely primarily on: Neubacher, “Geist aus der Maschine,” May 29, 2000; “Think Tools: Der Chefdenker verkauft das Haus.” *Bilanz. Handelszeitung* (March 31, 2002). <https://www.handelszeitung.ch/panorama/think-tools-der-chefdenker-verkauft-das-haus> “Think Tools: Gnadenstoss für die Denkwerkzeuge.” *Bilanz. Handelszeitung* (May 31, 2002). <https://www.handelszeitung.ch/unternehmen/think-tools-gnadenstoss-fur-die-dendenk-werkzeuge>, both last accessed on March 1, 2022; “Ein Bluff fliegt auf.” *Blick* (June 28, 2007). <https://www.blick.ch/news/platz-4-ein-bluff-fliegt-auf-id136434.html>, last accessed on Feb. 27, 2021. The *Computerwoche* of March 16, 2001 dealt especially with the plagiarism accusations that Frederik Vester raised against Think Tools AG: “Plagiarism accusations against Think Tools AG. Munich scientist Frederic Vester defends himself against Swiss startup company.” *Computerwoche* (March 16, 2001). <https://www.computerwoche.de/a/plagiatsvorwurfe-gegen-think-tools-ag,1064053>, last accessed 27.2.2021. Further press references can be found in the English-language Wikipedia entry: Think Tools, last accessed Feb. 27, 2021.

193 Interview Müller (Sachse) April 9, 2018. Parmenides Foundation, <https://www.parmenides-foundation.org/>; Parmenides AG, <https://www.parmenides-foundation.org/parmenides-ag>, both last accessed on Feb. 27, 2021. In his recently published magnum opus, von Müller traces an arc from think tools via visual reasoning architecture back to the categorical foundations of time and logic, which he already discussed with C. F. von Weizsäcker as a doctoral student: Müller, *Selbstentfaltung*, 2020.

The relationship between Dürr and the MPS, conversely, did not have a happy ending. Dürr could not forgive the MPS for not allowing him, unlike his role model C. F. von Weizsäcker, to smoothly transition from theoretical physics to active concern for the existence of the Earth, which came so naturally to him, and for not even recognizing his outstanding commitment, which had been awarded prizes elsewhere. For the MPS, its scientific member Dürr, who did not want to accept that with the closure of the Starnberg Institute this very hybrid intersection of science and politics was to be eliminated once and for all, remained a dangerous interface to the new social movements, which since the early 1980s had also been knocking on the doors of the MPS and some of its institutes, eliciting renewed nervousness there.

4.4 New Social Movements: From Krefeld via Mainz and Hamburg to Moscow

The end of détente policy had been on the horizon since the deployment of the Soviet SS-20 missiles in the mid-1970s. But it was the NATO Double-Track Decision of 1979 that sealed it and revived fears of a possible nuclear war more than ever before. In many Western countries, the tradition of Easter marches, which had been on the wane in the meantime, was resumed with unprecedented numbers of participants.¹⁹⁴ By far the largest number of people, measured in terms of population, took to the streets in the Federal Republic of Germany. In this new peace movement, many of the social movements that had emerged in the 1970s—the women’s movement, the anti-nuclear movement, environmental activists, citizens’ initiatives, post-Marxist groups—came together with members of established organizations, especially from the two Christian churches, the youth associations of the SPD and FDP and the trade unions, which had previously tended to work alongside or even against each other.

As could hardly be expected otherwise, the GDR attempted to influence this diverse mass movement through its various West German front organizations with more or less covert financial and organizational support and to appropriate it for its “alliance policy.” But contrary to the claims of the Federal Government, the associated contemporary press and later historical studies, this strategy was less and less successful. On the contrary, with their motto “swords to plowshares,” the peace groups in the GDR took the peace rhetoric of their state leadership at its word; under the protection of the churches and with the public support of Western celebrities not suspected of collaborating with communists,

194 Wittner, *Struggle Against the Bomb*, vol. 3, 2003, pp. 144–150; Gassert, Geiger und Wentker, *Zweiter Kalter Krieg*, 2011.



Fig. 33: Gert Bastian, Petra Kelly, and Carl Friedrich von Weizsäcker in a Tibetan temple, undated.

such as Petra Kelly and Gert Bastian from the Green Party, which had just emerged from all these new social movements, they contributed to the downfall of the regime.¹⁹⁵

From Theoretical Physicist to Peace Activist: Hans-Peter Dürr

The theoretical physicist Dürr was active in many branches and forums of this peace movement—but only after the death in 1976 of his mentor and paternal friend Heisenberg, who, until the very end, had held on to the peaceful use of nuclear energy as an indispensable resource for societal development and thus to the moral sublimation of his early reactor research. Dürr had been critical of the prevailing conviction that sustained economic growth was indispensable and that the concurrent increase in energy demand could only be met by expanding nuclear energy, at least since the 1975 petition by science representatives Lüst

195 On the alleged control of the peace movement by the GDR and its “infiltration” by West German organizations with close ties to the GDR, see, among others, Herf, *War*, 1991; Baron, *Kalter Krieg und heißer Frieden*, 2003; Wettig, “Sowjetunion,” 2009. In contrast, Walter, “Manifest der Friedensbewegung,” 2010; Nehring and Ziemann, “Wege nach Moskau,” 2011. A middle position is represented by: Heidemeyer, “NATO-Doppelbeschluss,” 2011.



Fig. 34: Carl Friedrich von Weizsäcker and Hans-Peter Dürr at the MPS General Meeting.

(MPS), Beckurts (KfA) and Maier-Leibnitz (DFG) in favor of the Schmidt government's nuclear energy program, which he did not sign (→ 4.3).¹⁹⁶ But it was not until 1977 that he presented his own ideas to the public in a long double spread in the *Frankfurter Rundschau*.¹⁹⁷ Inspired by the Club of Rome and its report on the "Limits to Growth" of 1972, he rejected the social goal of permanent economic growth and the constantly rising standard of living, referring to the finite nature of the planet's resources and, given the laws of nature, the impossibility of a perpetuum mobile, as a misguided maxim that would lead to a catastrophic end of humanity. Instead, he advocated developing forms of economy and life, which were to be geared towards a better quality of life rather than rising living standards. Such developments were to be promoted through fiscal regulation, especially of energy consumption, the containment of global population growth and humane working conditions and full employment for all, instead of higher wages and shorter working hours for the few in industrially developed countries. He considered the operation of nuclear power plants and their encroachment on the environment to be the lesser evil, one that was temporarily acceptable compared to the general over-exploitation of the Earth's resources.

196 Beckurts, Lüst and Maier-Leibnitz: "Offener Brief an die Abgeordneten des Bundestages," AMPG, Abt. III, ZA 116, K 65; Dürr to Lüst on Dec. 3, 1975, *ibid*.

197 Dürr, "Immer mehr," *Frankfurter Rundschau*, Sep. 27, 1977; Dürr, "Sicherung des Weltfriedens," *Frankfurter Rundschau*, Sep. 28, 1977.

Dürr thus represented a balanced position in the increasingly polarized West German nuclear energy debate from the mid-1970s onwards, which could have been compatible with the ambivalence of his prominent colleague— “with Weizsäcker for and against nuclear energy,” as people in Starnberg liked to mock. But while the latter, as an ‘ideal citizen’ moderated debates with a philosophically thoughtful understanding of both sides and urged them to be politically reasonable, Dürr, though not entirely opposed to nuclear power plants, advocated a radical ecological and peaceful transformation of the world, which would soon make nuclear power plants superfluous and in which the Federal Republic of Germany was to lead by example.¹⁹⁸ With his resolute criticism of growth, his ecologically based commitment to peace and his both esoteric and physical understanding of the world, Dürr reflected the protest mood of those years, taking into those aspects that allowed the divergent social movements in the early 1980s to amalgamate into the peace movement.¹⁹⁹ These movements adopted the director of the Werner Heisenberg Institute as their scientific expert, as he accommodated them with his catchy images of the “physicist’s web” or the “path” to the “open future” of an “ongoing process of creation” and a non-material “actual reality,” which he was able to justify both in terms of quantum theory and Taoism.²⁰⁰ He himself found recognition here for his post-physical thinking and his resulting social and ecological commitment, which the MPS presidents from Lüst to Staab to Zacher explicitly denied him and many of his MPS colleagues tacitly withheld.²⁰¹ However, he was not entirely alone in the MPS with his peace

198 Seefried traces Weizsäcker’s undecided doubts about the blessings of nuclear energy, which he cultivated even as the moderator of the legendary Gorleben hearing in Hanover at the end of March 1979. This hearing was the aim of the week-long “Gorleben trek,” as a result of which the Lower Saxony state government led by Ernst Albrecht (CDU) ultimately abandoned the construction of the planned reprocessing plant in Gorleben as politically unfeasible. It was not until 1986, the year of the Chernobyl catastrophe, that Weizsäcker managed to force himself to vote clearly in favor of abandoning nuclear power. See Seefried, “Ohne Atomkraft leben?” 2014.

199 The oscillation between theoretical physics and esotericism was not uncommon in the history of physics, particularly in the 1970s and 1980s, see Kevles, *The Physicists*, 1995; Forstner, *Quantenmechanik*, 2007.

200 Quotes: Conversation Dürr (Devillard) 2013, pp. 59–60. Dürr liked to refer to “the Chinese” with their “open world view”, the “deep” thinking of “the Russians,” the reciprocity in the understanding of nature of “the Indians,” “the duality of man/woman” and the life-sustaining thinking of “the woman,” which he had also observed in “mother pigs.” Ibid, 50–52, 56–60, 67, pp. 110–111, p. 117. Cf. also his numerous later books, including Dürr, *Netz des Physikers*, 1988; Dürr, *Zukunft*, 1995.

201 The arguments with Lüst about the role of the scientist in the nuclear energy debate were very emotionally charged, especially on Dürr’s part (Dürr to Lüst, on Jan.10, 1980; Lüst to Dürr on Jan. 14, 1980, Dürr to Lüst on March 18, 1980; Lüst to Dürr on April 2, 1980, AMPG, III. Abt., ZA 116, K 65) and did not allow for reconciliation until the end of Lüst’s presidency. This becomes particularly clear in a handwritten, unsent draft letter from Dürr to Lüst from spring 1984 as well as in the subsequent correspondence,

policy commitment and his growth-critical approach, which could be easily combined with the concept of sustainability that gradually became popular in the 1980s. Some who did not wish to follow him to the podiums of the social movements and their newly emerging organizations in the 1980s respected his unwavering advocacy of values and visions of the future that were recognized as correct, because at least in his view they harmonized with quantum theoretical considerations.²⁰² However, he found more resonance outside the MPS.

Congresses and Appeals to the Public

The political public sphere in the Federal Republic of Germany in the late 1970s and 1980s had changed—at least beyond the parliaments and established institutions. The once numerically and milieu-wise manageable extra-parliamentary opposition of students who now graduated had diffused into many alternative life and work styles, projects, and movements. Their heterogeneous social goals and even group-specific lifestyles could neither be classified by party nor by the classic left-right scheme, but could be linked to demands for an end to deterrence policy, nuclear energy and environmental destruction.²⁰³ If they wanted to articulate their goals as common ones and with public impact, movements like these needed charismatic speakers such as Petra Kelly, the co-founder of the Green “Anti-Party Party,” and political and moral authorities such as the writer Heinrich Böll, who could enthral hundreds of thousands of demonstrators in Bonn’s Hofgarten.²⁰⁴ There was no longer a need for memorandums penned by elitist scientists, which were primarily addressed to the political elites of the Republic and only occasionally deviated from Heisenberg’s “invisible path.”

undated, Dürr to Lüst Feb. 10, 1984, Lüst to Dürr March 14 and March 15, 1984; Dürr to Lüst March 19, 1984, *ibid.*) On the Dürr/Staab relationship, see Chapter 4.3 above; the relationship with Zacher was probably somewhat more conciliatory on both sides, despite the distance in terms of content and politics (farewell greeting from Dürr to Zacher May 1, 1996, letter of thanks from Zacher September 1996, *ibid.*). A long list of Dürr’s memberships in peace and environmental organizations and institutions can be found on the website: Global Challenges Network, Dürr CV, <http://www.gcn.de/lebenslauf.html>, last accessed on May 24, 2022.

- 202 Some of my interviewees expressed similar views. Dürr’s papers (AMPG, III. Abt., ZA 116) contains a vast plethora of material from organizations he corresponded with, he joined or in which he intermittently assumed leading roles, of which Greenpeace only the best-known one was. (AMPG, III. Abt., ZA 116, K 24.)
- 203 In a thousand-page volume, Sven Reichardt attempted to describe these milieus and, in my opinion unconvincingly, identified the search for “authenticity” as their unifying characteristic: Reichardt, *Authentizität*, 2014.
- 204 Richter, *Aktivistin*, 2010; Richter, “Protagonisten,” 2012. For a brief overview of the West German peace movement, see Wittner, *Struggle Against the Bomb*, vol. 3, 2003, pp. 144–150.

In order to unite such ramified movements beyond spontaneous and decentralized protest actions, organizational and propagandistic know-how was required. And since the days of Willy Münzenberg and the KPD alliance politics of the 1920s, this had been available above all to the tiny DKP and its derivatives such as the German Peace Union (DFU, *Deutsche Friedensunion*) with its professional functionary Josef Weber, who, with political backing and financial support from East Berlin, personally took on the preparations for the autumn actions of the peace movement in the Federal Republic. The goal was to make use of the deadline for the deployment of the new medium-range weapons announced in the NATO-Double Track Decision at the end of 1983 if the disarmament negotiations failed. The DFU organized the “Krefeld Forum” in November 1980 and, as with its earlier, little-noticed actions, ensured that a host of non-communist celebrities were also present. This time, the long hoped-for “political alliance breakthrough” became reality.²⁰⁵ However, it soon turned into a dynamic that neither the DKP nor the DFU controlled, nor could it be “remote-controlled by Moscow,” as the supporters of the NATO-Dual Track Decision repeatedly claimed.²⁰⁶ Proven allies such as pastor Martin Niemöller, constitutional law expert Helmut Ridder and journalist Gösta von Uexküll were joined by Christoph Strässer from the Young Liberals, Giessen physicist and SPD member of the *Bundestag* Karl Bechert, and, most notably, by Major General Gert Bastian, who had just retired following a dispute with his defense minister Hans Apel (SPD), and the newly elected chairwoman of the Green Party, Petra Kelly. Although Bastian claimed authorship, the appeal adopted in Krefeld was still entirely in line with the DKP and DFU “fighters for peace” in that it called exclusively on the Federal German government to withdraw its consent to the deployment of U.S. missiles and to take a stand against the arms race within NATO; it did not, however, say a word about the SS-20 missiles on the other side of the Iron Curtain. Soon afterwards, Kelly, Bastian and the other initiators explained in newspaper advertisements, with which they solicited public support and invited people to the subsequent forums, that they were very passionate

205 See Walter, “Manifest der Friedensbewegung,” 2010, p. 264.

206 An ironic bumper sticker during these years read: “I am remote-controlled by Moscow.” Quoted here from Schmid, Krefelder Forum Einführung, https://www.1000dokumente.de/index.html?c=dokument_de&dokument=0023_kre&object=context&st=&l=de; last accessed July 28, 2024. On the loss of control by the DKP and the GDR regime over the peace movements in West and East Germany, see Wittner, *Struggle Against the Bomb*, vol. 3, 2003, pp. 282–286. The German Domestic Intelligence Services, however, was soon more concerned about the potential violence of militant “autonomists” and “anti-imperialists” and, in its small-scale preview of the autumn 1983 campaign, itself relied on the forces of order of the DKP and its supporting organizations, but did not trust the independent “New Left” to keep its militant sympathizers in check (circular letter of BMI to all federal ministries of July 6, 1983, here esp. p. 20, PA AA B 43-REF. 302/II/8/UA IIB/128636.)

about a “nuclear-free Europe” and the “dissolution of the military blocs.”²⁰⁷ Even Weber could not prevent this, especially as from 1982 the organization of the movement was largely taken over by the Coordination Committee of Independent Initiatives.

The Krefeld initiative finally collapsed in January 1984 over the issue of whether the East German “*Schwerter zu Pflugscharen*” (swords to plowshares) movement was also to be included, which Kelly and Bastian strongly advocated. By then, the movement had collected around five million signatures—also from numerous celebrities from the arts, culture, sport, science, politics, and churches—and organized follow-up congresses including rock concerts in Dortmund in 1981 and Bochum in 1982 with some 15,000 and 200,000 visitors respectively. It had also called for numerous mass demonstrations, in which rarely fewer than 100,000 and sometimes over a million people across the country participated and which—above all the demonstration marches to Bonn’s Hofgarten in 1981 and 1983—left their mark on the memory and self-image of an entire generation.²⁰⁸

All in all, the combination of old-left organizational skills and new-left creativity proved to be highly successful in mobilizing the masses and directing imaginative forms of protest with high visibility.²⁰⁹ This also included the organization of people who could be addressed and mobilized as members of prominent professional groups beyond the trade unions. With this “professional group approach,” the Krefeld initiative attempted to activate a total of 21 predominantly academic professional groups for peace and against the “arms madness” of missile deployment, including doctors—who subsequently came together in 1982 as the West German section of the International Physicians for the Prevention of Nuclear War (IPPNW)—educators, ministry officials, information specialists, officers, and soldiers, as well as entrepreneurs. They were to further disseminate the largest social movement in the history of the Federal Republic of Germany and to keep it alive even after the not so unlikely defeat. Reiner Braun from the DKP-affiliated Marxist Student League Spartakus (MSB, Marxistischer Studentenbund), who initially supported Weber in the

207 An advertisement in *Der Stern* of March 15, 1982, quoted from Walter, “Manifest der Friedensbewegung,” 2010, p. 269. See also Zepp, “Ratio der Angst,” 2012.

208 On the organization of the peace movement and its infighting following the Krefeld Appeal, see Walter, “Manifest der Friedensbewegung,” 2010; Schmid, “Nuclear Colonization?” 2011; Becker-Schaum, “Die institutionelle Organisation,” 2012, pp. 159–162 as well as the other contributions in this volume. On the self-image of the peace movement, see Reichardt, *Authentizität*, 2014, pp. 173–186.

209 The competing social democratic initiative, the Bielefeld Appeal of December 1980 by contrast, reached, with similar demands, its own membership and from this only those for whom the independence from communist influences was more important than being part of a broader mass movement. See Hansen, “Zwischen Staat und Straße,” 2012, pp. 521–522.

management of the Krefeld Initiative following his studies in 1981 and took over after his death in 1985, was responsible for the organization.²¹⁰

One of his more successful efforts led to the Mainz congress with the title “Responsibility for peace—scientists warn against new nuclear armament” in early July 1983. At the beginning of 1982, Braun approached Cologne geneticist Peter Starlinger, who had already co-initiated the Krefeld Appeal in 1980 and was now willing to act as anchorman among his colleagues nationwide to promote a congress that would strengthen the broad social protest against the planned missile deployments by adding scientific expertise.²¹¹ As a scientist coming from the universities, Starlinger had been a member of the MPS Senate since 1972 and retired from this body in March 1978 with a critical commentary on the limited influence of the senators on scientific decisions within the MPS.²¹² The newly appointed directors of the restructured MPI for Breeding Research in Cologne between 1978 and 1982—the Belgian plant geneticist Jozef Schell, the molecular geneticist and former doctoral student of Starlinger, Heinz Saedler, and the biochemist Klaus Hahlbrock—nevertheless appointed him as an external scientific member of their institute in 1982 and provided him with a laboratory there for many years.²¹³ They were all among the first signatories of the congressional appeal, which was published in a press release in February 1982 with about a hundred signatures from scientists, including several female scientists.²¹⁴ Dürr also belonged to the circle responsible for the preparatory work; however, he largely left the organizational work, including a first draft for the final communiqué of the congress, to Albrecht von Müller, who was thus able to prominently place his concept of a “stability-enhancing rearmament

210 The “professional group approach” was also the subject of my interview with Reiner Braun on March 8, 2018. See Drewitz et al., *Berufsbezogene Friedensinitiativen*, 1984; Braun et al., *Berufsbezogene Friedensinitiativen*, 1986. See also Baron, *Kalter Krieg und heißer Frieden*, 2003, pp. 103–107, especially FN 399 and 402. Despite his heated anti-communism, Baron concludes that all these organizations were too heterogeneous “that they would have allowed themselves to be taken in by the DKP and its alliance organizations:” *ibid.*, 105. On the IPPNW, see Kemper, *Medizin gegen den Kalten Krieg*, 2016.

211 Interview with Braun (von Schwerin) May 6, 2020. Starlinger to the members of the preparatory group (including Dürr) on Feb. 8 1983, AMPG, III. Abt., ZA 116, No. 7.

212 Starlinger to Lüst and Haunschild on Feb. 8, 1978, BArch B 196/20197; protocol of the 89th Senate meeting on March 17, 1978 in Munich, AMPG, II. Abt., Rep. 60, No. 89. SP, fol. 103–107. For Starlinger’s appointment to the MPS Senate, see: Protocol of the 93rd meeting of the Executive Council on March 13/14, 1972 in Frankfurt, Hotel Frankfurter Hof, AMPG, II. Abt., Rep. 61, No. 93.VP, fol. 203–207. I would like to thank Alexander von Schwerin for information and background information.

213 On the collaboration between the Institute of Genetics at the University of Cologne, founded by Max Delbrück in 1959, and the MPI for Plant Breeding Research, based in Cologne since 1955, see Wenkel and Deichmann, *Max Delbrück*, 2007.

214 Press release Feb. 17, 1983 (I suspect a typing error in the dating of Feb. 17, 1982) and call for participation in the congress on July 2/3, 1983, signature list without first names, AMPG, III. Abt., ZA 116, No. 7.

to a structural aggression non-capability in what was then known as the Mainz Appeal.²¹⁵

The honorary president of the MPS, Butenandt followed Starlinger's request in spring 1983 and signed it immediately, even if he regretted that the congress appeal referred to the Göttingen Declaration of 1957 and not to the 1955 Mainau Declaration of the Nobel Laureates, which he had once co-signed.²¹⁶ The directors Gerhard Ruhenstroth-Bauer of the MPI for Biochemistry and Uli Schwarz of the MPI for Virus Research also proceeded to sign the document. By June 1983, more than 1,600 signatures had been collected, and in the end the appeal was adopted by about 3,300 congress participants, including 400 professors and a good dozen MPI directors. 23 of them were named in the published Mainz Appeal; from then on, they operated as the "Mainz Twenty-Three," similar to the "Göttingen Eighteen," including MPS members Dürr and Schell alongside Starlinger.²¹⁷

Those who had signed the Mainz Appeal were not alone in the world. As early as January 1983, the American Physical Society had warned of the renewed escalation of the arms race and called on the heads of state of the nuclear powers to finally hold serious disarmament talks; the German Physical Society (DPG) joined this statement in March 1983 with its "Regensburg Appeal."²¹⁸ Over thirty national science academies, including the American, Soviet, and French ones, as well as the British Royal Society, had expressed similar views. By contrast, in April 1983, barely a month after Reagan had announced his SDI program, Soviet physicists addressed "all scientists in the world" in an appeal published by the Soviet embassy in Bonn to inform them that the planned defense system was at best suitable for "increasing the strength of the counterstrike," i. e., to strengthen "the American first-strike potential" and was therefore not a defensive but rather an aggressive weapons system.²¹⁹

While elsewhere in the world it was primarily physicists who spoke out, the Mainz group of signatories represented several disciplines. Thanks to Starlinger's network, the life sciences, in particular, were strongly represented, also including the MPS scientists involved. Among the speakers and the few female speakers at the congress, it was, however, physicists and mathematicians who dominated on the one hand and peace researchers on the other. The defensive strategists from Starnberg—Afheldt, von Müller, Dürr—took part in one of nine parallel

215 Draft of Müllers' final communiqué of June 26, 1983, *ibid.*; there also further revisions and the printed final version of the Mainz Appeal.

216 Butenandt to Starlinger on March 22, 1983, *ibid.*

217 Congress program with signature lists, *ibid.* The number of MPI directors is sometimes given as 12 (FAZ), sometimes as 16 (SZ): Kauntz, "Politiker," *Frankfurter Allgemeine Zeitung*, July 4, 1983; Schütze, "Kompetenz," *Süddeutsche Zeitung*, July 4, 1983; Schütze, "Naturwissenschaftler," *Süddeutsche Zeitung*, July 4, 1983.

218 American Institute of Physics, News Release, January 31, 1983 and Resolution of the DPG on the nuclear weapons issue, March 16, 1983, AMPG, III. Abt., ZA 116, No. 7.

219 Press Department of the Embassy of the USSR, Appeal to all scientists of the world, April 18, 1983, *ibid.*

panels together with four other colleagues. Radiation biologists and disaster physicians, by contrast, appeared at the public event in the center of Mainz and vividly described the short-term and long-term consequences that would await the audience of several thousand if even one SS-20 or Pershing missile were to be fired over the Rhine-Main region in the future.²²⁰

Not a single press report failed to mention the participation of Nobel Prize laureates from the USA and Sweden, Linus Pauling, and Hannes Alfvén, and the support of MPS Honorary President and Nobel Prize winner Butenandt. At the same time, young scholars such as the peace researcher Corinna Hauswedell and practising doctors also gave their own presentation and young people predominated in the audience.²²¹ Unlike the Göttingen Eighteen, with whom they nonetheless aligned themselves, the Mainz signatories did not convey their congress as an event for a small scientific elite who believed they should inform politicians about the risks of their actions on the basis of their exclusive expertise.

The large-scale event in Mainz was more like a self-organized mass education event, much like the “critical universities” of the student movement or the summer universities of the new women’s movement in the 1970s, but in this case it was organized by and for “concerned citizens” from the scientific professions. They saw themselves as the scientific arm of the peace movement and, as Starlinger put it, sought to supplement its “predominantly declamatory and emotional character (as valuable as this may be elsewhere)” with statements characterized by “clarity and scientific accuracy.”²²² Starlinger, Dürr and other speakers articulated clearly that in the end it was not about scientific evidence against rearmament, but about political assessments, for which they, as scientists, were no more and no less qualified than other citizens. However, they felt morally obliged and professionally entitled to think through “complex systems” with their professional “sense for the critical points” and their specific analytical instruments—here the bifurcation theory became practical—and to communicate their conclusions to the public.²²³ The reporter of the *Süddeutsche Zeitung* emphasized the new self-restraint in his conclusion:

220 Congress program as of June 4, 1983, AMPG, *ibid.* Art. “Besorgte Bürger,” *Der Spiegel* 23, June 5, 1983, p. 50; Starlinger, “Frieden,” 1983. More detailed information on the Mainz atomic bomb scenario: Kater, “Atomkrieg,” 1983.

221 Congress “Verantwortung für den Frieden,” draft program as of June 4, 1983, AMPG, III. Abt., ZA 116, No. 7.

222 Circular letter from Starlinger dated February 8, 1983 to the preparatory group and first signatories of the congress appeal (quotes) and Dürr’s speech manuscript, undated, *ibid.*; “Besorgte Bürger,” *Der Spiegel*, June 5, 1983, p. 50.

223 The reporter for *Die Zeit* quoted Dürr here, whose system-analytical approach, including the concept of retooling for structural aggression non-capability, was emphasized by almost all press reports: Bertram, “Experten oder Bürger?,” *Die Zeit*, July 8, 1983. Not so convinced, however, was the author of the science-critical journal *Wechselwirkung*, for whom the “slogan ‘Umrüsten statt Abrüsten’” still remained too close to “the prevailing dogmas of weapons technology.” Stange, *Naturwissenschaftler*, 1983, 45. Undated speech manuscript by Dürr, AMPG, III. Abt., ZA 116, No. 7.



Fig. 35: Demonstration on the occasion of the Mainz Congress on July 2, 1983.

New, scientifically sound arguments for the peace movement and new thoughts for the discussion of politicians should be sown without overstressing scientific competence.²²⁴

Let Politics be Private

The participating MPI directors, like the other signatories, did not make their professional affiliation known on the signature lists or in the congress program. But their commitment to peace policy did not go unnoticed in their institutes and among their colleagues, especially as Dürr, who had been outraged by Lüst's collection of signatures in support of Schmidt's nuclear energy program in 1975, had himself collected signatures for the Mainz Appeal at the Garching Max Planck Institutes. In any case, the Administrative Headquarters was alarmed by mid-September 1983 at the latest, when the BMFT urgently requested information in response to a parliamentary question from Christian Lenzer, a CDU

224 Schütze, Kompetenz, *Süddeutsche Zeitung*, July 4, 1983. Kauntz took a similar view in the *FAZ*: Kauntz, Politiker, *Frankfurter Allgemeine Zeitung*, July 4, 1983. Only the *WELT* repeated the old accusation of presumption, which Starlinger rejected: Starlinger, Frieden, 1983, p. 591.

member of the *Bundestag* from Hesse: whether it was true that on the premises of state research institutions and during working hours, staff meetings were “considering ways to protest against the NATO Double-Track decision,” drafting “protest resolutions” and planning “additional actions.”²²⁵ MPS President Lüst’s reply was brief and immediate:

The management of the MPS is not aware of anything like this. If they were aware of it, they would not tolerate it.²²⁶

But it was not quite like that. A week earlier, Wolfgang Lempert from the MPI for Human Development had already told MPS press officer Robert Gerwin about the highly motivated “peace initiative group” at his MPI and the two other Berlin MPIs and about a “very stimulating” discussion with von Müller about his memorandum on European security policy. After the highly acclaimed Mainz Congress, it was now time, Lempert suggested, to report on von Müller’s analyses and the Gottstein Research Center in the *MPS-Spiegel*:

In it, it could be shown that science, including basic research as conducted at the Max Planck Institutes, promises to promote the rationality of politics in the public interest.²²⁷

Lempert was soon informed that von Müller’s study had been commissioned by the VDW, not the MPS, and that although the Gottstein Research Center had been working on disarmament issues for some time, it had not gone so far as to be able to report on them publicly.²²⁸ Lempert and the Berlin initiative group were not satisfied with this: von Müller’s study was already seen as significant in the public discussion of one of the most important contemporary problems; it was also “an exemplary reflection of the clearly very timely concern among scientists, especially MP people, regarding this aspect of the relationship between science, politics and questions of life in society.” The “journalistic professional ethos” would virtually demand that information be provided about this:

The decision not to report on it in such a case has much more the character of a political measure than a decision to report.²²⁹

The response from the Administrative Headquarters and the report in the *MPS-Spiegel* did not materialize. Instead, in mid-October 1983, a half-page advertisement appeared in the Berlin newspaper *Tagesspiegel* with the headline

225 Note by Roeske, September 14, 1983, enclosure transcript of the Lenzer question, AMPG, II. Abt., Rep. 1, No. 625, fol. 53.

226 Ibid.

227 Lempert to Gerwin on Sep. 7, 1983, *ibid.*, fol. 51, referring to the study by Müller, *Kunst des Friedens*, 1984 (see chapter 4.3 above.)

228 Marsch (in place of Gerwin, who was on vacation) to Lempert on Sep. 14, 1983, *ibid.*, fol. 49. Gottstein did not appear in connection with the Mainz Congress and, according to the signature lists available to me, did not sign the Mainz Appeal.

229 Lempert to Marsch on Oct. 6, 1983 (emphasis in original,) *ibid.*, fol. pp. 47–48.

"Employees of the Berlin Max Planck Institutes warn of new nuclear missiles" and a request to the Federal Government to withdraw its approval for the deployment of Pershing II missiles and cruise missiles. The petition was signed explicitly by "employees" of the MPI for Human Development and the MPI for Molecular Genetics as well as the Fritz Haber Institute, scientific staff, honorary staff and secretaries, numbering 400 altogether, joined by technical staff, craftsmen, cleaning personnel, librarians as well as several emeriti such as the education researchers Hellmut Becker, Friedrich Edding and Dietrich Goldschmidt along with their active colleague, Wolfgang Edelstein.²³⁰ MPI employees in Freiburg joined in with a collection of signatures. Around 230 "employees of the Garching Max Planck Institutes" followed suit at the beginning of November, after most of them had already gathered on the Garching Max Planck campus for a spontaneous "silent circle"; their more generally worded ad in the *Süddeutsche Zeitung* called on "the leaders in the East and West" to put an immediate end to the "existentially threatening accumulation" of nuclear weapons.²³¹ Immediately afterwards, the Munich MPIs began collecting signatures for another advertisement, which adopted the text of the Berlin colleagues.

Meanwhile, in the Administrative Headquarters, the legal department examined the extent to which the fundamental right to freedom of expression could be restricted by the requirement of moderation, an employee's duty of loyalty, his/her duty to maintain internal peace, the ban on off-duty activities during working hours or other issues, and also whether within the MPS civil service law, public service law or general collective bargaining law was applicable, all of which contain provisions that are highly open to interpretation. To make matters worse, the legal assessment of general political statements made by employees also had to take into account the "previous conduct of the employer," which had thus far been characterized by significantly greater freedom at the MPS than in other enterprises. The consequence was seen as being that "within the framework of this tradition" for all its employees there is now a certain protection of confidence."²³² In short, there was no legally robust means of prohibiting employees from engaging in signature campaigns and issuing warnings to offenders until the tradition of informal liberalism had been broken by clear and adequately communicated instructions. Prior to this, it was not even possible to prohibit fellow directors, whose duty of moderation was to be held to a stricter standard, from mentioning their MPS affiliation in public political campaigns.

In any case, the order from the Managing Director of the MPI for Psychiatry, Detlev Ploog, addressed to "all employees," with its sharply worded "disapproval," came too late, as the collection of signatures among the Munich MPS members

230 Excerpt from *Tagesspiegel*, Oct. 14, 1983, 15, *ibid.*, fol. 41.

231 Excerpt from *Süddeutsche Zeitung* Nov. 5, 1983, *ibid.*, fol. 45; note by Marsch dated Nov. 8, 1983, *ibid.*, fol. 42; the initiative came from the Institute for Plasma Physics; Mahn et al. to Lüst on Nov. 17, 1983, *ibid.*, fol. 28–29. The Freiburg initiative is mentioned in the letter from Holländer to Lüst dated Nov. 18, 1983, *ibid.*, fol. 22.

232 Weidmann's legal assessment of Nov. 15, 1983, *ibid.*, fol. 32–36.

was almost complete. Three days later the four-column advertisement appeared in the *Süddeutsche Zeitung* with around 800 signatures.²³³ In a personal conversation with the managing director of the MPI for Biochemistry, Robert Huber, Lüst was able to persuade him—even though he was a co-initiator of the collection of signatures in Martinsried—to withdraw his own signature, just in time before the paper went to press. Huber resigned from his management position in order, as he admitted to Lüst, “to minimize the damage to the Max Planck Society” and “not to make your task any more difficult.”²³⁴ His colleague Wolfram Zillig, on the other hand, did not retract his signature, even signing it with the addition “Director,” but like Huber, was committed by his successor in the management at the MPI of Biochemistry, Peter Hans Hofschneider, to abide by the convention of speech that they, like all other “signatories,” had only “acted as private individuals.”²³⁵

Some scientific staff, who until then had believed to be acting in the tradition of the Russell-Einstein Manifesto and the Göttingen Declaration under the umbrella of the MPS and had also felt politically at home there, now doubted whether they were really in the right place. In any case, they refused to adopt the expected split into a private and a scientific persona. “I only have one conscience,” wrote the neurologist Horstmar Holländer from the MPI for Psychiatry to his president, “which I cannot divide into a private and a scientific part.” Discussions among colleagues on questions of general interest are “a good tradition in the Max Planck Society, as the memoirs of leading personalities in our Society show:”

A “purely scientific” atmosphere strikes me as an evil utopia, and so I consider scientific purism to be just as dangerous for our society as excessive politicization. [...] Couldn’t the name of our society be a tolerant umbrella under which scientifically active, responsible people can feel safe, even with their different political views? I feel that limiting our name to purely scientific content is a regrettable simplification and impoverishment.²³⁶

In a staff meeting, the managing director Ploog once again clarified the institution’s line to Holländer and from then on took it very seriously with the posting of flyers or newspaper clippings on general political topics, which he handed over to the legal department in the Administrative Headquarters for their comment. However, the latter recommended that he should not escalate the situation any further and that “the incriminated notices [...] should, if need be, be removed by

233 Ploog to all employees on Nov. 15, 1983, *ibid.*, fol. 37; clipping from *Süddeutsche Zeitung* of Nov. 18, 1983, 11, *ibid.*, fol. 25.

234 Huber to Lüst on Nov. 17, 1983, *ibid.*, fol. 30.

235 Hofschneider to Huber on Nov. 17, 1983, *ibid.*, fol. 27.

236 Holländer to Lüst on Nov. 18, 1983, *ibid.*, fol. 22; similarly, Mahn and seven other colleagues from Garching to Lüst on Nov. 17, 1983, *ibid.*, fol. pp. 28–29. Holländer later followed Georg Kreutzberg to the MPI for Neurobiology in Martinsried. I thank Sascha Topp for this information.

the administration without a word.”²³⁷ In doing so, it was following the advice of its legal expert Hans Zacher from the MPI for Foreign and International Social Law, whom Lüst had asked for “decision-making support on the issue of signature campaigns.” Zacher recommended, after he had consulted the “probably most experienced expert on civil service law in the circle of German constitutional law teachers,” exercising restraint: “The way things have gone so far, the problem is not a legal issue, but a question of style.”²³⁸ And there was still room for argument, for example with the managing director of the MPI for Physics, Dürr, who opened the lecture series on “Science and Peacekeeping” in the Ludwig Maximilian University’s Audimax in November 1983 and thus, as the *Münchener Abendzeitung* headlined, initiated the “peace discussion at the university” despite the reservations of its management.²³⁹

Against the Militarization of Space

The Mainz Twenty-Three did not allow themselves to be driven to resignation by the deployment of the Pershing II missiles and cruise missiles that began in autumn 1983, especially as Reagan’s Strategic Defense Initiative (SDI) posed a further threat to the precarious balance of nuclear deterrence. Instead, they now sought contact with colleagues who had joined forces within the Soviet Academy of Sciences (AS-SU) to form a Committee of Soviet Scientists for Peace and against Nuclear Threat (CSS) under the leadership of its vice-president and long-time Pugwashite Yevgeny Velikhov and Roald Sagdeev, an external scientific member of the MPI for Physics and Astrophysics. The CSS itself had already been in bilateral contact with the US Committee on International Security and Arms Control (CISAC) of the National Academy of Science (NAS) since 1980, complementing the transnational Pugwash conferences.²⁴⁰ The Mainz Twenty-Three stepped in to fill the gap in science diplomacy created by the lack of a German National Academy, which the MPS refrained from doing.

As Dürr and Velikhov had envisaged during the 1983 Pugwash Conference in Venice, in March 1984 Starlinger, Dürr and three other members of the Mainz Twenty-Three—or, as they now also called themselves, the “Natural Scientists’

237 Ploog to Weidmann on Jan. 30, 1983 (with attachments), *ibid.*, fol. 12; Weidmann to Ploog on Dec. 2, 1983 (quotes), *ibid.*, fol. 12.

238 Zacher to Lüst on Nov. 22, 1983, *ibid.*, fol. 16.

239 Clipping from *AZ München* of 15/16.11.1983, *ibid.*, fol. 31. Dürr’s colleague, Gerd Buschhorn, at the MPI for Physics and Astrophysics, was in any case unable to motivate him to hold back and urgently asked Lüst to have a conversation with Dürr (note from Marsch of Nov. 8, 1983, *ibid.*, fol. 42.)

240 Evangelista, *Unarmed Forces*, 1999, pp. 147–148, pp. 156–164; Wittner, *Struggle Against the Bomb*, vol. 3, 2003, pp. 222–224, p. 301. See also the CISAC website: <https://www.nationalacademies.org/cisac/committee-on-international-security-and-arms-control>, last accessed on Nov. 27, 2021.

Initiative”—traveled to Moscow and made a stopover in East Berlin on their way back.²⁴¹ They wanted to discuss the problems of a comprehensive nuclear test ban, a ban on biological and chemical weapons, alternative disarmament strategies and the prevention of the militarization of outer space. However, the informal talks, as agreed, were not easy, as even under these conditions the Soviet colleagues did not reveal more than what they also presented at their major events, which they held four times a year in various Union republics for the scientific and generally interested public. The program for autumn 1984 included events in Kiev on “aspects of European security policy,” which Dürr was interested in, and in Moscow on “global consequences of a nuclear war” such as nuclear winter. For the latter, Paul Crutzen from the MPI for Chemistry was suggested to the Soviet colleagues as a guest; he had published the widely acclaimed article titled “Twilight at Noon” together with John Birks in 1982 on the catastrophic effects of a nuclear exchange of blows on the atmosphere and the ecosystem of the northern hemisphere.²⁴² For the time being, it was hoped that two Soviet physicists would be able to take part in the Göttingen congress against the “militarization of space” scheduled for July 1984.²⁴³ Even if the plans did not materialize in this way, the talks did not come to a halt thanks to Sagdeev’s effort to ensure the direct connection to the Mainz Twenty-Three and in particular to the MPS members committed to peace and disarmament policy to the CSS.²⁴⁴

241 Starlinger to the members of the travel group o.D. (ca. early April 1984) with draft letters for the travel group to the Mainz Twenty-Three, Velikhov (CSS Chairman), Klare (Chairman of the GDR Committee for Scientific Issues Related to Securing Peace and Disarmament) and Seibold (DFG President), AMPG, III. Abt., Klare to Starlinger on March 6, 1984, AMPG, Sect. III, ZA 116, K 78. The other fellow travelers were the Erlangen physicists Helmut Aichele and Horst Wegener as well as the Mainz mineralogist Werner Dosch, who was also a regular author for the journal *Wissenschaft und Frieden*. Regarding Aichele: SPD awards August Bebel Clock 2014 to Dr. Helmut Aichele. SPD Erlangen, Dec. 1, 2014. <https://spd-erlangen.de/blog/spd-verleiht-august-bebel-uhr-2014-an-dr-helmut-aichele/>, last accessed on March 29, 2021. Regarding Wegener: Naturwissenschaftliche Fakultät I: Zum Tod von Prof. Dr. Horst Wegener, March 3, 2006. https://www.presse.uni-erlangen.de/infocenter/presse/press/pressemitteilungen/2006/nachrichten_2006/03_06/4548wegener.shtml, last accessed on March 29, 2021.

242 Crutzen and Birks, “The Atmosphere,” 1982; Crutzen and Hahn, *Schwarzer Himmel*, 1986.

243 Dürr to Marsch on March 23, 1984, AMPG, III. Abt., ZA 116, K 78; here Dürr emphasizes the private nature of the trip (Moscow March 26–30, 1984, East Berlin March 31, 1984), the expenses of which the travel group financed privately; handwritten notes of conversation by Dürr.

244 The organizers of the Göttingen Congress on July 7/8, 1984 were also the Mainz Twenty-Three, who then also signed the new “Göttingen Declaration” directed against the militarization of space. Göttingen Declaration of July 7/8, 1984, AMPG, Sect. III., ZA 116, folder 11; Fischer/Labusch/Maus/Scheffran: Entwurf für einen Vertrag zur Begrenzung der militärischen Nutzung des Weltraums, *ibid*. Unlike the peace movement itself, this congress and the activities of natural scientists as part of the peace movement in general have hardly been dealt with in historical studies: Labusch, Maus und Send, *Weltraum ohne Waffen*, 1984.

Within the MPS, the militarization of space that was feared with the SDI program was met with rejection, especially by physicists involved in extraterrestrial research. An open letter to Chancellor Kohl in June 1985, in which scientific staff from the relevant institutes contributed to the heated public debate, triggered less concern in the Administrative Headquarters than the anti-rearmament protests had two years earlier. The letter was initially signed by 350 Munich “scientists, engineers and technicians” who were careful not to mention their MPS affiliation. Over the course of the year, they were joined by a further three thousand relevant scientists from all over the Federal Republic.²⁴⁵ Firstly, they criticized the “misleading” promise that “SDI would make nuclear deterrence superfluous,” while in fact political destabilization and accelerated armament were to be expected on both sides and, in addition, a limited nuclear war with tactical nuclear weapons in Central Europe would only become more likely. Secondly, in analogy to the Göttingen Declaration of 1957, they refused to “cooperate in the SDI project”—if not in agreement with, then certainly not in contradiction to MPS President Staab, who for his part emphasized at every opportunity the institutional non-responsibility of the MPS for military secret research and thus also for SDI, without positioning himself scientifically and certainly not politically in this regard (→ 2.4).²⁴⁶ The Director of the Institute for Extraterrestrial Physics, Joachim Trümper, also “personally shared the unease about SDI with [...] many colleagues at home and abroad.” However, as the current president of the German Physical Society (DPG), he wanted to hold back with a public declaration and wait and see what the SDI seminars planned within the DPG and a conference organized by his MPS colleague Gottstein would reveal.²⁴⁷

In his research unit, Klaus Gottstein dealt with the “problem of the perception of opposing plans and objectives” not only in the context of the SDI program, but also in connection with arms control negotiations in general. In a series of meetings in 1985/86, scientists, diplomats and military officers were initially to reflect on Western perceptions of Soviet positions and determine the corresponding political options. These results were then to be discussed with Soviet interlocutors, who were to introduce the mirror-symmetrical perceptions on the part of the Warsaw Pact. The aim was to promote “mutual understanding of the causes of reciprocal misperceptions” and to facilitate a policy “which seeks not to feed the existing mistrust, but to reduce it.”²⁴⁸ The material basis of this DFG-funded project was Gottstein’s network of contacts in almost all branches

245 Explanation of the open letter, undated, AMPG, III. Abt., ZA 116, folder 11. The initiators of the letter campaign came from the MPIs for Physics and Extraterrestrial Physics, for Plasma Physics and for Quantum Optics.

246 Open letter to Kohl dated June 13, 1985, *ibid.*; Dürr to Stercken (Foreign Affairs Committee of the *Bundestag*) on Dec. 17, 1985, AMPG, III. Abt., Rep. 116, K 7.

247 Trümper to Hotop on Dec. 16, 1986, AMPG, III. Abt., Rep. 139, No. 4.

248 Paraphrased from the 1986/87 annual report of the Gottstein Research Center at the MPS, pp. 45–68 (citations: p. 46, p. 48), AMPG, IX. Abt., Rep. 5, No. 337.

of the international arms control scene, from which he recruited his West-East cooperation partners, not least as a longstanding convener of the West German Pugwash Group in the VDW.²⁴⁹ Even in the 1980s, Gottstein strictly adhered to the “invisible path” outlined by his former director Heisenberg. Whether and what effect his tireless networking had can hardly be evaluated in retrospect. In contrast to Afheldt’s and von Müller’s strategic approaches to defensive defense and structural aggression non-capability, Gottstein’s theory of perception left virtually no traces in the media.

Hans-Peter Dürr, on the other hand, was quite different. With his ten-page *Spiegel* article “on the folly of the ‘Strategic Defense Initiative (SDI)’,” in which the “Director at the Werner Heisenberg Institute” of the MPS published a Munich university lecture from May 1985, the “student of the nuclear physicists Heisenberg and Teller” rose to become the “most prominent spokesman” of those “West German scientists” who publicly warned against West German participation in the SDI.²⁵⁰ As a theoretical physicist, he did not present his own research findings here, as he himself emphasized, but relied on the extensive contemporary literature, in particular the publications of American colleagues who had joined together in the Union of Concerned Scientists (UCS) founded at MIT in 1969. These included UCS co-founder Henry Kendall and the physicists Richard Garwin, Hans Bethe, Carl Sagan and Victor Weisskopf, some of whom were still members of advisory boards to the US government.²⁵¹ In May 1985, they published an appeal that was signed by over seven hundred members of

249 Gottstein, “Die VDW,” 2009. Gottstein organized a large number of the Pugwash workshops and symposia held in Germany, including the major conference on the twentieth anniversary of the PCSWA in Munich in 1977. He reported on his numerous memberships in or relationships with institutions, organizations and informal associations of scientists in the field of international politics and arms control (PCSWA, SIPRI, Amaldi Conferences, IIASA, CISAC) in the interview Gottstein (Sachse) on Nov. 11, 2011; here he also quoted the American experimental physicist and U. S. government advisor Richard Garwin: “We all have national academies, only Germany has Mr. Gottstein.” Without belonging to one himself, Gottstein was often sent by the West German academies as their representative to international peace and disarmament policy meetings of the academies united in the ICSU. Cf. also his address to the colloquium held in his honor on May 5, 2009 at the MPI for Physics (Ms. in Gottstein’s Privatarchiv) and the VDW’s obituary for its member who died on March 20, 2020: Neuneck, Graßl and Bartosch, “Klaus Gottstein,” 2020, <https://vdw-ev.de/nachruf-klaus-gottstein/>, last accessed July 29, 2024.

250 Dürr, “Der Himmel,” *Der Spiegel* 29, July 14, 1985. All quotations are taken from the editorial introduction, which used these attributes to signal Dürr’s scientific expertise in the assessment of SDI. Dürr had by no means given his speech on May 23, 1985 at the LMU without a manuscript, as claimed in the introduction: the 36-page continuous text, which was somewhat shortened for publication (Dürr, *Star-Wars-Konzept*, May 23, 1985), and almost two dozen overhead transparencies can be found in his estate, AMPG, III. Abt., ZA 116, No. 37.

251 AMPG, III. Abt., ZA 116, No. 37. The bibliography is attached to the lecture manuscript of May 23, 1985.

the NAS, including around sixty Nobel Prize laureates. In it, the governments of the USA and the Soviet Union were equally called upon to adhere strictly to the ABM Treaty of 1972 and to supplement it with a “total ban on the testing and deployment of weapons in space.”²⁵² Like his American colleagues, Dürr endeavored to show that a space-based missile defense system was not completely impossible, but that Reagan’s vision of a defense shield that would be so secure that offensive weapons would become unnecessary was an illusion. For one thing, the then conceivable components of such a shield, such as satellites to be further developed, radar screens, sensors and X-ray laser mirrors, which he explained in detail to his readership, were technologically highly complex in their precisely coordinated modes of operation; in addition, the production and energy costs and, not least, the costs that would have to be incurred just to transport this entire arsenal into orbit were prohibitive. Secondly, such a technologically complex defense system was seen as by no means robust and relatively vulnerable to existing anti-satellite and anti-missile missiles, which are much cheaper for the enemy to develop. SDI was therefore not the euphemistically promised end but rather opened up a new spiral of deterrence policy.²⁵³

This criticism made Dürr a sought-after speaker in the following years, not only in forums of the peace movement. He was also approached by numerous regional branches of the SPD, the Greens and even a local branch of the Junge Union (CDU) and was forced to turn down many requests.²⁵⁴ However, he readily accepted Peter Glotz’s invitation to be interviewed as a scientific expert at the “European workshop discussion of the SPD on space armament,” which the party executive organized together with the SPD members in the EU Parliament in early autumn 1985.²⁵⁵ The deputy chairman of the SPD parliamentary group in the *Bundestag*, Horst Ehmke, who had already formulated and published his party’s position on SDI, assured him at the same time “that our assessment was almost completely in agreement.” He hoped to meet with Dürr soon, possibly also to win him over as an expert for the hearing scheduled for the end of the

252 Union of Concerned Scientists: 1985 Appeal by American Scientists to Ban Space Weapons, July 16, 2003. <https://ucsusa.org/resources/1985-appeal-ban-space-weapons>, last accessed on April 8, 2021. As early as 1983, the UCS, in cooperation with its Soviet colleagues Velikhov and Sagdeev of the CSS, advocated a ban on *Anti-satellite Weapons* (ASAT), cf. Evangelista, *Unarmed Forces*, 1999, pp. 237–240; Wittner, *Struggle Against the Bomb*, vol. 3, 2003, pp. 173–176.

253 Summarized from Dürr, “Der Himmel,” July 14, 1985.

254 He also turned down the Greens’ request to work on their space memorandum in the fall of 1986. Requests, acceptances and rejections as well as various lecture manuscripts based on the Munich lecture of May 23, 1985 and into 1987 are documented in: AMPG, III.Abt., ZA 116, folders 34, 37 and 39. On Dürr’s importance in the anti-SDI campaign, see also Neuneck, “Deutsche Pugwashgruppe,” 2009, p. 388.

255 Glotz to Dürr on July 9, 1985, AMPG, III.Abt., ZA 116, K 7; program flyer, *ibid.*: The workshop discussion took place on Sep. 30/Oct.1, 1985 at the Erich-Ollenhauer-Haus in Bonn.

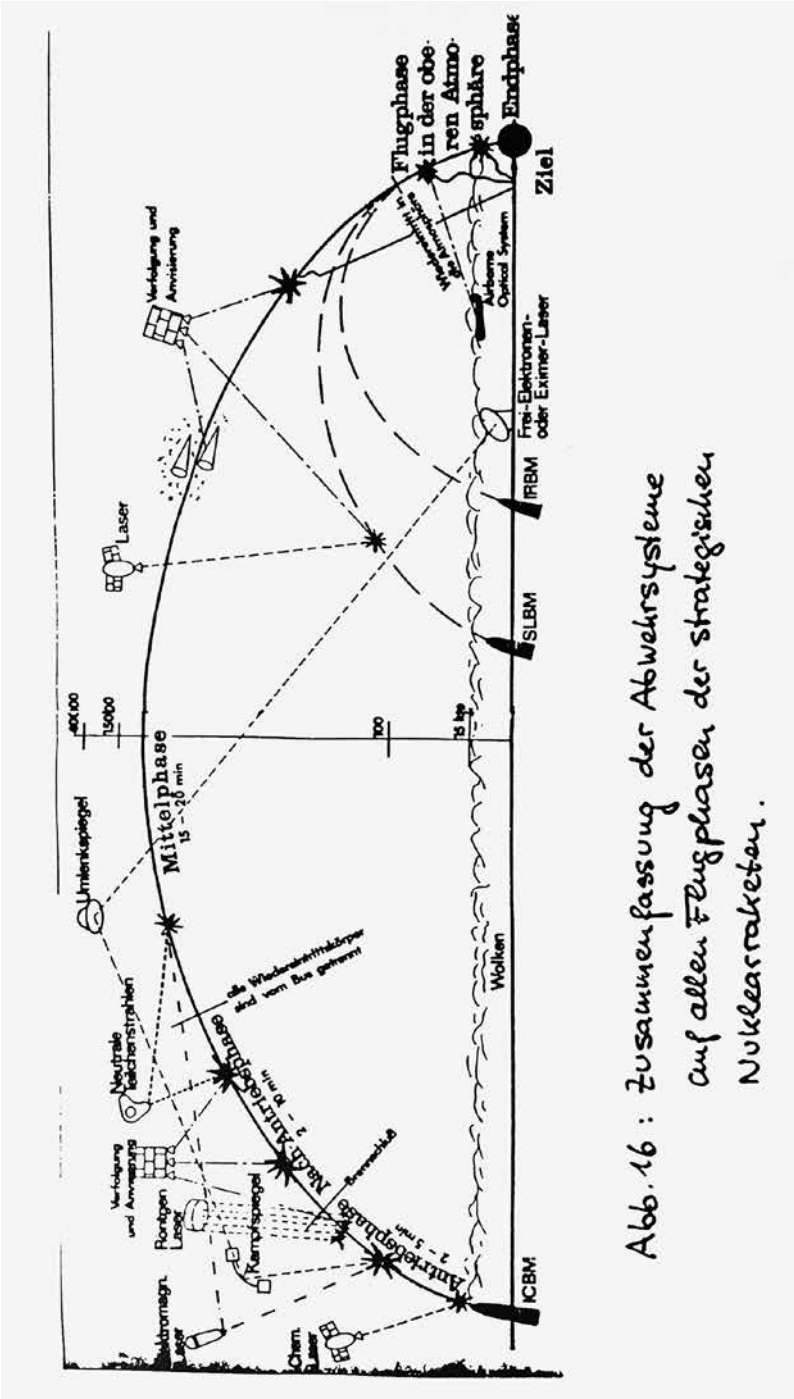


Fig. 36: Facsimile of an overhead slide presented by Hans-Peter Dürr during his lecture on May 23, 1985 as part of the public interdisciplinary lecture series "Wissenschaft und Friedenssicherung" (Science and Securing Peace) in the Auditorium Maximumum of the Ludwig-Maximilians-Universität, Munich.

year in a joint meeting of the Foreign Affairs and Defense Committees in the *Bundestag*, which in turn was to prepare the vote on the motions of the SPD and the Greens against the participation of the Federal Republic in SDI and the European accompanying program of a European Defense Initiative.²⁵⁶

Dürr's *Spiegel* article quickly became, as the Federal Ministry of Defense (BMV) saw it, "the printed credo' of German scientists against SDI," and the head of the planning staff, Hans Rühle, set about writing a rebuttal.²⁵⁷ In it, he claimed that the scientific and technical objections of those SDI-critical "East Coast liberals" associated with the UCS, to whom Dürr had referred, had long since been refuted, that the USA had never been concerned with overcoming the policy of deterrence based on offensive weapons, but rather with supplementing it with the planned defense system; Dürr's refutation of Reagan's vision was, as Rühle argued, therefore pointless. In addition, Rühle calculated the costs on the American side to be significantly lower and thus certainly viable, while the costs of building up an "offensive potential" directed against the SDI components were to be significantly higher and thus difficult for the Soviet Union to afford; why else would it be waging such a "fierce fight against SDI at all levels?"²⁵⁸ The rebuttal appeared in *Der Spiegel* at the end of November 1985, just in time for the expert hearings in the two *Bundestag* committees, and triggered frantic action not only with Dürr, who was in the process of preparing his appearance.

The reviled "East Coast liberal" Garwin also sat down, as soon as he had the translation of the freshly published article in his hands, and dismantled Rühle's argumentation, citing above all the insider knowledge of the UCS authors and their scientific reputation, the confirmation of their analyses from high-ranking circles in the US Army and the support of their position by parts of the Washington political establishment, not least the former Pentagon chief James Schlesinger, who was hardly known as a "left-liberal." Rühle had neither correctly grasped Reagan's security policy motives nor realistically assessed the costs; moreover, as Garwin demonstrated with numerous examples, he understood neither the technology nor the strategic significance of the existing weapons systems and

256 Ehmke to Dürr on July 9, 1985, AMPG, III. Abt., ZA 116, K 7; press release by the SPD parliamentary group in the *Bundestag* of May 25, 1985, *ibid.*; manuscript Ehmke: Die technologische Selbstbehauptung Europas, May 24, 1985, *ibid.* Aktuelle Informationen der SPD, No. 3, May 1985, *ibid.*; Stenographic protocol of the meetings of the Foreign Affairs Committee and the Defense Committee a9/10/12/1985 (cited in the following as protocol Dec. 10/11, 1985), *ibid.* PA-DBT 3119 Verteidigung, A10/12 Prot. 80/81. BT-Drs 10/4073 of Oct. 23, 1985 (= Antrag der Fraktion Die Grünen). Information of the SPD parliamentary group of Dec. 12, 1985, PA AA B 43-REF. 302/II8/UA IIB/130084.

257 Rühle, "An die Grenzen," *Der Spiegel* 48, Nov. 24, 1985. The quote is taken from the editorial introduction.

258 *Ibid.*, 159. While Rühle was clearly alluding to the intention of disarming the Soviet Union and to driving it into bankruptcy, which was already being discussed at the time, he made no mention of the economic interests in the SDI program that his colleague Teltschik in the Federal Chancellery was pursuing at the same time with the travel preparations for a West German economic delegation to the Pentagon (cf. chapter 2.4 above).

those envisaged as part of SDI. Garwin faxed his twenty-page critique to Dürr less than three days after it was published in the *Spiegel* magazine.²⁵⁹ Dürr also dealt with Rühle's arguments in detail, but then decided not to engage in elaborate calculations and counter-calculations in his statement to the two *Bundestag* committees.²⁶⁰ Instead, Dürr warned against the false hope of being able to "solve by technical means the political problem of a nuclear-armed world to the point of multiple overkill." On the contrary, as long as the logic of deterrence prevailing on both sides could not be overcome, military stability would have to be ensured by adhering to and expanding existing treaties, avoiding "technological outliers," clarifying in the long term and cooperatively how to "scale back offensive weapons systems" and in the meantime trying to achieve disarmament by converting to ground-based conventional defensive weapons systems—not through space-based defense systems, which inevitably also contained offensive components and further fueled the arms race. Ultimately, Dürr argued in favor of the strategy of structural aggression non-capability, which he had developed together with von Müller and which he no longer had to convince the majority of Social Democratic and Green MPs of; however, he was unable to win over the Christian Democratic MPs.²⁶¹ In their comments, the latter denounced the fact that experts who, like Dürr, were invited because of their scientific qualifications, were relying "not on their scientific knowledge, but on [...] common sense and political argumentation."²⁶² They preferred to trust those American scientists who, unlike the Concerned Scientists, were amenable to the SDI and considered the space-based defense system to be indispensable, given that further missile deployments on the ground could not be politically enforced in the democratic West, while the Soviets would have a much easier time deploying nuclear weapons thanks to the lack of freedom of opinion; therefore, only the SDI would be left for the West to "ultimately achieve disarmament."²⁶³

259 Garwin manuscript dated Nov. 25, 1985, AMPG, III. Abt., ZA 116, No. 34; the fax arrived on Nov. 27, 1985 between 1:55 and 2:15 pm.

260 Handwritten notes, undated, and comments on the essay "An den Grenzen der Technologie" (no author named), undated, *ibid.*; comparison of text passages from Dürr's and Rühle's articles, undated, AMPG, III. Abt., ZA 116, No. 37.

261 Protocol Dec. 9/10, 1985, AMPG, III. Abt., ZA 116, K 7 and PA-DBT 3119 Verteidigung, A10/12 Prot. 80/81, 16–17. The broad agreement on peace and disarmament policy between Dürr and the opposition party SPD, in particular with Glotz, Ehmke, Bahr and Voigt, was also noted by the Foreign Office rapporteur, who, at the workshop meeting on Sept. 30/Oct. 1, 1985, identified "without exception SDI opponents" who "often did not justify their stance rationally, but mobilized emotions in the audience with missionary zeal," while the international guests from France, Italy, Great Britain, Sweden and the Netherlands "consistently showed a greater sense of reality" (Seitz [AA] to Minister on Oct. 3, 1985, PA AA B 43-REF. 302/II8/UA IIB/130084).

262 According to member of *Bundestag* Lamers (CDU/CSU), protocol Dec. 9/10, 1985, AMPG, III. Abt., ZA 116, K 7 and PA-DBT 3119 Verteidigung, A10/12 Prot. 80/81, 60.

263 According to member of *Bundestag* Todenhöfer (CDU), *ibid.*, 63.

It was one of those aporias that repeatedly turned the debates remaining in the discourse of the logic of deterrence into absurdity: Now it was the political strength of the international peace movement on the streets that forced Western governments to shift the renewed defense efforts into the sky—and to use this technological offensive as an opportunity to drive the Soviet Union into bankruptcy. In fact, it was the peace movement with its strong scientific branch, which was supposedly remote-controlled from Moscow but, in reality, acted across bloc lines that now turned to the East and seized the opportunity—in Dürr's language: the bifurcation—that arose with Gorbachev's appearance on the geopolitical stage to finally lead the bloc political discourse out of the dead end of deterrence logic.

Ex oriente lux: Gorbachev's Disarmament Initiatives and the Mainz Twenty-Three

Undoubtedly, the more important background discussions took place between the scientists of the two superpowers who were committed to peace and disarmament policy. On the American side, these were above all the FAS representatives Frank von Hippel and Jeremy Stone as well as the disarmament experts Christopher Paine and Thomas Cochran, but also the IPPNW chairman Bernard Lown. Their Soviet interlocutors were primarily the CSS members Yevgeny Velikhov, Gorbachev's scientific advisor on all disarmament issues and in particular SDI, the external scientific member of the MPS Roald Sagdeev, Andrei Kokoshin and occasionally Gorbachev himself. In preparation for and after the summit talks in Geneva (1985), Reykjavík (1986) and Washington (1987), Gorbachev was not only persuaded to extend the unilateral nuclear test moratorium several times against resistance from the military and the Central Committee of his party, but also convinced to abandon an SDI-like rearmament program. His scientific advisors also recommended those decisive negotiating offers, for example, on the issues of verification of a future comprehensive test ban treaty and reciprocal on-site inspections, as well as the renunciation of the junction with which he had tied his willingness to negotiate an Intermediate Range Nuclear Forces Treaty (INF Treaty) to the American renunciation of SDI.²⁶⁴ With these offers, Gorbachev not only strengthened the position of the negotiation supporters and SDI opponents in the American Congress and in public opinion so that Reagan could no longer ignore them. He also raised world public expectations of the US-Soviet disarmament negotiations, putting not only Reagan but also himself under pressure to succeed if he did not want to disappoint the "Gorbimania" that had been spreading rapidly around the world since 1985.²⁶⁵

264 Evangelista, *Unarmed Forces*, 1999, pp. 274–288, pp. 328–329.

265 According to the Google Ngram viewer, the popularity of this word reached its peak in 1990: "Gorbimania", Google Books Ngram Viewer, <https://books.google.com/ngrams/>,

In this West-Eastern royal drama, the Mainz Twenty-Three and the German scientists' initiative "Scientists for Peace" with its protagonists Starlinger and Dürr played a significant supporting role. They had already invited international guests to their previous congresses in Mainz in 1983 and Göttingen in 1984, respectively. But now, together with well-known colleagues from a dozen Western and Eastern European countries, including the GDR, they were planning a large, expressly international congress to be held in Hamburg in November 1986. With its motto "Ways out of the arms race," it followed on from an "International Forum of Scientists to Stop Nuclear Testing", to which the Committee of Soviet Scientists (CSS) of the AS-SU had already invited almost two hundred scientists from 32 nations, including Dürr, to Moscow in July 1986; the main topic here was the seismological possibilities of reliable control of test stops.²⁶⁶ Some of the participants then also traveled to Hamburg, including, most notably, the Soviets Velikhov, Sagdeev and Kapitsa, the Americans Pauling, von Hippel and Garwin as well as the British chemist, Nobel Prize winner and current Pugwash President Dorothy Hodgkin who gave the closing speech. Around 3,000 people from around two dozen countries took part in the congress, which was embedded in a peace week at Hamburg University and was intended to have an impact on the urban public with several events. The prominent international group of speakers from the political and natural sciences had already met for a preliminary workshop to continue the verification discussion that had begun in Moscow.²⁶⁷

last accessed on 10.3.2022. For the Soviet side, see Evangelista, *Unarmed Forces*, 1999, pp. 322–338. AMPG III-116/36 (folder) contains the abridged English version of the SDI study prepared by the CSS under the leadership of Sagdeev and Kokoshin: CSS: *The Large-Scale Anti-Missile System and International Security. Report of the Committee of Soviet Scientists for Peace Against the Nuclear Threat*, Moscow 1986. For the American side, see Wittner, *Struggle Against the Bomb*, vol. 3, 2003, pp. 369–404, who also points to Nancy Reagan's strong influence in the White House: "[she] pushed everybody on the Geneva summit" (389). Matlock Jr, *Reagan*, 2005; Taubman, *Gorbatschow*, 2018.

266 Reichert, *Wege aus dem Wettrüsten*, 1986, AMPG III-116/78 (:): Dürr to Velikhov on July 16, 1986, enclosure "Contributing remarks [...]". Evangelista, *Unarmed Forces*, 1999, pp. 274–275.

267 Only this workshop and thus also the travel expenses of the international speakers were financed by the VW Foundation, the congress itself from donations and participation fees that Starlinger had requested from colleagues in circular letters. The extremely meagre funds were—contrary to what *WELT* and *FAZ* insinuated—if at all, then only sparsely topped up from Moscow (press review, *Die Welt* Nov. 14, 1986; *FAZ* Nov. 14, 1986; even harsher: *Bayernkurier* Nov. 25, 1986; in contrast: *Frankfurter Rundschau* 11/17/1986, AMPG, III. Abt., ZA 116, folder 11). The congress is documented in AMPG, III. Abt., ZA 116, folder 5: Program and list of participants of the workshop "Scientific Aspects of Verification of Arms Control Treaties," Nov. 13–14, 1985; circular letter Starlinger of Sep. 5, 1986; program of the Peace Week Nov. 10–14, 1986; various program drafts for "Wege aus dem Wettrüsten. Internationaler Naturwissenschaftler-Friedenskongress," Nov. 14–16, 1986; brief descriptions of the 26 parallel working groups. The reported number of participants varies between 2,400 and 3,500.

The Hamburg congress was intended to extend to Europe the exchange on the scientific-technical aspects of the present-day arms race politics, which had previously been conducted mainly by scientists—with only a few women among them—from the USSR and the USA. The aim was to support the more far-reaching disarmament proposals presented by Gorbachev at the beginning of 1986 following the Geneva negotiations, which were refined several times in the following months. The Secretary-General had initially sent his proposals to the US President, but at the same time had presented them in the form of “public diplomacy” at a press conference in Moscow. In addition, the Soviet ambassadors delivered so-called oral messages to the governments of various NATO countries—including the head of the Federal Chancellery, Wolfgang Schäuble—which were intended to persuade these governments to “reconsider most seriously the question of other countries joining the US ‘strategic defense initiative’” and to influence the negotiating position of their leading NATO power accordingly.²⁶⁸ In its careful analysis of this message, the Federal Foreign Office recognized some elements as “useful” for further negotiations. However, it remained highly skeptical about the extent to which these were serious new approaches or tactical fine-tunings and what they meant for German and European security, which was threatened above all by the superiority of the conventional Soviet arsenal.²⁶⁹ For the time being, it was important to “test the Soviets’ willingness to compromise,” but also not to lose “the new round of the ‘battle for the hearts and minds of Europeans;’” one was thus “not (to) be perceived as an opponent of the attractive nuclear zero solution slogan,” but “as an eager advocate of the gradual development suitable for achieving this goal.”²⁷⁰ The opportunity offered by the Hamburg Congress to this end was, of course, missed by the Federal Government—in contrast to the opposition of the SPD and Greens. As *Die Zeit* commented, it practiced “strict abstinence;” the Bonn officials and officers “who had registered for the preceding verification workshop, but then had all canceled their participation” and thus missed “a useful, important debate.”²⁷¹

At least they were able to follow the “Satellite Summit,” which the Hamburg organizers and the UCS jointly broadcast between Hamburg and Washington D. C. on the penultimate evening of the congress and which was transmitted by numerous television stations, at least in a compilation that *Westdeutscher Rund-*

268 Unofficial translation of Gorbachev’s message to Chancellor Kohl dated January 15, 1986, citation: p. 15, PA AA B 43-REF. 302/II8/UA IIB/144754; note by Ruth (AA) dated Jan. 17, 1986, *ibid.*; note Ref. 213 Jan. 21, 1986, *ibid.* Further proposals were available to the Foreign Office for consideration in April and July (Hartmann memo of April 18, 1986, *ibid.*; memo of July 3, 1986, *ibid.*; oral message from Gorbachev of July 14, 1986 and further memos, *ibid.*).

269 Note by Hofstetter (AA) dated Jan. 20, 1986 (quote), *ibid.*

270 Summary analysis, Abt. 2A (AA), Jan. 31, 1986, Part 2 (citations, p. 5, p. 8), *ibid.*

271 Pressespiegel: *Die Zeit* 48/1986, Nov. 21, 1986, AMPG, III.Abt., ZA 116, No.5.

funk broadcast a day later in a special program.²⁷² The head of the Pentagon's SDI research department, Allan Mense, who took the counter-position in this event, which was otherwise dominated by SDI critics, joined the program and described the development of a space-based defense system as "indispensable" for "our defense against the nuclear holocaust."²⁷³ However, his appearance could hardly relativize the impression left by Valentin Falin, the former Soviet ambassador in Bonn and later head of the news agency Novosti, with his plea for Gorbachev's disarmament proposals, which had not yet found the hoped-for resonance in Reykjavík and needed to be supported all the more.²⁷⁴

The ten "Hamburg disarmament proposals" adopted by the congress were not suitable as pacifist Easter march slogans. Instead, they wisely took up where scientific and technical expertise was needed, at the delicate point of verification. They outlined in a differentiated manner which disarmament steps could, at the time, be verified with sufficient reliability using the methods and instruments already available, namely, the halt to all nuclear weapons tests, including underground tests, and the halt to the production of fissile material. Other measures, such as the dismantling of land-based multiple explosive systems, could be sufficiently controlled by existing or yet to be expanded national satellite monitoring. However, it was difficult with mobile single warhead missile systems, where cooperation, trust, and international control measures, including the controversial on-site inspections, were required. The Hamburg proposals differentiated the weapons systems according to the degree of their political destabilization potential and advocated the prioritized dismantling of the highest-risk systems as well as the long-term conversion to non-aggressive defense systems still requiring research. The existing treaties, above all the ABM Treaty, were to be strengthened and not undermined. Space-based defense systems such as SDI were to be banned, as they would increase first-strike capacity and thus force the other side to deploy additional strategic offensive weapons. Of equal importance, however, was the immediate dismantling of strategic and, above all, land-based medium-range missiles "along the dividing line through Central Europe." Finally, existing international treaties banning chemical and biological weapons were also to be adapted to technological developments. The

272 *Science* announced the placement in the issue of Oct. 24, 1986, *ibid*; *Hamburger Abendblatt*, Nov. 14, 1986, *ibid*. Overall, the press response was very impressive: although the press clippings compiled by the Hamburg organizers was dominated by excerpts from the DKP- and DFU-affiliated media, the transregional liberal press (SZ, *Die Zeit*, *Frankfurter Rundschau*, *Stern*, *Spiegel*) also reported, in some cases repeatedly and predominantly positively, while the conservative press (*Frankfurter Allgemeine Zeitung*, *WELT*, *Hamburger Morgenpost*, *Bayernkurier*) was, as to be expected, critical and even denunciatory.

273 Quoted from *Süddeutsche Zeitung*, Nov. 17, 1986; similarly, *Hamburger Morgenpost*, Nov. 17, 1986 (both in: *Pressespiegel*, *ibid.*).

274 Tape transcript of Falin's speech of Nov. 15, 1985, *ibid*.

approximately sixty first signatories from 19 countries included nine prominent Americans and nine prominent Soviets, eight West Germans and four East Germans, many active Pugwashites, several Nobel laureates such as the chemist Dorothy Hodgkin and the Italian neurobiologist Rita Levi-Montalcini, as well as the two external scientific members of the MPS, Starlinger and Sagdeev, and three acting MPI directors, including, in addition to Dürr, also atmospheric chemist Paul Crutzen from the MPI for Chemistry and Nobel Prize laureate Georges Köhler, who was appointed to the MPI of Immunobiology in 1984.²⁷⁵

... et umbra: “Save Sakharov”

For all his commitment to Gorbachev’s disarmament initiative, Dürr kept a distance to ‘actually existing’ socialism. He declined invitations to the Soviet embassy in Bonn for the awarding of the Lenin Prize to the DFU and DKP functionaries Josef Weber (1985) and Herbert Mies (1987).²⁷⁶ On a different matter, he did seek dialogue with the embassy, namely when it came to using the high esteem in which he was held by the Soviet side to advocate the return to Moscow of the nuclear physicist and regime critic Andrei Sakharov, who had been exiled to Gorky.

Dürr had already reported on his irritating experiences during his numerous research trips to the Soviet Union in his address to the Mainz Congress in 1983:

‘For example, I often hear from my Soviet colleagues, when I speak to them about my great dismay over the treatment of Sakharov, the reply that this case was exaggerated beyond measure in the West, that I could observe for myself how the Soviet scientific establishment had taken note of it, which was only right, since such insubordinate behavior towards the state, especially in the case of people like Sakharov, who had received many honors and benefits, was perceived as disloyal and ungrateful.’²⁷⁷

He had embedded this critical report in a pledge to the democratic values of the political West and an appeal to the Mainz audience not to be intimidated by accusations of disloyalty and anti-Americanism, but to recognize that, under democratic conditions, “the maturity of the citizen is not only a right, but also a

275 “The Hamburg Proposals for Disarmament,” Sep. 12, 1986, which had already been formulated in advance and then confirmed by the Congress, *ibid*; “Dokumentation: Wege aus dem Wettrüsten. Die Hamburger Abrüstungsvorschläge,” *ibid*. *Stern* Nov. 14, 1986 published short statements by ten particularly prominent signatories, including the newly crowned Nobel Prize winner Köhler, Pauling, Velikhov, Kapiza, the President of the Egyptian Academy for Research and Technology, Essam Eldin Galal, the Pakistani physicist and Nobel Prize winner Abdus Salam and others.

276 Soviet Embassy to Dürr dated June 3, 1985 and Aug. 18, 1987, AMPG, III. Abt., ZA 116, K 58.

277 Handwritten manuscript “Dear friends [...]” undated. (ca. end of June 1983), 15–16, AMPG, III. Abt., ZA 116, folder 7.

duty.”²⁷⁸ In November 1983, he accepted an invitation from the International Society for Human Rights (ISHR) to support the “Save Sakharov” action at one of its press conferences and on this occasion extended an official invitation to Sakharov on behalf of the MPI for Physics and Astrophysics—regardless of the fact that he did not at all agree with Sakharov’s position on the rearmament issue.²⁷⁹ In the midst of the great international solidarity campaign for his release, Sakharov had published a long article in *Die Zeit* in which he urged the West to restore the conventional arms balance and rearm accordingly, as well as counter the preponderance of the Soviets in “large missiles” by “credibly” threatening them with the deployment of American MX missiles; both measures were “a prerequisite for nuclear disarmament.”²⁸⁰ With this position, he had not only offended the few Soviet colleagues who were sympathetic to him, but also some of his Western supporters, whose global actions were not made any easier as a result; in any case, they had no success for the time being.²⁸¹

However, Dürr repeatedly raised the issue in discussions with Soviet colleagues, for example at the meeting of the Mainz Twenty-Three with the CSS in Moscow in 1984, in the context of the Pugwash Workshops on Conventional Forces in Europe and, above all, in the run-up to the Hamburg Congress.²⁸² In January 1986, Dürr asked Willy Brandt for advice on whether and in what form he could approach Gorbachev directly who seemed “a reasonable man” to him.²⁸³ In May, at the IPPNW congress in Cologne, he consulted with Sagdeev and soon afterwards wrote a five-page letter to the Secretary-General, in which he developed a sweeping argument, albeit avoiding the provocative term “human rights.” His starting point was the irritation that people in the Federal Republic of Germany, in particular, felt in view of the “Sakharov case” in their support of the policy of détente. This was followed by a gesture of humility, in which he admitted that he belonged to the aggressor nation of World War II, only to immediately describe the divided “horrible experience of war” and the resulting

278 Ibid. 16.

279 Luft (ISHR) to Dürr on Nov. 20, 1983, AMPG, III. Abt., ZA 116, K 51; Dürr’s statement on the press conference “Save Sakharov” on Nov. 28, 1983, *ibid.*; some media that were otherwise less sympathetic to Dürr reported on this: *Die Welt*, Nov. 29, 1983; *Münchener Merkur*, Nov. 30, 1983.

280 Sacharow, “Wenn die Bombe,” *Die Zeit*, June 24, 1983. Some of the large circle of supporters were very unsettled by these statements and believed that this article, which was addressed as an open letter to American physicist Sidney Drell, was a forgery, which the *Zeit* editorial team ruled out after consulting Gräfin Dönhoff: Foerster (“Ärzte warnen vor dem Atomkrieg”) to Schwelien (*Zeit* editorial board), June 26, 1983 and July 26, 1983; Schwelien to Foerster on July 4, 1983, AMPG, III. Abt., ZA 116, K 51.

281 The action is extensively documented in AMPG, III. Abt., ZA 116, K 51; see also Gorelik, *Andrej Sacharow*, 2013; Rhéaume, “Western Scientists’ Reactions,” 2008.

282 Two undated handwritten lists Dürr compiled of his various activities in the Sakharov case 1982–1986, AMPG, III. Abt., ZA 116, K 51.

283 Dürr to Brandt on Jan. 10, 1986, *ibid.*; a reply is not documented.

desire on both sides “that Europe would never again become the arena of war.” This was followed by a lengthy passage on the cross-bloc dialog between scientists, which lent itself particularly well to creating trust because it was genuinely solution-oriented and not confrontation-oriented. He focused his letter on the “enormous ecological problems,” which threatened all people and all countries to the same extent, but which were also particularly suitable for practicing trust-building cooperation, and would require an “atmosphere of détente.” This brought him to Gorbachev’s “many constructive proposals” on disarmament, which had reaped him a great deal of sympathy in Western Europe thanks to the reason, determination, and patience with which he had stuck to them against all resistance at the bilateral negotiating table and in his own country, but which “the powerful in the West” did not appreciate—something that could hardly be explained. Dürr then introduced himself as an expert, listing his own experiences in the cross-bloc academic dialogue, particularly with his CSS colleagues. Only then did he present his “urgent requests,” which could also be understood as problem-solving proposals for the faltering disarmament talks, namely, to summon Sakharov back to Moscow and recommend him to the CSS for critical involvement in the peace issue. One implicit advantage that such a decision would bring for Gorbachev’s own policy was that Sakharov’s controversial disarmament policy position, from which Dürr discreetly distanced himself, could be discussed and contained within the CSS’s collective circle. The other explicitly formulated advantage was the building of trust, which was indispensable for the successful progress of the disarmament negotiations:

I am convinced that such a courageous step in the Sakharov case will have a tremendous signal effect in the world and would be another clear sign to many that you are quite serious in your efforts to achieve a better and more stable peace.²⁸⁴

Two days later, he handed this letter to the Soviet ambassador Juli Kwizinski, whom he questioned about Gorbachev’s disarmament proposals at a panel discussion in the Representation of the State of Hessen in Bonn. At the beginning of July 1986, barely four weeks later, the embassy phoned him and asked him to come to Bonn as soon as possible so that they could read him Gorbachev’s answer before he traveled to Moscow to attend the CSS forum on possible test ban controls. As there was no time left for such a quick visit, they met directly at Frankfurt Airport prior to Dürr’s departure, where embassy counselor Popov translated the letter for him, but did not hand it over. According to the letter, Gorbachev welcomed Dürr’s “remarks on the role of scientists” but rejected Sakharov’s “participation in the SSC [= CSS, CS] due to ‘inhuman’ behavior.”²⁸⁵ Dürr was then advised to discuss everything else in Moscow with the appropri-

284 Dürr to Gorbachev on June 10, 1986, *ibid.*

285 Undated handwritten “Sacharov” list, *ibid.* The word “unmenschlich” (inhuman), which Dürr identifies as a quotation, is not explained further there; it may have been a clumsy choice of words by the translator Popov.

ately instructed colleague Velikhov.²⁸⁶ Despite intensive talks, Sakharov was still not allowed to travel to the Hamburg Congress in November 1986; it was not until December 19 that his ban was finally lifted.

The Brief Dream of One World

It is possible that this happy Christmas message to the West was intended as a propaganda advance for another initiative—this time not exclusively on disarmament policy, but a global one with an impact on many areas of civil society, with which Gorbachev wanted to start the new year and overcome the setback of Reykjavík. Alongside many other Western celebrities and intellectuals, he also counted on Dürr, whom he invited for a personal discussion on the fringes of the International Moscow Forum “For a Nuclear Free World and for Survival of Mankind” in mid-February 1987. In addition to the scientists who had already met in Moscow the previous summer and who were now able to welcome their colleague Sakharov to their circle, seven other professional groups were invited to this peace forum: Physicians, ecologists, politicians and political scientists, representatives of the six world religions, economists and company representatives, retired NATO generals and, last but not least, cultural workers from all sectors—among them, unlike the other groups, more than just a few women. In total, there were over a thousand people from more than eighty countries—a “personification of global public,” as Gorbachev greeted them.²⁸⁷ At the reception for the West German delegation in the Moscow embassy, Dürr was joined by Petra Kelly, Otto Wolff von Amerongen, Günter Wallraff, Hanna Schygulla, Klaus Gottstein, Egon Bahr, and Berthold Beitz, among others; the other national groups were just as mixed and prominent.²⁸⁸

Records of the conversation between Gorbachev and Dürr in February 1987 are not yet available. But its content is easy to deduce, as the two men pursued two very similar ideas during these months.²⁸⁹ Dürr had already called for a world peace initiative of scientists multiple times, and so, too, at the CSS meeting in Moscow in the summer of 1986. This initiative was intended to address the major problems of humanity far beyond the issue of disarmament, namely the global “ecological problems caused by the enormous expansion of our technical activi-

286 This is what Dürr said to SZ journalist Urban, *Feindbilder*, *Süddeutsche Zeitung*, Dec. 29, 1986.

287 Gorbachev, *Unsterblichkeit*, 1987, p.7.

288 Hartwig Spitzer, “Eindrücke vom International Forum of Scientists to Stop Nuclear Testing,” Feb. 20, 1987, AMPG, III. Abt., ZA 116, K 78; handwritten notes by Dürr, “Internationales Friedensforum[...],” *ibid.*; Broichhausen, “Neugierde,” *Frankfurter Allgemeine Zeitung*, Feb. 13, 1987.

289 Dürr made similar comments to the *Süddeutsche Zeitung*: Urban, “Feindbilder,” *Süddeutsche Zeitung*, Dec. 29, 1986.

ties,” the energy problems resulting from the growing world population and its growing economies, and the “third-world problems” in view of the increasing inequality within the industrialized countries, in which more and more people were becoming unemployed, and even more so between these countries and the majority of people living in poverty in the global South.²⁹⁰ In January 1987, he then founded the Global Challenges Network (GCN) with friends in Starnberg, the purpose of which he explained at the Moscow Peace Forum in February 1987.²⁹¹ According to this, he had learned in his involvement with SDI that one should not shy away from utopias, such as “protection against nuclear missiles.” One only had to follow in the footsteps of the “rationalists and pragmatists” who—when it came to SDI—had not stopped at utopia but had pursued their own research interests within the SDI program with good funding:

With the help of fifty competent scientists who were part of a commission headed by former NASA Director James Fletcher the SDI was expertly broken down into over 800 manageable and scientifically elaborate sub-projects in four and a half months of work; these sub-projects were then offered to suitable arms companies and research institutes for further research and development.²⁹²

Methodologically “similar to the Fletcher Commission,” but very different in terms of substance, an International Science and Technology Group based within the institutional framework of the GCN was now to define the challenges facing humanity, prioritize them according to feasibility and urgency, to identify entry points for solutions, “identify scientific, technical, industrial and ‘grass-roots’ potentials” and finally allocate the sub-problems and potentials thus identified. Existing projects and initiatives at national and international level were to be networked with the help of the GCN, and new initiatives were to be promoted and integrated into the network.²⁹³

In his address to the guests of the Moscow Peace Forum, Gorbachev praised this idea as being “rich in perspective and sublime,” but did not, for example, join the Starnberg GCN. Instead, he left it to his scientific advisors in the CSS, above all Velikhov and Sagdeev, to transform Dürr’s idea into a Peace Forum initiative, namely the establishment of a “Fund for the Survival of Mankind.” He himself promised to recommend that the Soviet public actively participate

290 Transcript of Dürr’s speech at a round-table discussion at the International Forum of Scientists to Stop Nuclear Testing, Moscow 11–13 July 1986, AMPG, III. Abt., ZA 116, K 78; the topic of the discussion was the opportunities for improving the international situation that could possibly open up with a future ban on nuclear testing and weapons. Geschke, “Hans-Peter Dürr,” *Deutsches Allgemeines Sonntagsblatt*, Jan. 11, 1987.

291 Manuscript Dürr: Scientists’ Initiative for Meeting Global Challenges, presentation at the Moscow International Forum, Feb. 15, 1987, AMPG, III. Abt., ZA 116, K 78. Similar statements in a conversation with Dürr (*Bild der Wissenschaft*), October 1987.

292 Manuscript Dürr: “Denkfabrik der Zukunft,” July 14, 1987, p. 8, AMPG, III. Abt., ZA 116, No. 38; the article was written for *Stern* but did not appear there in a printed version.

293 Ibid.

“both materially and intellectually” in this “Survival Fund.”²⁹⁴ Unlike the modestly financed GCN, which was ultimately more closely linked to the grass roots, the International Foundation for the Survival and Development of Humanity (IFSDH), which was officially founded at the beginning of 1988, had a broad and promising base of international financing; Gorbachev at least wanted to contribute some of the funds to be saved on armaments in the future to the foundation. Initially, the foundation set up offices in Moscow, Stockholm, New York, Sofia and—at Dürr’s instigation—also in Munich. Its board brought together prominent figures from over a dozen countries with representative functions in science, business, international organizations, and NGOs. Thanks to their American board members with fundraising experience, such as Sagdeev’s wife Susan Eisenhower and Robert McNamara, they were able to hope for donations from the major American foundations, which in turn were involved in an advisory board—this all the more so, as human rights had even been included in the foundation program under American pressure with board member Sakharov. The funds raised were then to be used to finance pilot projects in four funding areas: International Security, Environment and Development, Human Rights and the Rule of Law, Education and Culture.²⁹⁵ However, the IFSDH had barely been consolidated when time caught up with it. At the end of 1991, Gorbachev resigned as President of the Soviet Union; in January 1992, the newly founded Gorbachev Foundation began its work, initially concentrating on socio-economic and political studies and then devoting itself primarily to the reputation of Mikhail and the memory of Raissa Gorbacheva; one year later, in 1993, the IFSDH was dissolved.²⁹⁶

Dürr was right in deciding not to merge his GCN with the IFSDH or its German branch, but to pursue a two-pronged approach.²⁹⁷ In this way, he retained his self-created affiliation beyond the MPS even after the IFSDH’s failure and was able to use the GCN, for example, to push ahead with better-positioned projects such as the Baltic Coalition. Following his network approach, Dürr had brought

294 Gorbachev, *Unsterblichkeit*, 1987.

295 The founding process is extensively documented in: AMPG, III. Abt., ZA 116, K 78. On the founding history, see the critical-liberal account in the SZ and the anti-communist interpretation in *Deutschland-Magazin*: Wehowsky, “Ein Netz,” *Süddeutsche Zeitung*, March 19, 1988; Bärwald, “Weltweite Wühlarbeit,” *Deutschland-Magazin*, 1988.

296 On the dissolution of the IFSDH: opencorporates: International Foundation for the Survival and Development of Humanity (The), 2021. https://opencorporates.com/companies/us_dc/EXTUID_2801495, last accessed on April 23, 2021. On its successor: The International Non-Governmental foundation for socio-economic and political studies (The Gorbachev Foundation): http://www.gorby.ru/en/gorbi_fund/about/, last accessed on Oct. 27, 2022. The extent to which the Gorbachev Foundation has taken over the legacy of the IFSDH requires further research. Joachim Radkau shows that the boom in ecology in the Soviet Union around 1990 was quickly brought to an end by economic priorities, see Radkau, *Ära der Ökologie*, 2011, 506.

297 Dürr to Bjørnerstedt (IFSHDH) on March 24, 1988, AMPG, III. Abt., ZA 116, K 78.

together government representatives, scientists, and other interested parties from the MPI for Limnology and NGOs active in environmental protection from all the coastal states in this coalition. They wanted to investigate the eutrophication and algae formation in the Baltic Sea, determine the origin and quantity of inputs and develop incentives for polluters in the various countries—such as debt-for-nature swaps—to change their production and disposal methods.²⁹⁸ Unlike the GCN, which has been inactive since Dürr's death in 2014, the Coalition Clean Baltic (CCB), as it is now known, continues to work in an enlarged institutional network and with a broader range of topics.²⁹⁹

4.5 A Scientific Response to Concern: The Expansion of Earth System Research at the MPS

The foundations established by Gorbachev and Dürr in 1987/88 were fully in line with the trend of a global “environmental boom” that Joachim Radkau, in his global history of ecology, describes as beginning with the nuclear disaster at Chernobyl in April of 1986 and waning again with the unfulfilled promises of the UN Conference on the Environment in Rio in June 1992.³⁰⁰ It attracted all the more public attention and civil-society commitment as the imminent end of the Cold War brought forth more and more new ideas for the future. This was reflected not least in the fact that even the PCSWA, which had to redefine their *raison d'être* with the end of the Cold War, was carried away by this wave. Especially on the initiative of the Soviet members of the Pugwash Council, of which Dürr had been a member since 1987, ecological issues moved to the top of the agenda as, for example, at the Dagomys conference in 1988, which adopted the declaration “Ensuring the Survival of Civilization,” and at the conference

298 IFSDH, Summary of Activities 1989–90, July 1990, esp. sheets 6–8, *ibid*.

299 The website of GCN does not reveal any activities: Global Challenges Network, <http://www.gcn.d/indexalt.html>, last accessed on April 23, 2021. On CCB see Coalition Clean Baltic. For protection of the Baltic Sea environment, <https://ccb.se/>, accessed last on April 24, 2021. On the concept of Debt-for-Nature-Swap formulated by Thomas Lovejoy (World Wildlife Fund) in 1984 see Radkau, *Ära der Ökologie*, 2022, pp. 536–558.

300 United Nations Conference on Environment and Development (UNCED). Cf. Radkau, *Ära der Ökologie*, 2011, pp. 488–498; surprisingly, he does not mention the IFSDH in his ten-page listing of global environmental policy events of these years. My subsection 4.5 draws on Radkau's global-historical study on the “era of ecology” for the environmental-historical context, and primarily on the studies of Lax, *From Atmospheric Chemistry*, 2018; Lax, *Wissenschaft*, 2020; and Schwerin, “Landwirtschaftswissenschaften,” 2024 for more specific developments in the MPS; I thank both GMPG colleagues for detailed discussions and valuable comments.

organized under Dürr's leadership in 1992 in reunified Berlin.³⁰¹ The MPS, too, could no longer avoid this global ecological wave, even though for years it had let suggestions, and later also demands, from the federal political arena go unheeded, calling for a stronger commitment on the part of the MPS in researching the ecological distortions in industrial and postindustrial societies, which were becoming increasingly apparent, most notably the "*Waldsterben*" (forest dieback) that had been hotly debated in the 1980s.

Environmental Research *avant la lettre*

As has been shown by Gregor Lax and Alexander von Schwerin, environmental research was nothing essentially new in the MPS.³⁰² As diverse as the concept of the environment was, as heterogeneous and often controversial the ideas about how to deal with it were, so, too, the scientific approaches that dealt with one or the other aspect of this complex that was not yet fully understood as a whole.³⁰³ Since the KWS times, it was primarily the agricultural science institutes that were increasingly founded during the "Third Reich" in which, among other things, ecological, biocenotic, or systemic links in the development of plant and animal organisms were researched. Most of these institutes, however, were dissolved in the first two decades following World War II, when their directors retired, now that their research fields were considered incompatible with the more narrowly defined profile of the MPS reorganized in 1948 as the most prominent Federal German institution of basic research.³⁰⁴ Other examples of environmental research *avant la lettre* in the KWS/MPS included research

301 Pugwash Conferences on Science and World Affairs, Pugwash Council, <https://pugwash.org/1988/09/03/dagomys-declaration-of-the-pugwash-council/>, last accessed March 1, 2022; Smith et al., *The World at the Crossroads*, 1994. Both conferences are documented extensively in: AMPG, III. Abt, ZA 116, K 84, K 85, K 86, and K 87. Gottstein, "Erinnerungen an Pugwash," 2007, p. 46.

302 Lax, *Von der Atmosphärenchemie zur Erforschung des Erdsystems*, 2018; Lax, *Wissenschaft*, 2020. Schwerin, "Zeitlichkeit," 2022.

303 I will not attempt to provide conceptual definitions of "environment" and "ecology" here, especially since Radkau also fails to offer handy definitions in his fundamental study, while following historically descriptive accounts of the changing and consistently multilayered meanings as well as the occasionally controversial discursive uses of these words by political actors and social movements, cf. Radkau, *Ära der Ökologie*, 2011.

304 Schwerin ("Zeitlichkeit," 2022) clearly elaborated the differences between a more holistic and problem-solving agricultural science (which was later dismissed as applied) and a more reductionist, method- and "fundamentals"-oriented, increasingly technology-driven molecular biology, using the example of the corresponding MPIs, and at the same time combined this with the political attitudes of their protagonists in the MPS, especially in the Nazi era and with regard to the Nazi past. On the prehistory, see Heim, "Forschung für die Autarkie," 2002 as well as other contributions in the volume Heim, *Autarkie und Ostexpansion*, 2002.



Fig. 37: Käthe Seidel at the Limnological Station Lower Rhine, Krefeld in January 1974.

on the biological effects of low-level radiation and on radiation protection at the KWI/MPI for Biophysics.³⁰⁵ The MPIs for Ornithology and for Limnology, which had emerged from the biological stations of the KWS at Rossitten and Radolfzell, Plön and Langenargen, respectively, corresponded most to today's common understanding of environmental research, i. e., serving the protection of species, biotopes, and ecosystems. Until the 1970s, however, they tended to be relegated to the background in the MPS, despite the internationally sensational research of Käthe Seidel on biological wastewater treatment. This did not change until they were able to integrate their subjects of investigation into new fields of research such as behavioral ecology, neurobiology, climate research, and evolutionary biology.³⁰⁶

But even then, the MPS was still far from seeing itself as an eminent address for ecological research. In 1972, the Administrative Headquarters first had to get a clear idea of which of its institutes were conducting anything resembling environmental science research. The reason for this was an inquiry from the BMFT (Federal Ministry of Research and Technology) which wanted to find out which German research institutions could contribute to the environmental program of the first social-liberal government, which was passed in 1971. The

305 Karlsch, "Boris Rajewski," 2007; Schwerin and Karlsch, "Außenstelle," 2011.

306 Heim, *Kalorien*, 2003, pp.63–72; Potthast, "MPI Evolutionsbiologie," 2010; Henning and Kazemi, *Handbuch*, vol. 2, 2016, pp. 1656–1654.

Administrative Headquarters believed that 33 of the 49 MPIs at the time could provide relevant information; only eleven of them actually responded, including the MPI for Limnology.³⁰⁷ Its tropical ecology data and models would soon prove valid as *billet d'entrée* to the burgeoning research field in the MPS that grew into a cluster of Earth systems research in the 1980s.³⁰⁸

Two coincidences brought on this initially unplanned effect in their coming together: first, it was the difficult search for a successor to Josef Mattauch as director of the MPI for Chemistry (MPIC), which after World War II had shifted more strongly from nuclear chemistry to meteorite research and later to cosmochemistry, similar to their colleagues in physics who, evading the Allied research bans, had turned to cosmology and astrophysics after 1945. It took almost a decade to decide on the Mainz meteorologist Christian Junge in 1968, mainly due to his scientific reputation and his good relationship with the local university. The advantage was that his field of work, atmospheric chemistry, which was new within the MPS, could be combined well with the existing research foci of cosmochemistry and meteorite research.³⁰⁹

On the other hand, it was a politically motivated addition of a new institute: In Hamburg, the internationally renowned and networked Fraunhofer Institute for Radiometeorology and Maritime Meteorology (IRM) was without a leader after the unexpected death of its director Karl Brock in 1972. To a large extent and in close cooperation with the University of Hamburg, the IRM carried out research that fit less and less under the umbrella of the Fraunhofer-Gesellschaft, which, in the context of the social-liberal turnaround, was to concentrate on “applied” research, not least industrial, military and development policy contract research, and to distinguish itself as a counterpart to the MPS as a Federal German authority on basic research. In the summer of 1973, Hans-Hilger Haunschild, State Secretary in the newly founded BMFT, asked the MPS President to take over this institute. Together with the newly appointed atmospheric chemist Junge, Lüst successfully lobbied the MPS committees to accept the institute. It was reopened in the spring of 1975 to great media acclaim as the MPI for Meteorology (MPIM) under the direction of Klaus Hasselmann, who up until then had taught at Hamburg University. A decade later, it was to become an institutional cornerstone of the German Climate Computing Center (DKRZ, Deutsches Klimarechenzentrum), also founded in Hamburg in 1987, and, together with the MPIC, the core of the internationally broadly networked Earth Systems Science Cluster in the MPS.³¹⁰

307 March to Kelberer on Dec. 14, 1972, AMPG, II. Abt., Rep. 70, No. 967, fol. 1–2. Cf. Lax, *Wissenschaft*, 2020, p. 39.

308 On the concept of clusters as inter-institutional and research organizing networks or social entities within the MPS, see Reinhardt, “Strukturen der Forschung,” 2024. On the history of the Earth systemic cluster, see Lax, *From Atmospheric Chemistry*, 2018; Lax, *Wissenschaft*, 2020, and Lax, “Erdsystemwissenschaften,” 2024.

309 Lax, *From Atmospheric Chemistry*, 2018, pp. 43–47.

310 Lax, *Wissenschaft*, 2020, pp. 43–65.



Fig. 38: Klaus Hasselmann at the MPI for Meteorology in Hamburg after receiving the Nobel Prize for Physics, 2021.

Ecological Revolution—Revolutionary Research?

The fact that these personnel and science policy contingencies of the early 1970s were able to trigger such a sustained epistemic dynamic within the MPS was, however, also due to the global *Zeitgeist*. If one follows Radkau's periodization, the "era of ecology" dawned around 1970 with events around the globe eliciting shock: for instance, the drought catastrophe in the Sahel zone (1969–1973), the floods resulting from deforestation on the southern edge of the Himalayas (1970), the fatal poisonings resulting from laxly disposed chemical waste from Japanese companies (1969–1971), or the British-Icelandic wars over dwindling cod stocks in the North Atlantic (1971–1976). Scientific findings, presented in a popular scientific and evocative manner, were translated into many languages, finding worldwide acclaim. Rachel Carson's warnings against the unchecked use of DDT, which have been reprinted again and again since 1962 with the emotionally arousing title "Silent Spring," Paul Ehrlich's "Population Bomb" from 1968 and the "Limits to Growth" of the *Club of Rome* from 1972 are perhaps the best-known works to date. New social movements and NGOs, such as *Friends of the Earth* and *Greenpeace*, joined the long-established conservation organizations on a transnational and national level, and were especially strong in the United States. Many countries, from the U.S. to the Federal Republic of Japan, passed new laws and established new agencies to protect the environment. The OECD established its *Environment Committee* in 1970; UNESCO launched

its still-ongoing *Man and the Biosphere Programme* (MAB) in 1971; the next year, the UN launched the *UN Environmental Programme* (UNEP) following its first environmental conference in Stockholm in 1972. And even NATO established a *Committee on the Challenges of Modern Society* (CCMS) as early as 1969, with which the Western alliance opened up to new transnational problem areas and, not least, environmental issues beyond its military defense mission. This was done primarily at the insistence of Nixon, who wanted to distinguish himself with this initiative and his new China policy in popular domestic and foreign policy areas not linked to the ongoing Vietnam disaster.³¹¹

If all these activities are to be understood, as Radkau suggests, following prominent British and transnationally active conservationists such as Max Nicholson and Martin Holdgate, as an “ecological revolution around 1970,” then it was at least as much one from above as from below. It was followed by several more revolutions and—as the transnational Fridays for Future school strikes recently demonstrated—has yet to come to full fruition.³¹² In such revolutionary times and surrounded by an almost unmanageable network of national, international and transnational actors, not a few of whom attempted to meet the ecological challenges, which were at best only rudimentarily understood, with research and knowledge generation, research related to the environment cannot remain apolitical. This was something also the MPS had to learn.

Its new atmospheric chemist Junge acquired his skills in the 1950s at the *Air Force Cambridge Research Center* (AFCRC) in Bedford, MA, and there, around 1960, he and his research group discovered the ten-kilometer-thick aerosol veil in the stratosphere, which consisted mainly of sulfuric acid droplets, the “Junge layer” named after him. Of course, Junge also had his young scientists at the MPIC trained on the radar instruments of the NASA, which conducted both civilian and military research.³¹³ Research funding for his aerosol research à l’américaine by the Federal Ministry of Defense was difficult to imagine within the MPS, since the Administrative Headquarters was anxious to avoid any semblance of engaging in renewed military research as its predecessor had done excessively with the armaments research of the “Third Reich.” What it could not prevent, however, were the unexpectedly explosive environmental research results that Junge presented in close cooperation with the DFG Special Research Sector “Atmospheric Trace Gases” (SFB 73), which had been prepared during his time at the University of Mainz and ran from 1970 to 1985, and the colleagues from the universities of Mainz, Darmstadt, and Frankfurt am Main who par-

311 Radkau, *Ära der Ökologie*, 2011, pp. 124–164; Lax, *Wissenschaft*, 2020, pp. 25–42.

312 Radkau, *Ära der Ökologie*, 2011, p. 134; Nicholson, *The Environmental Revolution*, 1970; Holdgate, *The Green Web*, 1999, p. 101. Holdgate, who in the 1980s was president of the International Union for the Conservation of Nature and Natural Resources (IUCN), founded in 1948, speaks there of the “environmental explosion.”

313 On the military context of Earth and environment sciences in the USA cf. Doel, “Postwar Earth Sciences,” 2003.

ticipated in it.³¹⁴ Although, as outlined in the renewal proposal submitted to the DFG in 1975, they actually only wanted to investigate the “different components” of the “pure atmosphere” and their mutual behavior as well as the historically dynamic material cycles between the bio-, geo-, and atmosphere. But it soon proved to be impossible “to discount the part originating from anthropogenic air pollution, even in areas with clean air”³¹⁵ And thus one was in the middle of the new environmental policy debates that no longer revolved only, as in the first half of the 20th century, around the agricultural optimization of national resources or, after 1945, around local and regional nature and environmental protection problems such as the “blue sky over the Ruhr” or London smog, the protection of an endangered native animal species, the possible radiation exposure in the vicinity of a planned nuclear power plant in Wyhl, a “fast breeder” in Kalkar, or a nuclear waste repository in Gorleben. Rather, they took aim at the limitless, but not always immediately perceivable, planetary hazards of anthropogenic origin.³¹⁶

As early as 1975, Junge warned in a public lecture at the MPS General Meeting, which took place on the occasion of the opening of the MPI for Meteorology in Hamburg, about the “greenhouse effect,” i. e., the effect on the Earth’s atmosphere of the anthropogenic increase in CO₂, which had already been observed since the end of the 1950s, as well as the accumulation of trace gases, specifically, chlorofluoromethanes (CFM) and chlorofluorocarbons (CFC) from spray cans and refrigeration units.³¹⁷

There is little doubt that humanity will face a very serious problem regarding CO₂ in about two generations. Because of the relatively long time spans involved—in the economy, as in the atmosphere-ocean system—serious consideration should begin early enough. [...] There is no doubt today that CFMs are likely to be a very serious environmental problem. [...] But all these mostly suddenly appearing environmental problems show how ignorant we really are about the chemistry of trace elements in our environment, especially in the medium we live in, namely our atmosphere. A great deal of basic research is still needed here to first understand the behavior of the still unaffected atmosphere. Only when this understanding is available, we will be able to assess the global and regional impacts of our industrial civilization with some certainty and need not wait until we stumble upon the problems by chance and then give false, hasty, or belated alarms in haste.³¹⁸

314 On SFB (Sonderforschungsbereich,) 73, see Lax, *From Atmospheric Chemistry*, 2018, pp. 71–82.

315 Quoted here from Lax, *From Atmospheric Chemistry*, 2018, p. 79.

316 For an understanding of the environment that emerged around 1970 in terms of science policy, integrating many aspects of established environmental and nature conservation into a systemic concept of ecology and pointing the way to ecosystem research, see Küppers, Lundgreen, and Weingart, “Umweltprogramm,” 1979; Küppers, Lundgreen, and Weingart, *Umweltforschung*, 1978.

317 Junge, “Entstehung der Erdatmosphäre,” 1975, p. 44.

318 Ibid, pp. 45, 48; see also Lax, *Von der Atmosphärenchemie zur Erforschung des Erdsystems*, 2018, p. 78.

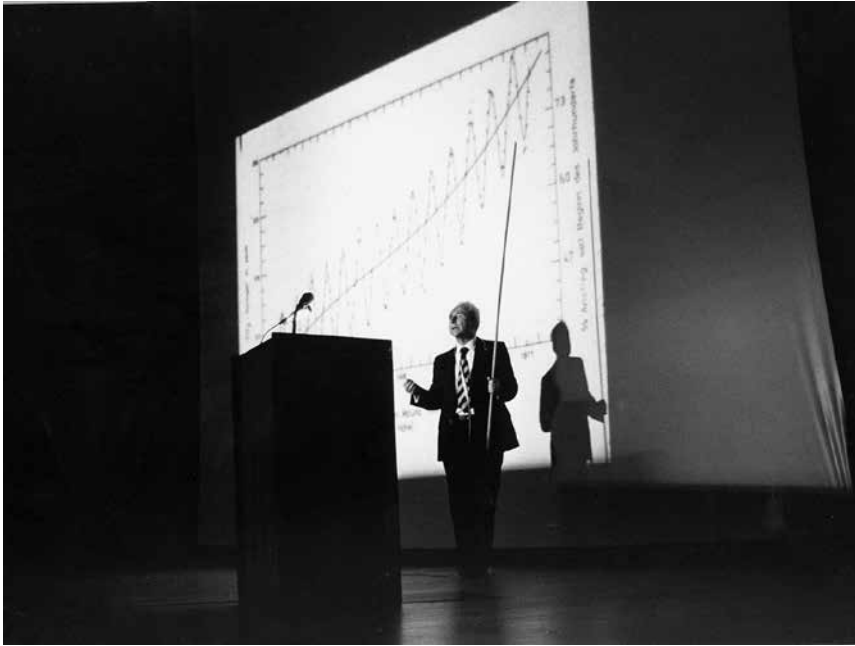


Fig. 39: Christian Junge giving his speech at the MPS General Meeting in Hamburg in 1975.

Junge alluded here to younger professional colleagues: Paul Crutzen, who had just moved from the Meteorological Institute of Stockholm University to the *National Center of Atmospheric Research* (NCAR) in Boulder (Colorado), was one of the first to point out in 1970/71 the threat to the ozone layer posed by nitrogen oxide emissions from supersonic transport (SST) aircraft, the use of which in civil aviation was just being planned, but he considerably overestimated the effect of these emissions. However, only a little later, in 1974, Mario Molina and Frank Sherwood Rowland, referring to Crutzen, discovered the significantly destructive effect of even small amounts of CFCs/CFMs on the ozone layer.³¹⁹ At the same time, Junge warned in his lecture against environmental policy misconceptions that could only be prevented by basic research, thus responding to Chancellor Schmidt, who had so emphatically urged the “social commitment of science” and the use of business management instruments in science management at this General Meeting, also in view of the increasing “disturbance of the ecological balance.”³²⁰

319 Crutzen, “SST’s,” 1972; Crutzen, “My Life,” 1995, p. 209; Molina and Rowland, “Stratospheric Sink,” 1974; Crutzen, “Estimates of Possible Future Ozone Reductions,” 1974; see Lax, *From Atmospheric Chemistry*, 2018, pp. 114–118.

320 Schmidt, “Forschungspolitik,” 1975, 7, 9. See chapter 2.4 above.

Paul Crutzen: A Polluted Atmosphere Needs Impure Science

Despite a professional career that was unusual for a future MPI director and Nobel laureate—he had first worked as a civil engineer in the Netherlands and then as a programmer in Stockholm, while studying meteorology and earning his doctorate—Crutzen, too, still saw himself as a basic researcher at that time:

Originally, that was my goal, just to do pure science. At that time in Stockholm, for example, many people were working on acid rain. I didn't want to have anything to do with that, so I said I'd do pure science with the nitrogen oxides. The nitrogen oxides had nothing to do with human activities at first, because they can also be formed naturally. So that was the situation in 1970.³²¹

But then his own research findings blocked his escape from politics: in addition to the nitrogen oxides that supersonic aircraft carried into the stratosphere, there were those that entered the atmosphere from the ground because of burning fossil fuels and slash-and-burn agriculture:

These were two phenomena that I made visible. At the beginning, however, not because of their political significance, but for purely scientific reasons. Until I discovered for myself that this topic has relevance for humans, and it became clear to me that even as a scientist in the field of atmospheric research, one cannot ignore the influence of humans. We play a role everywhere, which is why I eventually came up with the term Anthropocene.³²²

It would be another two decades before that happened. Initially, Crutzen and his team in Boulder conducted trace gas research similar to Junge's, but focused on the development of atmospheric chemical models and continuously exchanged ideas with his Mainz colleagues active in empirical research. But when he was appointed as Junge's successor in 1978 and took over as director in Mainz in 1980, the anthropogenic influences on the chemical processes in the atmosphere and their feedback with the geosphere, biosphere and anthroposphere of the entire Earth system, which had originally been discovered in passing, advanced from being annoying disruptive factors to becoming the actual subject of research at the MPI for Chemistry.³²³ The background to this was the increasing worldwide concern about scientifically documented climatic changes such as the retreat of glaciers and the rise in average annual temperatures, but especially the thinning of the ozone layer in the lower stratosphere, as the cause of which Mario Molina

321 Interview Crutzen (Reinhard, Lax) on Nov. 17, 2011, typescript pp. 11–12 (Z 279–284). On Crutzen's career, see Lax, *Von der Atmosphärenchemie zur Erforschung des Erdsystems*, 2018, pp. 89–91.

322 Interview Crutzen (Reinhard, Lax) on Nov. 17, 2011, typescript p. 12 (Z 287–292).

323 On Crutzen's appointment to MPIC, see Lax, *Von der Atmosphärenchemie zur Erforschung des Erdsystems*, 2018, pp. 91–95. Interview Crutzen (Reinhard, Lax) on Nov. 17, 2011, pp. 8–10 (Z 208–237).

and Sherwood Rowland, in an exchange with Crutzen in 1974, had identified the chlorofluoromethanes.³²⁴ By now, at the latest, Crutzen was, by his own admission, no longer doing “pure science.”³²⁵

Even more, hardly having arrived in Mainz, he interfered in the Cold War, which was becoming icy again, and with his model calculations on the atmospheric effects of a nuclear war, which he had developed together with John Birks, he thrust a new argument into the debate, which led the newly reemerging idea of the winnability of a nuclear war ad absurdum.³²⁶ According to this argument, the wildfires of forests, cities, oil and gas fields caused by nuclear bombs would raise such quantities of sooty smoke into the troposphere that, for months, sunlight would be absorbed, darkening the Earth and thus making agricultural production infeasible, especially since photochemical reactions would dangerously enrich ozone in the troposphere while, equally dangerously, diminishing it in the stratosphere. At least in the mid- and higher latitude regions of the Northern Hemisphere, the likely theater of war, few survivors of the bomb blasts would survive the starvation and disease of the following year. Crutzen and Birks published their article, titled “Twilight at Noon,” in early 1982 in a special issue of the Swedish Academy of Sciences’ environmental journal *Ambio* co-edited by Józef Rotblat, the gray eminence of the Pugwash Conferences.³²⁷ That same year, the *International Council of Scientific Unions* (ICSU) established a *Steering Committee* to research the “Environmental Effects of Nuclear War” (ENUWAR), which involved over three hundred scientists worldwide, including Crutzen.³²⁸ This concept became popular as the “nuclear winter,” the title of the subsequent TTAPS study by a group of researchers led by Richard P. Turco, which emphasized primarily the temperature and weather changes resulting from the prolonged blackout and continued to work thereafter to illustrate the expected feedbacks.³²⁹

It was primarily Carl Sagan, astronomer at Cornell University and one of the TTAPS authors, who popularized the risks of nuclear winter in the U.S. and at the same time also introduced them—supported by Victor Weisskopf—into the informal discussions with Soviet colleagues. With Evgeny Velikhov, vice president of the Soviet Academy of Sciences, chairman of the CSS established in

324 Molina and Rowland, “Stratospheric Sink,” 1974; Crutzen, “Estimates of Possible Future Ozone Reductions,” 1974.

325 Interview Crutzen (Reinhard, Lax), Nov. 17, 2011, typescript p. 11 (Z 280).

326 See for the following Lax, *From Atmospheric Chemistry*, 2018, pp. 118–123.

327 Crutzen and Birks, “The Atmosphere,” 1982, pp. 123–124. In his 1995 Nobel Prize speech, Crutzen pointed out the connection to Rotblat, who received the Nobel Peace Prize that same year, Crutzen, “My Life,” 1995, p. 216, p. 218.

328 It was a subcommittee of its Scientific Committee on Problems of the Environment (SCOPE); see Holdstock, “The Scope-Enuwar,” 1986; Lax, *Von der Atmosphärenchemie zur Erforschung des Erdsystems*, 2018.

329 Named after the initials of authors Richard Turco, Owen Toon, Thomas Ackermann, James Pollack, and Carl Sagan: Turco et al., “Nuclear Winter,” 1983.

1983, and later Gorbachev's advisor, he met with open ears. Soviet scientists had been studying related climate phenomena for some time. Now Velikhov urged them to link their findings to the concept of nuclear winter and to exchange ideas with their American colleagues in CISAC, so that the coordinated findings could ultimately be communicated to politicians on both sides.³³⁰ While U.S. President Reagan continued to delude himself that his projected orbital missile defense shield would prevent enemy nuclear bombs from reaching the Earth's surface in the first place, and thus also prevent nuclear winter, Gorbachev felt that this newly recognized nuclear risk strengthened his conviction that nuclear war could not be waged and his disarmament efforts. Finally, in 1988, the UN recognized nuclear winter as a theory backed by scientific evidence.³³¹

Crutzen, of course, was not only concerned with dystopian nuclear war scenarios. Since his warning about nitrogen oxide emissions in the stratosphere, he had also continued investigating the long-standing damage to the atmosphere from comparatively mundane anthropogenic causes, especially the CFC gases used in aerosol cans, foams, and refrigeration units. It is true that the studies by Rowland/Molina and Crutzen in the 1970s had already prompted some countries (USA, Canada, Sweden and Norway) to ban the "non-essential use" of CFC gases, meaning spray cans. But it took the shock of 1985 for British researchers at the Antarctic Survey to finally publish the data they had been collecting since the late 1970s on the ozone hole developing over Antarctica—and only after Japanese colleagues had presented similar observations at an international conference. NASA, too, then went public with data from satellite measurements that had long been available. Now the "whole ozone science community" set out to elucidate this phenomenon, which was least expected over the coldest region of the Earth and far from the places where CFCs were released into the atmosphere.³³² Crutzen further developed a hypothesis of his former student Susan Solomon in Boulder, who led the 1986/87 *National Ozone Expedition* at McMurdo Station in Antarctica, and then asked Frank Arnhold of the MPI for Nuclear Physics to calculate his theory. They were both then able to show that under stratospheric conditions at 200° Kelvin, solid saltpeter trihydrate particles can form, which in turn enable devastating ozone depletion through chlorine activation. Independently, a group of researchers led by Owen Toon and Richard Turco had also developed this idea; Luisa and Mario Molina then presented the entire reaction cycle.³³³

330 Evangelista, *Unarmed Forces*, 1999, pp. 154–155, pp. 158–159. Sagan spread the idea of nuclear winter primarily through the weekend supplement *Parade* (Oct. 30, 1983), which was attached to numerous U.S. daily newspapers.

331 Lax, *From Atmospheric Chemistry*, 2018, p. 123.

332 Crutzen, "Schutz," 2019, p. 144.

333 Solomon et al., "On the Depletion," 1986; Crutzen and Arnold, "Nitric Acid Cloud Formation," 1986; Toon et al., "Condensation," 1986; Molina and Molina, "Production," 1987. For details on the research process, see Crutzen, "My Life," 1995, pp. 210–214.

International policy, under the direction of UNEP, followed suit with the Montreal Agreement of 1987, now ratified by 180 countries, at a pace that can only be dreamed of in light of the leapfrogging of environmental and climate policy of the two last decades. Initially, CFC production was to be halved worldwide, and from 1996 it was to be banned completely in the industrialized countries. Since then, the Montreal Protocol has been updated at irregular intervals and further ozone- and climate-damaging substances have been added to the reduction and prohibition list, which Crutzen was occasionally involved with in an advisory capacity. Current measurements indicate that the ozone layer has now stabilized at the low level of the 1980s and that the ozone hole over Antarctica is also no longer growing with strong annual fluctuations; a certain recovery thus seems possible, but a return to the levels of the 1970s is not in sight. The first Nobel Prize ever awarded for environmental research was given in 1995 to atmospheric chemists Crutzen, Mario Molina, and Rowland for their contributions to understanding ozone depletion.³³⁴

Crutzen, unlike Junge, did not retreat to the position of “pure” science or basic research, which would hardly have been possible given the highly political implications of his research, both nationally and internationally. Unlike Dürr, however, he was not an activist either, although the explosive nature of his research results, which he published several times in a popular format, could very well galvanize others into environmental activism.³³⁵ He accepted Rotblatt’s invitation to contribute to his special issue on the possible environmental consequences of a nuclear war, but refrained from getting further involved at the Pugwash conferences. He signed the disarmament proposals of the 1986 Hamburg Congress and an appeal against SDI by scientists committed to peace policy but did not appear as a speaker at the relevant congresses; his climate policy warnings were nevertheless heard by those who wanted to hear them. He confined himself to the role of expert, for example as a member of the Bundestag’s Enquete Commission “Precautions for the Protection of the Earth’s Atmosphere,” convened in 1987, but was also less frequently represented in such bodies than, for example, his younger colleague Hartmut Graßl, who joined the MPI for Meteorology in 1988. Crutzen focused on his interdisciplinary and international scientific community of scholars who were concerned with the chemical, geological, and biological cycles of matter in the Earth system and who wanted to understand their interactions and feedbacks and identify anthropogenically induced changes.³³⁶

334 Grundmann, *Transnationale Umweltpolitik*, 1999; Jacobson, *Atmospheric Pollution*, 2012.

335 Crutzen and Hahn, *Schwarzer Himmel*, 1986; Crutzen and Müller, *Das Ende*, 1989; Crutzen et al., *Raumschiff Erde*, 2011.

336 See Lax, *Wissenschaft*, 2020, p. 67, pp. 121–122; Third Report of the Enquete Commission, German *Bundestag*, Drucksache 11/8030, May 24, 1990. On Crutzen’s political reticence, see also the obituary by Joachim Müller-Jung in the *FAZ*, Jan. 29, 2021; Müller-Jung, “Paul Crutzen,” *Frankfurter Allgemeine Zeitung*, Jan. 29, 2021.



Fig. 40: Paul Crutzen in his office at the MPI for Chemistry in 1993.

The Resistible Rise of Environmental Research at the MPS

The appointments of the atmospheric chemist Junge in 1968 and his congenial successor, the meteorologist Crutzen in 1980 to the MPI for Chemistry on the one hand, and on the other hand the takeover of the Hamburg Meteorological Institute in 1975 and the appointment of the geophysicists Klaus Hasselmann and Hans Hinzpeter to this new MPI opened up a field of research for the Chemistry, Physics and Technology Section (CPTS) of the MPS that was new to it in an unusual way. It was quite common for institutes to be founded and succession decisions to be made in the MPS that, as in this case with atmospheric chemistry and meteorology, (sub-)disciplines were included that had not previously been represented there. Remarkably, however, as Lax points out, all of the new appointees represented an integrative atmospheric research approach that had not previously been established in the CPTS and, for that matter, not in Germany.³³⁷ They wanted to understand atmospheric chemical and physical processes and their feedbacks with interacting processes in other subsystems of the Earth—i.e., the oceans, the biosphere, the geosphere, the cryosphere and, last but not least, the anthroposphere. The fact that the MPI für

337 Lax, *Wissenschaft*, 2020, p. 5, p. 15, p. 90 and passim.

Meteorologie was given such a classical name at all was, as the founding director Hasselmann stated in his inaugural address in 1975, only due to “our linguistic lack of imagination” in translating “the English expression ‘atmosphere-ocean’ physics into an acceptable German form.”³³⁸ Even twenty years later, Crutzen warned the members of the CPT that, in view of the realization that “the chemical composition of the atmosphere and [the] activities of the biosphere form a complex system that interacts with each other,” a holistic institute was finally needed to integrate all the knowledge gained about individual processes into a global system.³³⁹

The expansion of the Earth system sciences, which were increasingly referred to as such in the 1980s, actually did not proceed as quickly as one might have expected in view of the international reputation that the atmospheric and climate researchers in Mainz and Hamburg soon acquired, the persistently disturbing results of the worldwide Earth system sciences, the political appreciation of cross-bloc environmental and climate research in the context of the disarmament negotiations, and the public interest, which had again increased with the Chernobyl catastrophe. It was not until 1987 that a department for bio-geochemistry was established at the MPIC and the chemist and oceanographer Meinrat Andreae was appointed as its head. In Hamburg, Hasselmann, Hinzpeter and his successor Graßl had to wait sixteen years for the long-promised third department for theoretical climate modeling to be established under Lennart Bengtsson in 1991, while the initially planned fourth department was not established at all.³⁴⁰ This may also have been due to scarce funds, because while in Mainz it was essentially a matter of redefining existing departments and the Hamburg MPI for Meteorology could be taken over on favorable terms, including the BMFT-funded morning gift of the Climate Computing Center, any further institutional expansion had to be financed from the stagnating MPS budget, i. e., with savings made elsewhere and institute closures. It is nevertheless surprising that the spark of an integrated Earth system science, which in its self-image included the bio- and anthroposphere, only spread to the Biology and Medicine Section (BMS) and even later to the Humanities Section (GSHS) under the entirely different (science) political conditions after German reunification.

There was no lack of calls for action from the political arena. One of the most emphatic admonishing voices was from Helmut Schmidt, who as Federal Chancellor had politically supported the integration of the meteorological institute into the MPS and the further expansion of the Hamburg site with the recognized geoscientific university institutes for meteorology, oceanography, and geophysics into a German and international beacon of environmental and climate research. Appointed to the Senate of the MPS after being ousted as chancellor in 1982, he tried to use this new honorary office to further advance

338 Quoted here from *ibid.*, 63.

339 Quoted here from *ibid.*, 69.

340 *Ibid.*, 19, 64.

the ecological cause he shared with his wife, the biologist Loki Schmidt, in the MPS—and was thwarted one time after the other.

At the height of the debate about what was then known as *Waldsterben* in the early 1980s, the Minister President of Baden-Württemberg, Lothar Späth, offered to fund an interdisciplinary project group at the MPS. This group was to investigate the forest damage observed not least in the Black Forest, in particular the possible connection with “acid rain” and the higher vents that had been clearing the skies over the Ruhr since the 1970s but had polluted the atmosphere over a wide area.³⁴¹ A commission headed by MPS Vice President Benno Hess of the MPI for Nutritional Physiology had examined and rejected this unsolicited offer. Schmidt noted this with regret at the fall meeting of the MPS Senate in 1984, because “politicians would soon be faced with difficult decisions without being able to rely on competent scientific advice.” He was least convinced by the justification, namely that the MPS did not have the “necessary personnel potential” to research such a complex “disease pattern” triggered by several factors such as pollutant emissions and soil conditions and the “complicated interaction of biological and biochemical systems,” moreover in a period of only five years, and that the topic was therefore better off with the DFG and ESF. Schmidt, on the other hand, considered it “wrong to capitulate in the face of complexity and do nothing.”³⁴² State Secretary Haunschild of the BMFT tried to calm the waves by referring to the forest damage report of the inter-ministerial research advisory board established in 1984, which was to be expected at the beginning of 1985 and which, as he conceded, MPS scientists also took part in to a “satisfactory extent.”³⁴³

In the following Senate meeting, which Schmidt was unable to attend, MPS President Staab admitted that “scientific research must share the responsibility for the preservation and safeguarding of life on Earth.” But in the subsequent discussion, the complexity of the problem was once again met with capitulation. At best, risk factors could be defined, but “researchers do not yet know a solution for an effective therapy.” Moreover, according to the Bavarian Minister of Culture, Hans Maier, “the difficulty of reaching an understanding between representatives of different disciplines, such as biologists, forest botanists and ecologists” had been underestimated. Haunschild further conceded that in the MPS one had begun too late to work intensively on all these complex questions. It

341 At the latest since the *Der Spiegel* cover story “Der Wald stirbt. Saurer Regen über Deutschland,” *Der Spiegel*, Nov.15, 1981). In the meantime, the debate has been studied by historians several times. Cf. Detten, “Umweltpolitik und Unsicherheit,” 2010; Metzger, “*Erst stirbt der Wald, dann du!*” 2015.

342 All quotations: Protocol of the 109th Senate meeting, Nov. 23, 1984, in Munich, AMPG, II. Abt., Rep. 60, No. 109.SP, fol. 20–22.

343 Ibid, fol. 22 and protocol of the 110th meeting of the Senate, March 8, 1985, in Düsseldorf, AMPG, II. Abt, Rep. 60, No. 110.SP, fol. 234–235, here fol. 235. On the Hess Commission and the Research Advisory Council of the Federal Government, see also protocol of the 110th meeting of the Senate, March 8, 1985, in Düsseldorf, *ibid*, fol. 227–228.

was not to be expected that a new MPI would make up for the delay and achieve a breakthrough. Staab nevertheless promised that the MPS would “examine possible consequences for a concentration and expansion of its activities” on the basis of the “excellent work” of that inter-ministerial research advisory board.³⁴⁴

Schmidt shared neither Haunschild’s fatalism nor Staab’s forbearance, and instead toured a “number of relevant institutes” in 1985/86, which in the end only reinforced his doubts “whether we in the Federal Republic or in Europe are doing enough with regard to *Waldsterben*.”³⁴⁵ Subsequently, together with his former ministerial colleague and current MPS honorary senator Leussink, he rounded up a small “circle of independent personalities experienced in research, but not necessarily working in the narrower field of ‘*Waldsterben*,’” who were to clarify with each other on the fringes of the next MPS General Meeting in Aachen in June 1986 whether one should not “strive for completely different methods and dimensions.”³⁴⁶ The MPI directors Eigen (MPI biophysical chemistry) and Schell (MPI breeding research), the MPS honorary member Lüst, the MPS honorary senator and former Bosch manager Hans Merkle, and the botanist and ecophysiolgist Hubert Ziegler from the Technical University of Munich were invited. Schmidt brought along his wife Loki and the Zeit journalist Haug von Kuenheim. Leussink took the lead in this Aachen breakfast meeting, which the acting MPS president only learned about by chance the night before.³⁴⁷

The descriptions of the problems varied according to professional background: the botanist Ziegler lamented the lack of chairs and research facilities for forest pathology in the Federal Republic, recommended replacing the popular but misleading notion of uniform forest dieback with the differentiating concept of multi-symptomatic and -causal forest damage, and wanted to place the “ecology of trees” at the center of a research institute in which plant ecological, systems analysis, and microbiological approaches could be combined. Schmidt, on the other hand, considered forest damage to be only part of the problem, which he divided up according to the implicit political fields of reference, such as the influence of nuclear power plants on genetic mutations, but also on the “macro-ecosystem,” the industrially caused damage to the atmosphere by hydrocarbons and increased CO₂ emissions, but also the importance of demography for the global ecosystem. Leussink felt he was already “on the cusp of a fundamentally new stage of development in the history of mankind.” The proposals on how to proceed were just as far apart: they ranged from a project group to a “somewhat more complex” structure than an MPI or a university institute would represent,

344 Protocol of the 110th Senate meeting on March 8, 1985 in Düsseldorf, AMPG, II. Abt. Rep. 60, No. 110.SP, fol. 228 (quoting Staab), fol. 234 (quoting Maier), fol. 235 (quoting Haunschild).

345 Leussink to Eigen on April 22, 1986, BACh B 196/156214.

346 Ibid.

347 Leussink to Staab on Oct. 1, 1986, Staab to Leussink on Oct. 21, 1986, Leussink to Staab on Nov. 5, 1986, BACh B 196/134374. The meeting had taken place on June 6, 1986 from 9.00 a.m. at the Aachen Quellenhof Congress Hotel.

to a “completely new form of organization” such as an “independent foundation endowed with ample funds (several hundred million) [...] freed from all budgetary regulations.” In the end, however, familiar formats were agreed upon: The biologists Ziegler and Schell were to draft an institute concept for research on forest damage. The more far-reaching ecosystematic questions were initially to be discussed in “symposia à la Schloss Ringberg.”³⁴⁸

In the end, it was Ziegler who drafted the institute concept, taking pains to counter all possible objections in advance. The “Institute for Terrestrial Ecology” he proposed was to be conceived as a complement to the existing MPI for Limnology in Plön and its research on the physiological interplay between water and forests in the Amazon region and, in contrast, was to “put the forest in the foreground [...]” In order to reduce complexity, it was to be limited to four selected, internationally most promising approaches: 1. “the formulation of heuristic computer models,” with which, for example, transpiration and photosynthesis of plant ensembles could be recognized as “interactions in the stand;” 2. measuring ecophysiology, which was to investigate “material cycles, regulations in the ecosystem, gas exchange,” if necessary, with instruments to be newly developed. The “minimum program” also included 3. “soil science and plant nutrition” and 4. “soil microbiology.” In addition, Ziegler outlined half a dozen complementary approaches and methods, with which he wanted to clearly show that the new institute would in many respects be compatible with existing MPIs such as those for breeding research, chemistry, meteorology, biochemistry, quantum optics and behavioral physiology, but also with Garching Instrumente GmbH and the Göttingen Society for Data Processing. Last, not least, he named a number of qualified scientists from nearby Bavaria as well as, further afield, from Australia who could be sought out.³⁴⁹ The breakfast round, which met again in November 1986, this time at BMW headquarters in Munich, and to which Edmund Marsch from the MPS Administrative Headquarters was also delegated, unanimously approved the concept. Even Schmidt was “impressed” by the “concreteness of the proposal” and renounced his further plans for the time being. On the fringes of the next Senate meeting in March 1987, the project was then to be discussed with the MPS president.³⁵⁰

The BMFT, which was always kept up to date by Leussink, immediately began to evaluate this initially “promising” plan, which, however, lost its luster upon closer examination.³⁵¹ It welcomed that the MPS now finally wants to move in environmental research, since it has had little to show here so far apart from “the excellent MPI for Atmospheric Research” with Crutzen and the MPIs for

348 All quotations: Leussink report of Oct.1, 1986 on the informal discussion on the topic of “forest damage” on June 12, 1986, BArch B196/134374.

349 All quotations: Ziegler’s “concept” as an attachment to his letter to Leussink dated Nov. 13, 1986, BArch B 196/134374.

350 All citations: Report of Dec. 5, 1987 on the second meeting on “forest damage” on Nov. 20, 1986, *ibid.*

351 Note by Keune, Dec. 3, 1986, *ibid.*; Note by Zelle, Dec. 4, 1986 (citation), *ibid.*

Limnology and Ethology. But Ziegler's concept once again documents "the lack of self-confidence of science" to cope with the "complex [...] requirements of ecosystem research:"

The way out found is reflected in the choice of words for the institute to be established [...]: Institute for Terrestrial Ecology and not Institute for Ecosystem Research. This avoids a comprehensive approach (also including disciplines not part of the natural sciences) and is limited to closing the gap in the field of terrestrial ecology that undoubtedly exists in the German scientific landscape. This may be meritorious, but such an approach does not seem particularly innovative.³⁵²

The concept was thought to do just as little justice to the most recent recommendation of the inter-ministerial research advisory board to establish a center for terrestrial ecosystem research, as to the "more comprehensive approach" that "Mr. Schmidt had in mind when he took the initiative as senator of the MPS." It would be more beneficial to the common cause if the MPS, as an "excellent part of science," would support a more comprehensive interdisciplinary approach and join the initiative of the BMFT to establish centers for ecosystem research at Bayreuth, Saarbrücken, Göttingen, Kiel and Jülich.³⁵³

In the MPS, the discussion ran in the opposite direction. In May 1987, Ziegler—seconded by Schell—presented his approach to the Senate Planning Committee. The idea was by no means to conduct "damage research" that drift into the sidelines for lack of a scientific definition of its subject matter; rather, the concentration on the forest would "take into account the desideratum of basic research that is setting the course." The biologist and DFG president Markl praised "the clear limitation of the research approach to a few, basic science-oriented questions," while nevertheless urging additional consideration of soil microfauna and physiological mycology. With these recommendations, the concept was forwarded to the Biology and Medicine Section (BMS) for consideration, along with an application from the Hanseatic City of Bremen to establish an MPI for Marine Biology.³⁵⁴ In preparation for this meeting, the BMFT had also come around to the small solution, but saw it only as an accompanying measure to

352 Note by von Osten, Dec. 17, 1986, *ibid.* The lack of institutionalization and career opportunities with only project funding and lack of permanent positions was identified as a major reason for Germany's lagging behind in ecosystem research, which deterred young scientists. Here, too, an MPI would act as an incentive.

353 All quotes: Note by von Osten, Dec. 17, 1986, *ibid.*; Note by Keune on the "Schmidt-Initiative/Waldschadensforschung," undated, *ibid.* On the history of ecosystem research in the Federal Republic and in an international context, see Kaiser, Mages-Dellé, and Oeschger, *Gesamtsynthese*, 2002, 3–13; Masius, Sparenberg, and Sprenger, *Innenwelt der Umweltpolitik*, 2009; Uhrqvist and Linnér, "Narratives," 2015; Trischler, "The Anthropocene," 2016.

354 Summary protocol of the 19th SAPFF meeting of May 20, 1987, pp. 15–17, BArch B 196/134374; materials for the Senate meeting of June 11, 1987, concerning item 1.2 of the agenda, p. 4. Protocol Senate of June 11, 1987, BArch B 196/156218.

the university centers for ecosystem research that were being prepared; in any case, the special funding of such a narrowly defined MPI from the specialist title established for this purpose in the BMFT was not possible.³⁵⁵ The BMS, on the other hand, was far from convinced and announced six months later that in the case of terrestrial ecology, as in the case of the Bremen application for marine biology, it “would first undertake a thematic demarcation of the project in relation to other activities in this field and then concretize its own ideas.”³⁵⁶

This dragged on for so long that Schmidt’s patience wore thin. In February 1988, in an extensive article in *Die Zeit*, he outlined the dilemmas of a “sensible energy policy” in the national and global context between the necessary economic growth, the threat of mass unemployment, global population growth and the worldwide increase in energy demand on the one hand, and the economic, technical, military or terrorist, ecological and climatic risks of the various available energy sources on the other. The politician’s biggest problem, he said, was insufficient knowledge, because even the risks that are already known are still not sufficiently quantifiable and “can therefore hardly be weighed against each other.” Under such conditions of uncertainty, the “weighing reason” of energy policy requires the “narrowing of recognized risks, spreading of as yet undeterminable risks, keeping open later decisions for times when individual risks become more apparent than others,” as the social-liberal federal governments had pursued until 1982. In view of the progressing global warming, the most depressing but still least calculable risk was the emissions of hydrocarbons and CO₂ caused by industry and consumer society. A “phase-out of hydrocarbons” would trigger such “tremendous upheavals in economic structures” that Schmidt did not want to “even allude to it here.” Before such momentous political decisions, he rather expected the “German natural sciences,” the MPS, and the MPI for Terrestrial Ecology requested by him and others “for several years” the necessary decision support:

1. What processes have taken place since the beginning of massive industrialization, what consequences have they brought about?
2. What forecasts can be justified today?
3. What does science recommend to politicians authorized to act, nationally and internationally?³⁵⁷

While the former Chancellor was struggling to find the scientific prerequisites for political action based on an ethics of responsibility, the Biology and Medicine

355 Note by Keune dated May 14, 1987 and May 11, 1987, BArch B 196/134374.

356 Protocol of the 117th Senate meeting on Nov. 19, 1987, in Munich, AMPG, II. Abt, Rep. 60, No. 117.SP, fol. 147. Cf. also Lax, *Wissenschaft*, 2020, p. 67.

357 All quotations: Schmidt, “Sieben Prinzipien,” *Die Zeit*, Feb. 19, 1988. He also argued accordingly several times in the MPS Senate: Protocol of the 119th meeting of the Senate, June 9, 1988, in Heidelberg, AMPG, II Dept, Rep. 60, No. 119.SP, fol. 17 and Protocol of the 120th meeting of the Senate, Nov. 10, 1988, in Munich, AMPG, II. Abt., Rep. 60, No. 120.SP, fol. 15. See Lax, *Wissenschaft*, 2020, pp. 65–67.

Section (BMS) of the MPS was still looking for a niche for its belated entry into ecosystem research, which was not so easy. While the environmental science problems were diverse and complex, there were also numerous national, international, and transnational players in the field already. These were, in particular, all the multi-national research groups participating, for example, in the *Man and the Biosphere Programme* (MAB) of UNESCO, established in 1971, or the *International Geosphere-Biosphere Programme* (IGBP) of ICSU, launched in 1986, or the West German centers for ecosystem research that were being established. Thus, as Staab reported to the Senate in November 1988, the BMS Commission had by then discovered that the research program for the future MPI proposed by Ziegler and Schell was already being pursued in a similar way by the German Society for Radiation and Environmental Protection and was “in good hands there.”³⁵⁸

Meanwhile, at least, the BMS Commission had an idea in which way the MPS could contribute “with its means and possibilities” to the solution of “a multi-causal problem,” namely, as its chairman Hess had already indicated in June 1988, “for example, with work on the molecular basis of the interaction between the ecosystems soil and plants.”³⁵⁹ And indeed, with the molecularization of terrestrial ecology and likewise of marine biology, the BMS Commission was finally able to ward off the political impositions that Staab had already formulated publicly elsewhere:

[...] in our country the debate about ecological problems is more intertwined than in other similar countries [...] with the struggle for political goals in which—often more than the environment—our social and economic system is at stake.³⁶⁰

With this molecular biological approach, there was no need to return to holistic concepts, which one had hoped to have finally eliminated in 1976, when the MPI *für Landarbeit und Landtechnik* (agricultural work and technology), the last agricultural science institute in the MPS to survive from the Nazi era, was closed with the retirement of its director Gerhardt Preuschen—the vehement critic of molecularization, intensification, and over-technification of agriculture alike, who had turned himself from a National Socialist into an eco-activist.³⁶¹

The precise integration of terrestrial and marine ecology into the successfully defended molecular biology paradigm of the BMS and the selection of appropriate colleagues took another two years, although Crutzen and Andreae of the MPI Chemistry were involved. They tried their best to introduce BMS

358 Protocol of the 120th meeting of the Senate, Nov. 10, 1988, in Munich, AMPG, II. Abt., Rep. 60, No. 120.SP, fol. 14.

359 Protocol of the 119th meeting of the Senate, June 9, 1988, Heidelberg, AMPG, II. Abt., Rep. 60, No. 119.SP, fol. 19.

360 Heinz A. Staab, “Notwendigkeiten und Grenzen der naturwissenschaftlichen Forschung heute” (plenary lecture, 50th annual meeting of the DPG, March 17, 1986), Bl. 13, BArch B 196/96342.

361 Schwerin, “Zeitlichkeit,” 2022.

colleagues to “working on systems larger than a cell” and strongly promoted the strengthening of integrative biogeochemistry.³⁶² Politically, they were flanked by Schmidt’s increasingly angry criticism in the Senate of the—against the backdrop of “the close connection between the problems of population growth, energy supply, and climate change”—half-hearted search by the BMS for a “‘niche’ for a research initiative” and the appeal by the incumbent Federal Minister of Research, Riesenhuber, to the MPS “in view of the growing pressure of problems and possibly soon irreversible developments”—with all due respect for basic research—to finally bring together “scientific approaches of individual researchers and research groups” and to tackle “cross-sectional problems.”³⁶³

At the MPS’s general meeting in Lübeck in June 1990, Staab was then able to announce the founding of the new microbiological MPIs. The MPI for Terrestrial Microbiology in Marburg began its work in 1991 with biochemist Rolf Thauer and microbiologist Ralf Conrad, and the MPI for Marine Microbiology in Bremen followed in 1992 with microbiologists Friedrich Widdel and Bo Barker Jørgensen; with Conrad and Jørgensen, two scientists who had intermittently done biogeochemical work at the Mainz MPI, came to serve as department heads in both institutes.³⁶⁴ Together, the colleagues in the resulting Earth System Cluster of the MPS then seized the opportunity of the *Aufbau Ost* to finally advance the holistic “understanding of biogeochemical cycles against the background of rapidly increasing anthropogenic effects,” as Bengtsson of the MPI for Meteorology put it in a CPT meeting in 1996, with the necessary institutional infrastructure.³⁶⁵

362 Andreae wrote this in an email to Lax Sep. 15, 2018; I thank Gregor Lax for this reference and Meinrat Andreae for permission to cite.

363 Protocol of the 119th meeting of the Senate, 9 June 1988 in Heidelberg, AMPG, II. Abt., Rep. 60, No. 119.SP, fol. 11–12, fol. 17–22, here fol. 21; protocol of the 120th meeting of the Senate, 10 November 1988 in Munich, AMPG, II. Abt., Rep. 60, No. 120.SP, fol. 14–17, here fol. 15. Cf. Lax, *Wissenschaft*, 2020, pp. 66–70.

364 Henning and Kazemi, *Handbuch*, vol. 2, 2016, 923, 1561; Lax, *Wissenschaft*, 2020, 69. Rudolf “Rolf” Kurt Thauer is the son of physiologist Rudolf Thauer, who, as a former aeronautical physician and cold researcher had done research for the German Luftwaffe and knew about the infamous human experiments carried out the Dachau concentration camp; de-nazified in 1947, and, after several years as a paper clip scientist in the United States, appointed director in 1951 to the MPS’s Kerckhoff Heart Research Institute, later MPI for Physiological and Clinical Research in Bad Nauheim; cf. Schlünder, “Versuche,” 2024, p. 753.

365 Quoted here from Lax, *Wissenschaft*, 2020, 74; on the founding of the two Jena institutes in 1996, see in detail *ibid.*, pp. 68–84.

4.6 The Search for Traces in Fast Motion

If we take a quick look at the trail of concern for world peace, human life, and the planet Earth in the history of the MPS and its correspondingly committed scientists, we see that it was once broader, once narrower, but never completely broken off. It did, however, change in some respects. Firstly, the world-political problem areas to which this concern was primarily linked had changed. Until the end of the Cold War, the avoidance of a nuclear war fought between the two superpowers on European soil remained its prominent subject. But since the mid-1970s, concerns about the risks of even peacefully used nuclear energy and about the planet's limited resources have been increasingly mixed in with criticism of the energy-devouring economic growth paradigm of a Western or Eastern type. This planet-oriented concern came to the fore as the threat of nuclear war seemed to be contained from the mid-1980s onward.

The protagonists who manifested the increasingly complex concern also changed, and with them the institutional location within the MPS where this concern could be articulated. In the 1950s and 1960s, it was in a sense the ideal presidential office where the threads came together, even if the postal address was the VDW office in Hamburg, the FEST in Heidelberg or the EKD office in Bonn. And even if Hahn or Butenandt tried to keep their roles as responsible scientists and as MPS presidents separate in order to keep the expected wrath of the government away from the MPS, they still remained part of that Federal German intellectual leadership circle around C. F. von Weizsäcker, Raiser, and Heisenberg, which liked to make its presence felt publicly with memoranda. This circle was not completely identical with the top management of the MPS, but it was networked in many ways, which was certainly taken note of by the public.

With the generational change at the top of the MPS, the change in the public discourse of the 1970s, and the stricter differentiation of the social spheres of science and politics, concern was pushed out of the leadership center of the MPS. It was a purification process that the new president, Lüst, pushed decisively and eloquently in at least MPS public controversies, whether at ceremonial meetings with Chancellor Schmidt or in Senate meetings with the peace activist Dürr. Internally, he occasionally followed up with personal admonitions of MPI directors who had not yet sufficiently internalized the separation of the scientific from the political persona. He completed this process by winding up or conceptually restructuring the two "political" institutes, the Starnberg MPI for Living Conditions in the Scientific and Technical World and the MPI for Human Development in Berlin.³⁶⁶ His successors Staab and Zacher took over a

366 In a sense, this was a second purification after the first one in the early postwar years described by Heiko Stoff (2004) using the example of Butenandt: At that time, it had been a matter of constructing scientific reason and/vs. ideological unreason, science and/vs. National Socialism as a logical contradiction and, in particular, of defining basic

house that had been thoroughly cleaned up in this sense, complete with care instructions for the future.

This was by no means the end of the concern, which only intensified in the 1980s with renewed rearmament, the threatening militarization of space, the Chernobyl reactor disaster, and the industrially caused environmental damage that had become even more obvious with the *Waldsterben*. Other protagonists like Dürr took them on. They preferably came from the ranks of those scientific staff members who felt more connected to the new social movements on the streets or in front of the construction fences of Kalkar and Wackersdorf than to the political elites of the Kohl era and dared to receive formal warnings as soon as the boundary between their individual civic commitment and their professional employment relationship with the MPS became blurred.

The fact that in a further stage, with the expansion of Earth system research into a veritable cluster in the 1990s, concern for planet Earth was given more space than ever before within the MPS was due to three contingent impulses, none of which, of course, came from the President's Office. The first impulse was the buildup of the chemical and physical atmospheric research at the MPI for Chemistry in Mainz and the MPI for Meteorology in Hamburg. Since the mid-1970s, their research—initially unintentionally—had been producing environmentally disturbing results. The second impulse came from a former federal chancellor who, as a senator at the MPS, also knew how to drill thick boards and who did not give in to the resistance of the Biological-Medical Section to any biological environmental research beyond its molecular-biological research dogma. Finally, German reunification and the scientific *Aufbau Ost* (Build-up in the East) provided the political and financial framework to accelerate the further expansion of Earth system research in the MPS with new institutes or departments.

One would think that the MPS had thus repaid its *Bringschuld* (obligation to deliver) which Chancellor Schmidt had demanded during his term of office. However, the two and a half decades that have passed since then have hardly brought us any closer to the required climate policy turnaround, but rather have shown that scientific evidence does not automatically translate into political action. The political *Holschuld* (obligation to collect) that Schmidt's sparring partner at the time, MPS President Lüst, had called for in return has since increased rather than been paid off. Sheer desperation in the face of political "inertia and ignorance and, of course, economic interests" drove the scientific pioneer of climate change research at the MPS and godfather of the "Anthropocene," Paul Crutzen, to draft a "Plan B" for the not unlikely event that CO₂ emissions and thus global warming would not be limited in time.³⁶⁷ With the

research, including those who conducted it, as per se resistant from the Nazi regime. Now it was a matter of fundamentally separating scientific research, basic research in any case, and politics—institutionally, in terms of personnel, and in terms of the logic of action.

367 Citations: Crutzen, "Erdkühlung," 2019; Crutzen, "Albedo Enhancement," 2006, p. 211.

help of sulfate injections into the stratosphere, as he reasoned, solar radiation could be reduced and global warming slowed down. He was severely scolded by the environmental movement for this proposal coming from the toolbox of geoengineering, while colleagues from environmental and biodiversity research calculated the risks of this “albedo enhancement” as prohibitively high.³⁶⁸ In 2011, Crutzen himself formulated another, less risky vision, which seems like a revival of the style of thinking disposed of in the 1970s and can easily be read as a legacy to the MPS from the noble laureate who died in 2021:

It would be good if science, including the Max Planck Society, used its great scientific potential to clarify what an ecologically sustainable economy and society might look like. The Anthropocene requires a cognitive shift so that we become aware of the importance of a global civilization. For many scientists, it is difficult to think beyond pure science. But we scientists need to come to a closer connection between natural and social science.³⁶⁹

368 For example, Trisos et al., “Biodiversity,” 2018.

369 Quote: interview Crutzen (Müller), undated (ca. 2010/11).

5. The Science Foreign Policy of the MPS and International Politics: Looking Back—and Forward

Researching the Max Planck Society with its transnational scientific relationships in the field of international politics over a period of more than six decades was a challenge, especially since future outcomes remain in doubt. Contemporary historians generally feel more comfortable when they can embed their subjects of study into periods defined by political power shifts, economic cycles, phases of war and peace, or at least into “short” and “long” decades, or ideally by major events of regional, national, or international significance.¹ However, this study had to contend with a series of variably paced timelines. These ranged from the level of institutional history through the national foreign policies of the Federal Republic and the respective partner countries to the geopolitics of power blocs. Underlying these are longer-term developments such as Europeanization, internationalization, and globalization, which particularly shaped the design of cross-border scientific relationships. These timelines and developments followed different rhythms, could overlap, and reinforce each other, but could also often come into tension and block each other. In summary, a number of longitudinal sections aim to filter out how the MPS positioned itself in relation to these timelines and developments over the entire period under study, specifically in relation to West German foreign policy, the Europeanization of science funding, and the globalization of scientific cooperation and competition. In conclusion, how the MPS’s self-understanding as an institutional actor vis-à-vis international politics and global developments changed from the post-war period to the present day will be recapped.

The guideline for the following longitudinal sections is the MPS’s policy line described in the introduction as ‘science foreign policy.’ Its touchstones include the institutional autonomy in the primarily science-intrinsic selection of its international scientific cooperation partners and the maximum financial and contractual flexibility in further shaping these relationships. Initially, these guiding points were little more than an unarticulated reaction by the Administrative Headquarters, which had been led since the mid-1930s and until 1960 by Ernst Telschow, to the equally justified and existentially threatening allegations by the Allies that the Kaiser Wilhelm Society had been too closely linked with the racial and expansionist policies, and above all with the armaments economy of the Nazi regime. In its nascent state, this science foreign policy was, in a way, a

1 See Doering-Manteuffel, “Zeitbögen,” 2014.

derivative of the apolitical, purpose- and interest-free basic research that MPS henceforth invoked as its sole *raison d'être*. This (foreign-) policy-distant self-positioning of the MPS was supported by the reorganized structures of the West German science system in the 1950s, in which the DFG served as the primary representative of science abroad, and other organizations such as the Alexander von Humboldt Foundation, the DAAD, or the Goethe Institutes were available as carriers of the Federal Republic's foreign cultural policy. Some attempts by the MPS, associated with the founding of the MPI for Educational Research and the Starnberg Institute in the 1960s, to position itself anew in relation to national and international politics with its specialization in basic research, were discontinued by the end of the 1970s. In contrast, the International Relations Unit established in 1971 during the administrative reform of the late 1960s and early 1970s ensured the "full operational capability" as the guideline for its administration of the MPS's international scientific relationships in the following years.² This strategic basic position was reaffirmed by the further reform of the Administrative Headquarters in the late 1990s, which revolved around the primacy of service as its pivotal point, and with occasional modifications concerning its current operational feasibility, this principle was maintained well into the 2000s.

The MPS and Federal German Foreign Policy

Nevertheless, this consistent guiding principle of science foreign policy was continually challenged, first and foremost by the foreign (science) policy of the successive federal governments. In 1955, when the Federal Republic regained its political agency in foreign affairs, things began quite harmoniously in terms of a balanced exchange of resources: the MPS benefited from special federal funding, which significantly expanded its international relations; the federal government, in turn, counted on the scientific performance of the MPS to enhance the political image of the Federal Republic abroad. In the case of Spain, such image cultivation was not necessarily needed, yet the scientific relationships between the MPS with the CSIC and the JEN supported both questionable notions of safeguarding old German cultural influence against new Western competition and the nuclear policy and economic interests of the Federal Republic. Classic foreign cultural policy also played a role for a long time in the history of the KWS's only regained institute abroad, the Bibliotheca Hertziana in Rome. Here, despite all diplomatic efforts from leading representatives of the MPS, it was ultimately thanks to the negotiations of the Federal Chancellor and his policy of *Westbindung* (alignment with the West) that the Allies agreed to the restitution of the former German cultural institutions in Italy to the Federal Republic. Only then could the MPS reintegrate this former Kaiser Wilhelm Institute and had to accept that the Hertziana only reluctantly evolved from a German cultural

2 Note by Nickel dated Feb. 25, 1974, AMPG, Sec. II, Dept. 70, No. 373, pp. 37.

representation to a scientific and scholarly institute, which one would expect from the MPS with its commitment to fundamental research.

Initial differences between the MPS and the Federal Government's foreign science policy became apparent toward the end of the 1950s and contributed to the formation of a science foreign policy guideline that would later be articulated. There were three equally delicate issues: first, there was the Federal Government's proposal that the MPS act as an intermediary for the covert transfer of West German funding to Israeli scientific institutions, which had been emphatically requested by them. In this way, the MPS was to extricate the Federal Government from the diplomatic dilemma it had maneuvered itself into with its highly obstructive Hallstein Doctrine, especially in Middle Eastern policy. Leading MPS scientists were indeed interested in scientific relations with Israeli research institutions—particularly with the Weizmann Institute—and in renewing contact with colleagues who had been persecuted and expelled by the Nazi regime. However, the Administrative Headquarters, with Telschow still at the helm, refused the requested non-statutory secret diplomatic support. It was not until after Telschow's retirement that an elegant solution was found, enabling the transfer of federal funds into the Israeli science system to be processed via Minerva Stiftung GmbH. Thus, the MPS could keep its distance from this foreign science policy task as a research organization but, as Minerva's main founder, still influence the distribution of funds, expand its scientific relations with Israel according to its own criteria, and retroactively claim a pioneering role in reconciliation with Israel despite its initially ambivalent stance.

However, no elegant solution was found for scientific relations with the Soviet Union, which were highly valued by many MPS scientists. Although scientific contacts between MPS scientists and their Soviet colleagues (and vice versa) were reactivated immediately after the reopening of the embassies in Bonn and Moscow, and there were similarly aligned interests between West German foreign policy and the MPS's science foreign policy, insofar as both wanted to loosen their dependence on the transatlantic hegemon and diversify their opportunities for cooperation, whether in trade and energy supply or in space research. However, when it came to science policy towards the Soviet Union, the *Deutschlandspolitik* (policy concerning the two German states) of the Federal Government tended to prevail. Whether led by the CDU or SPD, they sought to use the MPS's scientific allure to advance their broader cultural and democratic objectives. This included incorporating the entire West German academic spectrum, especially the university humanities, into the exchange, and not least, to wrest concessions from the Soviet government on the Berlin issue. Hence, they repeatedly thwarted any independent science foreign political initiatives by the MPS, which for its part left no stone unturned in its efforts to bring its bilateral project plans with Soviet partners to fruition. West German foreign science policy and the MPS's science foreign policy regarding the Soviet Union operated at best in parallel, but often at odds. It was only during the period of Gorbachev's policy of *détente* that there was occasionally a collaboration, such as

the multinational cooperation in fusion research agreed to in 1985 as a scientific-diplomatic prelude to the Soviet-American arms reduction negotiations, which helped usher in the end of the Cold War.

The third foreign policy difference between the Federal Government and the MPS surfaced in the late 1950s and persisted, with reversed roles, until the government change at the end of the 1960s. In this case, leading representatives from within their own ranks felt challenged to overstep the MPS's guidelines for science foreign policy, which Chancellor Adenauer and his Defense Minister Strauß would have preferred to be maintained. The bone of contention, as Carl Friedrich von Weizsäcker, who led the effort on behalf of the MPS in connection with the Göttingen Declaration of 1957 and the Tübingen Memorandum of 1961 and also on later occasions, repeatedly and publicly articulated, was the lack of realism in West German foreign policy. This deficit, for Weizsäcker and his colleagues, was evident in the fact that the CDU-led state could not come to terms with its role as a nuclear weapon-less entity, diplomatically cornered itself with the Hallstein Doctrine, and was unwilling to acknowledge the geopolitical consequences of the lost World War II, particularly the Oder-Neiße line and the existence of a second German state, and beyond that, was in denial of the only conditional solidarity of the Western allies with their obstinate ally.

Given the fiercely debated and public anticipation of Willy Brandt's later *Ostpolitik*, one might have expected that the MPS's science foreign policy and the foreign science policy of the social-liberal governments, which also established scientific-technical cooperation as the third pillar of their new foreign policy, would harmoniously complement each other. However, with the exception of the scientific exchange with China launched under the auspices of the MPS in 1974, the opposite was the case: in scientific cooperation with the Soviet Union, which more than ever became a tool of West German Eastern diplomacy, the restrictions of the Foreign Office, which could rely on the support of the DFG, increased rather than decreased with respect to bilateral projects of the MPS with the Soviet Academy of Sciences. In policy consultancy, the quite science-friendly social-liberal governments and the MPS did not find common ground beyond narrowly defined expert committees assigned to the respective ministerial departments. On the one hand, the government increasingly relied on academic expertise in its foreign policy, which it could hardly summon from the Starnberg Institute, founded in 1970 for scientific policy consulting after the American model but operating quite differently, instead finding guidance from the newly emerging state-funded Institutes for Peace and Conflict Research outside of the MPS.³ On the other hand, the MPS benefitted from this academic specialization combined with an increasing functional differentiation of politics and science during the domestically turbulent and economically lean 1970s.

3 See Hauswedell, *Friedenswissenschaften*, 1997; Nehring, "Friedensforschung," 2011; Wagner, *Notgemeinschaften*, 2021, p. 430.

A focus on the core business of (natural) scientific research and a targeted, yet flexible deployment of scarce resources for cost-intensive, increasingly large-scale international scientific cooperations was the order of the day. These priorities set the framework for the subsequently formulated guidelines of further science foreign policy, which were based on foreign policy abstention.

This separation of politics and science, while occasionally debated intellectually during Chancellor Schmidt's and MPS President Lüst's times, had by the late 1980s solidified into a taken-for-granted norm within discourses and institutional practices. This went so far that the MPS itself, particularly its Chemistry, Physics and Technology Section (CPTS), would plead ignorance when asked by political publics for a scientific assessment of President Reagan's Strategic Defense Initiative, despite the astrophysical and radioastronomical expertise within its institutes. Similarly, the Biology and Medicine Section (BMS) reacted defensively to calls from MPS Senators from the public and political spheres to investigate the causes of ecological degradation and the risks posed by the prevailing economic growth paradigm for life conditions on this planet, responding with the excuse that the overly complex biogeochemical and physical interconnections of these phenomena were contrary to their still dominant molecular biological research paradigm. However, the MPS, particularly in the form that it took under its President Staab, became vocal when the Kohl government's loyalty to Atlantic alliance went as far as diverting parts of its research budget to manned spaceflight, thus indirectly supporting the U.S.-American SDI and space programs through this civilian route. This alliance-driven, power-oriented, and prestige-motivated research funding did not benefit the space research conducted at the relevant MPIs. On the contrary, their experiments, which relied on American and European satellites and rocket programs, would only become unnecessarily more expensive due to the additional security expenses for "our man in space," unless in the later 1980s one could opt for the more affordable ride-along offers abundantly provided by the Soviet space agency. Moreover, there was concern that the long-demanded financial increases for German basic research in general and the MPS in particular would continue to be withheld.

As an interim conclusion, it can be noted: throughout the entire Cold War era, the foreign policy of the federal governments consistently set limits to the science foreign policy interests of the MPS—especially when these interests were directed towards the countries behind the Iron Curtain, particularly the Soviet Union. Only occasionally, in specific foreign policy constellations, did the MPS's science foreign policy interests and the government's foreign science policy goals complement each other and mutually promote one another. To speak of a coordinated science diplomacy was out of the question.

The decline of the Soviet empire and the imminent prospect of German reunification did not just dim the spaceflight dreams of the Federal Government and the associated disagreements between the MPS and the alliance policy of the Bonn Republic. Both events also presented the MPS with entirely new chal-

lenges. In the relationship between East and West Germany, it was necessary to expand the science system into the *Beitrittsgebiet* (acceding territory) in a way that was as structurally conforming as possible, in agreement with the Federal Government and in conjunction with the other West German science and research organizations. There was to be no shaking up of the established cultural federal and research organizational peculiarities of the old *Bundesländer*, and especially not of the MPS's institutionalized special role in non-university basic research. The MPS—whether president, Administrative Headquarters, individual institutes, research groups, or MPI directors—was highly committed and, measured against its own goals, achieved resounding success: it not only recorded the highest increase in new institutes since the economic miracle years but also managed to handle this increase in a structurally conforming way without identity-threatening concessions to the dissolving East German science system and its remaining scientists.

Europeanization of Research Funding and Its Complexities

The MPS faced another challenge, concurrent in time but more difficult to tackle. This challenge arose with the national expansions of the European Union and the concurrent goal of the European Commission in Brussels to strengthen the cohesion of the member states, deepening their collaboration across an increasing number of societal and political domains.

From the MPS's perspective, the Europeanization of science and research was a double-edged sword. On the one hand, even before the actual end of World War II, concepts of larger transnational science spaces on Western European soil began to sprout. They might have been thought of on a regional level, imagining the 'trans-Rhenish' integration of the Southwestern German research area into the French one. Or, as envisaged by the British side, as a continental counterbalance to the scientific power across the Atlantic. In any case, these ideas contradicted American notions, according to which research institutes in Germany, especially the Kaiser Wilhelm Institutes, should be closed, and scientific research—thoroughly demilitarized, denazified, and under long-term control—would only be permitted at democratically reconstructed universities, and furthermore, Western European scientific structures should be reshaped in line with their own scientific and political leadership. It was this early resistance from some leading French and even more so British scientists to the scientific hegemony of the USA, manifest at least since Hiroshima and Nagasaki, that ultimately led to the continuation of the Kaiser Wilhelm Institutes in the Western occupation zones and their transformation into the MPS.

The ideas of a future European research area were indeed too incoherent; their proponents perhaps not resolute or enduring enough: the vision did not develop in a European Science Union akin to the Coal and Steel Community, the EEC, or EURATOM. Instead, the science systems in Western European countries reorganized themselves strictly along national lines and according

to their respective historical idiosyncrasies after the war. This established the fundamental contradiction that turned the dream of a European research area, one that could compete with American and Soviet innovation and performance, into a nightmare time and again. This was perhaps even more the case for the MPS than for its Western European partner organizations. Few had as much to lose in terms of institutional, subject-related, personnel, and financial autonomy as the state-funded stronghold of German basic research: should a European research policy ever form, it would be unlikely to replicate the Federal German structures within which the MPS's extensive autonomy was enshrined.

Initially, the research policy of the EC was confined to the areas of interest of its three founding communities and thus to fields attributed to applied research. It barely touched the interests of the MPS, with the exception of the Institute and later the Max Planck Institute for Plasma Physics (IPP), which was one-third co-financed by EURATOM.⁴ The vague post-war ideas of a European research area, which would consist of more than bilateral exchange programs, a collection of bilaterally operated large research facilities, and CERN as a solitary multinational beacon, would only materialize in coordinated resistance to the research policy plans of the European Commission. Together, and with some success, European research organizations, including the MPS, insisted that the European Science Foundation, founded in 1974, be managed by the participating science organizations themselves and that its albeit modest funds be distributed according to self-defined criteria of scientific quality rather than Brussels-preferred cohesion policy aspects.

However, for the large sums of the Research Framework Programs (RFP), which started in 1984, the Brussels Commission continued to keep a firm grip, not relinquishing control over either the thematic foci, according to its economic and cohesion policy priorities, or the organizational guidelines and grant procedures. From the perspective of the MPS, this top-down approach to program research was counterproductive in every respect: it was only marginally suitable for the basic research conducted under its roof. It threatened, rather, the sublime status of base funded, purpose-free research. Not all MPIs held back nobly; some indeed successfully applied for EU funding, thereby giving project research, which was viewed very critically by MPS President Staab, increasingly more space within the MPS. Since the RFPs were financed by tax money from the EC countries, they also diverted funds that would otherwise have been available for domestic research funding, with its well-balanced mix of base and project financing. In short, this form of Europeanization of research funding was eroding the research policy foundations of the MPS.

The MPS was far more amenable to bi- or even multilateral European research institutions and collaborations that were solely initiated, operated, and accounted for by the participating partner institutions, even if they generally tapped into

4 Boenke, *Entstehung und Entwicklung*, 1991.

public funds that the partners procured from their respective national funding bodies. Initially, the European research area was marked by such Big Science collaborations, which were tied to cost-intensive, large-scale instrumental infrastructures. In particular, the radioastronomy, nuclear, and astrophysical research fields, prominently represented within the MPS, proved to be early promoters of a primarily science-driven Europeanization of research. Since the 1960s, MPS biologists, along with European colleagues, especially from Great Britain and France, but also beyond the EC/EU, were engaged in establishing a network in Europe that would accommodate their small science approaches and help to close the gap with the United States in molecular biology. The path that this grassroots bioscience movement took led from the establishment of the European Molecular Biology Organization (EMBO) in 1964 to the founding of the European Molecular Biology Conference, where the countries that wanted to support the project in the long term came together. Smaller European countries such as Denmark, Sweden, and the Netherlands were particularly active in this regard. This culminated in 1974 with the construction of the European Molecular Biology Laboratory (EMBL), which—thanks to the persistent lobbying of MPS biologists—was first located in Heidelberg and now has five additional European sites. It was, in a sense, the archetypal process of a bottom-up organizing European research network and the counterpart to the top-down organized RFPs of the Brussels Commission.

It is no coincidence, therefore, that especially bioscientists from the circles of EMBO and EMBL, including committed colleagues from the MPS, as of 2000 played a key role in shaping the funding provided by the European Research Council (ERC) into what it is today. This network possessed both the grassroots political know-how and access to governments—again, primarily those of smaller EU countries. They also had the persistence necessary to extract from the Brussels Commission the concessions needed for a research funding mechanism that largely operated according to the principles of scientific self-governance. With the funding formats of Starter and Advanced Grants for researchers deemed excellent, who had self-defined projects and their own research teams, the MPS could identify, as they closely mirrored its junior research groups in biological research, which had been first established in 1969 with the opening of the Friedrich Miescher Laboratory. However, the contention over program-oriented versus self-initiative research, project versus base funding, and political control versus scientific self-governance is likely not resolved. The MPS will have to continue advocating for its distinctive model of research organization and financing at both the national and European levels.

Globalization of Scientific Cooperation and Competition

If one looks at the MPS, the latest phase of globalization—potentially ended by the Russian military assault on Ukraine in February 2022—actually began in the mid-1970s, a good decade and a half before the term began its multilingual

ascent to prominence culminating around 2005.⁵ In 1974, the MPS and the Chinese Academy of Sciences (CAS) established their first exchange program, which has been continuously expanded and maintained to this day. Especially in the first two decades, these exchanges significantly differed from other bilateral relations that the MPS maintained with partner institutions, colleagues, and peers abroad: Firstly, the MPS took on a genuinely scientific-diplomatic task at the behest of the Federal Government. Instead of the DFG, which was rejected by Beijing due to its relations with Taiwan, the MPS was to represent the entire West German scientific community, including its universities, in China, and to prepare and administer the corresponding exchanges and joint projects with additional federal funds. Secondly, these scientific relations were not just seen as the first concrete manifestation of the diplomatic relations established between the Federal Republic and the People's Republic of China in 1972. They were also intended to serve as a gateway to the Chinese market, on whose opening and development West German companies placed their hopes after the transition from the economic miracle years to the stagflation of the 1970s. Thirdly, these scientific relations shaped by the MPS were embedded in the geopolitical strategy of the Nixon administration in Washington, which aimed to introduce the other communist superpower as an independent player to break the bipolar world order of the Cold War.

Moreover, contrary to their principle of only engaging in collaborations that directly served their own research interests, the MPS, its institutes, and its scientists traveling to China accepted the role of scientific development workers, a position into which they were particularly pushed by the Chinese side. Given the initially diagnosed post-Cultural Revolution deficit in Chinese research institutions, the development aid investment paid off surprisingly quickly and in a twofold sense: on one hand, the MPS was able to establish lasting and increasingly productive collaborations over the years, be it in materials science, astrophysics, or the life sciences, securing its place among the most important partners for China from the USA, the UK, Japan, and Germany, even into the period when China itself became a highly sought-after scientific cooperation partner. On the other hand, the MPS was able to test, through close, often personally based collaboration with CAS institutes, to what extent their own instruments for promoting young researchers were viable under very different political and social constellations and what adjustments might be necessary and feasible. To what extent processes of convergence have taken place from the Chinese side, such as whether the establishment of MPS-CAS junior research groups contributed to de-hierarchization of research practices in the participating CAS institutes or even of the Chinese science system, can

5 Compare, for example, the very similar trends in the use of the terms "Globalisierung," "globalization," and "globalisation" in the Google Books Ngram Viewer, <https://books.google.com/ngrams/>, last accessed May 29, 2022. Levitt is credited with the current use of the term, see Levitt, "Globalization," 1983; cf. Lavelle, "Levitt Dead," 2006.

only remain in the realm of speculation based at best on individual observations without access to Chinese sources.

Conversely, it can certainly be stated that the instrument of junior research groups, which was transferred abroad for the first time in the mid-1990s, specifically to the MPS-initiated guest laboratory in Shanghai, has proven itself, albeit in a subsequently modified form. Initially, it was also considered for establishing scientific relations with the post-Soviet countries of Central and Eastern Europe.⁶ More recently, the Dioscuri program was launched, specifically tailored to support leading-edge research in these countries and administered by the MPS. It began in 2019 with the opening of the first five centers in Poland, four of which are located at the Polish Academy of Sciences and collaborate closely with partners from German universities and research institutions, including two Max Planck Institutes. Further Dioscuri Centers in the Czech Republic are to follow.⁷

In contrast, the MPS maintains more than seventy such partner groups, as junior research groups are now called, across all regions of the world, particularly in scientifically emerging countries in Asia, Latin America, and Africa, with more than thirty currently in India and about twenty in China alone. Unlike the first two Shanghai groups with their globally advertised leadership positions, these partner groups are now more closely tied to the research interests of the MPS: only postdocs who have previously worked at an MPI are eligible for group leadership, and only if they continue to research a topic of interest to the previously hosting MPI. Furthermore, a capable institute must be found in their home country where this research can be conducted and which is also interested in a cooperation with the respective MPI. In this way, the MPS has not only globalized its own promotion of young researchers but also reconnected to its long-standing principle of intrinsically driven collaborations, directly negotiable between the involved institutes. Such bilateral junior and partner groups, thanks to their limited personnel and financial outlay and their usual five-year duration, represent a manageable risk. In addition, the respective foreign partner institute is responsible for cushioning any friction that may arise between this predominantly MPS-funded format of young researcher promotion and the respective national science system.

These partner groups remain to this day the most widely used tool of the MPS for positioning itself in the now globally extended field of scientific cooperation and competition.⁸ But they were just the beginning. Since the turn of the millennium, the toolkit has been further diversified in response to the federal

6 *MPG-Jahrbuch* 1997, p. 46.

7 See the website of the Dioscuri Programme: <https://www.mpg.de/internationales/dioscuri-programm>, last accessed on July 28, 2022. The Dioscuri Centres are co-funded by the BMBF and the respective host countries.

8 Max Planck Society: Partner Groups, <https://www.mpg.de/de/international/partnergruppen>, last accessed on June 2, 2022. The following outlook is based solely on publicly available material, as files up to the year 2002 only could be viewed within the GMPG project.

government's internationalization strategy for foreign science policy.⁹ Added to the mix were: the International Max Planck Research Schools, graduate colleges based at Max Planck Institutes and operated in cooperation with regional and foreign universities; so-called virtual labs, where MPS research groups collaborate with those at foreign institutions on common thematic fields using complementary methodological and instrumental approaches; Max Planck Centers located at the MPIs as bi- or multilateral cooperation platforms for selected research institutes internationally regarded as equally excellent; Max Planck Fellow Groups, and other formats.¹⁰ They share a triple objective: first, to leverage and capitalize on "growth dynamics abroad" and expand their own "research portfolio." Secondly, to make the "Max Planck" brand name even more known within the globalizing scientific communities and to make the various, but by no means new, international cooperations visible under this label, increasing their international "visibility."¹¹ Third, with the tailwind of such an internationally established brand name the MPS aims to improve its chances in the 'Global Race for Talent,' to attract both young scientists and already established research personalities worldwide for the MPS and its institutes. In his millennium address to the MPS General Meeting in June 2000, President Markl took the opportunity to warn in far-reaching reflections about the demographic developments that would intensify in the 21st century at the national, international, and global level, and particularly about the resulting "scarcity of talent." He called on the then-serving Federal Minister for Research Edelgard Bulmahn and the *Länder* prime ministers to equip the MPS in such a way that it could compete in the global contest for the increasingly scarce resource of "scientifically gifted and enthusiastic individuals."¹²

In this competition, the instruments developed in the following two decades of the 21st century, which are only briefly outlined here, appear to have proven effective, not least due to their limited and temporary commitment of funds and flexible management in direct bilateral cooperation. The quantitative increase and geographic expansion of these various forms of cooperation across all continents suggest this, as does the rapidly growing proportion of scientific personnel with foreign passports at the newly founded Max Planck Institutes in the new East German *Länder*; among the MPS directors alone, this proportion rose from

9 Federal Ministry of Education and Research: *Internationalisierung*, 2016.

10 *The Max Planck Society. At Home in Germany—Present in the World*, 2022. <https://www.mpg.de/15297895/max-planck-weltweit>, last accessed on June 2, 2022.

11 *The Max Planck Society. At Home in Germany—Present in the World*, 2013/14. https://web.archive.org/web/20150317103932/http://www.mpg.de/7897212/Zu_Hause_in_Deutschland_de.pdf, last accessed on July 29, 2022.

12 Markl, "Grenzenlosigkeit," 2000, p. 15. In 1997, McKinsey & Company initiated a multi-year study among American companies titled *The War for Talent*, see Michaels, Handfield-Jones, Axelrod, *The War*, 2001. In view of global developments, the more peaceful term "global race for talent" subsequently became established, see for example Kapur and McHale, *Give Us Your Best*, 2005; Lewin, Massini, Peeters, "Companies," 2009.

25 percent in 2000 to 30 percent in 2013 and currently to 37 percent.¹³ The extent to which this significant internationalization of the scientific leadership has brought about new forms of communication within the institutes and in the sections of the MPS, different ways of professional cooperation, loyalty, and mobility, possibly homogenizing nationally specific scientific work cultures and smoothing out previous elements of a Max Planck-specific corporate identity, remains to be investigated.

The attempt in the 2000s to export the specific MPS business model of publicly funded and simultaneously content-independent, personnel-independent, and administratively autonomous Max Planck Institutes to the science systems of other countries has not progressed beyond the initial pilot projects. Although lengthy preparatory phases with difficult financing negotiations allowed the Max Planck Florida Institute for Neuroscience in 2009 and the Max Planck Institute Luxembourg for International, European, and Regulatory Procedural Law in 2012 to begin operations, no further foreign institutes with comparable foreign funding have been added since, and they are no longer prominently mentioned in recent public statements by the MPS as important elements of its own “internationalization strategy.”¹⁴ On the contrary, early in 2024 the MPI Luxembourg was transformed into an Interdisciplinary Center for European Law at the University of Luxembourg.

The number of so-called partner institutes has also stagnated: In addition to the Shanghai guest laboratory, which was transformed into the CAS-MPS Partner Institute for Computational Biology (PICB) in 2005, only the Biomedicine Research Institute of Buenos Aires—CONICET—Partner Institute of the Max Planck Society (IBioBA) in Buenos Aires was added in 2007.¹⁵ These partner institutes were indeed funded by their host countries and required significantly

13 Markl, “Grenzenlosigkeit,” 2000, p. 26; The Max Planck Society. At Home in Germany—Present in the World, 2013/14: https://web.archive.org/web/20150317103932/http://www.mpg.de/7897212/Zu_Hause_in_Deutschland_de.pdf, last accessed on July 29, 2022; Facts and Figures. Closely connected with top talents from around the world: <https://www.mpg.de/internationales/zahlen-und-fakten>, last accessed on August 11, 2022. Currently, the percentage of scientific staff and doctoral candidates from abroad lies between 50 % and 60 %.

14 Henning and Kazemi, *Handbuch*, vol. 1, 2016, pp. 523–526, 918–921; Henning and Kazemi, *Handbuch*, vol. 2, 2016, pp. 1396–1407. The art history institutes in Rome and Florence are exclusively funded by the MPS; for the MPI for Psycholinguistics in Nijmegen, the Dutch state contributes to the operational costs. For the development of the MPS’s internationalization strategy, see the press releases from Jan. 18, 2013: We need to knit a worldwide network (<https://www.mpg.de/7478568/Internationalisierung>, last accessed on Aug. 11, 2022) and from June 1, 2021: Cooperations are an expression of our scientific freedom (<https://www.mpg.de/16980624/orientierung-fuer-internationale-kooperationen>, last accessed on August 11, 2022). For the transformation of the MPI Luxembourg see: <https://www.mpi.lu/home/>; last accessed April 25, 2024.

15 IBioBa-MPSP—CONICET: <http://ibioba-mpsp-conicet.gov.ar/index.php/en/>, last accessed on Aug. 11, 2022.

less institutional commitment from the MPS. However, they operated according to the scientific policy rules customary in their countries, which in the Chinese case meant, among other things, that the managing director was accompanied by a CPC party secretary, who undoubtedly did more than just assist in the preparation of five-year plans. Indeed, the contractual cooperation between the MPS and the PICB was tacitly terminated in December 2020.¹⁶

MPS scientists are urged to carefully review the “Guidelines for the Structuring of International Cooperations of the Max Planck Society” adopted by the Senate in 2021 and to consult the Ethics Council or the Committee for Ethics in Security-Relevant Research (KEF, Kommission für Ethik sicherheitsrelevanter Forschung) of the MPS before entering into international cooperation agreements. This is particularly important when dealing with “research prone to misuse” and when the partner institutes are located in countries with “special structural, regulatory, political, but also ethical and cultural conditions” that “are not or only partially compatible with those found in Germany.”¹⁷ MPS researchers willing to cooperate are encouraged to not only orient themselves to the academic and scientific freedom of scientists as laid down in the International Covenant on Economic, Social and Cultural Rights of the UN, the Charter of Fundamental Rights of the EU, and the German Basic Law (Art. 5, Para. 3). They are also warned of particular risks such as signs of corruption and espionage in science or possible restrictions on upholding human rights and respecting democratic structures in the prospective partner countries. According to the guidelines, such risks do not preclude cooperation but require continuous documentation of the measures taken to minimize risk throughout the duration of the research project.¹⁸ As for the legal reality of the international, national, and MPS-specific regulations invoked in the guidelines, and the handling of the recommended security precautions, as well as how political changes in the partner countries, not least in XI Jinping’s China, impact them, would be worth further research.

For now, it remains to be noted that such political risks suggest that, in line with the MPS’s preferred science foreign policy, restraint should be exercised in long-term institutional engagements, such as those associated with the establishment of partner institutes, and especially institutes abroad. Instead, it’s advisable to use more flexible, time-limited instruments with moderate cost involvement. Especially when political circumstances—as they have been since February

16 CAS-MPG Partner Institute for Computational Biology: <https://www.picb.ac.cn/picben/#/channelData/7c052e3f63de4d70afa62407a433b77e>, last accessed on Aug. 11, 2022. However, in terms of gender politics Shanghai relied completely on the German partner as a model. There was exactly one woman on the list of the 2020 twenty “principal investigators”. The contractual cooperation of the MPS with the PICB ended in December 2020: <https://www.mpg.de/15290773/china-historie>; last accessed on Aug. 19, 2022.

17 The guidelines adopted in Mar. 2021 can be accessed at: <https://www.mpg.de/16767044/mpg-leitlinien-int-kooperationen-2021.pdf>, last accessed on June 3, 2022, Quote: 4.

18 Ibid., p. 7.

2022—suggest a foreign science policy in lockstep with other German science organizations and at least on an institutional level, the suspension of all scientific cooperation with Russia.¹⁹

In the current situation with Russia, however, it's not just about comparatively small and temporary partner groups or Max Planck Centers, but rather extensive and long-term projects like the ICARUS project, which observes the migration movements of animals around the globe from the ISS to gain insights for species protection, the spread of infectious diseases, and ecological changes, as well as to potentially anticipate natural disasters. Among those projects suspended is also the cooperation at the Siberian climate measuring tower ZOTTO, an important link in a worldwide chain of climate measuring stations providing data for calculating the interactions of greenhouse gases and climate change.²⁰ In the face of such acute value conflicts between geopolitics and internationally networked, highly technologized environmental and climate research, the MPS as an institutional actor is challenged to redefine its role in this renewed geopolitical confrontation in Europe and beyond in international politics. And not just that: it remains to be seen whether the MPS can effectively counteract the currently increasing centrifugal forces of nationalistic interest policies within the painstakingly and still inadequately developed research area of the EU member states with its bilateral instruments of scientific cooperation such as the Max Planck and Dioscuri Centers. This includes, for instance, considering the significant consequences of Brexit for both sides, which also affect science and research, or the science policy restrictions that, for example, have impeded autonomously designed research collaborations with the MPS in countries like Poland until recently or still Hungary.²¹

19 On the MPS website, under the keyword “country portals” for Russia, one currently finds only the terse statement: “Due to the Russian war of aggression in Ukraine, the Max Planck Society has currently suspended its scientific contacts at the institutional level.” <https://www.mpg.de/14474361/russland>, last accessed on June 3, 2022.

20 During the German-Russian Year of University Cooperation and Science 2018–2020, the acting head of the MPS's International Relations Department, Felix Kahle, reported about 390 Russian visiting and early career scientists in 2019 and just under 90 cooperation projects with Russian partner institutions: <https://wissenschaftspartner.de/interview/auf-augenh-he-zusammenarbeit-der-max-planck-gesellschaft-mit-russischen-wissenschaftsorganisationen/>, last accessed on Feb. 3, 2022. For the status of collaborations of some MPIs with Russian partner institutions four months after the Russian attack on Ukraine, see the article in *Spektrum der Wissenschaft* from June 29, 2022: Nestler, Disturbed Contacts, 2022. <https://www.spektrum.de/news/russland-wie-sich-das-wissenschaftsembargo-auswirkt/2035294>, last accessed on June 30, 2022. In a written communication to CS on June 30, 2022, Kahle confirmed that the ICARUS cooperations installed on the ISS and at the ZOTTO measuring tower are suspended.

21 For the MPS's stance on the crisis developments in Europe, see <https://www.mpg.de/15008149/bilaterale-zusammenarbeit-und-netzwerke>, last accessed on Aug. 11, 2022. Regarding the science policy consequences of Brexit, see O'Grady, United Kingdom, 2022, <https://www.science.org/doi/epdf/10.1126/science.add6987>, last accessed on Aug. 3, 2022.

The MPS and Its Researchers as Actors in International Politics

In the decades since the end of World War II, the principle of a foreign-policy-distant, autonomous, and flexible science foreign policy, serving exclusively the research interests of MPS members, was not only questioned from outside, as shown here by the Federal German foreign policy and by the processes of Europeanization and Globalization. MPS affiliates also did not always adhere to it, finding themselves, especially as scientists, occasionally compelled to comment on foreign policy developments. The separation of the scientific and the civic persona, of institution and individual, was by no means a given, not always practical, sometimes not intended, and often contested.

This began with the contradictory lessons that, especially the prominent figures of the time who continued their influence into the 1970s, drew from their experiences of the war and the immediate post-war period. On one hand, the integration of the KWS into the NS regime's expansion and extermination policies nearly cost it its institutional existence after 1945. For the MPS as its successor, it seemed advisable, at least according to the long-time Secretary-General Telschow, to meticulously separate the rapidly intensifying international collaborations of its institutes and scientists from state foreign policy. On the other hand, the most prominent MPS scientists like Otto Hahn, Werner Heisenberg, Adolf Butenandt, and not least Carl Friedrich von Weizsäcker, as its most famous public intellectual, felt called upon not only to retroactively confront the irrationalism to which they liked to reduce the NS regime, in order to dissociate it from themselves and "the sciences." They also wanted to contribute to the rationalization of future politics—and that primarily meant preventing nuclear war.

The first attempt with the Mainau Declaration of 1955, which gathered Nobel laureates from predominantly Western countries in Lindau on Lake Constance, faded away as a politically inconsequential admonition for peace to the world public. The second attempt in 1957 with the Göttingen Declaration led to a risky confrontation between the MPS and the Federal Government due to its concrete nuclear policy statements directed at the government, provoked criticism from American colleagues and recognized West German philosophers but received applause from the side the authors considered wrong, namely the movement of West German rearmament and nuclear weapon opponents, with whom they did not necessarily want to be associated. The third attempt, the Tübingen Memorandum of 1961, showed that the lessons from the two previous ones had been learned: on the subject matter, namely the critique of nuclear policy and *Deutschlandpolitik*, education and social policy of the Federal Government, they expressed themselves even more pointedly. At the same time, thanks to the well-considered composition of the eight-member group of authors from the media, the Protestant Church (EKD), and only three MPS scientists, along with the institutional backing of the Bonn EKD office, the MPS was out of the firing line. With the carefully graded dissemination and publication strategy, the

authors' group continued to call the shots even when public discussion flared up, not on the streets, but in leading media, parties, and associations. As intended, it succeeded in initiating a foreign policy discourse change in the Federal Republic, even though it would take a few more years for the corresponding policy change to happen.

Given this domestic political success, it is all the more surprising that not only the MPS as an institutional actor but also its prominent scientists were very reserved on the stage of international politics—in stark contrast to their American and British colleagues. This was especially evident in the non-relationship between the MPS and the Pugwash Conferences on Science and World Affairs (PCSWA). It certainly was not due to foreign reservations about the former KWS scientists of the Nazi era. On the contrary, the American and British Pugwashites would have gladly welcomed MPS scientists who had transitioned from atomic to astrophysicists, from nuclear to cosmochemists and also biologists like Butenandt or Manfred Eigen with their valuable contacts to GDR colleagues into their circle. The “German question” remained and continued to be a crystallization point of the Cold War and thus high on the Pugwash agenda. Even the Federal German Foreign Office had understood by the early 1960s that Pugwash could no longer be dismissed as a communist front organization but had to be taken seriously as a forum for potentially influential second-track diplomacy. Therefore, it would have liked to see academically prominent West German representatives with international standing, preferably from the MPS, interacting at eye level with the committed American, British, and Soviet Pugwashites. However, no sufficiently prominent MPS scientist picked up the ball. Instead, scientific staff and colleagues from the second rank were sent to the Pugwash meetings—and received, through the Starnberg Institute, and later through the remaining, but completely marginalized groups within the MPS, generous infrastructural support for their activities. In this way, the MPS remained an indispensable institutional pillar for the West German Pugwash group until the 1990s, but paid little attention to their activities.²²

Overall, the MPS showed itself to be somewhat resistant to advice as an institutional actor when it came to the question of whether and how scientific policy consultancy beyond narrowly defined expert committees could be established under its auspices. The Starnberg MPI for the Study of Living Conditions in the Scientific-Technical World certainly did not develop in the 1970s into what the American advisors had tried to convey to the MPS's leadership circle around Butenandt, Heisenberg, and Weizsäcker prior to the institute's founding. Whatever this institute ultimately represented, its failure certainly accelerated the

22 This was also the assessment of Reiner Braun, who, over nearly four decades in various roles, coordinated the anti-nuclear war and peace initiatives that followed the Krefeld Appeal of 1980, among others, for several years as the managing director of the Federation of German Scientists (VDW) including the West German Pugwash Group located there; cf. interview with Braun (Sachse) on March 8, 2018.

further withdrawal of the MPS as an institutional actor from the realm of politics and reinforced the position represented by the Administrative Headquarters of a science foreign policy that served solely the research interests of its institutes and members.

With the retirement of Weizsäcker and his political ally, the educational researcher Hellmut Becker, in 1980/81 and the associated dissolution or restructuring of their institutes, a marked generational shift was completed for the intellectual history of the MPS, perhaps even more so than for its scientific history. With the physicist and philosopher Weizsäcker, the last protagonist disappeared from the institutional fabric of the MPS, upon whom the MPS's self-image as a corporately acting scientific-political entity—still quite evident in the 1960s but rapidly fading thereafter—could be projected, albeit with diminishing convincing power internally and externally. Instead, since the end of the 1970s, intense and conflict-ridden efforts have been made to redefine the role of MPS scientists in West German politics and to demarcate the boundaries between politics and science, between civic opinion and scientific expertise. This was evidenced, among other things, by the deep personal rift between former colleagues at the MPI for Physics, Hans-Peter Dürr, who saw himself in the tradition of Einstein and Weizsäcker when he insisted on his identity as an MPS scientist and political intellectual in his public appearances, and Reimar Lüst, who as MPS President unsuccessfully tried to commit him to the new boundary regime. The subsequent president, Heinz Staab, also explicitly denied Dürr institutional recognition for his increasingly expansive peace and environmental activism. Nevertheless, Dürr received backing not only from social movements and their alliance partners in parts of the political parties outside of the MPS, but also from scientific staff within the institutes, who in the 1980s publicly and in a coordinated manner spoke out against nuclear armament and ignored presidential or directorial warnings to refrain from political activism as members of the MPS.

In light of these developments, it was logical that the large congresses in Mainz in 1983 and Hamburg in 1986 took place with thousands of participants. There, natural science researchers, in particular, engaged critically with the NATO-Double Track Decision and the ensuing arms build-up, with significant participation from MPS members, including the directors of the Cologne MPI for Plant Breeding Research and, of course, Dürr, but without institutional support or even commentary from the MPS. The MPS's leadership in Munich took no documented notice of the genuinely scientific diplomatic activities, such as those undertaken by Peter Starlinger, Horst Afheldt, and Albrecht von Müller within Pugwash and by Dürr in personal contact with Gorbachev. The disarmament strategy studies from Starnberg, which formed the scientific basis for the diplomatic engagement of MPS scientists, were appreciated in the international arms control community but not within the MPS. Despite the commitment of these and other MPS scientists, the MPS as an institutional actor played no part in ending the Cold War, with one exception: thanks to the fusion

research conducted at the MPI for Plasma Physics (IPP) and the direct contacts of its director, Klaus Pinkau, with Soviet colleagues and Gorbachev's scientific advisors, the MPS was also involved when, in 1985, it came to setting a concrete first step towards further disarmament negotiations with the multinational cooperation agreed upon between the heads of the two superpowers in Geneva for the development of a fusion reactor.

Beyond the bloc confrontation, new developments set in during the 1990s: In the German reunification, with the intensification of the Europeanization of science and research, and in the accelerating globalization of scientific cooperation and competition, the MPS as an institutional actor was in demand not only by German politics and its newly proclaimed science diplomacy. The MPS quickly understood that it had to shape these political processes and simultaneously test new instruments of bi- and multilateral research collaboration, especially in the promotion of young scientists, if it was to assert itself as a leading German and relevant international research organization.

Moreover, the Earth system sciences, previously based mainly in the Max Planck Institutes for Chemistry and for Meteorology, spread more broadly within the Max Planck Society and expanded into the Biology and Medicine Section. This development gave rise to a new research cluster, which intersects with international politics like few others: its object of knowledge is the Earth system with its interacting biogeochemical cycles from the ocean floor to the stratosphere, including human-induced influences and changes; its research tools include globally networked monitoring stations on water and land, in the air and in space. Accordingly, the research practice demands the closest international cooperation regarding technical designs and mathematical modeling, data collection, transfer, evaluation, and interpretation. Ultimately, the results are of utmost relevance to national and international climate and environmental policies. One would think that on such a research field, science diplomacy and science foreign policy would form a harmonious symbiosis. And for a while, this may have been the case, but the symbiosis did not last; most recently, Putin's war of aggression against Ukraine shattered it. On one hand, Russia is a central player in this field of research, not only because of its intercontinental reach and the Earth system developments observed and taking place there but also due to the long-established and highly valued scientific expertise in ecological and climate research located there, appreciated by MPS scientists. On the other hand, Putin's regime has been increasingly rigid against dissenting scientists for years and appears to have recently cut off the dialogue between critical science and authoritarian politics, a dialogue that since Khrushchev's times had been the prerequisite for cross-block diplomatic initiatives by scientists from both sides. This reassertion of the primacy of foreign science policy has also led the MPS, along with the 'Holy Alliance' of German science organizations, to deviate from its maxim of a science-intrinsic policy of international research cooperation and to suspend its relations with Russian partner institutions until further notice. Regrettably, this suspension affects research projects that could

help better understand and, what is long overdue, steer planetary change in a better direction. This situation is not just particularly tragic, but it also raises the question of whether the foreign policy-driven boycott has indeed squandered a final chance for science diplomacy.

Abbreviations

A

AA	Federal Foreign Office (Auswärtiges Amt)
ABM	Anti-Ballistic Missiles
ADL	Arthur D. Little, Consulting Firm
AdW	Academy of Sciences (Akademie der Wissenschaften)
AS-SU	Academy of Sciences of the Soviet Union
AFCRC	Air Force Cambridge Research Center
AG	Working Group (Arbeitsgruppe)
AG	Joint Stock Company (Aktiengesellschaft)
AGF	Working Group of Major Research Institutions (Arbeitsgemeinschaft der Großforschungseinrichtungen)
AKA	Committee for the Coordination of International Relations (Ausschuss zur Koordinierung der Auslandsbeziehungen)
AS	Academia Sinica
ASA	Atomic Scientists Association (UK)
ASAT	Anti-Satellite Weapons
AvH	Alexander von Humboldt Foundation
AWM	External Scientific Member (Auswärtiges Wissenschaftliches Mitglied)

B

BAF	Advisory Committee on Research Policy (Beratender Ausschuss für Forschungspolitik)
BAFT	Advisory Committee on Research and Technology (Beratender Ausschuss für Forschung und Technologie)
BAS	Bulletin of the Atomic Scientists
BBAW	Berlin-Brandenburg Academy of Sciences and Humanities (Berlin-Brandenburgische Akademie der Wissenschaften)
BDI	Voice of German Industry (Bundesverband der Deutschen Industrie)
BGBI	Federal Law Gazette (Bundesgesetzblatt)
BIOS	British Intelligence Objectives Sub-Committee
BMAt	Federal Ministry for Atomic Energy (Bundesministerium für Atomfragen)
BMB	Federal Ministry for Inter-German Relations (Bundesministerium für innerdeutsche Beziehungen)
BMBF	Federal Ministry of Education and Research (Bundesministerium für Bildung und Forschung)
BMBW	Federal Ministry of Education and Science (Bundesministerium für Bildung und Wissenschaft)
BMFJG	Federal Ministry of Family Affairs, Youth and Health (Bundesministerium für Familie, Jugend und Gesundheit)

BMFT	Federal Ministry of Research and Technology (Bundesministerium für Forschung und Technologie)
BMI	Federal Ministry of the Interior (Bundesministerium des Inneren)
BMS	Biology and Medicine Section
BMV	Federal Ministry of Defense (Bundesministerium der Verteidigung)
BMwF	Federal Ministry of Scientific Research (Bundesministerium für wissenschaftliche Forschung)
BND	Foreign Intelligence Service of Germany (Bundesnachrichtendienst)
BRD	Federal Republic of Germany (Bundesrepublik Deutschland)
C	
CADIS	Calar Alto Deep Imaging Survey
CAS	Chinese Academy of Sciences
CASS	Chinese Academy of Social Sciences
CCB	Coalition Clean Baltic
CCMS	Committee on the Challenges of Modern Society
CDC	Carl Duisberg Center
CDU	Christian Democratic Union (Christlich-Demokratische Union)
CEA	Commissariat à l'Énergie Atomique
CERN	Conseil européen de la recherche nucléaire
CFC	Chlorofluorocarbons
CFE	Conventional Armed Forces in Europe
CFM	Chlorofluoromethane
CIOS	Combined Intelligence Objectives Sub-Committee
CISAC	Committee on International Security and Arms Control
CKA	China Coordination Committee (China-Koordinationsausschuss)
CLORA	Club des Organismes de Recherches Associés
CND	Campaign for Nuclear Disarmament
CNPq	Conselho Nacional de Desenvolvimento Científico e Tecnológico
CNR	Consiglio Nazionale delle Ricerche
CNRS	Centre national de recherche scientifique
COCOM	Coordinating Committee on Multilateral Export Controls
COSINE	Cooperation for Open Systems Interconnection Networking in Europe
CPC	Communist Party of China
CPTS	Chemistry, Physics, and Technology Section
CSCE	Conference on Security and Cooperation in Europe
CSCPRC	Committee on Scholarly Communication with the People's Republic of China
CSIC	Consejo Superior de Investigaciones Científicas
CSS	Committee of Soviet Scientists for Peace and against Nuclear Threat
ČSSR	Československá Socialistická Republika
CSU	Christian Social Union (Christlich-Soziale Union)
CTI	Regio Comitato Talassografico Italiano
D	
DAAD	German Academic Exchange Service (Deutscher Akademischer Austauschdienst)

DAI	German Archaeological Institute (Deutsches Archäologisches Institut)
DAK	German Atomic Energy Commission (Deutsche Atomkommission)
DASA	German Aerospace Corporation (Deutsche Aerospace Aktiengesellschaft)
DAW	German Academy of Sciences in Berlin (Deutsche Akademie der Wissenschaften zu Berlin)
DDT	Dichlorodiphenyltrichloroethane
DED	German Development Service (Deutscher Entwicklungsdienst)
DESY	German Electron Synchrotron (Deutsches Elektronen-Synchrotron)
DFG	German Research Foundation (Deutsche Forschungsgemeinschaft)
DFR	German Research Council (Deutscher Forschungsrat)
DFU	German Peace Union (Deutsche Friedensunion)
DFVLR	German Aerospace Center (Deutsche Forschungs- und Versuchsanstalt für Luft- und Raumfahrt)
DGAP	German Council on Foreign Relations (Deutsche Gesellschaft für auswärtige Politik)
DG XII	Département Général XII
DIJ	German Institute for Japanese Studies (Deutsches Institut für Japanstudien)
DKP	German Communist Party (Deutsche Kommunistische Partei)
DKRZ	German Climate Computing Center (Deutsches Klimarechenzentrum)
DM	German Mark (Deutsche Mark)
dpa	German Press Agency (Deutsche Presseagentur)
DPG	German Physical Society (Deutsche Physikalische Gesellschaft)
DSAZ	German-Spanish Astronomical Center (Deutsch-Spanisches Astronomisches Zentrum)
E	
EAES	European Atomic Energy Society
EC	European Commission
EC	European Community
ECU	European Currency Unit
EDF	Électricité de France
EEC	European Economic Community
EISCAT	European Incoherent Scatter Facility in the Auroral Zone
EKD	Protestant Church of Germany (Evangelische Kirche Deutschlands)
ELDO	European Launcher Development Organization
ELSO	European Life Scientist Organization
EMBL	European Molecular Biology Laboratory
EMBO	European Molecular Biology Organization
ENUWAR	Environmental Effects of Nuclear War
ERC	European Research Council
ESA	European Space Agency
ESF	European Science Foundation
ESO	European Southern Observatory
ESRC	European Science Research Council
ESRO	European Space Research Organization

ESTA	European Science and Technology Assembly
EU	European Union
EUCIS	European Center for International Security
EURATOM	European Atomic Energy Community
EuroHORCs	European Heads of Research Councils
EUROTRAC	European Experiment on the Transport and Transformation of Environmentally Relevant Trace Constituents in the Troposphere over Europe
F	
FAO	Food and Agricultural Organization
FAS	Federation of American Scientists
FDP	Free Democratic Party (Freie Demokratische Partei)
FEST	Research Institute of the Protestant Study Community (Forschungsstätte der Evangelischen Studiengemeinschaft)
FF	Research Institute for Peace Policy (Forschungsinstitut für Friedenspolitik)
FhG	Fraunhofer-Gesellschaft
FHI	Fritz Haber Institute
FIAT	Field Information Agency, Technical
FRG	Federal Republic of Germany
G	
GCN	Global Challenges Network
GDR	German Democratic Republic
GfK	Society for Nuclear Research (Gesellschaft für Kernforschung)
GIRL	German Infrared Laboratory
GMPG	Research program “History of the Max Planck Society (1948–2002)” (Forschungsprogramm “Geschichte der Max-Planck-Gesellschaft (1948–2002)”)
GSHS	Humanities, Social Sciences, and Human Sciences Section (Geistes-, Sozial- und Humanwissenschaftliche Sektion)
GTZ	German Agency for Technical Cooperation (Deutsche Gesellschaft für Technische Zusammenarbeit)
GWS	Humanities Section (Geisteswissenschaftliche Sektion)
H	
HG	Helmholtz Association (Helmholtz-Gemeinschaft)
HRK	German Rectors’ Conference (Hochschulrektorenkonferenz)
HSFK	Hessian Foundation for Peace and Conflict Research (Hessische Stiftung Friedens- und Konfliktforschung)
I	
IAEA	International Atomic Energy Agency
IAU	International Astronomical Union
IBioBA	Biomedicine Research Institute of Buenos Aires—CONICET—Partner Institute of the Max Planck Society

ICIPE	International Center of Insect Physiology and Ecology
ICSU	International Council of Scientific Unions
IFSDH	International Foundation for the Survival and Development of Humanity
IFSH	Institute for Peace Research and Security Policy (Institut für Friedensforschung und Sicherheitspolitik an der Universität Hamburg)
IGBP	International Geosphere-Biosphere Program
ISHR	International Society for Human Rights
IGN	Instituto Geográfico Nacional
IIASA	International Institute for Applied Systems Analysis
IISS	International Institute for Strategic Studies
IKI	Institute for Space Research
INF	Intermediate Range Nuclear Forces Treaty
INTA	Instituto Nacional de Técnica Aeroespacial
INTOR	International Tokamak Reactor
IPP	Institute for Plasma Physics (MPI)
IPPNW	International Physicians for the Prevention of Nuclear War
IRAM	Institut de Radioastronomie Millimétrique
IRM	Fraunhofer Institute for Radiometeorology and Maritime Meteorology
ISS	ISPM International Solar Probe Mission
ISS	International Space Station
ITER	International Thermonuclear Experimental Reactor
IUCN	International Union for the Conservation of Nature and Natural Resources
IVV	Integrated Predefense (Integrierte Vorneverteidigung)
J	
JACOS	Joint Analysis of Conventional Stability
JEN	Junta de Energía Nuclear
JET	Joint European Torus
JOSIM	Joint Simulation
K	
KEF	Commission for Ethics in Safety-Related Research (Kommission für Ethik sicherheitsrelevanter Forschung)
KFA	Nuclear Research Facility Jülich (Kernforschungsanlage Jülich)
KfK	Nuclear Research Center Karlsruhe (Kernforschungszentrum Karlsruhe)
KHI	Art History Institute in Florence (Kunsthistorisches Institut in Florenz)
KMK	Conference of Ministers of Education and Cultural Affairs (Kultusministerkonferenz)
KOWI	Coordination Office of the Science Organizations (Koordinierungsstelle der Wissenschaftsorganisationen)
KPD	Communist Party of Germany (Kommunistische Partei Deutschlands)
KWG	Kaiser-Wilhelm-Gesellschaft
KWI	Kaiser Wilhelm Institute

KWU	Deutsche Kraftwerk Union AG
L	
LG	Leibniz Association (Leibniz-Gemeinschaft)
LMU	Ludwig-Maximilian University
LTBT	Limited Test Ban Treaty
M	
MAB	Man and the Biosphere Program
MAD	Mutual Assured Destruction
MBB	Messerschmitt-Bölkow-Blohm
MIRV	Multiple Independently Targetable Reentry Vehicle
MIT	Massachusetts Institute of Technology
MITI	Ministry of International Trade and Industry
MLF	Multilateral Force
MPG	Max-Planck-Gesellschaft
MPI	Max Planck Institute
MPIC	Max Planck Institute for Chemistry
MPIE	Max Planck Institute for Iron Research (Max-Planck-Institut für Eisenforschung)
MPIL	Max Planck Institute for the Study of Living Conditions in the Scientific and Technical World (Max-Planck-Institut zur Erforschung der Lebensbedingungen in der wissenschaftlich-technischen Welt)
MPIM	Max Planck Institute for Meteorology
MSB	Marxist Student Union (Marxistischer Studentenbund)
MPS	Max Planck Society
MWT	Central European Business Forum (Mittleuropäischer Wirtschaftstag)
N	
NAS	National Academy of Sciences
NASA	National Aeronautics and Space Administration
NATO	North Atlantic Treaty Organization
NCAR	National Center of Atmospheric Research
NGO	Non-governmental Organization
NPT	Non-Proliferation Treaty
NS	National Socialism/National Socialist
NSDAP	National Socialist German Workers' Party (Nationalsozialistische Deutsche Arbeiterpartei)
NSF	National Science Foundation
O	
OECD	Organization for Economic Co-operation and Development
OEEC	Organization for European Economic Co-operation
OST	Office of Science and Technology
OSTP	Office of Science and Technology Policy
OSCE	Organization for Security and Co-operation in Europe

Ö	
ÖAW	Austrian Academy of Sciences (Österreichische Akademie der Wissenschaften)
ÖDW	Austrian-German Science Aid (Österreichisch-Deutsche Wissenschaftshilfe)
P	
PCSWA	Pugwash Conferences on Science and World Affairs
PHI	Prussian Historical Institute
PICB	CAS-MPG Partner Institute for Computational Biology
PRC	People's Republic of China
PSAC	Presidential Scientific Advisory Committee
R	
RAF	Red Army Faction (Rote Armee Fraktion)
RFP	Research Framework Program
ROC	Republic of China
S	
SAC	Scientific Advisory Committee
SAFPP	Senate Committee on Research Policy and Planning (Senatsausschuss für Forschungspolitik und Forschungsplanung)
SALT	Strategic Arms Limitation Talks
SBZ	Soviet Occupation Zone (Sowjetische Besatzungszone)
SCWT	State Commission for Science and Technology
SD	Security Service of the Reichsführer SS (Sicherheitsdienst des Reichsführers SS)
SDI	Strategic Defense Initiative
SFB	Collaborative Research Centre (Sonderforschungsbereich)
SIPRI	Stockholm International Peace Research Institute
SPD	Social Democratic Party of Germany (Sozialdemokratische Partei Deutschlands)
SST	Supersonic Transport
STC	Scientific-technical Cooperation
SWP	German Institute for International and Security Affairs (Stiftung Wissenschaft und Politik)
T	
TACIS	Technical Assistance to the Commonwealth of Independent States
TH	Technical University (Technische Hochschule)
TTAPS	Turco/Toon/Ackermann/Pollock/Sagan
U	
UCS	Union of Concerned Scientists
USSR	Union of Soviet Socialist Republics
UHV	Ultra High Vacuum
UN	United Nations

UNCED	United Nations Conference on Environment and Development
UNEP	United Nations Environmental Program
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNGG	Uranium Naturel Graphite Gaz
Unione	Unione Internazionale degli Istituti di Archeologia, Storia e Storia dell'Arte
UNO	United Nations Organization
USA	United States of America
V	
VDPG	Association of German Physical Societies (Verband der Deutschen Physikalischen Gesellschaften)
VDW	Association of German Scientists (Vereinigung Deutscher Wissenschaftler)
VW	Volkswagen
W	
WDR	West German Broadcasting Corporation (Westdeutscher Rundfunk)
WFM	World Federalist Movement
WFSW	World Federation of Scientific Workers
WLF	World Law Fund
WM	Scientific Member (Wissenschaftliches Mitglied)
WOMP	World Order Models Project
WR	Scientific Council (Wissenschaftlicher Rat)
WRK	West German Rectors' Conference (Westdeutsche Rektorenkonferenz)
Z	
ZEAD	Central Office for Nuclear Energy Documentation (Zentralstelle für Atomkernenergie-Dokumentation)
ZOTTO	Zotino Tall Tower Observatory

Picture Credits

With few exceptions, the images in this volume are taken from the photo collection of the Archives of the Max Planck Society. I would like to thank them for their support in selecting the images and for their permission to reproduce them.

Fig. 30: AMPG III Dept., Rep. 14, No. 6513.

Fig. 36: Hans-Peter Dürr: *Star-Wars-Konzept SDI. Technische Machbarkeit und sicherheitspolitische Folgen*. Softcover, self-published, 1985, 51.

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Fig. 29: picture alliance/UPU, media number 61380842.

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Conversations and interviews with contemporary witnesses

Some of the interviews and conversations of contemporary witnesses listed here were conducted as part of the GMPG project between 2018 and 2021; they were conducted both by me and by colleagues and archived in the GMPG project database (Digital Archives of the Research Program History of the Max Planck Society, DA GMPG). The other interviews and conversations that were analyzed for this study originate from different time periods and contexts. Most of the interviews listed have been previously published in various forms. They are cited

below in alphabetical order of the names of the interviewees, along with their publication and storage locations. For background, some biographical data of the interviewees relevant to this study is provided first.

Afheldt, Horst

(1924–2016) Political scientist and economist; 1960–1970 VDW managing director; 1970–1980 research associate at the MPI for the Study of the Living Conditions of the Scientific-Technical World, then head of the Afheldt Research Group in the MPS until 1989.

Interview conducted by Götz Neuneck on June 25, 2007, video podcast.

Published: *Rüstungskontrolle im Kalten Krieg und heute—Interview mit Dr. Horst Afheldt*. [podcampus.de](https://www.podcampus.de).

<https://www.podcampus.de/nodes/wDEgE>. Last accessed on 31.7.2022.

Braun, Reiner

(b. 1952) Historian, Managing Director of the Krefelder Initiative (1981–1988), the Natural Scientists' Initiative "NatWiss—Verantwortung für den Frieden" (Responsibility for Peace) (1988–2003), the VDW (2006–2014) and ILANA (2014–2017).

Interview conducted by Carola Sachse on March 8, 2018 in Berlin.

Audio recording and minutes

Storage location: DA GMPG, ID 601001

Interview conducted by Alexander von Schwerin on May 6, 2020 in Berlin.

Audio recording

Storage location: DA GMPG, ID 601088

Crutzen, Paul Josef

(1933–2021) Atmospheric chemist, Nobel Prize winner, 1980–2000 Director at the MPI for Chemistry.

Interview conducted by Gregor Lax and Carsten Reinhardt on Nov. 17, 2011 in Mainz.

Transcript

Storage location: DA GMPG, ID 601091

Excerpts edited and published: Carsten Reinhardt and Gregor Lax: "Paul Crutzen im Interview." In: Horst Kant and Carsten Reinhardt (eds.): *100 Jahre Kaiser-Wilhelm-/Max-Planck-Institut für Chemie (Otto Hahn Institut). Facetten seiner Geschichte*. Berlin: Archiv der Max-Planck-Gesellschaft 2012, pp. 250–256; and: Paul Crutzen, Gregor Lax and Carsten Reinhardt: "Paul Crutzen on the Ozone Hole, Nitrogen Oxides, and the Nobel Prize," *Angewandte Chemie—International Edition*, 52/1 (2013), pp. 48–50.

Conversation led by Michael Müller, undated. (ca. 2018/19), s.l.

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Dürr, Hans-Peter

(1929–2014) Quantum physicist, 1963–1997 head of department and later Director at the MPI for Physics, then at the Werner Heisenberg Institute in the MPI for Physics and Astrophysics and finally at the Werner Heisenberg Institute (MPI for Physics).

Interview conducted by the editorial team of *Bild der Wissenschaft* in October 1987. Published: “Friedenssicherung vor Wissenserweiterung. Ein Gespräch mit Prof. Hans-Peter Dürr, Geschäftsführender Direktor des Max-Planck-Instituts für Physik und Astrophysik/Werner Heisenberg Institut.” *Bild der Wissenschaft* 10 (1987), pp. 84–90.

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Published: “Heisenberg, Teller & Co.—Wie ich zu einem Grenzgänger wurde. Adelbert Reif im Gespräch mit dem Physiker Hans-Peter Dürr.” *Conturen* 3 (2008), pp. 37–48.

Interview conducted by Reiner Braun and Hans-Joachim Bieber on July 29, 2008 in Munich.

Published: “‘Ich halte es für das Wichtigste, dass man den Krieg als Ultima Ratio achtet. Er ist keine Ultima Ratio’. Interview mit Hans-Peter Dürr am 29. Juli 2008 in München, geführt von Reiner Braun und Hans-Joachim Bieber.” In: Stephan Albrecht et al. (eds.): *Wissenschaft—Verantwortung—Frieden. 50 Jahre VDW*. Berlin: Berliner Wissenschafts-Verlag 2009, pp. 347–355.

Conversation led by Anne Devillard, ca. 2012/13.

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Eigen, Manfred

(1927–2019) Biophysical chemist; 1958–1995 Director at the MPI for Physical Chemistry, later MPI for Biophysical Chemistry, Göttingen, 1967 Nobel Prize for Chemistry.

In conversation with Wolfgang Frühwald on Sep. 23, 1994 in Bonn.

Published: Peter Frieß and Andreas Fickers (eds.): *Wolfgang Frühwald und Manfred Eigen sprechen über die Neugier als Antrieb wissenschaftlichen Arbeitens*. Bonn: Deutsches Museum Bonn, 1993.

Fang, Lizhi

(1936–2012) Astrophysicist; 1979–1986 Vice President of the Chinese University of Science and Technology in Hefei; expelled from the Chinese Communist Party in 1986, fled to the US Embassy in Beijing in 1989, Professor of Physics at the University of Arizona in Tuscon since 1990.

Interview conducted by Tiziano Terzani in October 1987.

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Fromm, Beatrice

(b. 1938) Mathematician, 1973–1998 in various functions and most recently as head of department in the Administrative Headquarters of the MPS, responsible, in particular, for preparing and supporting the establishment of new institutes.

Conversation conducted by Carola Sachse on Jan. 22, 2018 in Berlin.

Minutes

Storage location: DA GMPG, ID 601082

Frühwald, Wolfgang

(1935–2019) Literary scholar; professorships at the Universities of Trier-Kaiserslautern, Augsburg and at the Free University of Berlin, 1992–1997 President of the DFG

In conversation with Manfred Eigen on Sept. 23, 1994 in Bonn.

Published: Frieß, Peter and Andreas Fickers (eds.): *Wolfgang Frühwald und Manfred Eigen sprechen über die Neugier als Antrieb wissenschaftlichen Arbeitens*. Bonn: Deutsches Museum Bonn 1994.

Gottstein, Klaus

(1924–2020) Physicist; Scientific Member of the MPS since 1961, MPI for Physics and Astrophysics, later MPI for Physics; 1971–1974 Science Attaché at the German Embassy in Washington DC; 1974–1980 posted to the MPI for the Study of the Living Conditions of the Scientific and Technical World; 1983–1992 Head of the Gottstein Research Center in the MPS, long-time spokesman for the Federal German Pugwash Group.

Interview conducted by Carola Sachse on Nov. 11, 2011 in Neubiberg.

Transcript

Storage location: DA GMPG, ID 601083

Graßl, Hartmut

(b. 1940) Physicist and meteorologist; 1984–1988 Director of the Institute of Physics at the GKSS Research Center Hamburg; 1988–2005 Director at the MPI for Meteorology; 1994–1999 Director of the World Climate Research Program (WCRP) in Geneva.

In conversation with Helmut Schmidt on June 1, 1995 in Bonn.

Published: Peter Frieß and Peter M. Steiner (eds.): *Helmut Schmidt and Hartmut Graßl sprechen über die Bringschuld der Wissenschaftler gegenüber der Gesellschaft und die Annahmepflicht der Politiker gegenüber wissenschaftlicher Erkenntnis*. Bonn: Deutsches Museum Bonn 1995.

Lange-Gao, Angelika

(b. 1951) Sinologist; 1994–2006 officer in the International Relations Unit of the MPS Administrative Headquarters; 2006–2008, national expert at the Scientific Council of the ERC; 2008–2016 managing director of the Minerva-Stiftung GmbH.

Phone interview conducted by Carola Sachse on Dec. 8, 2021, Herrsching/Berlin.

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Lu, Jiaxi

(1915–2001) Chemist and materials researcher; 1960–1981 Vice President of Fuzhou University; 1981–1988 President of the Academia Sinica/Chinese Academy of Sciences (CAS).

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Interview conducted by Jürgen Renn and Horst Kant on May 18, 2010 in Hamburg.

Transcript

Storage location: DA GMPG ID, ID 601070

Müller, Albrecht von

(b. 1954) Philosopher; 1982–1989 research associate at the MPI for Physics and the MPI for Social Sciences, most recently in the Afheldt Research Group at the MPS; 1989–1995 director of the European Center for International Security (EUCIS); 2001 founder of the Parmenides Foundation.

Interview conducted by Carola Sachse on April 9, 2018 in Pullach.

Audio recording and minutes

Storage location: DA GMPG, ID 601038

Neizert, Berthold

(b. 1959) Physicist; 1991–1996 Head of Operations at the MPI for Quantum Optics; 1996–2011 Head of the International Relations and Supporting Members Unit; since 2011 Head of the Research Policy and International Relations Department of the MPS Administrative Headquarters.

Interview conducted by Carola Sachse on April 10, 2018 in Munich.

Audio recording and minutes

Storage location: DA GMPG, ID 601089

Nickel, Dietmar

(b. 1937) Lawyer and historian; 1971–1996 head of the International Relations Unit (Zusammenarbeit Ausland, Mitglieder, Protokoll), in the MPS Administrative Headquarters; 1996–2000 managing director of the Minerva-Stiftung GmbH.

Interview conducted by Carola Sachse on April 12, 2018 in Munich.

Audio recording and minutes

Storage location: DA GMPG, ID 601023

Pinkau, Klaus

(1931–2021) Astro- and plasma physicist; 1966–1981 head of department and director at the MPI for Physics and Astrophysics, then MPI for Extraterrestrial Physics; 1981–1999 director at the MPI for Plasma Physics.

Interview conducted by Helmuth Trischler on March 9, 2010 in Munich.

Transcript

Published: EUI Historical Archives of the European Union. Oral History of Europe in Space Collection: http://archives.eui.eu/en/oral_history/INT072. Last accessed on April 26, 2022.

Ranke, Wolfgang

(b. 1944) Physicist; 1970–2006 research associate at the Fritz Haber Institute of the MPS; 1980–1982 research sojourn at the Semiconductor Institute of the CAS in Beijing.

Written interview conducted by Carola Sachse on Dec. 21, 2019, Berlin/Kil (Sweden).
Typescript

Storage location: DA GMPG, ID 601084

Conversations conducted by Carola Sachse on Feb. 2 and Mar. 4, 2020 in Berlin; not recorded or transcribed.

Riesenhuber, Heinz

(b. 1935) Chemist; management and consulting activities for companies and associations; 1976–2017 CDU member of the *Bundestag*; 1982–1993 Federal Minister of Research and Technology.

Interview conducted by Helmuth Trischler on March 9, 2010 in Munich.

Transcript

Published: EUI Historical Archives of the European Union. Oral History of Europe in Space Collection: http://archives.eui.eu/en/oral_history/INT075. Last accessed on April 26, 2022.

Sagdeev, Roald Z.

(b. 1932) Plasma physicist; 1973–1988 Director of the Institute for Space Research (IKI) of the Soviet Academy of Sciences; since 1979 External Scientific Member at the MPI for Physics and Astrophysics, since 1991 at the MPI for Extraterrestrial Physics; scientific advisor to President Gorbachev; since 1989 professor at the University of Maryland.

Interview conducted by Patrick H. Diamond, 2018.

Published: Roald Z. Sagdeev and Patrick H. Diamond: “An Interview with Roald Sagdeev: His Story of Plasma Physics in Russia, 1956–1988.” *The European Physical Journal*, 43 (2018), 355–396, published online on Oct. 23, 2018: <https://link.springer.com/article/10.1140/epjh/e2018-90042-3>. Last accessed on Aug. 13, 2022.

Schmidt, Helmut

(1918–2015) SPD politician; 1953–1962 and 1965–1987, member of the *Bundestag*; 1969–1974 Federal Minister of Defense, later Minister of Finance and Economics; 1974–1982 Federal Chancellor, then Senator of the MPS.

In conversation with Hartmut Graßl on June 1, 1995 in Bonn.

Published: Peter Frieß and Peter M. Steiner (eds.): *Helmut Schmidt and Hartmut Graßl sprechen über die Bringschuld der Wissenschaftler gegenüber der Gesellschaft und die Annahmepflicht der Politiker gegenüber wissenschaftlicher Erkenntnis*. Bonn: Deutsches Museum Bonn 1995.

Sela, Michael

(1924–2022) Biochemist and immunologist, 1970–1985 (Vice) President of the Weizmann Institute of Science, 1975–1979 Chairman of the EMBO, 1970–1985 member of the Minerva Committee.

In conversation with Heinz A. Staab on May 5, 1995 in Munich.

Published: Peter Frieß and Peter M. Steiner (eds.): *Heinz A. Staab und Michael Sela sprechen über die wissenschaftliche Zusammenarbeit zwischen Israel und Deutschland als Grundlage der Völkerverständigung*. Bonn: Deutsches Museum Bonn 1995.

Sonntag, Philipp

(b. 1938) Physicist; 1964–1978 research assistant to Carl Friedrich von Weizsäcker, initially at the VDW research center in Hamburg, from 1970 at the MPI for the Study of the Living Conditions of the Scientific-Technical World.

Interview conducted by Carola Sachse on Mar. 6, 2018 in Berlin.

Audio recording and minutes

Storage location: DA GMPG, ID 601031

Staab, Heinz A.

(1926–2012) Chemist; from 1974–1996 Director at the MPI for Medical Research; since 1977 member of the Board of Governors of the Weizmann Institute of Science, from 1984–1990 President of the MPS.

In conversation with Michael Sela on May 5, 1995 in Munich.

Published: Peter Frieß and Peter M. Steiner (eds.): *Heinz A. Staab und Michael Sela sprechen über die wissenschaftliche Zusammenarbeit zwischen Israel und Deutschland als Grundlage der Völkerverständigung*. Bonn: Deutsches Museum Bonn 1995.

Trümper, Joachim E.

(b. 1933) Astrophysicist; 1974–2001 Director at the MPI for Physics and Astrophysics and since 1991 at the MPI for Extraterrestrial Physics.

Interview conducted by Helmuth Trischler and Matthias Knopp on Mar. 18, 2010 in Munich.

Transcript

Published: EUI Historical Archives of the European Union. Oral History of Europe in Space Collection: http://archives.eui.eu/en/oral_history/INT076. Last accessed on April. 26, 2022.

Zhou, Guangzhao

(b. 1929) Theoretical and particle physicist, Director of the Institute of Theoretical Physics of the CAS in Beijing; 1984–1987 Vice President of the CAS; 1987–1994 President of the CAS.

Interview conceived and translated by Barbara Spielmann in fall 1994

Published: “Mit ‘Marschällen’ und ‘Generälen’ ins 21. Jahrhundert? Fragen an den Präsidenten der Chinesischen Akademie der Wissenschaften.” *MPG-Spiegel* 5 (1994), pp. 45–48.

I would like to express my gratitude to the current and former employees of the Administrative Headquarters of the MPS, in particular Felix Kahle (1959–2024),

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Akten zur auswärtigen Politik der Bundesrepublik Deutschland

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1983. *1. Januar bis 31. Dezember*. 2 Bde. Bearbeitet von Tim Geiger, Matthias Peter und Mechthild Lindemann, wiss. Leiterin Ilse Dorothee Pautsch. München: Oldenbourg 2014.

1989. *1. Januar bis 31. Dezember*. 2 Bde. Bearbeitet von Daniela Taschler, Tim Szatkowski und Christoph Johannes Franzen, wiss. Leiterin Ilse Dorothee Pautsch. München: Oldenbourg 2020.

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