Henriette Pleiger

INTERDISCIPLINARY EXHIBITIONS AND THE PRODUCTION OF KNOWLEDGE

Perspectives from Curatorial Practice

[transcript] → Museum

Henriette Pleiger
Interdisciplinary Exhibitions and the Production of Knowledge

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Henriette Pleiger has been working as an exhibition curator at the Kunst- und Ausstellungshalle der Bundesrepublik Deutschland in Bonn, Germany, since 2002. In this position she has curated and organized several large temporary exhibitions often combining art, cultural history and science. She earned her PhD in museum practice at the Institute for Cultural Practices of the University of Manchester, UK.

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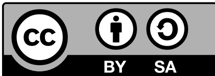

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For my brother Paul

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1 Introduction

> [...] museums would be more attractive to both researchers and audiences if we consider exhibitions as *knowledge-in-the-making* rather than platforms for disseminating already-established insights (Peter Bjerregaard 2020, *Exhibitions as Research*, synopsis).

1.1 Interdisciplinary exhibition-making and the production of knowledge

On considering the museum exhibition, the anthropologist and interdisciplinary museum curator Peter Bjerregaard offers a statement that sits at the heart of this book. Conceiving museums and exhibitions as 'sites for research and knowledge production' (Hansen et al. 2019, p. 3) makes them not only more attractive but also considerably more relevant. As Bjerregaard pinpoints, this does not only apply to knowledge produced for audiences, but – with regard to this study – more importantly for the people who create new knowledge through exhibition-making, the researchers themselves, the curators, designers, educators, and participating communities. This is especially true when disciplines are not simply presented separately or side by side, but are brought into contact, shaping and changing each other and thereby producing new forms of knowledge. Viewed from a cultural perspective, this book supports the notion expressed by the authors of *The Oxford Handbook of Interdisciplinarity*,

> that the solution to our social, political, intellectual, and economic problems does not simply lie in the accumulation of more and more knowledge. What is needed today is a better understanding of the relations between fields of knowledge, a better grasp of the ways knowledge produced in the academy moves into society [...] (Frodeman et al. 2010, p. xxx).

Universities, and also museums, are primed for this work; the joining together of diverse pieces of knowledge in ever new contexts instead of only collecting and accumulating them. Still, both academic discourse and museums themselves seem largely unaware that museums and exhibitions can be places that enable and facilitate interdisciplinarity. Interdisciplinarity, as a research method, is about making connections and striving for joint solutions, and about creating new knowledge during the research process. This also applies to the research conducted by museum project teams, and this fact, as I will explain over the course of this study, makes museums and exhibitions exciting and relevant experimental territories for interdisciplinary research.

This book[1] is rooted in practice-based research within the discipline of museum studies, namely the cultural practice of exhibition-making. It draws on two decades of curatorial experience and reflection at the Bundeskunsthalle[2] in Bonn, Germany, to examine the museum sector's growing interest in the development of thematic temporary exhibitions that include a multitude of disciplinary and non-disciplinary perspectives to address societally relevant topics. It highlights and analyses the kinds of partnerships, processes, and institutional systems that are necessary for an exhibition to be considered interdisciplinary and what happens when those key actors are not in place. My research thus focuses on the development process of *temporary interdisciplinary exhibitions*, often combining the perspectives of arts, cultural history, and sciences. Within this practical and theoretical scope, this study raises two main research questions.

Firstly, I investigate the *collaborative processes of interdisciplinary exhibition-making* and present a clearer picture of this specific type of temporary exhibition, which still seems to lack or even escape theoretical characterisation or any attempt at producing a typology of practice. As this exhibition type has, however, been gaining relevance and popularity in recent years,[3] it seems even more important to understand the actual meaning and practical implications

1 This book is based on my PhD thesis which is accessible online at the University of Manchester: https://research.manchester.ac.uk/en/studentTheses/interdisciplinary-exhibitions-and-the-production-of-knowledge (last accessed 19 June 2024).

2 The Kunst- und Ausstellungshalle der Bundesrepublik Deutschland, Bundeskunsthalle for short, is accessible at www.bundeskunsthalle.de.

3 An interesting example was the exhibition *Mind the Gut* at the Medical Museion in Copenhagen in 2017, combining art and biomedical science (see Bencard et al. 2019).

of the term 'interdisciplinarity' as well as related terms such as 'multidisciplinarity' and 'transdisciplinarity'. For this purpose, my research engages with theoretical discussions in interdisciplinarity studies, a field emerging from philosophical science theory and educational theories in the academic context. This study identifies the academic discourse on interdisciplinarity as a field of research (most prominently the works by Julie Thompson Klein) with the potential to provide a meaningful input to the formation of theory on temporary exhibition-making in museum studies. Based on this theoretical framework, the book contributes to the analysis and transparency of the practical processes of interdisciplinary exhibition-making, also involving a 'behind the scenes' critique of internal institutional processes (see Macdonald 2002). By investigating and testing how the established theories on interdisciplinarity manifest themselves in exhibition-making practice, I argue that the complexity of interdisciplinary exhibition-making calls for a more precise and practice-oriented application of what is an often-generalized notion and usage of the term interdisciplinarity.

Secondly, I consider the *potential of interdisciplinary temporary exhibitions to produce new knowledge*, especially during their collaborative production processes, involving complex and potentially creative procedures of negotiation and decision-making, similar to what Peter Bjerregaard (2020) suggests in the opening quote to this introduction. When exploring the question of how interdisciplinary exhibitions are developed and produced, I argue that the role of the interdisciplinary curator (which is my own professional role) as 'bridge-builder' is essential and is in fact very similar to that of an interdisciplinary researcher in academia (see Klein 1990, p. 131; Klein 2010, p. 16). Rooted in my own practice as an exhibition curator and manager at the Bundeskunsthalle in Bonn, where I have been working since 2002, my research deals with the possibilities and problems of interdisciplinary temporary exhibitions. I am interested in the question, whether creating such exhibitions can be a way not only to stage existing knowledge, but also to raise questions that might eventually lead to new research. Although this is of course also relevant for monodisciplinary or monographic exhibitions, I would like to advocate a more experimental, 'curiosity-led' (Arnold 2015, p. 335) approach to curating temporary exhibitions which involves the crossing of disciplinary boundaries for a wider and more differentiated perspective on the topics, stories, and contexts which are presented in exhibitions today. This may not work for all exhibitions, but as I show in this book, thematic exhibitions can effectively profit from taking on a wider perspective, especially when dealing with pressing topics

and public concerns in a world of seemingly growing interwovenness and complexity – problems which cannot be explained and solved by one discipline alone (see Message and Witcomb 2015, p. liii, Bjerregaard 2020, p. 7).

A position that I take throughout this study is that an interdisciplinary approach to exhibition-making can be understood as an experimental research method. Presenting knowledge from different disciplines in one and the same exhibition ideally comes with an integrative mutual understanding of different disciplinary perspectives on a given topic, developed in an interdisciplinary research process. And it is this collaborative process which potentially sparks new knowledge on a public stage, that is the exhibition. By enhancing not only academic research but also public knowledge and a potential participatory dialogue, I outline the ways that interdisciplinary exhibitions can serve as educational, societal, and democratic events.

While investigating the curatorial work and actual production processes of interdisciplinary temporary exhibitions, I am therefore interested in looking at how this type of exhibition creates new knowledge during the collaborative process of making them. This type of exhibition – often dealing with larger or more abstract themes and ideas that can only be described through consulting more than one discipline – can be very difficult to produce, but if successful, it can be very rewarding and inspiring for all participants on both the producing and the receiving ends. Making such exhibitions can become 'an illuminating research process in itself' prompting 'fruitful collaborations that will extend throughout the duration of the exhibition and beyond' (Herle et al. 2009, p. 9; see also Herle 2013). Even more so, if they take the risk to be experimental – a term I will explore more deeply in section 2.3.2 of chapter 2 and which will prove to be an important keyword of my research – not only across disciplines, but also across established exhibition genres (Macdonald, Basu 2007, p. 19).

Lehmann-Brauns et al. have analysed the possibility of staging new knowledge in an exhibition or even using the medium of the exhibition as an experimental ground to create new knowledge in detail for the realm of science museums, stating that 'research generates exhibitions which in turn generate research' (Lehmann-Brauns et al. 2010, p. 3). Exhibitions as an experimental ground can be of interest for monodisciplinary research projects, but they can also be a meeting point for varied disciplines to engage and collaborate on a given question or topic of public concern. The challenge is not only to find new ways of presenting, visualizing and conveying knowledge to a wider audience, but 'to find strategies to support non-traditional research that transcends dis-

ciplinary boundaries while preserving the value of knowledge and its creation' (Aldrich 2014, p. 250).

Knowledge creation is not merely limited to 'matters-of-fact' but also to 'matters-of-concern', as Bruno Latour puts it in *Making Things Public* (Latour 2005, p. 19), that is, matters and issues of public concern. 'We might be more connected to each other by our worries, our matters of concern, the issues we care for, than by any other set of values, opinions, attitudes or principles' (p. 14). Latour advocates for the medium of the exhibition to be a means of enhancing what he calls an 'object-oriented democracy' (p. 14). Every object (meaning issue, matter, or actual thing) 'gathers around itself a different assembly of relevant parties' and every object potentially triggers dialogue, be it dispute or agreement. Thus, objects do 'bind all of us in ways that map out a public space' (p. 15), transcending borders of disciplines or genres. Objects are surrounded by a 'hidden geography' (p. 15) that the spatial medium of the exhibition is capable of making visible in a productive and also fundamentally democratic way, as museums and exhibitions have 'an important role to play in the development of democracy and its civic cultures' (Dahlgren and Hermes 2015, p. 118). In being spaces for critical reflection (Message and Witcomb 2015, p. lv), they are contributing to our cultural understanding (p. xliv) and to our 'readings of the world' (Pickstone 2000, pp. 33–59).

1.2 Intersections between two fields of inquiry: Museum studies and interdisciplinary studies

In the introduction to the volume on museum practice of the *International Handbooks of Museum Studies* (2015), editor Conal McCarthy draws on Gerard Corsane's model of museum work as being divided in 'priorities' (general aims and strategies), 'resources' (professionals and objects), 'processes' (working procedures), and 'publics' (audiences), stating that whereas much has been written, for example, on theorizing the politics of collecting and display (belonging to the category of priorities) and on questions of education and interpretation (belonging to the category of publics), he finds a gap in the theorizing of the practical processes by professionals themselves, 'the professional practice as such' (McCarthy 2015, p. xxxix). McCarthy advocates a 'synthesis of research-led practice and practical theory' (p. xliv) and states that whereas the role of the curator and the contents of collections and exhibitions (belonging to the category of resources) have been extensively dealt with in the literature

of museum studies, 'the actual practice of curating / exhibiting / managing itself' has as yet only rarely been reflected on theoretically (p. xl).

This is exactly where my research is located, as I specifically want to explore the practical process and methodology of making interdisciplinary exhibitions. Of course, questions regarding resources (for example the specific role of the curator or exhibition-maker in interdisciplinary exhibition projects, and the way in which objects are carrying and speaking of knowledge) as well as regarding priorities and publics (especially the questions of outreach, participation, and public education) will necessarily be part of this investigation as these are overlapping categories, but I want to specifically look at the curatorial processes of exhibition-making and knowledge production. Gabriela Nicolescu reflects on the ideas of art theoretician Brian Holmes (in his article 'The Artistic Device, or, the Articulation of Collective Speech', in: *Ephemera* 2006.6 (4), pp. 411–432) and describes 'exhibition-making as a device, something that transforms itself in the process of making, and not as an end to itself; it is this transformation […] that captures the attention of public discourse' (Nicolescu 2016, p. 467). Nicolescu is advocating what she calls 'ethnographies of exhibition-making', unveiling and analysing the possibilities but also the conflicts and limitations of curatorial practice (p. 466).

My perspective is both that of a project participant as well as an academic observer, and as such I am especially interested in the internal processes that take place before exhibitions are finally opened and presented to the public. This inner perspective is not so much concerned with the evaluation of the quality of both the curatorial work and the resulting exhibition itself, but instead it promises to contribute to the transparency of curatorial processes (Norton-Westbrook 2015, p. 349), in this context not so much for reasons of political legitimacy as for a greater reflexivity on the practices of the curatorial profession itself. Working with three exhibition case studies conducted by me over a period of eight years (2013–2020), this book contributes to this still emerging transparency in terms of understanding a specific curatorial practice. I will elaborate further on my own curatorial role in section 1.4.

In order to not only analyse interdisciplinary exhibition cases as such, but to explore the possibilities of developing collaborative standards[4] for them

4 In 2011 the department of Museum Studies of the University of Michigan held a lecture series called 'Cross Currents: Transdisciplinary Dialogues on the Museum'. The introduction to a joint lecture by the astronomer Sally Oey and Harold K. Skramstad, historian and museum professional, entitled 'Presenting Science in Interdisciplinary

during this research, it is essential to understand how museums and other exhibition-making institutions are conveying and producing disciplinary knowledge, how they are conceiving of interdisciplinary approaches, and how they are putting these approaches into practice. Museums are 'points of conjuncture' dealing with both processes of 'fragmentation, dissonance, and crisis' (Message and Witcomb 2015, p. xli), as well as 'encounter, exchange, communication, and transgression' (p. xliii), both in theory and in practice. All these processes are in fact aspects of interdisciplinary collaborations.

In 2020, Bjerregaard published a substantial collection of essays titled *Exhibition as Research: Experimental Methods in Museums* that takes a similar approach to exhibition-making as my research suggests, which I began to work on in 2015. In his introduction Bjerregaard advocates the necessity for 'cross-disciplinary' methods and research in exhibition-making (Bjerregaard 2020, pp. 7, 8). In a footnote he explains that he decided on using the term 'cross-disciplinarity' as a 'general term', because 'the cases presented in this volume did not clearly define the nature of their collaboration across disciplinary divides' (p. 13). This use of terminology in the field of museum studies and indeed within the museum world itself reveals an ongoing absence or lack of a finer vocabulary to enable a more precise understanding of the 'nature' of these collaborations. This book extends Bjerregaard's volume by considering and testing a more precise vocabulary. By using it as a methodological framework the aim is to enable practitioners and academics to identify and even classify an exhibition that crosses disciplinary boundaries, or indeed to understand in what ways that exhibition might have crossed these boundaries in practice. I want to

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Exhibitions', on 4 December 2011 (http://ummsp.rackham.umich.edu/events/event-archive/2011-2012/, last accessed 3 March 2023) read: 'The themes, topics, and stories in museum exhibits often cover content that provide opportunities for teaching across a broad range of disciplines. Prevailing practice, however, tends to view exhibition content as neatly fitting into categories defined as art, history, or science. This represents a lost opportunity both to present a full, multidimensional perspective on various topics, and, in particular, to offer substantive science education within a broader societal context. […] Is it possible to formulate a robust *collaborative paradigm* [emphasis added] that would be helpful for the development of future interdisciplinary exhibitions?' The answers Oey and Skramstad gave on this occasion were not recorded, it seems, but this question is interesting in itself. It initially inspired my research question as it is asking for a detailed analysis and better understanding of how interdisciplinary exhibitions are actually made, in order to improve their production process and outcome.

contribute to a better understanding of what collaborations across disciplinary divides in exhibition-making actually are, and how they function, or not.

Apart from relevant museological literature on exhibition theory and practice, the conceptual framework I offer in this book is influenced by and intersects with a significant body of literature that has been published on interdisciplinarity. It comprises, firstly, a field of study that focuses on the theory of interdisciplinarity and, secondly, literature that considers practical exercises and experiences with interdisciplinarity in the context of academia. This latter body of literature offered me a way into thinking about interdisciplinarity beyond abstract conceptions, and instead examining how experiences in the museum sector could be analysed through theories of interdisciplinarity. Especially Klein's taxonomy and theoretical work on academic interdisciplinarity has been fundamental to the approach adopted in this study. Klein offers a meaningful framework for theorizing (and practically improving) interdisciplinary thematic exhibition-making. By discerning between multi-, *inter*[5]- and transdisciplinarity (Klein 2010, p. 16), and understanding the three terms as offering different qualities of interaction and integration, I suggest that the use of these terms provides a finer vocabulary for a detailed description and analysis of the practical processes of collaborative exhibition-making as well as of the different ways of producing knowledge during these exhibition-making processes.

Throughout this book I will use the term 'interdisciplinarity' in two distinct ways, firstly, as a general (more rhetorical) term, and secondly, in a more specific, stricter connotation. Klein distinguishes three types of interdisciplinarity (here serving as the general term): multidisciplinarity, *interdisciplinarity* (in a narrower sense; marked in italics in this book), and transdisciplinarity (Klein 2010, p. 16). (1) Multidisciplinarity 'is encyclopaedic in character' (p. 16), it is sort of a 'pseudo interdisciplinarity' that can be described as 'encyclopaedic', 'juxtaposing', 'sequencing', 'coordinating', 'complementing' and 'indiscriminate'. 'It is essentially additive, not integrative' (Klein 1990, p. 56). (2) *Interdisciplinarity* is described as an 'integrating, interacting, linking, focusing, blending, generalizing kind of collaboration', which enables at least a 'partial integration' (Klein 2010, p. 16). (3) The definition of transdisciplinarity is twofold, as it is either un-

5 As will be explained in the next paragraph, I will use the term 'interdisciplinarity' as a general term. However, *interdisciplinarity* or *interdisciplinary*, written in italics, will signify a specific meaning as defined by Klein (Klein 2010, p. 16).

derstood as 'full integration' or as 'transsector interaction' (p. 16), bridging the gap between academia and other stakeholders of society.

Apart from its significance to museum studies and the studies of cultural practices, this research provides a deep analysis of three cases of interdisciplinary collaborations in the cultural sector that will also be of interest to universities and particularly studies in interdisciplinarity, with the cultural sector being a site of interdisciplinarity not yet recognised or described enough by academics in the field. Being inspired and informed theoretically and practically by these studies about interdisciplinarity in the context of academia, this book tries to give something back to this discourse, namely a likewise inspiring and theoretically analysed application in cultural practice – a disciplinary exchange which Helen Saunderson poetically described as 'crossdisciplinary pollination' (Saunderson 2012, p. 160).

1.3 The institution where this practice-based research took place: Allowing for interdisciplinarity

To set the scene for this practice-based research, I would like to offer a more in-depth introduction to the institution[6] in which my curatorial practice has been taking place since I started to work there in 2002 as an exhibition manager and curator. I frame it as a place which allows for interdisciplinarity to happen in all its shades and grades of multi-, *inter-* and transdisciplinarity.

The Kunst- und Ausstellungshalle der Bundesrepublik Deutschland (Art and Exhibition Hall of the Federal Republic of Germany) (Fig. 1.1) – mainly known by its abridged brand name Bundeskunsthalle – was opened in Bonn in 1992 as a federally funded exhibition hall and multifunctional venue without a collection of its own. Since then, it has become one of Germany's leading institutions in the conceptualization and production of large temporary exhibitions in art, art history, archaeology, cultural history, ethnology, and natural sciences, as well as of other artistic and discursive events. This programme diversity has gone hand in hand with the institution's declared international and

6 The institution will be further discussed in specific contexts within the next two chapters: In chapter 2 I will discuss the wide programme scope of the Bundeskunsthalle regarding exhibition types, whereas in the context of explaining my research methods in chapter 3 I will describe some architectural features of the institution, which seem to go against the notion of transparency and accessibility.

multicultural orientation. Two of the Bundeskunsthalle's opening exhibitions in 1992 were already programmatic of this thematic diversity in presenting the art exhibition *Territorium Artis* (a broad and critical reflection on art in the 20th century) as well as the contrapuntal art-and-science exhibition *Earth View – Global Change* (focussing on global ecological challenges). The deliberately chosen cultural-historical perspective was a common feature of both exhibitions and became typical for many later exhibitions of the institution (Jacob 1992, p. 11). But despite the multidisciplinarity of its overall programme, its understanding of exhibition types has predominantly been a disciplinary one, and explicitly interdisciplinary exhibitions (like *Earth View*) have been rather an exception than the rule.

However, it is this thematic diversity of the Bundeskunsthalle as well as the continuous need to change and reinvent itself that, in principle, allow for multi-, *inter-* and transdisciplinarity to thrive. Lisa Lattuca states that interdisciplinarity in general requires a certain institutional 'climate' which she identifies as the more 'malleable and transient' 'institutional phenomena' as opposed to more 'closely held values' defining the work 'culture' of an institution (Lattuca 2001, p. 45). Elements belonging to the category of an institutional climate that advocates interdisciplinary research would, for example, be 'administrative support, institutional resources, and a reward system' (p. 45). Supportive elements like these have not been consistently characterizing the institutional climate of the Bundeskunsthalle, but first and foremost the comparatively large resources in federal funds have helped considerably to provide a territory allowing for experimentation with interdisciplinary types of temporary exhibitions. In the conclusion of this book, I will further consider and summarize possible institutional standards and conditions that enable interdisciplinary exhibition-making.

The Bundeskunsthalle was designed by the Viennese architect Gustav Peichl (1928–2019) in the late 1980s. Plans for a federally funded Kunsthalle[7] had already been discussed as early as 1949, when Bonn became Germany's first post-war capital. In 1991, after the German unification, the parliamentary decision was taken to make Berlin the capital of the reunified country, but fol-

7 'Kunsthalle' is a defined term in the German-speaking cultural landscape describing a public art space without a collection of its own, and originally also without any commercial interests. See, for example, this article by Jori Finkel (2014): https://www.artnews.com/art-news/news/the-future-of-the-american-kunsthalle-2819/ (last accessed 6 August 2023).

lowing Germany's historically federalist identity, the plan to build the Bundeskunsthalle in Bonn, which had gradually formed since a first parliamentary declaration of intent in 1977, was not abandoned, especially because construction works had already started. Thus, on 19 June 1992, the Bundeskunsthalle opened its doors to the public in Germany's most densely populated state of North Rhine-Westphalia instead of the new capital Berlin, attracting an average of 500,000 visitors from all over Germany and the Benelux countries per year (not counting years affected by COVID-19).

Fig. 1.1: The front side of the Bundeskunsthalle and the museum square. Photo: Bernd Lammel, 2020, © Kunst- und Ausstellungshalle der Bundesrepublik Deutschland GmbH, Bonn.

Peichl's architecture created a certain paradox which concerns the building's very dominant outward aesthetics as opposed to its inward aesthetic neutrality, flexibility, and openness. The journalist and architecture critic Dieter Bartetzko described the Bundeskunsthalle's front facade as possessing the 'aura of an ancient Egyptian cult complex' or a temple of the Mayas or Incas breathing a monumental 'nimbus of timelessness, dignity and festivity' (Bartetzko 1992, p. 13). A long, steep, and narrow staircase leads up to the rooftop-garden in the middle of the front facade resembling a 'celestial ladder', further adding to the hermetic pathos of the building (p. 14). But this dramatic outer appearance is not mirrored in the interior. Apart from reduced

playful elements, the Foyer, Forum, and various exhibition galleries within the building have a surprisingly open appearance which allows for a great variety of changing temporary architectures. The plain functionality of the offices and workshops in the backstage areas create the productive atmosphere of an exhibition factory rather than an art temple. However, Bartetzko rightly stated in 1992 that the Bundeskunsthalle, despite not being a museum with a collection, still seems to attempt a 'dangerous tightrope walk' between being an open 'place of learning as well as a temple of the Muses' (p. 15). Whereas the museum square between the Bundeskunsthalle and the Kunstmuseum (art museum) of the city of Bonn suggests an open public space, the Bundeskunsthalle looks like a hermetically sealed treasury resembling Fort Knox. The latter appearance was probably also intended to convey an aura of importance, trust, and security aiming at convincing international lenders to entrust the institution with precious loans.

From the start, the official mission of the institution, with its 5,000 square metres of empty exhibition spaces, was based on two conceptual terms: (1) staging 'exhibition[s]' and (2) enabling 'communication' (Jacob 1992, p. 9) and dialogue, aiming at creating – and continuously re-creating – a 'space for the discussion of cultural issues and developments of international relevance' (p. 10). For the purpose of conceptualizing and staging temporary *exhibitions*, the vast amount of gallery spaces forms an open vessel for a varied programme. Often two or three exhibitions are staged at the same time. Lacking a collection of its own, the Bundeskunsthalle had to build up an international network of potential partners and lenders. As predominantly administrative as this activity might seem, it has involved the continuous curatorial engagement with collections all over Europe and worldwide, researching and re-contextualising museum objects of a large variety.

As for fulfilling the conceptual purpose of *communication*, the Bundeskunsthalle provides a multifunctional hall called 'Forum' admitting up to 500 people for cultural events such as exhibition openings, theatre and dance performances, films, music concerts, conferences etc. From the beginning, a declared objective of the Forum's programme of events was to situate Germany within its European context suggesting a wide concept of international cultural practices (Jacob 1992, p. 12). In 2022, at the institution's 30th anniversary and after staging around 280 larger and smaller temporary exhibitions, the Bundeskunsthalle still pointed out its global perspective in its online mission statement, but also stressed 'the institution's commitment to wider audience participation in culture and to comprehensive social and cross-cultural inclusion

and integration' advocating an 'open and inclusive concept of culture'.[8] A press release of the German Federal Government from 3 June 2022 on the occasion of the 30th anniversary of the Bundeskunsthalle reiterates the 'thematic range of the exhibitions' as being 'correspondingly broad, often *spanning disciplines* [emphasis added]' as well as many forms of cultural practice.[9] These quotes show that the Bundeskunsthalle indeed has the potential to serve as a blank canvas or experimental territory for exhibition-making and other artistic or, more broadly speaking, cultural practices. This makes it quite a unique space, especially given its large scale, at least in the German context.

1.4 The curator: Becoming an interdisciplinarian

In order to further set the scene for this study, I would like to identify critical moments in my career, how they enabled me to become an interdisciplinarian – a 'bridge-builder' (Klein 1990, p. 131; Klein 2010, p. 16) interested in multi-, *inter-* and transdisciplinary curatorial approaches – and how they eventually led to this practice-based research on interdisciplinary exhibition-making. This autoethnographical account of my own curatorial practice in the past two decades reflects on and critiques my own work culture and its development at the Bundeskunsthalle. My reflections will focus on tracing my own experiences with academic interdisciplinarity and interdisciplinary exhibition-making and on examining how these experiences have affected my professional identity. This is important, because interdisciplinarity research can change the (often originally monodisciplinary) professional identity of the researcher, both in academia and cultural practice, as it, for example, widens their horizons and sometimes estranges them from their original discipline. In 1990, Klein identified a gap in 'interdisciplinary autobiographies' and 'narratives of actual interdisciplinary work' (Klein 1990, pp. 183, 184). This gap has been closed to a certain extent during the last three decades within the field of interdisciplinary studies, but such narratives of interdisciplinarians or

8 https://www.bundeskunsthalle.de/en/about/bundeskunsthalle.html (last accessed 19 June 2022). This is also stated in a similar way on the relaunched website: https://www.bundeskunsthalle.de/en/education/inclusion (last accessed 2 April 2024).

9 https://www.bundesregierung.de/breg-de/suche/vielfalt-als-anspruch-und-programm-2047310 (last accessed 19 June 2022).

'integration experts'[10] who 'risk time out of the disciplinary mainstream' (Klein 1990, p. 182) are still a desideratum. Mapping out my professional journey in hindsight requires reflection and transparency, both on a personal level and, as I will elaborate on in chapter 3, regarding the disclosure and analysis of my professional practice including institutional processes that are usually considered internal. This involves spelling out the possible aims and objectives of my curatorial work as well as of my practice-based research. Additionally, I suggest it is an ethical research requirement to clarify my own position before analysing those of others who took part in the three exhibition cases analysed in this book.

With the following reflections I aim to explore how my interest in interdisciplinarity is rooted in my own educational and professional biography in order to answer the question why this research topic has become so important for me. Thinking across disciplinary boundaries has been an integral part both of my academic education as well as my professional career, and I argue that my educational journey plays a role in my goals and values as an exhibition curator.

In my early years of studying Chinese studies, the curriculum resembled a kind of *studium generale*[11] on Chinese language, literature, art, philosophy, religion, history, politics, and geography, which is different from current curricula in Chinese studies. Nowadays, most university courses in Chinese studies tend to specialize in only one or two of these sub-subjects, but this wider disciplinary horizon within my former major field perhaps encouraged and stimulated my path towards a more generalist understanding of my role as an exhibition curator. After finishing my MA degree in Chinese studies, a museum internship at the Asian collection of the Museum für Angewandte Kunst (Museum of Applied Arts) in Frankfurt am Main eventually opened a new professional perspective. This internship ultimately helped me secure a contract as an exhibition manager and later curator at the Bundeskunsthalle in Bonn in 2002.

10 See Hoffmann, S., Deutsch, L., Klein, J. T. et al. (2022). 'Integrate the integrators! A call for establishing academic careers for integration experts', in: *Humanities and Social Sciences Communications* 9, 147 (2022), https://doi.org/10.1057/s41599-022-01138-z (last accessed 7 August 2023).

11 The term *studium generale* is used here in the sense of an introductory general education on a given subject. Compare the contemporary use of the term in: https://en.wikipedia.org/wiki/Studium_generale (last accessed 6 August 2023).

The start of my professional career made me decide to stop my initial PhD research in Chinese studies for the time being, but the wish to continue my academic education at some later point stayed in the back of my mind. But this was not yet the moment in which I left my original academic subject to develop a new professional identity. In *Behind the Scenes at the Science Museum*, Sharon Macdonald describes how exhibition-making shapes and redefines the professional identities of curators and other museum staff: 'In creating their plans, then, Museum staff were also inevitably engaged in a writing of their own professional identities' (Macdonald 2002, p. 78). This is exactly mirroring my own experience. Originally, I had been hired at the Bundeskunsthalle mainly for my ability to speak Chinese, and therefore set out managing and co-curating (at that time the title of curator was not officially part of the job description) exhibitions closely connected to my MA studies, namely art and cultural history exhibitions on Taiwan (*Treasures of the Sons of Heaven. The Imperial Collection from the National Palace Museum Taipei*, 2003–2004, two venues), China (*Xi'an. Imperial Power in the Afterlife. Burial Goods and Temple Treasures from China's Ancient Capital. Results of the German-Chinese Cooperation in the Protection of Cultural Property*, 2006) and Mongolia (*Genghis Khan and his Heirs. The Empire of the Mongols*, 2005–2006, five venues). The latter already involved an interdisciplinary team of archaeologists, historians, and scholars in Mongolian, Chinese, Japanese, Arabic, Islamic, Turkic and Slavonic studies, and I vividly remember their fruitful discussions and territorial conflicts, sometimes almost as if re-enacting the Mongolian Empire. This echoes Klein's observation that interdisciplinary teamwork is sometimes described in a language borrowed from geopolitics (Klein 1990, pp. 77–78; see also chapter 2 of this book). But at the time I had no knowledge of this context.

After the first four years (2002–2006) in this position, it was uncertain whether I would get another project contract, because the Bundeskunsthalle's diverse programming was not likely to include yet another exhibition on an Asian topic in the nearer future, as exhibitions on Tibet, Japan and Cambodia had been staged before as well as parallel to my projects in 1996, 2003 and 2006. But meanwhile I had become an experienced exhibition manager and was apparently considered fit for being entrusted with organizing other ethnographic and cultural history exhibitions. I was assigned to manage the large exhibition *James Cook and the Exploration of the Pacific* (2009–2011, three venues), curated by a team of anthropologists bringing together more than 500 original ethnographic 'curiosities' from the Cook voyages. Paradoxically, this was the first exhibition I was officially allowed to co-curate although at

the start I was quite ignorant of the topic. Within this curatorial team I took on an (in a sense interdisciplinary) outsider-role in contributing the biographical and natural history aspects (astronomy, navigation, botany, zoology) to the overall storyline of the exhibition. The comparatively few objects I chose were welcomed both by my co-curators and the visitors as contextualizing interventions amidst an ocean of stunningly beautiful ethnographic artefacts.

This was my first *interdisciplinary intervention* in an exhibition concept. It was epitomised by one object, an 18th century tablet of 'portable soup' from the Royal Navy, similar to those used as provisions on Cook's voyages. This became a little highlight of the exhibition in its own right as visitors (and the press) appreciated it for providing a moment of surprise (apart from its interesting history in the prevention of scurvy). Years later I myself was surprised to find this small object mentioned in Daniel Tyradellis' book *Müde Museen* (Tired Museums). He used the soup tablet as an illustration with the apparently ironic caption 'Soup tablet with an aura: historical object for the exhibition *James Cook and the Pacific* [sic], Bundeskunsthalle in Bonn, 2009/10' (Tyradellis 2014, p. 74, transl. HP) – casually placed in a chapter in which he (in parts rightly) criticized the all too often random and unreflected choice of objects due to the workload and time pressure of curators in acquiring and administering loans. This, he reckons, leads to curators researching objects for an exhibition 'rather in an additive and collecting [way] than in a thoughtful and conceptualizing way' (p. 73, transl. HP). I have myself experienced this problem and can also meaningfully associate it with the additive instead of discursive work processes in multi- instead of *inter*disciplinary exhibition-making processes and I will also discuss this challenge within the case studies in this book. I might have concurred had Tyradellis, for example, questioned the enormous amount of 500 (out of c. 2,000 known) ethnographic objects from the Cook voyages in this exhibition, but this specific object was chosen with care. Tyradellis himself curated the interdisciplinary exhibition *Wonder* at the Deichtorhallen in Hamburg in 2011 and wrote in the catalogue introduction that, although *Wonder* was largely an art exhibition, 'the mere fact that individual objects within the exhibition cannot count as art, potentially changes the view on all objects' (Tyradellis et al. 2011, p. 19, transl. HP). This was exactly how the soup tablet became a 'thing that talked', instantiating 'novel, previously unthinkable combinations' (Daston 2004, p. 24), namely in its surprising relation to the objects and contents around it. The soup tablet somehow created a surprisingly intimate moment in which visitors could briefly imagine a detail of everyday life on board of one of Cook's ships, when all those extraordinary artefacts of encounter surround-

ing them were collected. This whole anecdote might seem like a distraction but this at first glance insignificant object has taught me a methodological lesson in interdisciplinary exhibition-making as it succeeded in inspiring dialogue and 'thickening the plot' (Rugoff 2015, p. 44). Moments like these drew me to the topic of interdisciplinarity.

Further exhibition projects – working with ethnographical and historical contents and objects as well as with contemporary art – increased my interest in thematic exhibitions which take on an interdisciplinary approach, and my wish to explore their possibilities and problems. Working at the Bundeskunsthalle has not only changed my professional identity but has also changed my understanding of the disciplinary structure of today's knowledge production at universities, which at least in Germany still largely dictates the boundaries of most temporary exhibitions both in content and methodology, and it has offered me the opportunity to gain practical experience within a wide and varied content horizon. Not being an art historian like the majority of my colleagues in our institutional team of curators, made me become the curator for what a former director sometimes diffusely described as the 'other exhibitions', meaning other than art exhibitions, and in recent years I have learned to accept and even enjoy this role. All three 'other' exhibitions introduced and discussed in this book, namely the exhibitions *TOUCHDOWN*, *Weather Report* and *We Capitalists*, were explicitly trying to use the method of consulting and inviting various disciplines to contribute to the topic in order to create a multifaceted and meaningfully 'thickened' exhibition concept. As I will discuss in the three analytical chapters 4, 5 and 6, these exhibitions would not have been possible without interdisciplinary intent. Had these exhibitions remained within the boundaries of individual disciplines, not only would this have limited their content, but also and more importantly the types of knowledge involved and created during their conceptualization and production processes.

The experience of a gradually changing professional identity – in my case from a sinologist to a generalist exhibition curator – has brought on both the feeling of loss and gradual exclusion from an academic circle I had previously worked hard to belong to, but at the same time also the exciting feeling of something new emerging on the horizon. It was the PhD research in museum practice, which this book is based on, that enabled me to grasp and spell out this 'other' professional identity, gaining confidence in even two new academic fields – museum studies and interdisciplinarity studies – in which I have already been working as a practitioner for many years. But what constitutes this transformed professional identity? Have I become a generalist – or rather an

interdisciplinarian – after abandoning the field I majored in, and if so, what exactly is an interdisciplinarian? Is it just someone who knows a bit about many things but nothing in detail? Or have I become a specialist in just another profession? Speaking of my profession, I understand myself as a *maker, manager, curator, and researcher of exhibitions*. Although having become a 'curiosity-led' (Arnold 2015, p. 335) thematic generalist, I gradually come (and like) to see myself as a 'bridge-specialist' (Klein 1990, p. 131), focussing on conceptualizing and organizing complex and interdisciplinary thematic exhibitions. In the last few years, I have established myself within the institution I am working at as being especially interested in interdisciplinary exhibitions, which in recent years have finally also been named as such in our official internal programme schedule.

In the three case studies (chapters 4 to 6), I am also trying to understand the diverse professional identities of other exhibition curators that I had the pleasure to work with, identities that have been inscribed and very likely also been transformed by their exhibition-making practice. Reflecting on our curatorial practices, I have become increasingly interested in exploring the question of *what it takes* and *what institutions get* if they invest in experimental and interdisciplinary exhibition-making. A closer investigation necessarily requires the transparency of institutional processes, ideally leading to the development of more precise standards for this kind of exhibition-making.[12]

1.5 The case studies: Three exhibitions with various shades and grades of interdisciplinarity

In this section of the introduction, I want to provide brief abstracts to the three case studies, to discuss their chronology and to validate their purpose regarding my research question. As stated above, the exhibition cases presented in chapters 4 to 6 contribute to the analysis and transparency of the practical processes of interdisciplinary exhibition-making and identify the academic discourse on interdisciplinarity as having the potential to provide a meaningful

12 I have already published parts of this section on 18 May 2021 in the Blog of the EU project SHAPE-ID under the title 'Interdisciplinary exhibition-making as research practice': https://www.shapeid.eu/interdisciplinary-exhibition-making/ (last accessed 24 April 2023).

input to the theory formation on temporary exhibition-making. I will compare and analyse three cases of interdisciplinary temporary exhibitions from my own curatorial practice at the Bundeskunsthalle through the lens of my theoretical framework, using a precisely defined theoretical vocabulary on interdisciplinarity that will be established in chapters 2 and 3 of this book. The analysis of the cases aims to show how exhibitions labelled with the general term 'interdisciplinary' have turned out in practice, and what can be learned from this. Although the finer degrees of interdisciplinarity – multi-, *inter-* and transdisciplinarity – manifest themselves in practice in rather fluid 'shades and grades', they will prove to be useful for a more precise understanding, analysis, and critique of the actual processes of exhibition-making.

The analysis will follow five steps during the development and production process of the three exhibition cases. These five steps are: (1) Forming an interdisciplinary team of curators, (2) negotiating and developing a joint exhibition concept, (3) collaborative object choices within an interdisciplinary curatorial team, (4) finding a joint curatorial language for interpretation and exhibition design, and (5) identifying knowledge produced during the process of developing an interdisciplinary exhibition.

All three temporary exhibitions had a significant political dimension, thematically focusing on (1) Down's syndrome, (2) weather and climate, and (3) capitalism. These three themes were dealt with from a multitude of disciplinary perspectives. Furthermore, in all three exhibition cases a comparatively wide understanding of interdisciplinarity[13] was chosen by combining concepts and objects from the realms of art, cultural history, science, and everyday life.

The three case studies are presented in a chronological order that mirrors the curatorial learning process during my practice and research. The work on this study started in 2015, before the first exhibition case was opened in 2016, so that curatorial practice and research inspired each other during the process of my growing understanding of what interdisciplinary exhibition-making means in theory and practice. Perhaps surprisingly, my learning process and growing experience with regard to the integrative quality of interdisciplinary exhibition-making was – for mainly (but not only) institutional reasons – describing a curve that at first steeply arrived at transdisciplinarity (the most

13 An example of a narrower understanding of interdisciplinary exhibition-making would, for example, be the combination of concepts and objects from the arts and applied arts.

intense degree of integration) and then slowly moved back towards multidisciplinarity (the loosest form of disciplinary integration). The first case, *TOUCHDOWN. An exhibition with and about people with Down's syndrome*, took an almost radical participatory and integrative approach. In its high-flying ambitions, it sadly proved to be an institutional exception, if not an anomaly. As the two cases that followed will show, they were gradually weaker representations of this complex form of exhibition-making. The integrative approach was seemingly dialled down for pragmatic reasons. This observation will be subject to further discussion in the conclusion of this book.

The time frame in which the three cases were developed spans eight years, starting in 2013, when we began to work on the exhibition *TOUCHDOWN*, and ending in 2020, when the exhibition *We Capitalists* was on display from 13 March to 30 August. Employed at the Bundeskunsthalle for more than two decades, I had worked in interdisciplinary curatorial settings before 2013 but was admittedly not explicitly aware of it at the time. It was the *TOUCHDOWN* project which first triggered in me a strong reflective and theoretical interest in interdisciplinary and integrative forms of collaboration, as I had never found myself in a comparably complex situation regarding the production process of an exhibition until then. It was therefore a practical necessity – a sort of emergency procedure – to acquaint myself with this field of research to cope with and improve my own practice as an interdisciplinary exhibition curator. Instead of continuing to fly blind when facing collaborative and integrative exhibition-making processes, I felt the need for a deeper understanding of these processes, both practically and theoretically, to then translate this knowledge into action to improve this specific practice of exhibition-making.

1.5.1 The transdisciplinary and participatory exhibition: Setting the bar for good practice – *TOUCHDOWN. An exhibition with and about people with Down's syndrome* (3 venues 2016 to 2018)

The first case study introduces the predominantly transdisciplinary and participatory exhibition *TOUCHDOWN. An exhibition with and about people with Down's syndrome* (Bonn, Bremen, and Bern, 2016–2018). Within the theoretical framework of this book, this exhibition serves as an example of a successful transdisciplinary project from the cultural realm, integrating different ways of knowing and of producing knowledge. The exhibition and the accompanying book aimed to comprehensively research and tell the history of people with Down's syndrome for the first time, as they had not been part of our written history so

far. Including a wide range of disciplines such as history, archaeology, social science, genetics, medicine, and art, the research process for this exhibition was conducted together with a group of people with Down's syndrome. They took part in the decision-making processes during the development of the exhibition, especially during the curatorial process of choosing and interpreting objects. At least fifty percent of the produced texts for the exhibition and the book were written by people with Down's syndrome. All other texts were written in a clear language. This joint language, accessible to all project participants, can be understood as a methodological tool to unite different forms of knowledge and to enable transdisciplinarity. People with Down's syndrome also acted as paid docents in their own exhibition and were thus not only part of the knowledge production but also of the interpretation and dissemination of the knowledge generated in this exhibition.

1.5.2 The 'inter-disciplined' exhibition: Art meets science – *Weather Report. About Weather Culture and Climate Science* (7 October 2017 to 4 March 2018)

The second case study investigates the practical processes of making the predominantly *interdisciplinary* exhibition *Weather Report. About Weather Culture and Climate Science* (Bonn, 2017), which combined curatorial perspectives from the fields of art, cultural history and science. This approach to our topic mirrored the real-life need of joining disciplinary and non-disciplinary forces to tackle the global threat of climate change – a monumental task to which this exhibition tried to contribute a new narrative. Like the first case study, this second one traces the production process from forming an interdisciplinary team, negotiating conceptual ideas and methods on to object choices, interpretation, and exhibition design. It, too, aims at testing my hypothesis that the complexity of interdisciplinary exhibition-making asks for a more precise and practice-oriented usage of the general term 'interdisciplinarity'.

By discerning between multi-, *inter-* and transdisciplinarity and understanding these three terms as describing different qualities of interaction and integration, I use these terms as a finer vocabulary for a detailed description and analysis of the practical processes of collaborative exhibition-making. This specific case analysis shows that the established procedural categories or qualities of interdisciplinarity can all occur in one and the same exhibition project, when examining the various phases and constellations of its production pro-

cess in greater detail. It also leads to the question of institutional consequences and collaborative standards.

1.5.3 The multidisciplinary exhibition and the political dimension of *interdisciplinarity – We Capitalists. From Zero to Turbo* (13 March to 30 August 2020)

The third case study about the exhibition *We Capitalists. From Zero to Turbo* (Bonn, 2020) introduces and analyses a predominantly multidisciplinary exhibition of a more encyclopaedic and less integrative nature regarding its practical production processes. The exhibition aimed at deconstructing the basic characteristics of capitalism to find out how deeply the system is actually manifesting itself in our daily lives. As a case study within this book, it stresses the political dimension of interdisciplinary collaborations and elaborates on the fact that interdisciplinarity needs to be actively created and supported within an exhibition team. It also introduces the idea of *interdisciplinary* interventions during the development process. Although the practical exhibition-making processes were of a rather low level of integration amongst the participants, the exhibition unfolded a significant *interdisciplinary* quality in the cooperation with additional external partners. But this case study also shows that a multidisciplinary exhibition can still be a good exhibition, for example due to its wide content horizon and its diversity of objects.

1.6 The structure of this book: Chapter overview

Chapter 2 will explore the two relevant bodies of references from museum studies and interdisciplinary studies as described above. Drawing on theories and cases from museum studies, this chapter discusses the history, nature and characteristics of temporary exhibitions and their innovative and experimental potential, especially with regard to research and knowledge production. It draws on literature from across the discipline but pays particular attention to exhibition theory and curatorial practice. Furthermore, chapter 2 will explore the role of curators in the context of collaborative and interdisciplinary exhibitions and research projects comparing the situations of cultural institutions and universities after briefly providing basic understandings of interdisciplinarity, drawing on references from interdisciplinary studies.

Chapter 3 sets out the theories of interdisciplinarity in much greater detail and provides a precise vocabulary for the analysis of the three interdisciplinary exhibition cases in the practical part of this study (chapters 4, 5 and 6). It makes the case for a classification of interdisciplinarity and its usefulness to the museum sector by delineating between three modes of interdisciplinarity that this book is attentive to throughout: multi-, *inter-* and transdisciplinarity. Chapter 3 also looks at understandings of bad and good practices of interdisciplinarity, and how this might help with learning from failure. Furthermore, chapter 3 introduces the methods used in this research to investigate and analyse my curatorial practice as an interdisciplinary exhibition curator.

Within the practice-based part (chapters 4 to 6), the book analyses the different forms of the general term interdisciplinarity using three recent exhibitions at the Bundeskunsthalle as case studies. Each of the exhibitions was managed and co-curated by the author of this book together with teams of external curators. The case studies approach has resulted in both a deep and nuanced perspective on exhibition-making and a longitudinal analysis of exhibition-thinking as, collectively, the exhibitions highlight changing practices and institutional conditions of production over several years, while on an individual basis they shed light on the challenges met by the exhibition teams that aspired to enable interdisciplinarity during each respective exhibition-making cycle. The case studies carefully investigate and analyse the relationships and decision-making processes that underpinned the production processes of the three interdisciplinary exhibitions introduced above: *TOUCHDOWN. An exhibition with and about people with Down's syndrome* (2016–2018), *Weather Report. About Weather Culture and Climate Science* (2017/18), and *We Capitalists. From Zero to Turbo* (2020). Each exhibition combined curatorial perspectives from the fields of art, cultural history, science, and everyday life.

In order to establish possible standards for this type of exhibition the case studies include critical reflection, autoethnography and extensive semi-structured interview material with co-curators and partners to investigate the opportunities, dynamics and limitations within the respective projects as well as the institution's role in them. A transparent 'behind the scenes' critique of internal project developments and institutional processes (see Macdonald 2002) reveals the complexity of interdisciplinary exhibition-making.

The conclusion (chapter 7) critically reflects on the lessons learned from these three practical exhibition cases. In the field of thematic exhibitions, it is of growing relevance to include a multitude of disciplinary and non-disciplinary perspectives, especially on subjects of immense societal relevance such

as climate change. This explains why especially the term transdisciplinarity becomes more and more important as it implies and advocates the integration and joint production of different forms of knowledge – academic knowledge as well as knowledge from other stakeholders in society. In order to fulfil the museum's aim to become a more democratic territory, an integrative way of exhibition-making is crucial.

2 Mapping out the scope of this research: A literature review

2.1 Introduction

In this literature review I want to delineate the landscape of my research which is spanning two academic fields – (1) interdisciplinary studies as a field in science theory and (2) exhibition-making as a theoretical and practical question in museum studies – and is incorporating a specific cultural practice, that is the practice of developing and realizing interdisciplinary temporary exhibitions. As a researcher and practitioner, I like to view myself as both a garden architect and an actual gardener building a small bridge over a creek between two different garden areas that have yet to form a joint landscape, thus hoping to create a new garden vista as well as a more direct pathway between the two fields. While this literature review constitutes the architectural plan for my interdisciplinary garden project, I will start using my shovel and other gardening tools to dig deeper into both fields and build my small bridge in chapter 3 which will discuss my methodology. This work will be continued in the analysis of the three exhibition cases in chapters 4 to 6.

I will start this second chapter with discussing the term 'interdisciplinarity' in general, incorporating sources from the academic field of interdisciplinarity studies (section 2.2). Then I will construct an overview of the history and typology of temporary exhibitions (section 2.3.1), exploring their potential and methods in both conveying and producing knowledge by using the existing literature on museum and exhibition theory and practice. While looking at specific aspects of temporary exhibitions such as innovation and experiment (2.3.2) as well as dialogue and narrative (2.3.3), I will explicitly focus on interdisciplinary exhibition-making. Following up on chapter 1, this literature review will also discuss the relationship between universities and cultural institutions – such as museums or exhibition halls (venues for temporary exhibi-

tions) – with regard to them both being sites of research and knowledge production (section 2.4). Here, national differences must be taken into account, as the United Kingdom has certainly been more advanced and experienced in collaborations between the academic and museum worlds than Germany, which is the site of the three case studies included in this book. In exploring the question how interdisciplinary exhibitions are developed and produced, I argue that the role of the curator/researcher as 'bridge-builder' (Klein 1990, p. 131; Klein 2010, p. 16) is essential and is in fact very similar to that of an interdisciplinary researcher (section 2.5). As a way to establish this position, I ask, what does it mean to practice interdisciplinary research? And can universities and cultural institutions learn from each other in this respect?

2.2 What is interdisciplinarity?

In order to answer the question what interdisciplinarity means in general, I would like to start with understanding its history. Was interdisciplinarity always there as a method of learning and producing new knowledge, or is it a newer research strategy? John Aldrich's book on interdisciplinarity includes a roundtable discussion titled 'Interdisciplinary Teaching in Political Science: Best Practices'. In this conversation Lisa Baldez associates interdisciplinarity with the mouldering and unrecognized angel in Gabriel Garcia Marquez's story 'A very old man with enormous wings.' In her view, this angel of interdisciplinarity was and is always there, but its importance and specific role has been forgotten over time and not been recognized again until recent years (Aldrich 2014, p. 264). Joe Moran supports this notion in his overview on the history and 'rise of the disciplines' (Moran 2010, pp. 3–13). He shows that the division of knowledge into disciplines, going back to the ideas of Aristotle, 'proved remarkably resilient' (p. 4) but was continuously challenged throughout history by more generalist – and interdisciplinary – approaches, aiming to unite what was becoming an increasingly fractured body of existing knowledge. The term university speaks to these debates, as it simply stands for universal or general knowledge (p. 5). Moran argues that philosophy played an important role in both classifying and at the same time unifying the developing disciplines as 'a kind of metacommentary' (p. 7), with the most substantial historical divide still relevant today taking place in the late 18th and early 19th century when the natural sciences were separated from the humanities and social sciences, the latter being stamped as the weaker 'non-sciences' as far as the use of rigorous

scientific methods was concerned (p. 10). Historical divides and subsequent alienations like this are still providing obstacles with regard to the increasing demand for interdisciplinary collaborations today. However, there is a growing recognition that interdisciplinarity is vital if we are to address the significant problems of humankind that require the input of several disciplines (see, for example, Jungert et al. 2010, p. 10; Schipper et al. 2021).

While the authors discussed above date interdisciplinarity back to the birth of academia, other authors have described interdisciplinarity as akin to an intellectual earthquake in the late 20th century[1] turning the educational landscape upside down.

> Interdisciplinarity […] means the end of modernity: the breakdown in the separation of the public sphere and the isolation of the one kind of knowledge – scientific [meaning academic] – from other kinds of discourse. It also portends the end of academic autonomy, as knowledge becomes a common possession of society at large, most obviously via the Internet (Frodeman 2014, p. 191).

Here, Frodeman does not only talk about interdisciplinarity within the confines of academia but about a transdisciplinary development leaving these confines behind. His topic is therefore rather the question of academic outreach to society, which constitutes one aspect of the definition of transdisciplinarity. But let us now turn from the 'since when' to the 'what is it all about' in order to answer the question headlining this section: What is interdisciplinarity?

Moran's thinking about interdisciplinarity is interesting for my research, because he investigates the topic from the perspective of the humanities, whereas a lot of literature in the field of interdisciplinary studies originates from a science context. He finds this pragmatic definition of interdisciplinarity: 'I take interdisciplinarity to mean any form of dialogue or interaction between two or more disciplines: the level, type, purpose and effect of this interaction remain to be examined' (Moran 2010, p. 14). As an interdisciplinary researcher of English and Cultural History (combining textual criticism, history, and social anthropology) at the University of Liverpool, Moran takes on a broader view perhaps also because one of his own research interests is transcending the so-called academic world by focussing on the culture of everyday

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1 Machiel Keestra dates the term 'the interdisciplinary' back to around 1925 (Keestra 2019, p. 110, 111), but the concept has gained momentum from the 1970s onwards.

life. This aspect of his work is especially interesting, because the reality of our daily lives is naturally interdisciplinary, as it is not divided into disciplines, an observation that lets the academic structure of disciplines appear in a rather artificial light. As Moran unfolds the history and theory of disciplines as outlined above, he argues for interdisciplinary collaborations that do not dissolve the existing and established disciplines but make them more 'critically and self-consciously' aware of their own changing nature, and more 'open to different ways of structuring and representing their understanding of the world' (p. 181). Interdisciplinary exhibitions can be just like that, on the one hand deeply relying on the expertise of specialized disciplines, but on the other hand having an enormous potential for bridging disciplinary gaps and for being open-minded and creative. Moran concludes that 'interdisciplinarity can disrupt the deceptive smoothness and fluency of disciplines, questioning their status as conveyors of disinterested knowledge by pointing to the problematic nature of all claims to scientific objectivity and neutrality' (p. 180).

After these introductory observations that focussed mainly on the ideas of Moran, it is time to explain why the most important author this study is relying on in terms of a theoretical framework is Julie Thompson Klein (1944–2023), who was certainly the most prolific and influential author on the topic of interdisciplinary research. In 2019, a special volume of *Issues in Interdisciplinary Studies* was published on the work of Klein. In his contribution, Machiel Keestra explains why her book *Interdisciplinarity: History, Theory, and Practice* (1990) in particular was indeed 'groundbreaking' (Keestra 2019, p. 111). Klein's work is based on the 'ideas of unity and synthesis' (p. 111) of knowledge, and the 'defining feature' of interdisciplinarity for her is 'the process of integration' (p. 110). Together with William H. Newell, Klein provided 'a definition of interdisciplinarity that has found wide acceptance, […] because it avoids defining interdisciplinarity in a […] content-based way. Instead [her] definition focuses on the process of integration of disciplinary insights […], describing it as a means to reach a more comprehensive insight into a complex problem' (p. 112). Her description of the characteristics of interdisciplinary research processes and the taxonomy she developed and refined for this purpose are generally applicable to all disciplinary contexts and therefore of huge relevance for this research.

Diving into the terminological discussion on interdisciplinarity can be very rewarding and revealing for a better understanding of the characteristics of interdisciplinary projects and their processes both in the contexts of universities

and cultural institutions. Thus, Klein's taxonomy[2] of interdisciplinarity (Klein 2010, p. 16) can serve as framework for a finer understanding and more detailed description of interdisciplinary exhibitions. As briefly introduced in the introduction to this book, Klein distinguishes three types of interdisciplinarity (here serving as the general term): multidisciplinarity, *interdisciplinarity* (in a narrower sense; put in italics throughout this book) and transdisciplinarity (Klein 2010, p. 16). These terms are often used synonymously, and it is therefore even more important to understand and discern their respective characteristics:

1. Multidisciplinarity is described by Klein as a 'pseudo interdisciplinarity' that can be understood as 'encyclopaedic', 'juxtaposing', 'sequencing', 'coordinating', 'complementing', and 'indiscriminate' (p. 16). Multidisciplinarity is basically 'additive, not integrative' (Klein 1990, p. 56). Many research projects that label themselves as being interdisciplinary are in fact multidisciplinary, lacking in integration amongst the involved disciplines.
2. *Interdisciplinarity* (in a narrower sense) is described as an 'integrating, interacting, linking, focusing, blending', and 'generalizing' kind of collaboration, which enables a 'partial integration' (Klein 2010, p. 16). It resembles an increasing degree of integration among the participating disciplines.
3. Transdisciplinarity is described by Klein as a 'transcending, transgressing and transforming' (p. 16) kind of interaction. It enables 'systematic', 'conceptual, structural', and even 'unifying' integration as well as 'transsector interaction' (p. 16), allowing for collaboration between universities and other 'extra-academic' (Keestra 2019, p. 113) parts of society. In recent years, Klein has especially focused on transdisciplinary research fostering academic outreach strategies and the integration of different forms of knowledge such as 'experiental knowledge' from the 'real world' (see Keestra 2019, pp. 113, 114).

These three types of interdisciplinarity can be viewed as gradually increasing qualities or 'degrees of collaboration': from 'shared' to 'cooperative', from 'complementing' to 'hybridizing', from 'bridge building' to 'restructuring', from

2 For another useful analysis of the terminology of interdisciplinarity see, for example, Jungert et al. 2010, pp. 1–12.

'partial integration' to 'full integration' (Klein 2010, p. 16). Dahlgren and Hermes offer a similar discussion regarding 'degrees of *participation*' (Dahlgren and Hermes 2015, p. 123, emphasis added), another important keyword used both in academia and the cultural sector. They are describing these degrees as 'power balance between the interacting parties' (p. 123). It is certainly true that discerning the degrees of interdisciplinary collaborations also has a political dimension. This political aspect of interdisciplinarity will play an important role within the cases studies of this book.

But at this point I would already like to briefly focus on the important relationship between, particularly, transdisciplinary research and participation. There is a noticeable absence of the term participation in the science theoretical literature on interdisciplinarity in all its forms. Instead, the focus there is on the integration of knowledge to solve problems. But transdisciplinarity holds a 'promise' which Merritt Polk describes as joining the 'in-depth participation of users and the integration of relevant knowledge from both practice and research in real-world problem contexts' to 'produce socially robust results' (Polk 2014, p. 439), thereby acknowledging the social aspects of scientific problem solving. Participation is, by definition, socially and politically motivated (see Huybrechts 2014, p. 11) and touches on concepts of 'social belonging', 'social inclusion and exclusion', and 'cultural representation' (Dahlgren and Hermes 2015, p. 120). Participatory transdisciplinarity thus takes seriously what Klein called the 'transsector interaction' (Klein 2010, p. 16) between academia and society. Polk writes about the practical challenges that participatory transdisciplinarity provides, but also about how 'tightly linked' participation and transdisciplinarity are through 'the integration of different types of values, knowledge, perspectives and expertise from different sources' (Polk 2014, p. 442). She also states that 'a high level of participation often presumes the integration of knowledge, values, expertise and perspectives' (p. 442). Reestorff et al. also claim that specific 'participatory and collaborative processes' are 'inherently transdisciplinary' in the way they 'move between and beyond disciplines' (Reestorff et al. 2014, p. 6) and they advocate 'transdisciplinarity that takes an empirical interest in cultural participation' (p. 7). This important discussion shows that perhaps the literature in interdisciplinary studies (or science theory at large) is still not talking enough about social and cultural participation, whereas the literature on participation is perhaps not sufficiently acknowledging the integration and production of knowledge as being part of the respective collaborative processes.

2.3 Exhibition-making and the production of knowledge

2.3.1 The history and typology of temporary exhibitions

When looking at exhibitions as sites of knowledge production – and eventually at how interdisciplinarity plays out in this cultural practice – the literature documents well how closely the birth of this genre is connected to both the industrialization and the parallel development of the specialization and particularization of knowledge at universities. The history of museums and exhibitions mirrors the historical developments in the economy, politics, and education (see, for example, Bennett 1995, Waterfield 2015). Since the 19th century at the latest, museums and exhibitions have largely contributed to the construction of knowledges and disciplinarity (Whitehead 2009, p. 7), especially after opening their doors to the general public (Bennett 1995, p. 59), transferring 'cultural and scientific property from private to public ownership' (p. 73).

Reesa Greenberg et al. have described their 'effort to delineate a difference between thinking about exhibitions and thinking about [...] "museum culture"', suggesting that the 'growing number and diversity of temporary exhibitions' today asks for a separate discourse entangled from the literature relating to museums (Greenberg et al. 1996, p. 2). And there is certainly more literature to be found on the topic of exhibition-making in recent years (see, for example, Bjerregaard 2020, Hansen et al. 2019, Macdonald and Basu 2007, MacLeod et al. 2012, Marincola 2015). Historically speaking, it is also important to distinguish between museums and temporary exhibitions as these two forms of presentation were entirely separate enterprises until the beginning of the 20th century (te Heesen 2012, p. 14). The second half of the 18th and the 19th centuries saw the separate development of the institution of the museum (divided in museums of art, history and natural science) as opposed to early forms of temporary exhibitions such as mostly commercial (and taste-building) art exhibitions, department stores, amusement parks, and local or global industrial fairs, among them the extremely influential world expositions (see, for example, Bennett 1995, Waterfield 2015). These new institutions and exhibition formats 'served as linked sites for the development and circulation of new disciplines (history, biology, art history, anthropology) [...] as well as new technologies of vision' (Bennett 1995, p. 59).

A basic difference between the museum and the temporary exhibition is their time frame. While museums were originally planned for the unlimited preservation of objects and thus were representing institutions of continuity,

the exhibition is, by definition, of ephemeral nature (te Heesen 2012, p. 15). 'In the context of the traditional museum, the temporary exhibition is an anomaly' (Waterfield 2015, p. 175). The original purpose of exhibitions has been the display of new and exciting objects and contents either of art, science, or industry (te Heesen 2012, p. 22) and has thus been closely linked to the concept of innovation as well as to economic interests from the start. Exhibitions 'were born on the marketplace', says Giles Waterfield (2015, p. 175), and he states that 'even its most scholarly modern form, the temporary exhibition, [...] still operates as a spectacle' (p. 176, see also Bennett 1995, pp. 59–88). Tony Bennett adds the political dimension, describing both museums and temporary exhibitions as 'displays of power' (Bennett 1995, p. 59), or as the German art historian Ekkehard Mai puts it, 'every presentation is at the same time representation' (Mai 1986, p. 50, transl. HP).

Katharina Hegewisch questions the increasing speed and mobility of the 'exhibition merry-go-round', especially with regard to temporary art exhibitions, and advocates a more thoughtful and independent process of exhibition-making, which is not working according to schemata (meaning theoretically categorized exhibition types or economically successful exhibition models) but is adjusting to the individual case at hand (Hegewisch 1991, pp. 13–14, transl. HP). Still, it might be rewarding to take a closer look at existing typologies of temporary exhibitions. Waterfield investigates the historical development of exhibition types and genres such as art exhibitions, industrial art exhibitions, historical exhibitions, and what he calls 'scholarly' (Waterfield 2015, p. 194) or 'thematic' (p. 178) exhibitions. He observes that this last format emerged comparatively late in the last decade of the 19th century (p. 178).

In 1986 Mai published a history of exhibition-making also including a detailed discussion of the established spectrum of exhibition types in the 20th century in post-war Germany (Mai 1986, pp. 51–84). He states that these exhibition types have clearly developed out of political and disciplinary motifs and interests (pp. 83–84). While, after WWII, art exhibitions already thrived again in the 1950s, especially the renewed calls for public education in the late 1960s created a growing demand for various exhibition types (p. 53). At that time in Germany, art historical and historical exhibitions served the consolidating purpose of redefining national and regional identities in a yet still fragile international context (p. 54). In search for a 'utopian past', and thereby avoiding the more recent past, archaeological and ethnographical exhibitions started to emerge (p. 54). Apart from exhibitions on contemporary art, art history and the specific types of treasure and masterwork exhibitions, Mai discusses the cul-

tural history exhibition as a type (pp. 65–72), which seems to be close in definition to what Waterfield calls the scholarly or thematic exhibition mentioned above. Mai describes the cultural history exhibition – mostly focussing on historical epochs, eminent persons in history, or on national or regional cultures – as 'the type of the highest political and factual complexity, as it is related to a multiplicity of motifs and functions' (p. 65, transl. HP). This type of exhibition has mostly been conceptualized and displayed in a large and representative manner, inviting the fields of art, academic research, and politics to join forces serving governmental political, social, and economic purposes (pp. 65, 69). Such large thematic exhibitions do have the potential to display new research and to test its relevance to current society (p. 65), but an obvious danger is that they exploit objects and ideas to fit a bigger narrative (p. 66), reminiscent of Bennett's 'narrative machinery' (Bennett 1995, p. 179). Mai argues that the 'aura and authenticity' of objects should rather serve the conveying of historical contents in a situational and subjective way, than exploiting them for so-called objective histories (Mai 1986, pp. 66–67), an observation which seems still relevant almost 40 years later. Another danger of thematic exhibitions has been (and occasionally still is) their at times blind chase for 'superlatives' (p. 72) that could lead to a 'non-committal, arbitrary, and random' choice of objects and contents (p. 67, transl. HP). Steven Dubin's book *Displays of Power* from 1999 shows arguments which are similar to Mai's critical description of this type of exhibition from 1986. In the introduction to his detailed analysis of several exhibition examples at museums in the United States, Dubin stresses the importance of museums (and exhibitions) as 'venues in which a society can define itself publicly', being one of the few places in which culture becomes tangible. But this unique potential of museums can only too easily be misused for 'displays of [political] power' and 'academic power plays' (Dubin 1999, p. 3). In recent years there have been several examples of cultural history exhibitions in Germany[3] which were not governed by a certain ideology and were consciously questioning the 'power and knowledge relations' (Bennett 1995, p. 59) mentioned above.

3 An outstanding example was the exhibition *Racism. The Invention of Human Races* at the Deutsches Hygiene Museum in Dresden in 2019: https://www.dhmd.de/en/exhibitions/archive/racism (last accessed 4 April 2023).

An institution internationally known for its cultural history exhibitions is the Bundeskunsthalle[4] in Bonn, German's federal exhibition hall, which has already been introduced in chapter 1 of his book. After decades of planning, it was opened in 1992 (shortly after the political decision was made to move the capital to Berlin) and was modelled after the Centre Pompidou (founded in 1977 in Paris) regarding its large-scale and multidisciplinary exhibition programme (see Heinich and Pollak 1996, p. 236), but without a collection of its own. Pontus Hultén, who was the founding director of the Centre Pompidou, later became the founding director of the Bundeskunsthalle as well. Following the Centre Pompidou's lead, the Bundeskunsthalle especially developed exhibitions that were 'thematic/encyclopaedic (grouping various categories of works – visual arts, architecture, literature, music, etc. – around a subject)', and aside from that mainly three other large-scale exhibition types: 'monographic (of a single artist), […] historical (covering a period), [and] geographic (from a region or country)' (p. 236). Thriving in the era of the so-called blockbuster exhibitions, the Bundeskunsthalle, where I have been working as an exhibition manager and curator since 2002, is specialized in making large-scale temporary exhibitions. Apart from art exhibitions of a large variety, many of them were cultural history exhibitions often combing historical, geographic, and thematic contents (using Heinich and Pollak's vocabulary) and thus being interdisciplinary (or at least multidisciplinary) exhibitions – some of them with official political backgrounds and motifs that would be worth a critical investigation in hindsight, but amongst them also a number of very progressive examples, especially in recent years.[5]

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4 The institution's full name is Kunst- und Ausstellungshalle der Bundesrepublik Deutschland (Art and Exhibition Hall of the Federal Republic of Germany), accessible at: https://www.bundeskunsthalle.de/en/ (last accessed 2 April 2024).

5 As I will introduce three interdisciplinary exhibitions of the Bundeskunsthalle in great detail in chapters 4 to 6 of this book, I would like to mention two examples of this exhibition type from two other German institutions at this point. (1) The exhibition *Weltwissen: 300 Jahre Wissenschaften in Berlin* (World Knowledge: 300 Years of Sciences in Berlin) was presented at the Gropius Bau in Berlin from September 2010 to January 2011 (https://www.berlinerfestspiele.de/en/berliner-festspiele/programm/bfs-gesamtprogramm/programmdetail_10195.html, last accessed 6 April 2023). Although mainly a historical exhibition on academic research, *Weltwissen* advocated a critical attitude by society and its citizens towards the results of academic research emphasizing the university's social responsibility and relevance. Furthermore, the exhibition did support the importance of networking and outreach across disciplines and institutional barriers. It also extensively explored different methods of research like measuring, draft-

I am interested in such thematic exhibitions not only as a practitioner but also theoretically speaking – even more so, if they draw a broader picture on a theme of public concern or interest, for example, by setting exhibitions on specific historical epochs or national cultures in a larger historical or societal context, while also opening up towards other disciplines such as the natural sciences. This type of exhibition is more open to interdisciplinary and participatory work than other types of exhibitions, as the mere complexity of its content is asking for collaborations among participants from diverse academic and cultural backgrounds. To enhance the social and political relevance and openness of such exhibitions in a democratic sense, it is nevertheless important to bear in mind that 'exhibitions actually talk not only about the objects on display but also about the people who prompted them and the ideologies at work' (Nicolescu 2016, p. 466). Analysing the actual processes of exhibition-making seems thus an ever more important methodological task which promises to be both revealing and rewarding with regard to future exhibitions.

In her *Introduction to Museology* (2014, a handbook published in German language), Katharina Flügel states that in museums studies a consensus regarding the categorization and classification of exhibition types has not been reached yet. The only clear distinction so far is drawn between permanent museum exhibitions and temporary exhibitions. Apart from their limited duration, temporary or special exhibitions are mainly characterized by possessing a greater amount of conceptual and aesthetical freedom, and by providing more possibilities for collaboration (Flügel 2014, pp. 117–119). Especially this last characteristic is relevant for my research question regarding interdisciplinary exhibition-making as a collaborative cultural practice. In contrast to this careful approach to classifying exhibition types, Barry Lord and Gail Dexter Lord (in their

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ing, experimenting, travelling, and interpreting through the medium of the exhibition (Hennig et al. 2010, pp. 7, 18). (2) Another unusual exhibition example was *Wunder: Kunst, Wissenschaft und Religion vom 4. Jahrhundert bis zur Gegenwart* (Wonder: Art, Science and Religion from the 4th Century to the Present) shown at the Deichtorhallen in Hamburg from September 2011 to February 2012 (https://www.deichtorhallen.de/en/ausstellung/wunder, last accessed 6 April 2023). This interdisciplinary exhibition was, all in one, a cultural history exhibition, a science presentation, and an art exhibition. In its attempt to look at wonders of all sorts from a multitude of perspectives, it combined religious beliefs, artistic interpretations of the inexplicable, miracles of everyday life, and wonders of modern technology (Tyradellis et al. 2011, p. 11), thereby also questioning our modern belief in unlimited progress.

Manual of Museum Exhibitions) divide museum exhibitions into four types, relating them to four different modes of apprehension: art as being related to aesthetic contemplation; history, archaeology and ethnography as being related to contextual or thematic comprehension; natural science as being related to the mode of discovery; and science centres as being related to interaction (Lord et al. 2002, p. 22). Although the authors admit that these types and modes of apprehension may be combined and used by all types of exhibitions, I doubt the usefulness of such a stereotypical categorization in the first place. A more recent publication such as the *Curator's Handbook* by Adrian George from 2015 seems to take on a more 'anything goes' approach by not offering a detailed analysis of exhibition types at all, but just stating instead that temporary exhibitions 'could have almost any theme, from historical to contemporary, and can be any type of show' (George 2015, p. 38). Instead of looking for a schematic typology of temporary exhibitions, it is more useful to explore the growing number of case studies and 'ethnographies of exhibition-making' (Nicolescu 2016, p. 466, as already cited in chapter (1) in my quest for possible collaborative standards of interdisciplinary exhibitions, a genre within the academic literature of museum studies to which this research tries to contribute.

2.3.2 The innovative and experimental potential of temporary exhibitions

Museums have been described as 'retrospective prophets', reading and narrating the past to predict the future, but both museums and especially the short-lived format of the exhibition 'came increasingly to embody [...] ideologies of progress' (Bennett 1995, p. 179). The claim for novelty and innovation is something exhibitions and academic research do have in common, as both are searching to find or create new insights or even new intellectual or aesthetic phenomena (see, for example, Flügel 2014, p. 107, Norton-Westbrook 2015, p. 350). Macdonald and Basu identify 'claims to novelty' as 'part of the standard discourse of exhibition-production,' but they warn of 'the characteristic Euro-American obsession with novelty'. Exhibitions which are striving for novelty are not necessarily inventive and experimental in the sense 'that they trouble existing knowledge and practice' in a constructive way (Macdonald and Basu 2007, p. 19). As, for example, Leila Tabassomi's collection of interviews with Swiss exhibition curators and designers shows curators were nevertheless emphasizing that exhibitions should strive for novelty (Tabassomi 2010, p. 17), but in recent years, goals like societal relevance, equity and participation have

certainly taken the lead (see, for example, Simon 2010 or Janes and Sandell [eds] 2019).

Exhibition-making means theorizing and structuring objects, and 'establishing specific knowledge relations' (Whitehead 2009, p. 134). It means the 'physical, intellectual and territorial bringing together of objects' and ideas, and at the same time the 'separating and silencing of others' (p. 134). This can take place either divided by material categories or across such categories. Whitehead describes museum collections and displays (exhibitions) as 'embodied theory', making the point that 'cultural actions such as collection, classification, conservation and display are in fact ways of theorizing the world' (Whitehead 2009, p. 20) and thus are means of knowledge production. I argue that exhibitions can play a significant role in the organization, structuring, mapping, simulation, visualization, and communication of knowledge, especially as these methods have become an integral part of the production of knowledge itself and thus are used in both universities and museum alike. For example, Katy Börner's *Atlas of Science* is based on the exhibition *Places and Spaces: Mapping Science*,[6] which has described and displayed not only the scope and interwovenness of today's existing knowledge by employing techniques of mapping and visualization but is also aiming at enhancing interdisciplinary collaboration and outreach to the public. 'Ultimately, the inner workings and impact of interdisciplinary research should be communicated and understood by scholars and the general public alike (Börner and Boyack 2010, p. 460). Methods such as structuring and mapping are, of course, used in both monodisciplinary and multidisciplinary exhibitions.

What then, do museum studies scholars and practitioners believe, are the vital components for a meaningful and successful exhibition? Macdonald and Basu state that all exhibitions involve the assembling of different 'people, things, ideas, texts, spaces, and media' constituting a complex apparatus, in which the 'different components interact with each other, generating new and unanticipated outcomes (Macdonald and Basu 2007, p. 9). It is this often unpredictable outcome that makes authors like Jens Hoffmann describe exhibitions as an 'anthropological endeavour' that provides a 'passage through unfamiliar territories' (Hoffmann 2015, pp. 56–57). In his commentary 'Museum as Method' from 2010 (see also Thomas 2016, pp. 65–114), Nicholas Thomas, similar to Hoffmann, uses the term 'discovery' as one ingredient of

6 An exhibition touring since 2005: https://scimaps.org/about (last accessed 6 April 2023).

a good exhibition, along with a careful contextualization through captioning and juxtaposition: 'A good exhibition should make material accessible at multiple levels' (Thomas 2010, p. 9), offering 'problems rather than solutions' (p. 10). In raising questions rather than presenting answers, exhibitions are clearly contributing to the production of knowledge instead of simply presenting already existing knowledge unquestioned. It is the process of making exhibitions and the process of receiving them that has the potential to generate new knowledge. Peter Bjerregaard edited an important and more recent collection of essays titled *Exhibitions as Research* in 2020, already cited in chapter 1, in which he further develops this understanding of exhibition-making 'as a particular way of doing research, a way of exploring the world around us rather than mirroring it' (Bjerregaard 2020, p. 1).

Thomas also raised a crucial question with regard to my own research: as much as museums – in his context anthropological museums – were rooted in academia, their work has been gradually overlooked because of the university disciplines' preoccupation with theory as the 'locus for invention in disciplines', considering practices as 'sub-theoretical' (Thomas 2010, p. 8, see also Arnold 2015, p. 322). In a similar way to Whitehead, Thomas argues that the encounter with objects and the curatorial work with these materials can 'challenge many every-day or scholarly understandings of what things are and what they represent' and can thus create new knowledge (p. 8). In her compilation of essays on *Things that Talk* (2004), Lorraine Daston writes that things are far from being 'speechless' (similar to Latour 2005 as cited above), 'things communicate by what they are as well as by how they mean' (Daston 2004, p. 20), they talk when fusing matter and meaning. Citing Thomas on the 'mutability of things in recontextualization' (p. 17), Daston tries to bridge the gap between academic facts and cultural readings (as stated on the book cover).

Following Thomas and Daston, I argue that the methodologies of academic research and museum work (and academic work and museum research) may seem to be different, but they both have the potential to be innovative theoretically and practically. When taking a closer look at these methodologies, one finds distinct similarities. For example, John Pickstone's definition of the scientific methods of analysis and experimentalism (exploring ways of knowing in science, technology, and medicine, but using a much wider understanding of the term 'science' not limited to the natural sciences, Pickstone 2000, p. 207) is relevant in this context. Analysis – the traditional or 'ideal-type way of knowing' (Pickstone 2000, p. 130) – aims to achieve an order among known elements

by 'taking things apart', by dissecting, comparing, rationalizing, and classifying things.

Experimentalism builds on analysis (the deep understanding of the material in question) but is about a controlled act of synthesizing and putting things together to create something new – a new context, or even a new phenomenon (Pickstone 2000, p. 12). The process of exhibition-making does necessarily involve these two and other methods, and museums – and more specifically exhibitions – can very well be understood as 'laboratories' in that sense (Macdonald and Basu 2007, p. 2). Macdonald and Basu insist that exhibition-making involves an 'experimental practice' and that exhibitions are 'sites for the generation rather than reproduction of knowledge and experience', being 'experiments in meaning-making' (pp. 2–3; see also Hauser 2010, p. 52). Referring to Paul Feyerabend's understanding of a 'really creative science', relying rather on 'imagination and critical faculties' than on methodological rules, Pickstone advocates a pluralistic understanding of ways of knowing and the breaking down of 'the supposed boundaries of "science" and the supposed exclusivity of "scientific" method' (Pickstone 2000, p. 208). Drawing on the ideas of Charles Newton, Whitehead even takes an all-encompassing way of knowing into consideration, in which all human-made objects might be viewed as works of art, thus overcoming both established museological hierarchies and disciplinary boundaries (Whitehead 2009, pp. 135–136). These positions are all at least worth considering when it comes to achieving a better understanding of the making of interdisciplinary exhibitions, which may also involve the encounter of art and science.

2.3.3 The dialogical and narrative qualities of temporary exhibitions

Apart from innovation and experiment, two other key methods of exhibition-making have been discussed increasingly in recent years – dialogue and narrative (see, for example, MacLeod et al. 2012). The following statements by professionals underline the social and dialogical potential of exhibitions and their communicative aims and challenges. Nicholas Thomas describes the 'museum as method' as a 'distracted meditation on larger histories […] that throws wide open the questions of history – what […] are we to remember and consider significant?' (Thomas 2010, p. 8). The Swiss exhibition curator Angeli Sachs says, 'A really good exhibition has to leave an overall impression that stays in your mind for a long time.' And she adds that this impression 'is incorporated within the bigger picture which constitutes our understanding of culture' (Tabassomi

2010, p. 17), reminiscent of Whitehead's above cited notion of exhibitions contributing to our 'theorizing of the world'. In the same publication (a collection of interviews), exhibition curator Francesca Ferguson describes an exhibition as a 'social room which brings together the broken pieces of our times, in a conscious opposition to the fleeing images of the media world' (p. 25). Following this argument, she underlines the importance of thematic rather than monographic exhibitions. Exhibitions are 'rooms for reflection' and have the 'potential for dialogue' (p. 26, see also Latour 2005, p. 15). Macdonald and Basu emphasize that exhibitions 'must be understood as sites of cultural mediation […], a process that partly constructs that which it mediates' (Macdonald and Basu 2007, p. 11). 'The challenge for exhibition makers is to provide within exhibitions the contexts and resources that enable audiences to choose to reorganize their knowledge' (Karp 1991, pp. 22–23) or to even learn something entirely new. Baxandall describes the exhibition as an active (not static), dialogical field involving at least three independent players or 'agents': 'makers of objects, exhibitors of made objects, and viewers of exhibited made objects' (Baxandall 1991, pp. 36–37), all three of them forming a 'social occasion.' He stresses that the exhibition-maker's role is rather a stimulating one, which takes into account that they are not the only player on the field (p. 41).

The dialogical quality of exhibitions is closely related to the notion of some authors describing exhibition-making as storytelling, for example Hoffmann who uses the phrase 'dramatic construction' for exhibition concepts (Hoffmann 2015, p. 56). Heinich and Pollak have discussed comparing exhibition curators to 'auteurs', similar to the role of film directors, in order to stress the creative and artistic aspects of curatorial work (Heinich and Pollak 1996, pp. 238–241, see also Arnold 2015 about Robert Storr, p. 331). For Peter Jetzler, former director of the Historisches Museum Bern, exhibition-making is all about good storytelling. In addition to other skills, an exhibition curator should have an 'artistic attitude' as curating is, for Jetzler, an 'applied art' and 'an exhibition can become an artwork in its own right' (Tabassomi 2010, pp. 13–14). As a historian, Jetzler is not only talking about art exhibitions here but about exhibitions in general. Crew and Sims, taking a similar stance to Baxandall, have made the very important point that it is not only curators who create an exhibition's narrative, because an independent 'narrative is being constructed by the audience, whether the exhibition developers like it or not' (Crew and Sims 1991, p. 173). Robert Storr has analysed and questioned the stories told in art exhibitions and their accompanying catalogues, arguing that it is important not to 'impose meaning' but rather to 'offer proposals for meaning', and that 'exhibition-

makers [should] contribute by facilitating this expansion of meaning rather than containing it' (Storr 2015, p. 31) – a piece of advice that is certainly true not only for art exhibitions. The exhibition designer Xavier Bellprat is more confident about storytelling than Storr, saying that exhibitions are still a very powerful medium – despite the internet – because they are creating 'narrative environments' which provide a context and structure for the shown contents and materials' (Tabassomi 2010, p. 9).

However, exhibition visitors are comparatively free in how they understand and move within this narrative, and they have the possibility to interact with objects, which are in most cases not part of their everyday lives. Thus, the exhibition can be received as an immediate experience by its visitors, setting it apart from other indirect media of presentation (Flügel 2014, p. 110). For exhibition curator Roger Fayet exhibitions are also still important because of this specific way of reception, a 'mature' way, in which the recipients have 'a great amount of freedom' (Tabassomi 2010, pp. 21–22), also for developing an exhibition narrative of their own. As Hanks, Hale and MacLeod have pointed out, 'all narrative is constructed, and therefore contested […], but that capacity for provocation is precisely where its creative potential lies' (Hanks et al. 2012, p. xxiii).

Summing up this part of my literature review, it can be stated that exhibition-making combines both academic and artistic methods (obviously being fluid categories) such as analysing, structuring, classifying, focussing, selecting, experimenting, contextualizing, visualizing, storytelling, and enabling dialogue and public discussion. Exhibitions 'being fictional constructions as well as based on scholarly factual research […] reside at the interface of scholarly and artistic practice' (Hauser 2010, p. 49).[7] And exhibition-making means being prepared to discover new knowledge, not only on the visitors' side, but primarily by curators during the process of developing exhibitions (p. 50). How these research processes of exhibition-making play out in interdisciplinary settings, will be subject of the case studies in chapters 4 to 6.

7 The first case study of this book about the transdisciplinary exhibition *TOUCHDOWN. An exhibition with and about people with Down's syndrome* will be a good example of an exhibition matching this definition.

2.4 Outreach and interdisciplinarity: The academic world in relation to the collaborative cultural practice of exhibition-making

Pleas for reaching out to society and engaging with the 'real world' can be found in both the recent literature in museum studies (see, for example, Lehmann-Brauns et al. 2010; Dahlgren and Hermes 2015) and the literature on academic research (see, for example, Jungert et al. 2010; Barry and Born 2013). Museums and universities have both discussed and developed strategies for outreach and for opening up to the public, in order to play an important role within society, both for idealistic and economic reasons. The Deutscher Museumsbund together with ICOM (International Council of Museums) Germany published the revised 'Standards for Museums' in July 2023,[8] stating that: 'Museums are forums of public discourse [… and] react to social, political, and economic changes' (p. 13). Furthermore, museums are 'social meeting points that actively include their environments and communities into their own work' (p. 13, both quotes transl. HP). The visitor's perspective seems to meet these goals. According to the 2013 report 'Unpacking exhibitions' by the research consultancy Morris Hargreaves McIntyre (a market analysis commissioned by sixteen cultural venues in London), exhibition visitors are longing for cultural activities which provide a social and meaningful experience,[9] and they are very much interested in activities that increase their knowledge or enable them to take on a new perspective, learn a new skill or a new appreciation (Morris Hargreaves McIntyre 2013, p. 9), a result that would certainly also apply to the German situation.

Although closely linked in many ways, both institutional entities being places for the production and transfer of knowledge, the relationship between universities and museums is sometimes still described and experienced as 'delicate' (Lehmann-Brauns et al. 2010, p. 5) or 'uneasy' (Souhami 2011, p. 8, see also Norton-Westbrook 2015, p. 351). One of the reasons for this might be the assumption that there must be a dividing difference between academic and cultural or artistic products. Academic products have been described as indulging in 'exclusionary practices', and as being too complicated and aloof, and have been viewed as being disconnected from the 'ordinary' world (Dahlgren

8 https://icom-deutschland.de/images/Publikationen_Buch/dmb-leitfaden-standards-fuer-museen-online.pdf (last accessed 24 August 2023).

9 This is probably even more the case after the COVID-19 pandemic.

and Hermes 2015, p. 132, see also Huber 2011, p. 232). Whereas cultural products – meant here as products of popular culture which are accessible by the public – have sometimes been regarded from an academic point of view as being too simplistic or even populist, and in their attempt to convey knowledge to a wider public supposedly not reaching up to academic standards (Huber 2011, p. 232). Marilyn Strathern and Elena Khlinovskaya Rockhill, two social anthropologists who have critically analysed the public engagement strategies of the Cambridge Genetics Knowledge Park, an interdisciplinary research centre, nevertheless stated (at least for the realm of the natural sciences) that 'the relationship between science and society has shifted from a deficit model of public understanding never catching up with science to a proactive hope for public engagement with science' (Strathern and Khlinovskaya Rockhill 2013, p. 119). Dahlgren and Hermes are citing and supporting John Hartley's[10] plea for overcoming the divide between the 'knowledge class' and the 'ordinary people', 'as both are relevant sites of knowledge production' (Dahlgren and Hermes 2015, p. 132). Furthermore, they are supporting the development of public knowledge by saying that 'if democracy is deliberation by many on the best life possible for all, popular culture is the place where it will happen' (p. 131).

With regard to recent developments in the social and natural sciences, Andrew Barry and Georgina Born analyse the relatively new interdisciplinary field of 'art-science' (Barry and Born 2013). This field is dedicated to a curiosity-driven and science-inspired production of art as an interpretation of scientific knowledge, which has the potential to be inventive and to re-inspire academic research, forming a 'heterogeneous space of overlapping interdisciplinary practices at the intersection of arts, sciences and technologies' (p. 248). This space is not only seen as an internally productive experiment for innovation within universities, but also as a powerful instrument for outreach to the public, using the arts as a means of communication (p. 254), contextualization and potentially even as a research method (see also, for example, Hansen et al. 2019). In this respect Barry and Born are citing Helga Nowotny (Nowotny et al. [2001] *Re-Thinking Science: Knowledge and the Public in the Age of Uncertainty*. Cambridge: Wiley, pp. 256–257):

> The idea of 'contextualization' […] depicts a greater level of interaction than before between the production of knowledge, the context of its application and relations with citizens or publics. […] At stake is a process in which the

10 Hartley, J. (1999). *Uses of Television*. London: Routledge, pp. 58, 59.

> context of knowledge production is something that has to be made, not just through the work of scientists but through interdisciplinary practices involving a series of other institutions and professions as well as publics (Barry and Born 2013, p. 247).

Amongst the theoretical literature on academic research (and more specific on the history and theory of science, in a broader sense, and the disciplinary structure of universities), the debate on interdisciplinary research in particular is, by definition, advocating the crossing of disciplinary and even institutional boundaries, reaching out to other places of knowledge production and education as well as other stakeholders of society. This most radical form of academic outreach within the scope of interdisciplinary research activities is defined as transdisciplinarity. The body of literature about interdisciplinary research (summarized in the substantial handbook by Frodemen et al. 2010) is of great interest regarding my research question which aims to explore the potential of interdisciplinary exhibition-making to produce knowledge.

Both in the academic and cultural sectors the complex reality of interdisciplinarity projects seems to be leading to a considerable number of obstacles as 'doing interdisciplinarity differs from "talking" interdisciplinarity' (Graff 2015, p. 236). However, from an academic point of view, interdisciplinarity is more and more understood as a necessary condition when it comes to being inventive and to '"solving problems" that fall outside the domain, traditions, or intellectual resources of any given discipline' (p. 236). Like many other academic institutions, the University of Manchester, for example, also states that its vision and strategic plan 'points to a future where we will expand our world-leading research to address the most challenging global questions and exploit our capability for interdisciplinary research.'[11] At least in the last two decades interdisciplinarity has sometimes been used as an almost inflationary 'buzzword' (see, for example, Moran 2010, p. 1), a fact that causes Harvey Graff to ask, 'Is there more heat than light in all the fuss over interdisciplinarity?' (Graff 2015, p. 215). Both academic and cultural projects are increasingly demanded to be interdisciplinary (and participatory) in their respective research strategies not only by their own claim and design, but also by decision makers and funding organizations (for museums, for example, Arnold 2015, pp. 321, 322). This is especially true with theme-oriented projects and mission strategies that transcend the still persisting disciplinary structures (Weingart et al. 2014, p.

11 https://www.manchester.ac.uk/discover/vision/ (last accessed 5 April 2023).

155) and seek for societal and political legitimacy (p. 163). Although a self-acclaimed 'believer' in interdisciplinary collaborations, Graff states that 'the history of interdisciplinarity is littered with great expectations and disappointed hopes' (Graff 2015, p. 215) and warns of 'the dangers of exaggeration, excessive claims of novelty, and imitation' (p. 236).

Apart from Graff's well-balanced discussion of the history of interdisciplinary research, the available literature on interdisciplinarity includes a considerable number of theoretical books and articles as well as practical handbooks, the latter promising to help with the obviously difficult reality of interdisciplinary collaborations. Peter Weingart describes the problems of implementing interdisciplinary research in great detail (Weingart et al. 2014, pp. 163–167). The theoretical and practical discourse on this only seemingly new, and politically highly acclaimed, academic practice ranges from the fear and rejection of 'dissolving disciplines' and 'undisciplined knowledge' (for example discussed by Robert Frodeman in: Weingart 2014, p. 191), to praising the creative potential and productively chaotic qualities of interdisciplinary research (several of the listed sources, for example, Moran 2010), and further on to even turning interdisciplinarity itself into a discipline of its own (see, for example, Bammer 2013). Weingart rightly says that 'the juxtaposition of disciplinarity and interdisciplinarity is misleading as the uptake of problems that arise outside science is but the continued expansion of the scientific method to new phenomena'. In this quote Weingart is supporting an inclusive and, by definition, transdisciplinary understanding of academic knowledge and 'real world' issues, advocating what he calls a 'knowledge society' (Weingart et al. 2014, p. 172), a phrase which I would understand as a generally educated society. Most academic and cultural institutions claim in their mission statements to have an educational mandate. The term 'education' traditionally has a very important function in synthesizing, uniting, and combining disciplined portions of knowledge (Hartmut von Hentig, in: Kocka 2015, pp. 48–49). Furthermore, the concept of general education (the general knowledge and abilities of an educated individual) is clearly acknowledging the fact that our daily lives – our realities – are interdisciplinary, and not (only) structured in disciplines (see Klein 1990, pp. 22–23).

From reading the literature on interdisciplinary research, I conclude that much can be learnt for the territory of interdisciplinary exhibitions, a territory that still seems to be rather unexplored theoretically. And, as discussed above, this type of exhibition could also very well serve as an experimental field or laboratory for the academic world. Museums and other exhibition spaces should

therefore try to establish closer ties with universities in order to further introduce them to exhibition-making processes and their potentials as possible research methods. The UK seems to be leading the way in such collaborations,[12] whereas for example in the otherwise impressively comprehensive *Handbook for Inter- and Transdisciplinary Projects* (Defila et al. 2006, published in German language), which was funded by the Austrian, German, and Swiss Education and Research Ministries, exhibitions are not listed or even mentioned as an educational option in a long list of possible academic products (p. 152). Although this handbook states that the academic world should not isolate itself and instead play a certain role within the overall cultural realm (p. 30), culture as such is merely considered as a competitor for financial resources, and not as a potential collaborator (p. 247). This gap may not be as wide anymore today as it was almost two decades ago, but it is certainly true that at least in the German speaking countries exhibitions are still not automatically seen as a potential tool in higher education,[13] and even less so as a possible research method. Apart from looking at temporary exhibitions, it might be worth exploring and comparing the conditions and experiences of university museums in the UK and Germany to achieve a better understanding regarding this question beyond what can be achieved within this book.

In comparing the theoretical and practical debate on interdisciplinary academic research to the museological discourse on the role and function of curators and the process of exhibition-making, very interesting parallels can be found, as the methods and experiences of interdisciplinary researchers at universities are seemingly very much alike to those of exhibition curators in gen-

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12 In the UK for example AHRC Skills Development funded projects or networks like the National Co-ordinating Centre for Public Engagement (NCCPE): https://www.publicengagement.ac.uk/do-engagement/partnership-working/working-with-museums-and-libraries and its Museum-University Partnership Initiative (MUPI): https://www.publicengagement.ac.uk/nccpe-projects-and-services/completed-projects/museum-university-partnership-initiative (both last accessed 5 April 2023).

13 Experiences from my latest interdisciplinary exhibition *The Brain. In Art and Science* at the Bundeskunsthalle in Bonn (28 January – 26 June 2022) have again shown how inspiring and, in fact, educating the format of the exhibition can be, in this case, for several groups of students in neurology, philosophy of the mind and other related disciplines. And this effect was not only experienced in a passive receiving mode but inspired seminars and workshops, for example, at the philosophy department of the Otto von Guericke University Magdeburg, which has an interdisciplinary focus on neurophilosophy chaired by Sascha Benjamin Fink.

eral and more specifically curators of interdisciplinary exhibitions. Klein has offered a very telling and still valid analysis of the 'rhetoric of interdisciplinarity' (Klein 1990, pp. 77–78). Disciplines tend to describe themselves and their relationship to others in the language of geopolitics. They control their 'territories', 'properties', 'patrolled boundaries', fearing 'alien intrusion' and 'intellectual migration', whereas interdisciplinary programs are called 'poorly charted waters' or the 'Switzerland of academia'. Klein writes that the ideal 'interdisciplinary individual' should rather be 'combining the résumés of Aristotle and Alexander' (quoting Walter Baer)[14]. Aside from being characterized 'as a good "ringmaster", a "bridge specialist", "gatekeeper" […], "dynamo" […], "metascientist", "generalist"' (p. 131), the following abilities are additionally ascribed to 'interdisciplinary individuals: not only the general capacity to look at things from different perspectives but also the skills of differentiating, comparing, contrasting, relating, clarifying, reconciling, and synthesizing' (p. 183). Clearly, interdisciplinary researchers must have abilities that are very similar to the abilities and skills of exhibition curators. Could both interdisciplinary researchers and exhibitions curators perhaps learn from each other regarding the theorization of their production processes as well as their practical methods and experiences?

2.5 The curator's role in interdisciplinary exhibition-making

What exactly is a curator? The term 'curator' is nowadays 'at once remarkably vast and dangerously undefined' (Basualdo 2015, p. 60). In his pointed analysis of what he calls 'curationism', David Balzer deduces the term curator as follows: '"Curious" and "curator" both have the same Latin root, "cura"; "care" in Latin connotes both custodianship and taking an interest in something' (Balzer 2015, p. 28, for an etymological explanation see also Arnold 2015, pp. 327–328). Curators are rooted in academia as they have studied there themselves – for example, history, anthropology, art history, archaeology, natural sciences etc. – and have initially become specialists. Many of them work as curators of specific collections: they are 'researchers, commissioners, keepers, interpreters, producers, and collaborators' (subtitle of *The New Curator*, Milliard et al. 2016).

14 Baer, W. S. (1976). 'Interdisciplinary policy research in independent research centers', in: *IEEE-TEM (Institute of Electrical and Electronics Engineers) Transactions on Engineering Management*, 23(3).

On top of their academic qualification and specialist knowledge they have acquired a number of these very practical skills. McCarthy states that this is not a linear process, but rather a flexible exchange in which 'academics are immersed in practice' and 'professionals in the field become researchers' (McCarthy 2015, p. xliv). Apart from collection based curators there are independent exhibition curators – mostly in contemporary art, some of them having reached stardom (see, for example, Balzer 2015, pp. 7–21; Arnold 2015, p. 332) – and curators like myself who work in institutions without a collection (for example exhibition halls or centres) developing and producing temporary exhibitions on various topics from the fields of art, art history, cultural history, ethnography, and natural sciences. Exhibition curator Roger Fayet describes curators as 'hybrid all-rounder[s]', saying that 'making exhibitions means to be an academic, a philosopher, an artist, a designer, a manager, a coordinator, a coach, an accountant, a speaker and a museum education officer' (Tabassomi 2010, pp. 21–22). 'This hybrid quality of curatorial work – caught somewhere between thinking and doing – makes it all the more challenging to examine', writes Halona Norton-Westbrook in her very useful summary of curatorial theory (Norton-Westbrook 2015, p. 343).

Thus, curating is defined as a practical profession based on profound academic knowledge and longstanding experience (Norton-Westbrook 2015, p. 349), rather than an academic discipline in itself. However, it has been widely discussed (and the discussion is dominated by curators of contemporary art), whether curating has the potential to become an independent academic discipline or even a sort of meta-discipline comparable to philosophy, which viewed itself as such for centuries (Moran 2010, p. 7). I would not want to overrate the curator's function and position to that extent, but their ability to mediate and cross-cut between academic disciplines should not be underestimated either. Whereas Norton-Westbrook describes the growing professionalization of curatorship (though with changing and accumulating purposes) in an historical overview (Norton-Westbrook 2015, pp. 344–348), Heinich and Pollak have observed a de-professionalization in the fact that the curatorial field especially in the realm of exhibition-making has opened up to people with all sorts of careers and qualifications claiming the title of a curator (Heinich and Pollak 1996, p. 238, see also Arnold 2015, p. 327). The admittedly confusing reality is probably that both observations have weight depending on the context.

The question, whether curating is a discipline in itself, again shows interesting similarities to the academic discussion, whether interdisciplinarity has

the potential to become a discipline in its own right. In 1990 Klein offered a still convincing definition, although the science theoretical discipline of interdisciplinary studies has since been established all the same.

> Interdisciplinarity is neither a subject nor a body of content. It is a process for achieving an integrative synthesis, a process that usually begins with a problem, question, topic, or issue. [In this process] individuals must work to overcome problems created by differences in disciplinary language and world view (Klein 1990, p. 188).

Analogous to this crucial basic definition of interdisciplinarity as a process instead of a discipline, curatorial work could simply be understood as the process of making exhibitions, and I personally like the more hands-on ring of being called an exhibition-maker. Just like interdisciplinary researchers, exhibition curators employ methods such as the translation (see Souhami 2011) between different terminologies, object categories, and media, as well as the development of a visual and rhetorical curatorial language that is able to unite heterogeneous contents and materials, and the mediation between different working cultures, in order to create a bigger picture on a given topic.

Working in a cultural institution that conceptualizes and produces a multidisciplinary programme, I am especially interested in curators that are able to take on a generalist's perspective – like interdisciplinary researchers – based on their original academic knowledge, but transcending it for a wider approach, while at the same time still being capable of focussing on detailed questions when required (very similar to the concept of 'bridge scientists', Klein 1990, p. 131).

In 2015, Paul O'Neill and Mick Wilson have published an anthology on the question of research within contemporary curating, in which Simon Sheikh's contribution is especially thought-provoking. Sheikh tries to define curatorial ways of knowledge production and research – for the realm of art exhibitions – and their relation to other forms of research (Sheikh 2015, p. 35), differentiating between the terms '*recherché* [...] understood mainly in terms of journalistic research' and '*forschung*' which 'implies a scientific model of research' (p. 37). Whereas almost any exhibition involves research in a journalistic sense, 'not all exhibitions can truly be thought of as *forschung* – lacking a thesis, proposition or laboratory' (p. 39). But Sheikh is, in fact, questioning this exclusive duality of research modes and 'forms of authorisation' within the 'overall culture of research' and advocates an artistic research practice which 'is not necessarily

concerned with authorisation' (p. 46). One might ask though whether the urge to (unnecessarily) legitimize this artistic practice explains the attempt to subsume it into an 'overall culture of research'.[15]

Jens Hoffmann argues in a similar direction, saying that

> curators should ideally be curious and inquisitive human beings. They must feel compelled to wrestle with, study, and analyse essential questions of the human condition. And since these questions relate not only to the production of culture but also to the creation of histories and even reality itself, curators should consider themselves as operating outside the borders and the confines of traditional academic modes of inquiry (Hoffmann 2015, p. 83).

Though supporting Hoffmann's emphasis on curiosity as an important ingredient of curatorial work, my notion would be that exhibition curators and academic researchers, while preserving their different perspectives, should rather build even closer ties within and across the respective 'borders and confines' than they are doing already, instead of curators 'operating outside' these boundaries, especially when it comes to joining forces to tackle socially relevant topics.

Whereas authors like O'Neill, Sheikh, and Hoffmann discuss a wider curatorial approach from the perspective of art curators, Ken Arnold, a former curator at the Wellcome Collection, investigates the role of curators from the perspective of an interdisciplinary science museum (see also Barry and Born's discussion of the interdisciplinary field of art-science, mentioned above). In his handbook contribution 'From Caring to Creating. Curators Change Their Spots', Ken Arnold advocates the role of the curator as a 'public investigator', identifying a 'new breed of science curators' who intent to reach out 'from their home territory into other domains' (Arnold 2015, pp. 332–333), exploring their topic 'within a broad cultural context, rubbing shoulders with concerns emanating from the arts and humanities' (p. 334). Arnold (p. 322) and Norton-Westbrook argue for conceiving disciplinary boundaries as 'more fluid than they appear', saying that there is a yet 'unexplored commonality [...] between the curatorial work performed in museums of art, science, history, and anthropology' and an obvious shift toward interdisciplinary curatorial work in

15 I also find the stereotype choice of the terms *recherché* (implying the cliché of a more relaxed French attitude) as opposed to *forschung* (implying the cliché of a sterner and stricter German attitude) problematic.

recent years (Norton-Westbrook, p. 342). In this respect Norton-Westbrook is in line with Oey and Skramstad's notion of the intrinsic interdisciplinarity of museum work quoted in the introduction to this book.

2.6 Conclusion

In this literature review I have focussed on discussing a specific type of exhibition that is characterized by being temporary and thematic regarding its content. Furthermore, I have established arguments showing that this type of exhibition-making can serve as a research method. This is even more the case in a knowledge-integrating setting of an interdisciplinary exhibition, especially on themes that require multiple perspectives. Throughout this book I advocate the making of temporary interdisciplinary exhibitions that involve a certain amount of experimentalism. Moran writes, 'If a certain *messiness* [emphasis added] goes with the territory of interdisciplinarity, this is also what makes that territory worth occupying' (Moran 2010, p. 180). Talking to a very experienced exhibition curator and former museum director about my research question, he volunteered a very interesting piece of advice. He had just finished curating a large exhibition on the rain forests involving several academics from various disciplines. He said to me, half in earnest, half in jest: 'Always remember to speak to those people individually, and never let them speak amongst themselves, or you will end up in a complete mess.' This piece of advice left me quite surprised and, by the way, taught me the important terminological difference between a multidisciplinary and an *interdisciplinary* exhibition. A multidisciplinary exhibition would present its topic with an encyclopaedic selection of pieces of content arranged by a single curator. The result can be very enlightening, but probably not so much the curatorial process itself. Whereas, in my understanding, an *interdisciplinary* or even transdisciplinary thematic exhibition would attempt to create something new by allowing a productive and creative dialogue between the participating disciplines. Exhibitions like these will at some point within the process of making them inevitably be a mess – a chaos –, but a creative one. Thus, interdisciplinary exhibition-making requires openness and flexibility instead of a set recipe, but, on the other hand, the same openness can only too easily lead to a random and unsatisfactory result. The necessity of deeply thought through ideas and carefully developed concepts has therefore to be emphasized (see Tyradellis 2014) in order to meaningfully unite the often disparate materials in interdisciplinary thematic exhibitions. Addi-

tionally, on reviewing the literature, it seems there is a need to think about collaborative standards for such exhibitions, as suggested in the introduction to this book. Two theoretical and methodological tools that have emerged in this literature review seem to be most promising to that end.

Firstly, for understanding what interdisciplinary exhibitions are and how they are conceptualized and produced, the method of individual case studies or 'ethnographies of exhibition-making' (Nicolescu 2016, p. 466) seems to be more useful than starting from analysing already established typologies of temporary exhibitions, because this specific type of exhibitions has not been thoroughly theorized yet. Therefore, one of the aims of my research is to contribute to a better understanding and perhaps even a typological description of interdisciplinary exhibitions. The focus of studying such individual cases will be on the processes of exhibition-making and on the relationships and hierarchies amongst the involved participants. How can a disparate group of specialists develop a joint clear and convincing exhibition concept? Does it take both specialists and generalists to create the format of interdisciplinary thematic exhibitions, and what are their respective roles? What is the curatorial work like that is capable of bridging disciplinary gaps in an enlightening, engaging and perhaps even entertaining way? And how is the relationship between the academic and museum worlds affecting the production of temporary exhibitions? By comparing their respective ways of using and working with an interdisciplinarity method, I want to advocate a productive and inspiring relationship between the worlds on and off campus.

Secondly, for a detailed description of the processes of making interdisciplinary exhibitions it seems helpful to develop a more refined vocabulary with regard to the general term interdisciplinarity and its application to a museum context. Therefore, the most important theoretical and methodological tool for my research will be Klein's taxonomy of interdisciplinarity (as described in section 2.2) as it allows to differentiate between multi-, *inter-* and transdisciplinary exhibitions.

When differentiating between these subtypes of interdisciplinary exhibitions, as I will do in greater theoretical detail in chapter 3 and in a more practical analysis in the case studies (chapters 4 to 6) of this book, it must be taken into account that each has their strengths and weaknesses, and perhaps – if seen as different methods – they could even be fruitfully combined within one exhibition. Therefore, it does not make sense to be too strict about these cat-

egories.[16] I suggest treating them as sometimes overlapping, open categories. Similar to the degrees of interdisciplinary collaboration defined by Klein, the scale from multi-, *inter-* to transdisciplinary exhibitions describes a growing intensity of cooperation and integration among different partners. Here, I will primarily look at the process of exhibition-making from the perspective of its participants, rather than the audience's perspective. Of course, the different levels of audience engagement and participation must likewise be analysed but they are not the research focus of this study. The following three paragraphs will offer an initial description of multi-, *inter-* and transdisciplinary exhibitions borrowing Klein's taxonomy. This description will be elaborated on in chapter 3.

Multidisciplinary exhibitions can be characterized as encyclopaedic and accumulating pieces of knowledge often grouped by disciplines. They can be of high didactical value, for example, by providing an overview on a specific topic. But exhibitions of this type do only rarely have the potential to produce new knowledge in the process of making them. They are typically conceived by a single curator controlling their development and production process, drawing on various disciplines without enabling a discourse between them.

Interdisciplinary exhibitions (in a narrower sense) involve a productive exchange of knowledge and a joint process of exemplifying, visualizing, displaying and conveying knowledge. These exhibitions are not necessarily ordered by disciplines but rather by thematic questions, often problematizing them in a discursive and intellectually inspiring and productive way. By asking questions and suggesting solutions, they have the potential to spark new ideas and research questions. This type of exhibition could serve as an academic product and experimental territory for academic researchers.

Transdisciplinary exhibitions are bridging the gaps between the academic, cultural, and social worlds, overcoming hierarchies of knowledge, for example by including artworks and objects of everyday life in a more radical way. They are experimental (and sometimes unconventional) in a wider sense, creating larger narratives that reach their audiences in a multifaceted way – intellectually, emotionally, and aesthetically. But the most important feature of this kind of exhibition is that they involve a more heterogeneous group of participants on the producing end, and often also a more intense level of participation by

16 See Vienni-Baptista, B. (2023). Bianca Vienni-Baptista is arguing for a productive fluidity of the taxonomy of interdisciplinarity, which allows for different understandings of *inter-* and transdisciplinarity.

visitors. They specifically aim at including other stakeholders of society into the production process.

The Wellcome Trust with its collection and exhibitions has certainly been a very good example of *inter-* and transdisciplinary exhibition-making:

> We believe the arts are an effective way of stimulating debate and engaging people with biomedical science. Visual arts, music, moving image, creative writing and performance can reach new audiences which may not traditionally be interested in science. Collaborative and interdisciplinary practice across the arts and science can help to provide new perspectives on both fields (Wellcome Trust 2009, in: Barry and Born 2013, pp. 253–254).

Arnold emphasizes that this and other similar institutions are encouraging 'idea-led' temporary projects 'to bring into intriguing, sometimes iconoclastic, juxtaposition elements and demonstrations of real things, real expertise, and real experiences' (Arnold 2015, p. 334).

Another outstanding example for an *inter-* and transdisciplinary exhibition including 'artistic insights and practices' was *Assembling Bodies: Art, Science and Imagination* at the Museum of Archaeology and Anthropology of the University of Cambridge in 2010. The curators described the process of selecting and contextualizing interdisciplinary concepts and objects of how bodies are known and imagined as a most fruitful research process itself. The exhibition succeeded in both being 'research-driven' and 'question-raising' and at the same time amounting 'to a visual and sensory feast'. It emerged from a 'cross-disciplinary project' and set in motion a 'process of exploration and experimentation' that carries on in the discussions and reflections of both exhibition-makers and visitors alike (Nicholas Thomas in: Herle 2009, p. 5, see also Herle 2013 and Bjerregaard 2020, p. 21).

Ken Arnold's description of the curator as a 'curiosity-led public researcher' (Arnold 2015, p. 335) brilliantly sums up the kind of curatorial work I strive for and would like to reflect on in this research. This is a curator who has the sovereignty and institutional means and possibilities to do both – creative and artistic work as well as profound research – in public, enabling them as well as the audience to 'think out loud' (p. 335).

3 Theories of interdisciplinarity and their methodological application to museum practice

3.1 Introduction

Chapter 2 explored and defined the scope of this research and started to introduce the history of and recent research on interdisciplinarity both in academia and in museums. Apart from looking at the question whether interdisciplinarity is a desideratum in general, it also reflected on the striking similarities between the working cultures and conditions of interdisciplinary academic researchers and interdisciplinary exhibition curators. Chapter 3 will now strengthen this argument further by developing and defining an interdisciplinarity-based methodology for exhibition-making. The aim is to consider how existing theories of interdisciplinarity can be applied and further implemented to museum studies and museum practice as a potential work strategy. The specific focus will be on the production of interdisciplinary temporary exhibitions.

As established earlier in this book, I use the term interdisciplinarity in two distinct ways, following the terminology of Klein: Firstly, as a general term, and secondly, as a more specific and nuanced analytical tool (this second meaning set in italics throughout this study). Klein broadly distinguishes three types of interdisciplinarity (here serving as the general term): multidisciplinarity, *interdisciplinarity* (in a narrower sense) and transdisciplinarity, all three describing different qualities of interaction and integration (Klein 2010, p. 16). The significance for this research of Klein's fundamental theoretical work in interdisciplinarity studies has already been stated in both the introduction to this book and the literature review (chapters 1 and 2) and will now be further explained and elaborated on in this chapter, establishing the theoretical framework and methodology for my research.

As one of the most renowned experts on the history, theoretical classification, rhetoric and practice of interdisciplinarity, Klein names four main motivations for interdisciplinarity (following a definition by the National Academy of Sciences in the United States from 2004): '(1) the inherent complexity of nature and society, (2) the desire to explore problems and questions that are not confined to a single discipline, (3) the need to solve societal problems, (4) the power of new technologies' (Klein 2010, p. 26). As I have already observed in the literature review, interdisciplinarity is not confined to the realm of academia but has also become an important work and research strategy in the realm of cultural institutions and activities.[1] And it is evident that museums (and other cultural institutions) today are aiming to take part in the academic and public activities of addressing larger societal problems and questions. The present museum definition of ICOM (dating from 24 August 2022) does not literally mention the term 'interdisciplinarity', but implicitly sets the scene for it, as interdisciplinarity is essentially about integration, interaction, teamwork, communication, and outreach (see Klein 1990) with regard to research and the production of knowledge:

> A museum is a not-for-profit, permanent institution in the service of society that researches, collects, conserves, interprets and exhibits tangible and intangible heritage. Open to the public, accessible and inclusive, museums foster diversity and sustainability. They operate and communicate ethically, professionally and with the participation of communities, offering varied experiences for education, enjoyment, reflection and knowledge sharing.[2]

1 Michael Jungert, speaking from a German perspective, discerns between internal and external (from academia) motivations for interdisciplinarity and states that the external calls for interdisciplinarity coming from politics and society are even louder and more numerous than from within the universities (Jungert 2010, p. 10). This observation still seems to be valid today.

2 https://icom.museum/en/resources/standards-guidelines/museum-definition/ (last accessed 23 August 2023).

Interestingly, the wording of the former museum definition[3] was even stronger in providing an environment for interdisciplinarity to thrive, but the controversial debates leading to a new museum definition in 2022 have shown how immensely important these aims were and still are in constituting museum identities. Most of these aims are crucial ingredients and conditions for successful interdisciplinary projects, especially the democratic openness and transparency that museums and other cultural institutions are striving for today. And both the former and the present museum definition do acknowledge the importance of research in museum work.

In addition to the four aforementioned motivations for interdisciplinarity (Klein 2010, p. 26), I would argue for them to be extended by a fifth and a sixth. These two suggested motivations are especially important for the cultural realm: *creativity* and *curiosity* (see, for example, Thomas 2016). Surprisingly, *creativity* is rarely mentioned in the literature on interdisciplinarity in academia, although interdisciplinarity has long been credited with being a motor and adequate strategy of enquiry for inspiring creativity in the sense of creating new research questions as well as new knowledge (see, for example, Moran 2010, p. 15). In the academic context, John H. Aldrich names *curiosity* as a precondition for a multidisciplinary approach which may lead to new insights simply by 'taking a break' from one's momentarily unsolvable research problems 'into the fun of exploring something new and different' (Aldrich 2014, pp. 34, 35). In a wider sense, also reaching out to the cultural realm, interdisciplinarity as a research strategy has the potential to achieve more than just new knowledge. It can also create new research and work cultures, methodologies and even art forms, to which, for example, art and science collaborations (see, for example, Arnold 2015 and Bencard et al. 2019) bear witness.

Museum studies are themselves drawing on a number of disciplines such as material culture studies, history, art history, archaeology, anthropology, philosophy, psychology, and sociology, to name but a few. This would perhaps be a reason in itself for an in-depth study of the body of literature on

3 The former museum definition, discussed in 2019, was stronger in this respect: 'Museums are democratizing, inclusive and polyphonic spaces for critical dialogue [...]. They are participatory and transparent, and work in active partnership with and for diverse communities to collect, preserve, research, interpret, exhibit, and enhance understandings of the world, aiming to contribute to human dignity and social justice, global equality and planetary wellbeing' (https://icom.museum/en/news/icom-announces-the-alternative-museum-definition-that-will-be-subject-to-a-vote/, last accessed on 23 August 2023).

the research and work strategies of interdisciplinarity and all its theoretical and practical implications, for the existing literature seemingly has not been reflected on and does not yet translate well enough into the field of museum studies and the profession of museum practice. But my research will not look at the intrinsic multidisciplinarity of our own discipline. Klein calls that kind of intrinsic multidisciplinarity 'Pseudo ID' (pseudo-interdisciplinarity), arguing that a discipline's own 'wide compass alone […] does not constitute *interdisciplinarity*' (Klein 2010, p. 17, emphasis added). Instead, this research will attempt to theorize a certain practice within our discipline, namely the interdisciplinary outreach beyond our own field of working with various other disciplines on the territory of thematic temporary exhibitions. The word 'territory' is chosen on purpose, as I would like to think of such exhibitions as experimental grounds on which we are inviting other disciplines to meet in an interdisciplinary setting to work on a multifaceted perspective on a chosen theme. In a best-case scenario, such exhibitions could serve as or result in an interdisciplinary academic product. As laid out in the previous chapter, the literature review, interdisciplinarity studies are on their way to establishing themselves as a discipline in their own right (see, for example, Bammer 2013), but interdisciplinarity as such is first of all describing a *process* of interaction and integration (Klein 1990, p. 188) with regard to knowledge production. The processes that will be analysed in this study are the practical processes of interdisciplinary exhibition-making.

This chapter is devoted to a more precise discussion of the taxonomy and terminology of interdisciplinarity, starting with some general definitions and guiding principles. These general observations will lead to a more in-depth terminological discussion discerning multi-, *inter-* and transdisciplinarity, mainly based on Klein's work, followed by a closer look at what authors in interdisciplinarity studies are describing as 'bad interdisciplinarity' (see, for example Löffler 2010), in order to sharpen the understanding and criteria for best practices in interdisciplinary collaborations. The aim of this chapter is to establish the fundamental tools – a rich portfolio of terms and definition – for describing and analysing the exhibition cases in the practical part of this book (chapters 4–6) and to provide a theoretical framework for a more precise description, understanding, analysis, and critique of interdisciplinary exhibitions in general. Thus, the established tools are introduced as a useful contribution to theory building in museum studies.

3.2 General definitions: Why is it useful to classify interdisciplinarity?

In 2010 Michael Jungert wrote that 'there are only a few terms in recent debates in academia, for which the discrepancy between the usage frequency and the theoretical reflection on its meaning is as large as in the case of the term interdisciplinarity' (Jungert 2010, p. 1, transl. HP). As, at least in practice, only little seems to have changed in the past decade, I believe that it is important to improve the theoretical understanding of the term, in order to avoid a vague and meaningless application, although not all authors in interdisciplinarity studies are supporting this aim. Harvey Graff, for example, writes that the 'endless typologies, classifications, and hierarchies of multi-, inter-, and transdisciplinarities are not helpful. Most important, we must recognize that interdisciplines could not exist without disciplines; mutually and reciprocally, they shape and reshape each other' (Graff 2015, p. 215). As much as I like Graff's notion of disciplines shaping and reshaping each other like pebbles in the sea, I argue that a finer terminology and a more disciplined usage of its definitions and distinctions could not only deepen our understanding of interdisciplinarity as such both in theory and practice, but it could also avoid the current vague use of the term. This is especially important for the distinction between multidisciplinary and *interdisciplinary* projects, as the former clearly lack in integrative quality. Calling a project 'interdisciplinary' holds a promise regarding its content, namely of it involving a certain degree of interaction and dialogue between the participating disciplines. Therefore, differentiating at least these two categories is important, because the mere claim of interdisciplinarity is only too often not filled with life, that is interaction. The fact that *interdisciplinary* projects often end up as multidisciplinary has, of course, multiple reasons, an important one being the lack of resources that would be necessary to facilitate the complex process of an *interdisciplinary* or even transdisciplinary project.

Although not as sceptical as Graff, Moran also warns against an over-regulation and speaks of interdisciplinarity as 'a kind of *undisciplined* space in the interstices between disciplines' (Moran 2010, p. 14, emphasis added) that are established in successful interdisciplinary collaborations and have a potential for creativity in the production of 'new forms of knowledge' (p. 15). As opposed to Klein, Moran finds an advantage (or even a conditio sine qua non) in the 'slipperiness' and 'flexibility' of the term interdisciplinarity (p. 14), praising its openness and even its creative 'messiness' (Moran 2010, p. 180). Although ap-

proving of Klein's useful distinction between multi- and *inter*disciplinarity, he objects to further 'disciplining' or narrowing down interdisciplinarity, 'confining it within a set of theoretical and methodological orthodoxies' (p. 14). Moran cites Roland Barthes with the following words to underline this need for 'indeterminacy' (p. 14) or even insecurity in order to conduct interdisciplinarity in a meaningful and creative way, thereby also adding a political dimension:

> Interdisciplinarity is not the calm of an easy security; it begins effectively […] when the solidarity of the old disciplines breaks down […] in the interest of a new object and a new language neither of which has a place in the field of sciences that were to be brought peacefully together […] (Roland Barthes 1977, p. 155 in: Moran 2002, p. 15).[4]

As tempting as Moran's thoughts might be and as much as they appeal to me, the purpose of my research requires an attempt to at least partly overcome the terminological vagueness of interdisciplinarity which is still prevalent in museum studies and practice. I am supporting Klein's terminological accurateness not because I want to see the creative processes of interdisciplinary collaborations disciplined, but because I would like to advocate a more disciplined way of speaking and writing about these processes, hopefully resulting in a more precise way of theorizing them. The practice of interdisciplinarity would certainly also profit from a deeper understanding of its conditions and implications.

Generally speaking, interdisciplinarity involves more than one discipline or disciplinary participant in a collaborative research or work process. The German philosopher and biologist Thomas Potthast therefore calls interdisciplinary collaborations 'n>1 disciplinarities' (Potthast 2010, p. 173, transl. HP). At least until 2021, the *Oxford English Dictionary* gave the following definition: interdisciplinarity is 'the quality or fact of *involving* or *drawing on* two or more branches of knowledge' (last accessed online, 31 December 2019, emphases added). Since then, this has been replaced by a rather vague new description.[5] The *Cambridge Dictionary* just states that interdisciplinarity is 'involving two

4 Barthes, R. (1977). *Image-Music-Text*. Translated by Stephen Heath. London: Fontana.

5 The new definition of the adjective 'interdisciplinary' in the *Oxford English Dictionary* reads, 'Of or pertaining to two or more disciplines or branches of learning; contributing to or benefiting from two or more disciplines.' The old definition is, for example, still cited in this article from 2021: https://www.lis.ac.uk/stories/can-interdisciplinarity-be-quantified (last accessed 25 August 2023).

or more different subjects or areas of knowledge.'[6] The verb 'drawing on' was probably deleted from the older Oxford definition for a good reason, because the academic strategy to merely draw on two or more disciplines in a research process is not enough to constitute *interdisciplinarity* in a narrower sense which involves interaction, as defined by Klein (Klein 2010, p. 15). When speaking of interdisciplinarity in general, Klein uses 'the terms *interdisciplinary* and *integrative* interchangeably, as adjectives signifying an attempt or desire to integrate different perspectives' (Klein 1990, p. 15). It is an essential question for this research, whether these different perspectives (disciplines) are themselves part of the integrative process or not, that is, whether they are *involved* or just *drawn on*. And it is this distinction which guides Klein in her taxonomy of interdisciplinarity in describing different 'levels of integration' (p. 15). These levels are less understood in a hierarchical sense, than as different qualities of integration. These will be discussed in detail in the following sections of this chapter. Coming back to Potthast's basic definition of 'n>1 disciplinarities', it has therefore to be emphasized that the definition would have to imply that the involved disciplines are part of the decision-making processes during an *interdisciplinary* collaboration. '*Interdisciplinarity* claims that starting with defining the problem, working on it and synthesising the results, the involved disciplines are irritating each other and enter into a relationship of mutual interaction.' (Haas and Helmer 2014, p. 55, transl. HP, emphasis added). Does this mean that all interdisciplinary projects need a team of individuals willing to irritate and be irritated regarding their respective disciplines?

Not so for Liora Salter and Alison Hearn, who doubt what they call the 'myth' that 'interdisciplinary research always involves team research' stating that it is also 'possible for an individual researcher to draw upon the corpus of more than one discipline or to conduct research within a field of study characterized as interdisciplinary. [...] The problems of interdisciplinarity are distinct and independent of the number of people engaged in any study' (Salter and Hearn 1996, p. 7). Klein would perhaps still subsume the case of an individual researcher working alone in an interdisciplinary field under the general use (or rhetoric) of interdisciplinarity, but in a narrower sense she would certainly characterize this academic activity as *multi-* or *pseudo-disciplinary*, because *interdisciplinarity* in a narrower sense would require teamwork (Klein 2010, p. 19)'. With regard to museum studies this perhaps seemingly pedantic distinction

6 https://dictionary.cambridge.org/dictionary/english/interdisciplinary (last accessed 25 August 2023).

has important institutional implications. Is it enough to hire one curator to conceptualize and produce an *interdisciplinary* exhibition? I will argue that it is not and will test this hypothesis in the practical part (chapters 4–6) of this book. It might result in a decent multidisciplinary exhibition conceptualized by one mind, in a worst-case scenario without ever consulting any other disciplinary experts, communities or potential audiences during the production process at all. But for breathing life into *interdisciplinary* collaborations in the context of museum studies and museum practice, this terminological difference has a clearly political dimension with significant consequences for institutional 'priorities' (general aims and strategies), 'resources' (professionals and objects), 'processes' (working procedures), and 'publics' (audiences) (McCarthy 2015, p. xxxix; as already cited in the introduction to this study).

These last observations have tried to support the idea that it is useful to classify interdisciplinarity to a certain extent. In her contribution 'A Taxonomy of Interdisciplinarity' to the *Oxford Handbook of Interdisciplinarity*, Klein offered what was at that point the most comprehensive overview of the terminological debate in interdisciplinarity studies (Klein 2010). Here, Klein draws on earlier attempts in the 1970s[7] to discern and classify 'differentiated forms of disciplinary interaction, motivations for teaching and research, degrees of integration and scope, modes of interaction, and organisational structures' leading to a 'sometimes confusing array of jargon' (Klein 2010, p. 15). Although, within the only more recently established field of interdisciplinarity studies, there is still considerable debate on the vocabulary used to describe different types of interdisciplinarity (here again serving as the general term), however, the most commonly accepted are: multidisciplinarity, *interdisciplinarity* (in a narrower sense) and transdisciplinarity. As stated above, these three types or modes of interdisciplinarity can be viewed as differing qualities of collaboration or 'degrees of disciplinary interaction' (p. 17): from 'shared' to 'cooperative', from 'complementing' to 'hybridizing', from 'bridge building' to 'restructuring', from 'partial integration' to 'full integration' (p. 16). As an example for an alternative vocabulary, Sarah Whatmore uses the terms *superficial* (corresponding to multidisciplinary), *functional* (corresponding to *interdisciplinary*) and *radical* (corresponding to transdisciplinary) interdisciplinarity, aiming at describing

7 These earliest attempts of an 'interdisciplinary typology' started with an international conference in France in 1970 which was co-funded by the OECD (Organisation for Economic Cooperation and Development). The results were published by H. Heckhausen (Heckhausen 1972).

similar degrees of gradually intensifying disciplinary interaction (Whatmore 2013, pp. 166, 167). With regard to this research, it is important, however, to understand these terminological distinctions rather as different qualities or intensities than as degrees or grades on a hierarchical scale of interdisciplinarity. There is, admittedly, a certain gradual relationship between multi- and *inter*disciplinarity, but transdisciplinarity should not be understood as the ultima ratio or highest form of interdisciplinarity, as the following explanations will show.

3.2.1 Multidisciplinarity

As briefly outlined in the introduction and literature review (chapters 1 and 2), Klein defines multidisciplinarity as sort of a 'pseudo-interdisciplinarity' (Klein 2010, p. 16) that 'is essentially additive, not integrative' (Klein 1990, p. 56). It can be characterized as 'encyclopaedic', 'juxtaposing', 'sequencing', 'coordinating, 'complementing', and 'indiscriminate' (Klein 2010, p. 16). Synonymously it could also be called 'pluridisciplinarity' (Klein 1990, p. 56). Potthast describes multidisciplinarity as a process in which disciplines are working separately but focused on the same research question, problem or topic. This could be a rather practical subject matter such as a living being, a landscape, an artefact, a historical epoch, or a theoretical term (Potthast 2010, p. 180). The results of such academic collaborations could, for example, be found in thematic compendiums (p. 180) or handbooks. On a finer level, Klein (following Boden 1999 and Heckhausen 1972) discerns between *contextualizing* and *composite* multidisciplinarity for similar academic activities, in which disciplines are respectively 'taken into account without active cooperation' or only 'integrated within a common framework' (Klein 2010, p. 18). Speaking of an academic product, the resulting thematic handbooks, for example, could translate to multidisciplinary thematic exhibitions in museum practice.

I have already started with a very brief preliminary attempt of a typology of three kinds of interdisciplinary exhibitions in the literature review (chapter 2) and would like to continue this discussion in a more in-depth way in this chapter, in this section starting with multidisciplinary exhibitions. They can be characterized as encyclopaedic, as collecting and accumulating knowledge, as often listing facts ordered by disciplines.[8] They can be very informative in

8 Examples of exhibitions in Germany that perhaps belonged to this rather additive type and were at least in their outward appearances partly reminiscent of conference pre-

providing an overview on a specific subject, and they can be of high educational value. But exhibitions of this type do only rarely have the potential to create new knowledge (or new practice) in the process of making them, because they are lacking an integrative process of interaction, dialogue, and negotiation amongst the participating disciplines. They are typically curated by a single curator or a monodisciplinary curatorial team controlling their production process in which no fundamental discourse between the participating disciplines is involved. The achieved synthesis is therefore in fact *monodisciplinary* (see Haas and Helmer 2014, p. 55) or at least developed in a non-integrative, non-collaborative process, with a curator distributing tasks to a multidisciplinary group of advisors but keeping the decision-making on the overall concept to themselves. However, it must be acknowledged that multidisciplinarity often constitutes the initial step towards *interdisciplinarity* by creating a bigger picture through breaking professional and disciplinary boundaries, which in itself requires courage.

Klein (following Rebecca C. Burns)[9] mentions another finer terminological distinction between two different modes of multidisciplinarity, discerning a *sequencing* mode from a *coordinating* mode (Klein 2010, p. 17). While a form of multidisciplinarity in which various disciplinary contributions would just be 'aligned in parallel fashion', could be described as being conducted in a sequencing mode, the 'intentional' alignment of multidisciplinary content would be conducted in a coordinating mode. Translating this into a museological context, these two modes could serve for a finer description of the quality or intensity of multidisciplinary curation, although the 'integration and interaction' of knowledge (and differing practices) would still be lacking (p. 17) in such projects. Fittingly, Klein uses the artistically charged term 'assemblage' in this

sentations lined up by disciplines: *Pferdestärken – Das Pferd bewegt die Menschheit*, 21 April – 19 August 2012, Reiss-Engelhorn-Museen, Mannheim: http://magazin.spiegel.de/EpubDelivery/spiegel/pdf/51292091 (last accessed 23 August 2023); *Bewegte Zeiten – Archäologie in Deutschland*, 21 September 2018 – 6 January 2019, Gropius Bau, Berlin: https://www.smb.museum/ausstellungen/detail/bewegte-zeiten.html (last accessed 23 August 2023); *Das Gehirn – Intelligenz, Bewusstsein, Gefühl*, 29 June 2018 – 5 January 2020, Naturkundemuseum, Münster: https://www.facebook.com/LWL2.0/videos/10156090597357795/?locale=zh_CN (last accessed 23 August 2023).

9 Burns, R. C. (1999). *Dissolving the Boundaries: Planning for Curriculum Integration in Middle and Secondary Schools*. 2nd edition. Charleston, WV: Appalachia Educational Laboratory, pp. 8–9.

context (p. 17). The third of the case studies (chapter 6) with the title 'The mul-multidisciplinary exhibition and the political dimension of *interdisciplinarity – We Capitalists. From Zero to Turbo*' will be an example of an exhibition project to which the vocabulary in this section will aptly apply.

In the context of interdisciplinary higher education and shared responsibilities of faculty and students, Klein describes the relationships amongst the participants of multidisciplinary collaborations as 'limited and transitory' and not changing or enriching each other's disciplinary behaviour (Klein 1990, p. 56). The relationships remain 'loose and restricted' (Klein 2010, p. 17), and there is no attempt for the integration of disciplinary material in order to jointly create new knowledge, because this would demand 'an understanding of the epistemologies and methodologies of other disciplines and, in a team effort, requires building a common vocabulary' (Klein 1990, p. 57). If a synthesis still occurs in a merely additive multidisciplinary setting it happens only in one mind at a time, usually in the student's mind, being the recipient of a multidisciplinary education (p. 56). Applying this to the context of exhibitions, at best a synthesis of multidisciplinary content happens first in the curator's and then in the visitor's mind (when curated in a *coordinated* mode). In a worst-case scenario, the responsibility for achieving a synthesis of an exhibition's thematic, multidisciplinary content (merely arranged in a *sequencing* mode) is left to the visitor alone. In this event, the visitor might feel like a patient treated for an illness (the exhibition's theme) by many doctors of diverse medical subjects who do not communicate with each other about the patient's diagnosis, condition, and progress.[10] This is echoed in the work of Markus Arnold et al. who, for example, stress a comparable lack of communication in multidisciplinary research projects (Arnold et al. 2014, p. 107).

Taking Salter and Hearn's (Salter and Hearn 1996, p. 7) above mentioned claim further, Gerhard Vollmer perhaps provocatively writes, 'The best way interdisciplinarity can succeed is in a *single person*' (Vollmer 2010, p. 53, transl. HP, emphasis added). This quote by Gerhard Vollmer makes clear how misleading a vague and too general use of the term interdisciplinarity can be. As discussed above, the basic definition that *interdisciplinarity* involves more than one discipline and disciplinary participant collaborating or interacting in a research or work process provides an important question for the field of *interdisciplinary*

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10 I owe this thought to Sabine Lamprecht. 'Therapieziele effektiver erreichen' (Reaching therapy goals more effectively), in: *ergopraxis* 2009, 2(10): pp. 26–28.

exhibition-making, as this criterion obviously excludes multidisciplinary exhibitions that are conceived and developed by a single curator or a monodisciplinary curatorial team that does not allow for interaction amongst the involved disciplines. Although taking on a multidisciplinary perspective, this curator or curatorial team makes decisions on their own, drawing from other disciplinary expertise only on an advisory level. Many projects that call themselves 'interdisciplinary' are in fact multidisciplinary. Curators may find themselves forced by institutional demands or sometimes decide on their own to streamline the decision-making processes of a project initially planned as being *interdisciplinary*, downsizing its work process to a multidisciplinary project. The result might seem similar, and the production process is less complex and demanding, but it is also less rewarding as the curatorial monologue is then only rarely disrupted in a creative or productive way.

These observations have a clear consequence for my research, as the exhibition cases discussed and analysed in this book, which are claiming to be *interdisciplinary* in some shape or form, are therefore necessarily involving the collaborative decision-making processes of a curatorial team.

3.2.2 *Interdisciplinarity* as a specific analytical tool

> When integration and interaction become proactive, the line between multidisciplinarity and interdisciplinarity is crossed (Klein 1996, p. 6 and Klein 2010, p. 18).

This sentence is extremely important in the context of my research as it instantly makes clear that *interdisciplinarity* in its stricter form requires much more input and intensity of collaboration and integration than multidisciplinarity. Klein (comprehensively summing up her own and other authors' previous attempts of a typology and classification) finds the following adjectives to characterize and narrow down *interdisciplinarity*: It can be understood as an 'integrating', 'interacting', 'linking', 'focusing', 'blending', 'generalizing' kind of collaboration, which enables at least a 'partial integration' (Klein 2010, p. 16). Although the purposes and scopes of such collaborations may vary considerably (p. 18), they must involve a certain quality or intensity of interaction amongst its disciplinary participants. To achieve a more precise understanding of which forms these differing qualities of interaction might take, Klein (drawing on Boden 1999) introduces a weaker form called *shared interdisciplinarity* in which the participants work separately on 'different aspects

of a complex problem' or topic like in a multidisciplinary setting, but they do 'communicate results, and monitor overall progress' together (p. 19). This form seems very useful with regard to my research when it comes to describing the production process of an interdisciplinary exhibition that might oscillate between fulfilling the criteria of multi- or *inter*disciplinarity respectively, especially regarding its decision-making processes.

As distinguished from shared interdisciplinarity, a stronger form would be *cooperative interdisciplinarity* (p. 19). This latter form definitely requires continuous and more intense teamwork. The analysis of interdisciplinary curatorial teamwork will play an important role within the practical part of this study (chapters 4–6). In this context Klein also distinguishes between two differing motivations for interdisciplinarity, the looser motivation of 'bridge building' and the more ambitious motivation of 'restructuring' and of aiming to 'form a new coherent whole' (p. 21).

In her article in the *Oxford Handbook of Interdisciplinarity*, Klein introduces other useful and finer terminological distinctions with regard to understanding *interdisciplinarity* in a narrower sense. She, for example, discerns between *methodological interdisciplinarity* and *theoretical interdisciplinarity* (Klein 2010, pp. 19–20, see also Jungert 2010, p. 8). Methodological interdisciplinarity seems to remain more superficial in the mere exchange or borrowing of methodologies amongst various disciplines, but these exchanges are yielding interesting examples such as the 1980s turn in social sciences when society started to be understood as a 'game, drama, or text, rather than a machine or quasi-organism' (Klein 2010, p. 20). I have the notion that exhibition curators can relate or are even prone to this kind of methodological interdisciplinarity applying or borrowing analogies and metaphors in a similar way, sometimes being in danger of forgetting to take into account their respective intellectual disciplinary backgrounds, for example, in interpretive or didactical approaches.[11]

Theoretical interdisciplinarity 'connotes a more comprehensive general view and epistemological form' (Klein 2010, p. 20). This again stronger form of *interdisciplinarity* leads to joint 'conceptual frameworks' and the 'integration of propositions across disciplines', aiming at nothing less than 'to develop an interdisciplinary theory' (p. 20). Both methodological and theoretical

11 An example could be the layout and design of the exhibition *The Brain: In Art & Science* at the Bundeskunsthalle in 2022, which took up the visual concept of neuronal structures within the human brain. This curatorial decision might rightly be critiqued as superficial and overly simplistic.

interdisciplinarity have the disruptive potential to, at least partly, change 'disciplinary [...] concepts [...] as a result of cooperation, fostering new conceptual categories and methodological unification' (p. 20, drawing on Boden 1999). Jungert calls this form 'unifying' interdisciplinarity (Jungert 2010, p. 6, based on Heckhausen 1972), an adjective that Klein uses to characterize a certain form of transdisciplinarity. This detail from the terminological debate in interdisciplinary studies shows how fluid these descriptions still are, in this case between *inter-* and transdisciplinarity. Klein states herself, despite advocating to keep the established three basic definitions of multi-, *inter-* and transdisciplinarity, that in times of 'changing configurations of knowledge and education' (and I would add culture) these taxonomies 'need to develop [in an] open' and 'dynamic' way (Klein 2010, p. 28).

In order to continue my attempt of a preliminary typology of three kinds of interdisciplinary exhibitions, I would like to describe the production of *interdisciplinary* exhibitions (in a narrower sense) as requiring a creative exchange of knowledge and differing practices within a continuously cooperating (and ideally jointly decision-making) curatorial team. During the production process the team engages in a joint effort and process of conceptualizing, exemplifying, visualizing, displaying and conveying knowledge on a given topic. These practical aspects of collaborative exhibition-making will be analysed in great detail in the case studies (chapters 4–6). Exhibitions resulting from such collaborations are not necessarily ordered by disciplines but rather by thematic questions, often problematizing them in a discursive and intellectually inspiring and productive way. By asking questions and suggesting solutions, they have the potential to produce new ideas, new knowledge, and new practices. This type of exhibition could serve as an experimental territory and academic product for exhibition curators and academic researchers alike. Here, exhibition curators and academic researchers could together improve the outcome of interdisciplinary projects by uniting their respective strengths and perspectives.

3.2.3 Transdisciplinarity

The term *transdisciplinarity* is perhaps the most complex, radical and politically charged (Klein 2010, pp. 24–26), but arguably also the vaguest of the three classifications of interdisciplinarity. The basic definition already given in the pre-

vious chapters is twofold.[12] Klein describes transdisciplinarity (1) as a 'transcending', 'transgressing' and 'transforming' kind of interaction, which enables 'systematic', 'conceptual', 'structural' and even 'unifying' 'full integration', and (2) as 'transsector interaction' (Klein 2010, p. 16). This second definition seems to have become more common in the European context than in the academic communities of interdisciplinary studies in the United States (p. 25).

3.2.3.1 Transdisciplinarity as 'full integration'

Transdisciplinarity, in the first definition, is aiming at a *holistic* approach transcending 'the narrow scope of disciplinary worldviews' (Klein 2010, p. 25, drawing on Raymond C. Miller)[13] and is often driven by a 'social purpose' (p. 24) or 'critical imperative' (p. 25). This approach has deep roots in philosophy and the history of sciences, in what Klein calls the 'historical quest for systematic integration of knowledge' (p. 24). This historical approach towards a universal understanding of knowledge has already been mentioned in the literature review (chapter 2). Today's observable return of universalism in the course of globalization is, of course, also linked to problems and questions that are now perceived and hopefully solved on a global scale.

Moran uses the term 'trans-disciplinarity', when addressing the critics of interdisciplinarity, as a synonym for 'post-' or 'anti-disciplinarity' describing an 'intellectual stage where disciplinary divisions can be more radically subverted or even erased' (Moran 2010, p. 14). If interdisciplinary interaction could indeed reach a state of detachedness from disciplinary contexts and rules, such an interaction may perhaps in certain aspects or moments become a space for unifying integration, but it might also run the risk to turn into something like a 'non-place', a phrase coined by the French ethnographer Marc Augé (for example, Augé 2019, p. 32) and defined as a space without a sense of belonging or relations of any sort, a place where all communication has ceased to take place. 'Post-disciplinarity' seems to have become a new (mainly politically driven) movement in cultural studies (see Klein 2010, p. 23; Klein calls this 'critical interdisciplinarity'), but if understood in the sense of dissolving disciplines, it might be in danger of turning into something empty and weak instead of being a creative and productive research and work strategy. I therefore believe,

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12 Klein actually discerns four 'trendlines' in transdisciplinarity (Klein 2010, pp. 24–26), but these have been summed up for the purpose at hand.

13 Miller, R. (1982). 'Varieties of interdisciplinary approaches in the social sciences', in: *Issues in Integrative Studies* 1, pp. 1–37.

especially in times of populism, that we need both, disciplinary experts as well as creative and productive interdisciplinary collaborations amongst them.

3.2.3.2 Transdisciplinarity as 'transsector interaction'

Apart from the holistic definition described above, the second and more common understanding of transdisciplinarity is described by Klein as 'transsector interaction' (Klein 2010, p. 25). She identifies the 'core premise' of this definition in the notion 'that problems in the *Lebenswelt* – the life world – need to frame research questions and practices, not disciplines' (p. 25). The collaborations between 'academic experts and social actors' are also motivated by the aim to reach 'democratic solutions' (p. 25, see also, for example, Frodeman, R. 'The End of Disciplinarity', in: Weingart et al. 2014, p. 191, as discussed in the literature review). This specific type of transdisciplinarity representing academic *outreach* to other realms of society in terms of knowledge integration as well as the claim of social *participation* will prove to be especially important with regard to my general advocacy of interdisciplinarity in museum studies. In the practical part (chapters 4–6) of this book, this will be especially relevant for the first of the three case studies, 'A transdisciplinary and participatory exhibition: Setting the bar for good practice. *TOUCHDOWN. An exhibition with and about people with Down's syndrome*', an exhibition that was developed in a collaboration between diverse academic experts and people with Down's syndrome as experts in their own right.

Thomas Potthast understands transdisciplinarity strictly as collaborations between academic disciplines and the realms beyond 'academic communities', involving 'non-academic inquiries and persons' in the research process (Potthast 2020, p. 181, transl. HP here and in the following quotes from this source). He offers an interesting 'working definition' of successful interdisciplinary research in general, which he describes as

> a form of (1) academic (2) collaboration in which (3) experts (qualified within disciplines) (4) on the basis of mutual respect and trust, (5) within the framework of academic-organizational conditions and according to given resources, (6) in a coordinated way and (7) principally equally ranked in teams are (8) working on a problem, which (8a) cannot be dealt with by one discipline alone, about which (8b) a joint understanding has to

be reached, and for which (8c) a 'synthetic' solution (product) has to be developed (Potthast 2010, p. 181).[14]

By adding the word 'stakeholders' to 'experts' in point (3), this definition could also be applied to transdisciplinary projects involving 'non-academic aspects and groups' such as 'politics, administration, economy [or industry, p. 180] and civic society' (p. 181). Sadly, and tellingly, the realm of culture is missing in this list as a potential transdisciplinary partner, not to mention the fact that the realm of 'stakeholders' is apparently void of 'experts' in Potthast's understanding. The fact that culture is indeed underrepresented in the literature about interdisciplinarity might be sufficient in itself to justify my attempt to test out (and perhaps even implement) the theories of interdisciplinarity as a methodology or strategy of enquiry in museum studies and museum practice.

In my reading, transdisciplinary exhibitions are bridging the gaps between the academic, cultural, and social worlds, overcoming hierarchies of knowledge, for example by fostering collaborations of art and science (see, for example, Arnold 2015 and Bencard et al. 2019) or by including objects of everyday life. They are experimental (and sometimes radically unconventional) in a wider sense, creating larger narratives that reach their audiences in a multifaceted way – intellectually, emotionally, and aesthetically. These exhibitions often involve a more heterogeneous group of participants on the producing end, and a more intense level of participation of both exhibition-makers and visitors. Participatory transdisciplinary exhibitions are especially important to engage with (often marginalized) communities outside the academic or cultural realms. In a broader political sense, exhibitions like these are essentially 'making things [objects, issues, matters] public', including the 'different patterns of emotion and disruption, of disagreements and agreements' they are generating (Latour 2005, pp. 14–15). 'Discussion and [...] experimentation' are 'important for making sense of a globalized world and one's place in it', and 'museums have an obvious part to play in this regard' (Dahlgren and Hermes 2015, p. 127). The role of museums and exhibitions in society can thus additionally be seen as 'the moderation of open discussion' (p. 127). The political dimension of interdisciplinary exhibition-making will become further apparent in the case studies of this book.

14 Based on Dürnberger, M. and Sedmak, C. (2004). 'Erfahrungen mit Interdisziplinarität' (Experiences in interdisciplinarity), in: *Working papers 'Theories and commitments'*, Salzburg: Universität Salzburg, p. 8.

3.3 What is bad interdisciplinarity and what could be best practices?

With all these definitions at hand, what could possibly go wrong in conducting interdisciplinary research (and exhibition-making)? It has probably become clear by now that the author of this book is counting herself as one of the 'believers' in interdisciplinarity. To further justify and explain this personal instinct, I want to explore what critics of interdisciplinarity have to say in the context of academia, as this promises not only to reveal some more facets of interdisciplinarity as such, but also, in contrast, to bring out some ideas for best practices of interdisciplinarity. Rick Szostak, one of the most prolific and influential authors in interdisciplinarity studies today, suggests that it is important to not ignore and instead respond to critical arguments, but 'if we do not trumpet the existence of interdisciplinary best practices we cannot be surprised when interdisciplinarity is identified by its worst practices' (Szostak 2017). Despite many obstacles in my own practice, I am ready to join the trumpeters for good practices in interdisciplinarity, specifically with the critical analysis of three exhibition cases in chapters 4–6 of this book. And this research process of reflecting on my practice of interdisciplinary exhibition-making has definitely improved my understanding of interdisciplinarity both in its theoretical and practical implications.

In his article 'From Bad to Good: Is There Bad Interdisciplinarity?' Winfried Löffler makes an important distinction regarding a 'functioning and reasonable interdisciplinarity' (Löffler 2010, p. 157, transl. HP here and in the following quotes from this source). He discerns the 'material object' (German: Materialobjekt) of an academic discipline from its 'formal object' (German: Formalobjekt). Interdisciplinary collaborations might share a 'material object'[15]

15 What even missing a joint 'material object' (a theme, question, or problem) means, might be demonstrated by using an example from our own faculty at the University of Manchester. During the years 2017–2018, the School of Arts, Languages and Cultures (SALC) indulged its staff and students with a room called IDEA (Interdisciplinary Exchange Area) at Ellen Wilkinson Building (Fig. 3.1). The room was furnished with four black sofas around an empty glass table, flanked by a blank flip chart. Whenever I peered through the glass window in the door into this room, its empty and inhospitable atmosphere had not changed. It is no surprise that this room was put to another purpose in 2019 as – on my inquiry – the only 'material objects' that had been shared in there had been lunch break sandwiches. There is hardly a more telling example for

which is the object (topic, question or problem) of their research, but they always differ in their 'formal objects' which are their differing perspectives, ways of inquiry and methodologies of approaching the possibly joint 'material object' of their research. From a strictly (and also quite opinionated) academic point of view, Löffler argues that only those disciplines that not only share the same 'material object', but also share comparatively similar 'formal objects', have the chance to conduct productive interdisciplinary collaborations (p. 162). Although rightly stressing the process-oriented qualities of interdisciplinarity, he turns this advantage into confining interdisciplinarity to the realms of 'experimentation and activity', and doubts that there are such things as 'interdisciplinary theories' and 'interdisciplinary explanations' (p. 162). In Löffler's understanding, interdisciplinarity might perhaps be a productive research strategy *on the way* to new knowledge, but it is very rarely part of the final result (p. 161). He thus doubts the meaningful existence of interdisciplinary academic products – something this research wants to challenge.

Fig. 3.1: University of Manchester, Ellen Wilkinson Building, School of Arts, Languages and Cultures (SALC), IDEA (Interdisciplinary Exchange Area) room, 2017–2018. Photo: © Henriette Pleiger, 2018.

the fact that interdisciplinarity is not existing in itself but requires good questions and dedicated players.

To underline his view, Löffler names three 'forms of bad interdisciplinarity' in academia, which he calls 'nice-to-know-interdisciplinarity' (p. 164, in this case himself using the English phrase 'nice-to-know'), 'as-if-interdisciplinarity' (p. 166), and 'interdisciplinarity as unfriendly takeover' (p. 169).

The first type, the 'nice-to-know-interdisciplinarity', is described as a superficial academic activity – in Löffler's view hardly deserving the name 'interdisciplinarity' – as the involved disciplines are only relying on connections and similarities regarding their 'material objects' on a 'metaphorical level' and are 'lacking sufficiently similar formal objects', meaning ways of looking at their 'material objects' (p. 164). This is, of course, reminiscent of the characteristics of multidisciplinarity. Löffler gives the example of an academic event, a lecture series, about 'The Foreign' (German: Das Fremde) involving

> legal experts ([on the topic of] aliens legislation), literary scholars (exile literature), linguists (foreign words and language migration), biologists (immigration of foreign plants and animals, so-called neophytes), sociologists (delimitation and integration of foreigners in different cultures), aestheticians (techniques of artistic alienation), historians specialized in nutrition and economy (history of colonial goods and similar imports), military historians (history of the Foreign Legion and other non-nationally recruited army units) and so forth (Löffler 2010, pp. 164, 165).

Löffler judges such events in an academic setting as occasions of a mere social and entertaining quality that are meaningless regarding the production of new knowledge. They might offer some new 'nice-to-know'-facts for the inclined listeners, perhaps even widening their horizons regarding the 'relativity of their own discipline' (p. 165) but such events remain a 'merely additive, bad interdisciplinarity' (p. 165). Löffler rightly states that in such events (in Klein's terminology they would be characterized as multidisciplinary) the effort of integrating the presented pieces of knowledge and perspectives on the event's topic is mostly left to the recipients, but his worries about the danger of confusing and disorienting a lay audience (p. 165) seem exaggerated. Instead, I would argue that Löffler underestimates the power of *curiosity*. An event like the one he describes could have marked a promising beginning of an *interdisciplinary* project about its main topic. The problem with a lecture series such as this is not the event itself or the wide scope of the involved disciplines, but that it stopped short of being developed into an *interdisciplinary* project, per-

haps leading to the collaborative production of a publication or an exhibition with the conceptual depth to be taken seriously as an academic product.

The wide range of disciplines that were, for example, involved in the exhibition *Assembling Bodies – Art, Science & Imagination* (see Herle et al. 2009 and Herle 2013), certainly differed in their 'formal objects' (ways of enquiry), but nevertheless collaborated in a most meaningful way resulting in an equally meaningful academic (and not just cultural) product. When I saw this exhibition at the Museum of Archaeology and Anthropology of the University of Cambridge in 2009, I was instantly amazed and impressed by the courage of the exhibition curators to take on such a huge topic for a temporary exhibition. Although the museum's location and identity is obviously well settled within the inspiring environment of an academic campus and therefore perhaps provided a more natural setting for an *interdisciplinary* exhibition than other museums located off-campus, it still seemed like a Herculean task to curate a multifaceted exhibition about 'the different ways that bodies are imagined, understood and transformed in the arts, social and bio-medical sciences' (Herle et al. 2009, back cover). It is of little surprise that Nicholas Thomas, the museum director, called it 'the most ambitious exhibition' the museum had 'produced to date' (p. 5). The exhibition emerged from the 'cross-disciplinary' project 'Changing Beliefs of the Human Body' and was 'not just an outcome of research, it has been a research process in itself' (p. 5). The three exhibition curators, Anita Herle, Mark Elliott and Rebecca Empson, state in their introduction that 'the exhibition demonstrates the productivity of interdisciplinary research' (p. 9). From the beginning of the five-year research project, the exhibition had been planned as an integral part and academic output, also with the aim to present recent innovative research from the University of Cambridge. The project originally only involved the disciplines of archaeology, social anthropology, history, and classics, but during the process of making the exhibition the curatorial team extended the disciplinary scope to include art history, the history of science, biomedicine, and contemporary art (p. 9). Many more disciplines were touched in the exhibition, for example criminal law (p. 35), the study of musical instruments as analogies for the human body (p. 42), brain science (p. 44), as well as research on genetics (p. 66) and artificial intelligence (p. 84), to name but a few.

At first glance, the wide scope of the involved disciplines for this exhibition might be reminiscent of Winfried Löffler's example of a seemingly random array of academic facts and results encircling a topic or joint 'material object', like in the aforementioned lecture series about 'The Foreign'. But the difference is

that the latter produced a low 'level of integration' (Klein 1990, p. 15) compared to the intense curatorial work achieved by the three exhibition curators named above – three interdisciplinarians and curatorial bridge-builders – who managed to create a new whole out of 'a wealth of divergent materials, disciplines and practitioners' (Herle et al. 2009, p. 9). According to their own account, the process of making the exhibition 'prompted many fruitful collaborations', 'increased dialogue between academic colleagues in various departments, museums and libraries' and enabled 'links with local and international communities' (p. 9). Although the curators created and controlled the overall narrative, including 'numerous specialist contributions' (p. 9) they encouraged 'lateral connections' (p. 9) between objects and ideas both in the exhibition and the catalogue. It is these 'lateral connections' – these *lateral ways of thinking* – which constitute a greater intensity of integration in an interdisciplinary research process. The ways of enquiry (the 'formal objects') may have differed considerably in this exhibition project, but instead of being an example for 'bad interdisciplinarity' it became a truly inspiring exhibition and an example of best *interdisciplinary* practice, in its outreach even possessing rewarding transdisciplinary aspects, for example by including works of contemporary artists (see also Bjerregaard 2020, p. 5). Or, as Thomas Osborne wrote on the 'phenomenon of art-science', 'Interdisciplinarity is most exciting where most improbable; in other words, where the creative energies of its practitioners are most at stake in entering into the unknown' (Osborne 2013, p. 95).

The second and third types of 'bad interdisciplinarity', according to Löffler, are 'as-if-interdisciplinarity' (Löffler 2010, p. 166) and 'interdisciplinarity as unfriendly takeover' (p. 169). These two forms can be understood as building a linear relationship, as the former type might be leading to the latter. The 'as-if-interdisciplinarity' describes the academic practice of transferring the methodology and terminology of one discipline to another, or of translating the academic results of one discipline into the terminology of another discipline, in order to make these results available. These communication strategies amongst varying disciplines are to be viewed as 'basically reasonable activities at the forefront of real interdisciplinarity' (p. 166). These become questionable, though, 'where the awareness for the problems of methodological and terminological transfers is lost' (p. 166). Löffler has some telling examples of recent 'as-if-interdisciplinary' fields such as the 'economics of education' or 'neuromarketing.' Such seemingly interdisciplinary new fields of research are often put into existence by one discipline, in order to participate from the prestige of another discipline (in these two cases the allegedly more prestigious disciplines

of economics and the neurosciences) (p. 166). There are certainly examples of exhibitions to be found which tried to upgrade their appeal and significance by borrowing conceptual ideas or terminology from more popular disciplines, which is, of course, not a bad practice per se.[16]

'Interdisciplinarity as unfriendly takeover' is a possible consequence of the aforementioned 'as-if-interdisciplinarity'. While the latter still allows for different methodologies and terminologies to co-exist, the former means the takeover by a leading discipline, dissolving this methodological and terminological diversity. In a hierarchical instead of a collaborative process, only one voice prevails in an originally polyphonic setting. A more constructive form of *interdisciplinarity* would instead involve a democratic process of negotiation, in order to dissolve or save a methodological and terminological diversity by reaching a meaningful consensus.

Löffler's observations regarding the two latter forms of a problematic kind of interdisciplinarity are to be taken seriously when it comes to analysing the interdisciplinary exhibition cases in the practice-based part (chapters 4–6) of this study. Learning from my own experience, rather meaningless forms of interdisciplinarity are the ones in which dialogue and collaboration are suppressed either by the disciplinary participants themselves or by a third regulating or managing party mostly representing the institutional head (and/or financier) of an interdisciplinary project. *Interdisciplinarity* fails where it stops short of being developed or of being allowed to blossom. But how can practitioners mitigate this risk? In its best practice, interdisciplinarity is about creative processes and the courage to think across boundaries, in order to create

16 As a possible example, I am reminded of the trend for immersive digital art exhibitions, now often realized in a blockbuster format. As tempting as the technical possibilities are, I would not be surprised if the progress in digitalisation gradually decreased some museums' confidence in the strength of the original artwork and its traditional presentation. Especially economic interests could force on them a form of interdisciplinarity that might be unwanted in the long run. See, for example, this article from 2021: https://www.museumnext.com/article/blockbuster-immersive-digital-exhibitions-bloom/ (last accessed 26 August 2023). But there are also signs that the 'immersive art' trend, which gained momentum during the COVID-19 pandemic, may not be as economically successful as expected. See this article from 2023: https://www.theguardian.com/artanddesign/2023/aug/03/immersive-art-firm-behind-van-gogh-and-monet-shows-files-for-bankruptcy (last accessed 29 August 2023).

new knowledge and new practices. Anne Balsamo and Carl Mitcham have formulated five useful 'virtues' for 'the ethics of interdisciplinarity' (Balsamo and Mitcham 2010, p. 270). These are 'intellectual generosity, confidence, humility, flexibility and integrity' (p. 270), but these virtues (certainly also applying to curatorial work) must be facilitated within an interdisciplinary project setting to thrive. A moderated research process which provides enough time as well as financial and spatial resources is needed to turn these joint virtues and ambitions for an integrative collaboration into a meaningful cultural practice.

The discussion above has presented a more detailed classification of interdisciplinarity, revealing a number of insights regarding different qualities of collaborative research processes. Based on the assumption that exhibition-making can be a research method in itself (see Thomas 2010, Bjerregaard 2020), this terminological analysis can be applied and used to further understand the processes behind the making of interdisciplinary exhibitions. I plan to use this terminological toolkit for the analysis of three exhibition cases in chapters 4–6. Having described the theoretical framework of my research in the previous sections of this chapter, my methodological approaches will be discussed in the following section. For applying the theoretical framework to my practice as an interdisciplinary exhibition curator, I will look at useful methods of inquiry and analysis such as critical autoethnography in an institutional setting, case studies and qualitative interviews. Possible ethical issues of this research will also be discussed especially in terms of institutional transparency.

3.4 Methods of investigating my practice as an interdisciplinary exhibition curator

3.4.1 Institutional transparency and critical autoethnography

My research on interdisciplinary exhibition-making – and potential best practices thereof – is practice-led, as it tries to advance knowledge about and within this cultural practice. The evaluation and analysis of my own professional practice is therefore an integral part of my research.

The *transparency* of cultural practices – meaning the disclosure and investigation of internal processes and insider knowledge about cultural practices – has emerged as an important aspect of my research. Having worked and still working as an exhibition curator at the Bundeskunsthalle in Bonn, Germany, since 2002, I am especially interested in the production processes and inter-

actions of collaborative, interdisciplinary exhibition-making, focusing on the complex processes behind the scenes. The institution, an exhibition hall without a collection of its own, has already been generally introduced in the introduction (chapter 1) and more specifically regarding its programme scope of temporary exhibitions in the literature review (chapter 2). Despite the ethical questions arising from analysing internal institutional processes as a participant or member of an organization, I agree with Beatrice von Bismarck, who writes in her article 'Matters of Negotiation: Roles and Practices in Project Work' that collaborative exhibition projects can yield more meaningful results if their production processes and conditions are made transparent (Bismarck 2002, p. 235).

I have come to think about transparency also in spatial terms and analogies, and in terms of power relations, in order to map out open spaces and barriers enabling or hindering collaborations in exhibition-making. Having viewed interdisciplinary exhibitions as possible 'experimental territories' from the start of this research, I am asking myself now: Whom do we, as an institution, actually invite to experiment on such a territory (if we provide it at all), when our institution literally and figuratively is more reminiscent of a fortress than an open space? Inside its main building, opened in 1992, the Bundeskunsthalle has about 5,000 square metres of exhibition space designed for highly flexible use. But from the outside it looks so hermetically sealed that visitors often have difficulties finding its entrance, which lies hidden in a small courtyard at one corner of the building. From a bird's-eye view, its roof garden suggests openness but is only open for regulated access during the summer months. Judging from its architectural features the Bundeskunsthalle was clearly conceptualized as a 'temple' for the arts and other cultural activities rather than as a 'welcoming inclusionary' place, as Elaine Gurian put it when arguing for more inviting and open museum architectures as public spaces (Gurian 2005, p. 204). Some time ago, an elderly woman who had participated in one of our special guided tours for people with dementia, reportedly told one of her relatives a few days after the event that she had been on an outing. She couldn't remember where she went and what it was all about, but what she did know was that she had participated in a 'very elite activity' and that she definitely wanted to try staying in this distinguished 'circle'. This emotional reaction somehow revealingly stands against the inclusionary aim of the described activity. As proud as we are of our inclusionary programmes, our building (and perhaps other aspects of her visit that informed this woman's feelings) still breathes an elitist atmosphere.

Fig. 3.2: Architectural model by Gustav Peichl of the Bundeskunsthalle in Bonn, Germany, 1987. Photo: Peter Oszvald, © Kunst- und Ausstellungshalle der Bundesrepublik Deutschland GmbH, Bonn.

Our visitors' experiences with the institution and its barriers and boundaries are very important, but as for my research question about interdisciplinary exhibition-making, I am more interested in looking at the experiences of the external experts, curators and other collaborative partners who are invited to join us in making exhibitions, and in how the institution (including myself) deals with them. The aim and necessity to collaborate with others, at least in my institutional practice, surprisingly often stands against the fear of being invaded or overpowered. From an institutional point of view – and when theorizing about exhibition-making, I sometimes have to remind myself that I am not an independent exhibition curator but instead part of an institutional setting with all its rules and regulations – developing an interdisciplinary exhibition obviously means inviting people in but at the same time requires me to keep them at a certain distance, for example with security passes granting limited access, or with limited contracts and limited payments. Bismarck speaks of the deconstructive potential of changing defined boundaries during collaborative exhibition-making processes, describing them as 'processes of convergencies and divergencies' (Bismarck 2002, p. 231, transl. HP) and, quoting Stefan Germer, argues for the deliberate 'disturbance of certainties'

(p. 233, transl. HP). Anne Lorimer even speaks of 'ruptures', for example, caused by 'processual instabilities' (Lorimer 2007, p. 198) in her case study on an experimental exhibition about the human brain at the Chicago Museum of Science and Industry. She argues that experimental exhibitions should allow for going 'beyond what could have been thought out beforehand' in order to 'offer instead new forms of knowledge and practice' (p. 200) in a 'rich interplay of materiality, semiosis, and sociality that takes place within the space they have created' (pp. 215, 216). But to what extent are institutions ready for (or can realistically cope with) such productive disturbances to their institutional routines and workloads?

Reflecting on my own professional practice, I have become increasingly interested in exploring the questions of *what it takes* and *what institutions get* if they invest in collaborative and interdisciplinary exhibition-making, perhaps eventually leading to the development of more precise standards for this kind of exhibition. To answer these questions, the nearest at hand for the collection of relevant data is a transparent analysis of my own professional practice. But this requires the disclosure of insider knowledge about institutional processes that are usually considered internal (potentially leading to ethical issues), and such a disclosure must be carefully justified theoretically and methodologically.

The need for transparency in my research requires a qualitative method that is simply able to *describe and write about a culture* and is thus a form of *ethnography*. In my case this culture is a 'working culture' or 'institutional culture'. Ethnography becomes autoethnographical depending on how much it openly allows for the researcher's own perspective. Thus, allowing for subjectivity, *autoethnography* strikes me as a useful method with regard to my research questions in several aspects: (1) Autoethnography may help to connect insider experience and knowledge to a larger academic discourse (Adams et al. 2015, p. 25). (2) It may help to 'account for intuitive leaps, false starts, mistakes, loose ends, and happy accidents' (p. 22), and thus reveal the productive real-life messiness (p. 9), but also the institutional obstacles of the collaborative process of interdisciplinary exhibition-making. (3) It enables a transparency of the researcher's voice and professional identity. (4) It advocates proximity instead of objectivity (p. 23). (5) It values storytelling (p. 10) as a process-related method. A method allowing for 'stories and storytelling as ways of knowing' (p. 10) seems related to a crucial ingredient of exhibition-making itself. This aspect of autoethnography is also fittingly connected to the method of qualitative interviewing, allowing for individual narratives such as anecdotes and recounts of professional experiences.

Some autoethnographical approaches feel too personal and too emotional for my research, although they are, of course, completely justified within the context of biographies of, for example, marginalized groups or individuals in society (see Adams et al. 2013). Still, what justifies the use of autoethnography is my insider position and insider knowledge that could be relevant for my research questions. But this concerns my *professional self* rather than my personal self – if these two can always be separated. Leon Anderson distinguishes an *analytical* (Anderson 2006) style of autoethnography from a more evocative, sometimes intentionally emotional kind of autoethnography (Adams et al. 2015). My research in museum practice is certainly also a personal investigation of my own practice so that I can develop a clearer set of professional values and gain more knowledge and control over my own actions. In a positive way, this research also runs against my noticeably growing routine in the processes of exhibition-making and helps me gain more courage to travel new and untested paths. But in order to contribute to the academic discourse or even theory building in museum practice, I have clearly opted for a critical, analytical method and writing style by choosing a form of 'critical autoethnography' which acknowledges the researcher's standpoint but is 'accessible to judgement and evaluation' by others (Adams et al. 2015, p. 89).

3.4.2 Case studies, interviews, grey literature, and ethical limitations of this research

I will take three exhibition cases, already outlined in the introduction to this book, as examples from my own practice as a curator and manager of temporary exhibitions at the Bundeskunsthalle, reflecting on how they worked as interdisciplinary projects by documenting and analysing critical moments and developments during their production process. These *cases studies* from my own curatorial practice are about the following three exhibitions, constituting chapters 4–6 of this study:

1. A transdisciplinary and participatory exhibition: Setting the bar for good practice – *TOUCHDOWN. An exhibition with and about people with Down's syndrome* (2016–2018)
2. The 'inter-disciplined' exhibition: Art meets science – *Weather Report. About Weather Culture and Climate Science* (2017/2018)
3. A multidisciplinary exhibition and the political dimension of *interdisciplinarity – We Capitalists. From Zero to Turbo* (2020)

These three exhibitions are not necessarily key cases or representative examples, but they are complex cases rich in information and experience and can therefore be analysed in great detail. They offer variation (Flyvbjerg 2006, p. 230) in their different settings and circumstances, creating a diverse picture while being subject to scrutiny through a lens of theoretical propositions. Applying and testing theories of interdisciplinarity especially through the comparison of these three exhibition cases promises to deliver useful and revealing insights for exhibition theory and practice in museum studies. Bent Flyvbjerg writes that 'the most advanced form of understanding is achieved when researchers place themselves within the context being studied' (Flyvbjerg 2006, p. 236) and I am indeed very grateful for this privileged research setting allowing me to theorize my daily curatorial work at the Bundeskunsthalle, where changing directors and colleagues have generously supported my research over the past few years.

The three case studies are perhaps not only valuable from a museum studies point of view, but also for the academic discourse in interdisciplinary studies. Bianca Vienni-Baptista reiterates the need for case studies in this field of science theory, specifically for understanding more comprehensively differing conceptions of *inter-* and transdisciplinary research (Vienni-Baptista 2023, p. 72). At the same time, initiatives such as the EU project SHAPE-ID (Shaping interdisciplinary research practices in Europe)[17] are reaching out beyond the realms of science and technology research communities to the arts and humanities as well as other societal stakeholders.

For understanding what interdisciplinary exhibitions are and how they are conceptualized and produced, the method of individual and partly autoethnographic case studies seems to be rewarding, as they can unveil the possibilities and limitations of exhibition-making practice from an insider's perspective. Writing a case study from the inner perspective of a case participant promises to be a difficult task though. Reflecting on your own practice can feel like 'a kind of crisis' (Macdonald and Basu 2007, p. 6). Firstly, because there is a certain secrecy going along with inner-institutional production processes, as disclosing the 'disjunctions, disagreements and "surprise outcomes" involved in cultural production' does not necessarily meet the objectives of an institution's 'impression management' (Macdonald 2002, p. 8) even in hindsight. Secondly, these everyday procedures do not seem worth being theorized, as at least for the practitioner they often are routine activities, or as Sharon Macdonald put

17 Accessible at https://www.shapeid.eu (last accessed 26 August 2023).

it in *Behind the Scenes at the Science Museum*, 'one of the problems that an ethnographer working in a relatively "unexotic" setting may face is how to *defamiliarise the familiar*' (Macdonald 2002, p. 7, emphasis added). Although I have tried to include both perspectives – that of a participant and that of a (retrospective) observer – a 'participant-observer' (Macdonald 2002, p. 12) or 'participant academic' (Nicolescu 2016, p. 466) –, this theoretical attempt certainly lacks a more distanced view on my own role in the process of making exhibitions, and I have tried to make up for this deficit by including the views of colleagues who were able to also critically reflect on my own actions during these processes.

An important tool for the reflective analysis of my own practice and perspective are the *qualitative interviews* that I have conducted with co-curators and collaborative partners within the scope of the three case studies. These semi-structured interviews add to a deeper understanding of the processes involved to develop the exhibitions but also touch on more general questions within my research. For the interviews I have developed a set of ethically approved questions for external exhibition and museum curators as well as other academics and professionals (during the process becoming curators), who collaborated in interdisciplinary exhibitions co-curated and managed by myself at the Bundeskunsthalle.[18] These questions (see Appendix) aimed at a retrospective analysis of the process of making an interdisciplinary exhibition, starting from forming an interdisciplinary team, jointly developing an exhibition concept, on to negotiating and choosing objects and to finding a joint curatorial language for interpretation and exhibition design. The interview questions focused especially on key issues and moments of decision-making as well as knowledge production and allowed for a deep feedback conversation in hindsight. These occasions have proven to be of immense value to all participants including the researcher, especially because they were not automatically part of the institutional procedures of finalising an exhibition project. Apart from this welcome side effect of my research creating opportunities to jointly reflect on the project amongst the respective exhibition teams, I have most importantly tried to enable the interviewees' 'voices and experiences to challenge and support' my research claims (Vanover et al. 2021, p. 324).

The six interviews (and two additional feedback conversations) were conducted in German language between 2018 and 2021. All interviewees were sent

18 For this research, a low-risk ethical approval was granted by the University of Manchester, School for Arts, Languages and Cultures (SALC) on 12 February 2018.

a detailed information sheet and have given their written consent to participate in this research including to be published under their real names. The six interviews have been transcribed to enable a thematic analysis (see, for example, Brett and Wheeler 2022, p. 180). The interview transcriptions in German language amount to a total of c. 75,200 words. All quotes from these transcriptions were translated into English by me. Given the amount of data, one might legitimately ask why only a comparatively small part of it was used in the case studies of this book. Although the interviews followed the prepared set of questions, they turned into deep reflective discussions about the shared experiences in exhibition-making, as described above. These conversations revealed the 'social drama' (Macdonald 2002, p. 6, after Victor Turner)[19] of the exhibition-making processes and were in itself 'social processes' (Silverman 2017, p. 153) as they not only involved a joint reflection in hindsight but also had a clarifying and even in some instances healing effect regarding past conflicts. David Silverman gives the advice that as a qualitative interviewer you should 'ignore what you know already about your interviewees' (Silverman 2017, p. 154) to achieve a credible result. I tried to take up the role of the distanced researcher, but at the same time I was still a participant myself. The fact that we know each other well amongst the three exhibition teams introduced in this book led to a trustful and in large parts confidential atmosphere during the interviews. And I tried to remain ethically aware of what Dawn Mannay describes as 'landscapes of representation, interpretation, voice, trust, confidentiality, [and] silence' (Mannay 2016, p. 123) building up during the interviewing process. However, the interviews did yield immensely valuable observations and statements by the interviewees regarding my research question.

The main thematic grid, through which I analysed the interviews, was the classification of interdisciplinarity in order to identify multi-, *inter-* and transdisciplinary processes within our curatorial practice, revealing the complexity and fluidity of these categories. On a more general note, the interviews yielded important parallel stories and alternative perspectives on a shared series of events. Furthermore, the interview questions allowed me to reflect on my own curatorial and managing role within a team system. Some of the interviews also laid bare institutional shortcomings and suggestions for change. The arguably selective quotes from the interviews have been approved for publication

19 Turner, V. (1974). *Dramas, Fields and Metaphors: Symbolic Action in Human Society.* Ithaca, NY: Cornell University Press.

by the interviewees after reading the finished case studies before the final completion of this study.

This research had comparatively low *ethical risks* but, as stated above, the need for transparency afforded the disclosure of internal processes and insider knowledge from within the institution I am working at. In order to reveal some aspects of the 'complexity of what goes on behind the scenes – some of the mess that is tidied away in the finished product' (Macdonald 2002, p. 246), *grey literature* (unpublished documents) has also been an important source. Many of my own notes and memories during the work on the three exhibition cases have been included into this study as far as they are not violating any personal or institutional rights.

3.5 Conclusion: Applying a rich theoretical vocabulary to the analysis of interdisciplinary exhibition-making

Perhaps the most important result of the terminological observations above is the fact that *interdisciplinarity* in the discussed narrower sense must be recognized and acknowledged as a complex endeavour. If the established definitions are taken seriously not only in universities but also in the cultural sector, institutions and individual researchers/curators might be more careful in claiming the term 'interdisciplinary' for their academic and cultural projects. It must be understood that the research-based strategic decision to conduct projects in an interdisciplinary way has considerable consequences for their complexity, resources, and expenditures. These theoretical reflections therefore have significant practical implications if they are translated into a methodology and consistently implemented in museum practice. It is this methodological translation and implementation that I want to test out in the following chapters. As interdisciplinarity in all its forms applies first and foremost to *processes* of research and knowledge creation, this aim of testing the theory in practice requires a rigorous analysis of the production processes of interdisciplinary exhibition-making. An important precondition of this is my understanding of curating/exhibition-making as a research activity, as elaborated on above.

The works of Klein and other more recent authors not only provide a theoretical vocabulary and analysis of the field of interdisciplinarity studies but also an immensely useful and in-depth analysis of integrative processes as such (especially Klein 1990, for example, pp. 182–196, and later publications). I will

draw on these more practical aspects of interdisciplinarity in greater detail in the three case studies of this book.

In the course of the theoretical discussion above, I have gathered a rich portfolio of categories and terms, such as useful descriptive adjectives, that will enable a more precise analysis of interdisciplinary exhibition-making. The established categories of interdisciplinarity will be tested and exemplified in the three exhibition cases that in some way or other claimed to have taken on a multifaceted perspective on their respective themes. Their differing shades and grades of interdisciplinarity will show the fluidity of these categories, but more importantly the need for a more precise language to analyse their differences. This will also involve institutional critique and autoethnographical narratives as well as the views of co-curators, colleagues, and other collaborative partners in these exhibition cases. As Bent Flyvbjerg writes, 'the proximity to reality, which the case study entails, and the learning process that it generates for the researcher will often constitute a prerequisite for advanced understanding' (Flyvbjerg 2006, p. 236). This is something I plan to offer with the following three case studies.

4 A transdisciplinary and participatory exhibition: Setting the bar for good practice – *TOUCHDOWN. An exhibition with and about people with Down's syndrome*

4.1 Introduction

This chapter investigates the development process of a thematic temporary exhibition and reflects on the value of a transdisciplinary approach as a tool for validating and championing embodied knowledge alongside academically and curatorially based disciplinary knowledge. It is the first of three case studies which have informed and constitute the subject of enquiry of this practice-based research. In this chapter I argue that the exhibition *TOUCHDOWN. An exhibition with and about people with Down's syndrome* (2016–2018) serves as an example of a successful transdisciplinary and socially participatory project from the cultural realm that integrated different ways of knowing and producing knowledge, including advanced scientific knowledge.

The exhibition and the accompanying book aimed to research and tell the history of people with Down's syndrome for the first time, as they had hardly been part of a shared written history so far, and not only in Germany. Including a wide range of disciplines such as history, archaeology, social science, genetics, medicine, and art, this curatorial research was conducted in a closely-knit participatory production process, together with a group of people with Down's syndrome. Focusing on describing and analysing the specific actions that were taken to create and facilitate integration within the curatorial team, my practice-based research also tries to unveil where we failed to facilitate *interdisciplinarity* (and in this case more specifically transdisciplinarity) which, also judging from this experience, needs to be created and enabled and is thus a predominantly practical and process-oriented tool. An *interdisciplinary* or transdisciplinary research strategy or collaboration process is intrinsically integra-

tive and thus highly fitting for addressing societally relevant topics from a multitude of perspectives.

The following sections of this chapter will first introduce the exhibition (4.1), and subsequently analyse the development process of the exhibition along the basic steps and phases during its production. Section 4.3 will discuss the process of building the curatorial team including people with and without Down's syndrome, whereas section 4.4 is dedicated to investigating the process of conceiving of the exhibition's concept and storyline (4.4.1), with a special focus on using a joint language amongst participants with and without a learning disability (4.4.2). The choice of objects as well as the production of interpretative texts for the exhibition and the accompanying book will be explored in section 4.5. The challenges of developing the exhibition design in this specific project will be the focus of section 4.6 of this chapter. Section 4.7 will position this transdisciplinary and participatory project within the theoretical framework of the overall book.

4.2 The exhibition *TOUCHDOWN*

The exhibition *TOUCHDOWN. An exhibition with and about people with Down's syndrome*[1] was developed by the Bundeskunsthalle in cooperation with the research project TOUCHDOWN 21,[2] which was founded by the human geneticist Katja de Bragança. The exhibition was staged at three venues: At the Bundeskunsthalle,[3] Bonn, from 29 October 2016 to 12 March 2017 (Fig. 4.1), at the KulturAmbulanz,[4] Bremen, from 14 May to 27 August 2017 (Fig. 4.2), and at the Zentrum Paul Klee,[5] Bern, from 24 January to 13 May 2018. Altogether, the show attracted 81,400 visitors, a figure which considerably surpassed our most

1 I have published a short discussion of this exhibition in: Baumgart and Pleiger 2018.

2 The research project TOUCHDOWN 21 is accessible at: https://touchdown21.info/de/news/archiv.html (last accessed 10 July 2023). It will be introduced in greater detail in section 3 of this case study.

3 The Bundeskunsthalle produced a short film about the exhibition in 2016: Touchdown – Eine Ausstellung mit und über Menschen mit Down-Syndrom – Behind The Art (https://www.youtube.com/watch?v=wF7w_E71eHs) (last accessed 2 April 2024).

4 Accessible at: https://www.kulturambulanz.de/kalender/2015-2018/index.php (last accessed 10 July 2023).

5 Accessible at: https://www.zpk.org/en/ausstellungen/rueckblick_0/2018/touchdown-1583.html (last accessed 10 July 2023).

ambitious hopes.[6] As it turned out, an exhibition about Down's syndrome was, at that point in time, anything but an 'outsider' or 'niche' project, a fear that had been raised in an initial internal discussion about the exhibition proposal. Instead, the exhibition was received as being of great societal, political, and, surprisingly, also of high personal relevance to many people.

Fig. 4.1 and 4.2: Exhibition posters of the first and second venue of the exhibition TOUCHDOWN *in Bonn and Bremen, 2016/2017. The photos show Johanna von Schönfeld and Daniel Rauers, 2013,* Ohrenkuss *edition 'Superkräfte' (Superpowers) (details), © Martin Langhorst (www.lichtbilderlanghorst.de). Posters: © Kunst- und Ausstellungshalle der Bundesrepublik Deutschland GmbH, Bonn / © KulturAmbulanz, Bremen.*

6 The estimated figure for the first venue in Bonn was only 4,500 visitors. The final figure was over 35,000.

4.2.1 The exhibition title and a twofold storyline

The exhibition title was chosen with great care and reveals some of the different motivations and intentions behind this project. As stated in the introduction to the book accompanying the exhibition, written by Katja de Bragança, Heinz Greuling, Rikola-Gunnar Lüttgenau, and Henriette Pleiger, 'TOUCHDOWN is an English word for landing. We hope it is a pinpoint landing,' (de Bragança et al. 2016, p. 9).[7] Apart from this more common meaning, which suited the exhibition's storyline, the word 'touchdown' in our context also implied that we wanted to really 'touch' our subject, Down's syndrome. We wanted to get closer to it, instead of shying away from it. Therefore, we selected this word as the main exhibition title because its multiple connotations perfectly matched both intended layers of the exhibition narrative. These two layers comprised a fictional (science-fiction-style) storyline and another narrative rooted in real life. Especially the fictional part of the story became an important vehicle for participation as it was later fantastically extended and embellished by the group of people with Down's syndrome, who took part in the exhibition-making process. This process was supported and facilitated by the comic artist Vincent Burmeister as well as by exhibition designers Harry Vetter (Bonn, Bremen) and Paula Sansano (Bern).

The fictional story went like this: 5,000 years ago, a First Mission from the planet kUMUSI had settled on planet Earth. The inhabitants of kUMUSI were people with Down's syndrome. In 2016, a Second Mission arrived and 'touched down' on Earth in a spaceship (Fig. 4.3) to investigate and subsequently report to the kUMUSI authorities whether any descendants of their people were still living on Earth. The Second Mission was to explore their history and present living conditions, and finally ask them whether they wanted to stay on Earth or return home. The exhibition was the story of the Second Mission's research expedition, and the accompanying book, titled *TOUCHDOWN. Die Geschichte des Down-Syndroms* (TOUCHDOWN. The History of Down's Syndrome, de Bragança et al. 2016), was their journey's logbook.

7 All quotes, especially from the book that accompanied the exhibition and the interviews conducted for this case study, were translated from German to English by the author, if not stated otherwise. Apart from the texts in a simplified language that we called 'clear German' (see section 4.4.2 of this book), the exhibition also provided texts in Easy English, translated by Ute Schulz, www.easy-english-experts.de (last accessed 10 July 2023) in 2016. These will be used in this case study as well.

Fig. 4.3: The spaceship of the Second Mission, illustration by Vincent Burmeister for the exhibition TOUCHDOWN *and the accompanying book (de Bragança et al. 2016, pp. 12–13). The red symbol of the Second Mission, representing trisomy 21, was created by Sebastian Urbanski, a German actor with Down's syndrome (de Bragança et al. 2016, p. 224), © Kunst- und Ausstellungshalle der Bundesrepublik Deutschland GmbH, Bonn.*

Fig. 4.4: The crew of the Second Mission, illustration by Vincent Burmeister, 2016, © Kunst- und Ausstellungshalle der Bundesrepublik Deutschland GmbH, Bonn.

This story was told in comics by Vincent Burmeister and texts written by people with Down's syndrome. In the exhibition, the comics were presented in life-size. The portrayal of the crew members of the Second Mission (Fig. 4) as strong and confident people with Down's syndrome (created in a superheroes comic aesthetic) stood against their usual depiction as constantly in need of help – for example, by self-help groups and other social organizations relying on donations. The seven crew members (together with their dog) represented a fictitious *interdisciplinary* research team, as each of them was a specialist in a different discipline and was equipped accordingly (de Bragança et al. 2016, pp. 22–31): captain wELLE, officer lAPU, security woman jUDOYOU, engine driver fLOWREW, doctor aZU, communication expert lAPONION, adviser tEIYU, and the dog called '!'. Five of the altogether eight 'alien arrivals' were female (including the captain and the dog), and three were male.

4.2.2 The seven exhibition chapters

The story was structured in seven chapters or exhibition rooms: After (1) a spectacular spaceship (Fig. 4.3) landing on the roof of the Bundeskunsthalle (depicted in life-sized comics in the main building's foyer, and similarly staged at the next two venues in Bremen and Bern), the Second Mission entered room (2) which was called 'Today – Here and Now' (Fig. 4.5). Here, the crew explored the following real-life themes involved in the social and everyday life conditions of people with Down's syndrome, including education, work, money, love, marriage, violence, autonomy, and legal rights. In this room, the co-curators with Down's syndrome, for example, presented 'talking objects' that spoke of their various experiences.

Fig. 4.5: The second exhibition chapter 'Today – Here and Now' at the first venue in Bonn, 2016. Photo: Jirka Jansch, 2016, © Kunst- und Ausstellungshalle der Bundesrepublik Deutschland GmbH, Bonn.

In this first encounter between the fictitious Second Mission (and the exhibition visitors!) and people with Down's syndrome living in Germany today, the crew members from kUMUSI were introduced to the present real-life conditions of their people on Earth. After those first impressions they decided to do some historical research. In the following three exhibition chapters (3–5), the Second Mission tried to gather historical evidence of the whereabouts of the descendants of their First Mission throughout the centuries. The first room of this research excursion into history was room (3) titled 'The Invisibles – Searching for Traces in the Past' (Fig. 4.6). The results from this room – presenting only a few objects, amongst them two archaeological artefacts and one medieval document – were quite frustrating, because the historical evidence about people with Down's syndrome before the 19th century is extremely scarce.[8]

8 Our research for this room was mainly based on this article: Starbuck, J. M. (2011), 'On the Antiquity of Trisomy 21: Moving Towards a Quantitative Diagnosis of Down Syndrome in Historic Material Culture', in: *Journal of Contemporary Anthropology* II(1), pp. 19–44: https://docs.lib.purdue.edu/cgi/viewcontent.cgi?article=1019&context=jca (last accessed 11 July 2023).

Fig. 4.6: Uschi Baetz (left) and Verena Günnel (right) during a tandem guided tour in the third exhibition chapter 'The Invisibles – Searching for Traces in the Past' at the first venue in Bonn. Photo: Uschi Baetz, 2016, © Kunst- und Ausstellungshalle der Bundesrepublik Deutschland GmbH, Bonn.[9]

Stepping out of the small and dark room (3), room (4) felt like a mixture of relief and excitement. It was called 'The Great Appearance – John Langdon Down' (Fig. 4.7) and was devoted to the British medical doctor who first described Down's syndrome in 1866 (only much later to be identified as trisomy 21). Despite the later tragically racist history of the term 'mongolism' (sadly coined by Langdon Down himself, but at that point devoid of any racist connotation) in the late 19th century, this exhibition chapter nevertheless allowed for a positive depiction of the man and his exceptional work with and for people with Down's syndrome, making him a historical figurehead for them within

9 The image shows the 2,500-year-old skeleton of a woman excavated in Germany in the 1970s. The research related to these human remains and the reason for displaying them is elaborated on in section 4.5 of this book. We paid great attention to follow the established guidelines: https://www.museumsbund.de/wp-content/uploads/2021/07/dmb-leitfaden-umgang-menschl-ueberr-en-web-20210625.pdf, pp. 42–44.

their own history book. 'The Great Appearance' referred not only to the appearance of those with Down's syndrome on the 'world stage' but also particularly to Langdon Down's theatrical work with people with learning disabilities at Normansfield Hospital in Teddington near London.

Fig. 4.7: The fourth exhibition chapter 'The Great Appearance – John Langdon Down' at the first venue in Bonn. Photo: Jirka Jansch, 2016, © Kunst- und Ausstellungshalle der Bundesrepublik Deutschland GmbH, Bonn.

The last of the three historical rooms in the exhibition was designed as a separate chamber. Access to this room was intentionally not as straightforward as it was in the other rooms, because the curatorial team wanted to allow visitors to make a conscious decision on whether to enter this room (5) or not. It was named 'In the Twilight – The Extermination' (Fig. 4.8) and was about the Nazi era in Germany and Austria during which more than 300,000 disabled people were killed. The showcase in the centre of the room showed three empty glass containers. The labels on them told the names of three small children with trisomy 21 who were murdered in 1942 and 1943 in a Viennese hospital (Kinderfachabteilung Am Steinhof). Originally the glass containers held the brains of these children. The 'specimens' were used for medical education at least until

the 1970s. The human remains were finally buried in 2002 (de Bragança et al. 2016, p. 169).

Fig. 4.8: The fifth exhibition chapter 'In the Twilight – The Extermination' at the first venue in Bonn. Photo: Jirka Jansch, 2016, © Kunst- und Ausstellungshalle der Bundesrepublik Deutschland GmbH, Bonn.

In the following exhibition chapter (6) 'Research – I am what [sic!] I am' (Fig. 4.9) the crew of the Second Mission resurfaced from the past to further investigate present issues. The focus here was on thoroughly informing the museum audience about the syndrome itself (especially about it not being an illness) involving genetics and health questions. On the table set up in this room stood a microscope. On every weekend during the exhibition period, human geneticists from Bonn University explained trisomy 21. The scientific knowledge that was explained here in clear language also included the unbiased information about prenatal diagnosis and abortion (the latter being an extremely difficult topic for people with Down's syndrome – emotionally similar to but ethically very different from 'euthanasia'). Other themes raised in this room were a more in-depth look at learning and education as well as the importance of family relations. The knowledge and information presented in this room was meant to enable and empower both people with Down's syndrome and their relatives to

take independent decisions regarding their own lives, instead of being treated as mere medical and social 'objects' within our societies' administrative systems.

Fig. 4.9: The sixth exhibition chapter 'Research – I am what [sic!] I am' at the first venue in Bonn. Photo: Jirka Jansch, 2016, © Kunst- und Ausstellungshalle der Bundesrepublik Deutschland GmbH, Bonn.

The final room of the exhibition was dedicated to the sound installation (7) 'The Discussion – Staying or Leaving?' In an audio piece, people with Down's syndrome discussed this question among themselves including members of the Second Mission crew and people with Down's syndrome living on Earth today. At the end of the piece, they decided for themselves, in a secret vote, whether to stay on Earth or to return to kUMUSI, a decision people without Down's syndrome have all too often taken for them in the past and are still taking for them in the present.

Fig. 4.10: The last (seventh) exhibition chapter 'The Discussion – Staying or Leaving?' the first venue in Bonn. Photo: Jirka Jansch, 2016, © Kunst- und Ausstellungshalle der Bundesrepublik Deutschland GmbH, Bonn.

None of the texts written by people with Down's syndrome, in either the exhibition or the book, were corrected orthographically or regarding their content. All other texts that were written by people with just 46 chromosomes[10] were translated into clear language.[11] Apart from this consistent approach concerning a joint language, two of the most significant achievements of this exhibition regarding producing knowledge and enabling participation were the following: firstly, in addition to the exhibition itself the result was a history book written for and by people with Down's syndrome; secondly, people with Down's syndrome acted as paid docents in their own exhibition and were thus not only part of the knowledge production but also of the interpretation and dissemination of the knowledge generated during the process of making this exhibition. Especially this – at that time radical – approach to participatory educational programmes is today viewed as a milestone in the context of German museum education (see, for example, Maul and Röhlke 2018, Jacob 2017).

10 People with trisomy 21 have 47 chromosomes (a third copy of chromosome 21). I am not using this distinction in a political sense.

11 The term *clear language* will be further explained in section 4.3.

4.3 The transdisciplinary exhibition team: Involving people with 46 and 47 chromosomes and different ways of seeing the world

The following sections of this case study will analyse the development process of the exhibition along its production phases. The analysis will include reflections on my own role as manager and institutional co-curator in this exhibition case, using critical autoethnography, but it will also rely on three qualitative semi-structured interviews with my co-curators in this project. I spoke with Heinz Greuling (HG), physicist and TV journalist, on 26 February 2021. On 4 March 2021, I conducted a joint interview with Katja de Bragança (KB), human geneticist and founder of the pioneering magazine *Ohrenkuss* made by people with Down's syndrome (since 1998), and Anne Leichtfuß (AL), online editor and professional translator and interpreter for easy/clear language. On 25 June 2021, I interviewed Rikola-Gunnar Lüttgenau (RGL), historian, exhibition curator and head of strategic communication and public outreach at Buchenwald Memorial.[12] These four colleagues and I share the fact that each of us has only 46 chromosomes.

Approximately as many as 70 colleagues with Down's syndrome contributed to this exhibition at its three venues. The core group of people with Down's syndrome, who participated in the curatorial process, consisted of about 15 to 20 persons (in slightly varying constellations). It is therefore essential that their voices are included in this case study. I chose not to interview colleagues with Down's syndrome for this study due to ethical reasons,[13] but in order to achieve inclusion, I have drawn on several rich sources written and produced by colleagues with Down's syndrome for and in response to the exhibition: At least fifty per cent of both the exhibition texts and the published book (de Bragança et al. 2016) that accompanied the exhibition, were written by colleagues with trisomy 21. Some of their names are (in alphabet-

12 Because of the COVID-19 pandemic all three recorded interviews were conducted online via Zoom.

13 According to the University of Manchester's 'Policy on the ethical involvement of human participants in research' (Version 2.2 May 2021, accessed 23 March 2023), 'involving vulnerable groups, including [...] adults with special needs' would have led to a high-risk research setting. As the project itself produced enough material with direct quotes from our colleagues with Down's syndrome, this risk was avoidable and therefore not taken.

ical order): Julia Bertmann,[14] Natalie Dedreux, Angela Fritzen, Julian Göpel, Verena Günnel, Andrea Halder, Björn Langenfeld, Marc Lohmann, Jeanne-Marie Mohn, Antonio Nodal, Ansgar Peters, Anna-Lisa Plettenberg[15], Daniel Rauers, Johanna von Schönfeld, Paul Spitzeck, Marley Thelen, Martin Weser (full list of 56 names:[16] de Bragança et al. 2016, p. 292). After the exhibition in Bonn, in 2017, the magazine *Ohrenkuss* (including all authors mentioned above), published a special issue[17] reflecting on the exhibition, from which I will quote here as well. I have also consulted past project files, insofar as they do not violate any personal or institutional rights, especially with the aim of providing an accurate account of the development process of the exhibition.

The analysis of the practical process of making this exhibition starts with the following observations on how we built a transdisciplinary and socially participatory curatorial team to develop the exhibition narrative and content.

> Participation means:
> Everybody takes part. In everything.
> Because they can.
> And because they are allowed to.
> Because they have the possibility.
> (Carina Kühne, in: de Bragança et al. 2016, p.100)

I open this section with a brief autoethnographical account of the events at the beginning of this exhibition project. In 2013, I met KB, a human geneticist and founder of the progressive and highly decorated magazine *Ohrenkuss*, made

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14 Julia Bertmann and Anna-Lisa Plettenberg formed perhaps the strongest engagement with the exhibition's content amongst this group, truly viewing it as 'their' exhibition (according to the interview with KB and AL on 4 March 2021). Julia Bertmann had a special role as member of the advisory board of the exhibition and ultimately also as our opening speaker.

15 Among others from this group, Anna-Lisa Plettenberg was officially employed by the Bundeskunsthalle as docent for the exhibition *TOUCHDOWN* in 2016. She stayed on as a freelance docent and later also guided visitors through other exhibitions, for example about Ernst Ludwig Kirchner (2018) and Johann Wolfgang von Goethe (2019).

16 This list of 56 participants with Down's syndrome only includes those who contributed to the first venue in Bonn and to the publication (see also https://ohrenkuss.de/team/; last accessed 11 July 2023). Additionally, many more people with Down's syndrome participated in the following two venues in Bremen and Bern.

17 *Ohrenkuss ... da rein da raus – 2017 – Ein Update*, no. 38 (February 2017), Bonn: downtown – Werkstatt für Kultur und Wissenschaft gGmbH, www.ohrenkuss.de.

by people with Down's syndrome. The invented magazine title – which when translated into English means 'Earkiss' – refers to an important or interesting word, sentence or story that stays in your head, instead of 'going into one ear and straight out of the other ear'. When founding the biannual magazine in 1998, KB at first intended it to be a research project (in the academic context of human genetics), aiming at understanding how adults with Down's syndrome 'see the world' (KB, interview). Although assisted in their work, the journalists and authors of this magazine are treated as professionals without the interference of their families or primary caregivers and without any correction in content and orthography.

Fig. 4.11: Authors of the magazine Ohrenkuss, *made by people with Down's syndrome, who participated in the exhibition-making process. Portrait series in the image: © Britt Schilling. Photo, taken on the opening day in Bonn, on 28 October 2016: Jirka Jansch, 2016, © Kunst- und Ausstellungshalle der Bundesrepublik Deutschland GmbH, Bonn.*

Fascinated by this project, I suggested working together on an exhibition concept – back then without any idea of what such an exhibition could possibly look like. KB was enthusiastic about the idea, as she had at that time already started working on a larger participatory research project about Down's syn-

drome, which was supposed to serve as an 'academic umbrella', under which the exhibition could be developed as one possible product (alongside a website, a conference, and a number of publications). This still ongoing research project was named TOUCHDOWN 21 and later – amongst other support – received a large grant from the charity Aktion Mensch e.V., which the exhibition indirectly benefited from as well, especially regarding its unique educational programme at all venues, which required extensive training for docents with Down's syndrome. She had already been in contact with two TV science journalists, HG and Georg Wieghaus (GW left the team in 2015). HG had previously made a TV documentary on John Langdon Down (1828–1896), who first described the syndrome in 1866. GW had worked about 'euthanasia',[18] the euphemism used to cover up the murder of probably more than 300,000[19] disabled people during the German Nazi period. Both were experienced filmmakers and storytellers. RGL, historian, exhibition curator and back then interim vice director of the Buchenwald concentration camp memorial, also joined the team. Uniting us from the start was an interdisciplinary approach to the topic and the most important aim of all, namely that this exhibition should be developed together with people with Down's syndrome in a participatory process. In order to emphasize this aim early on, an official advisory board for the exhibition was implemented, consisting of Heinz Schott, in his function as a renowned medical historian, Julia Bertmann, a woman with Down's syndrome, as well as AL.

Interdisciplinary and transdisciplinary teams require three layers or levels of knowledge: (1) 'disciplinary knowledge' and (2) 'expertise in interdisciplinary [...] collaborations', as well as (3) 'transdisciplinary competence', meaning (experience with) practical knowledge (Krainer and Smetschka 2014, p. 68, transl. HP). Our core exhibition team, consisting of up to seven people with 46 chromosomes and 15 to 20 people with 47 chromosomes, possessed all of these qualifications, but in hindsight, our collaboration within the team went through different phases that oscillated between integration and separation. Justified by the fact that this exhibition project was at the same time an ambitious research project in which we had to create new knowledge – 'and new images of Down's syndrome' (HG, interview) – and were thus in a 'constant learning and research process' (HG), these phases can be analysed by using

18 Here, setting the term 'euthanasia' in quotation marks means to acknowledge its unequalled history in the context of the German Nazi period.

19 For this figure see: https://www.bundestag.de/dokumente/textarchiv/2017/kw04-de-gedenkstunde-490478 (last accessed 11 July 2023)

the research terminology from interdisciplinary studies introduced earlier, discerning between multi-, *inter-* and transdisciplinary processes. Apart from very intense integrative periods during the development process of the exhibition, which can definitely be characterized as *inter-* and transdisciplinary, we also had times when not 'everybody took part in everything' (see the above quote by Carina Kühne). These moments of separation – or lack of integration – might consequently be described as merely multidisciplinary.

During the interview, KB aptly described multidisciplinary research as 'flat', compared to *inter-* or transdisciplinarity which she understood as 'three-dimensional'. A 'flat' way of conceiving this exhibition would have been to just gather preconceived or separately commissioned bits of knowledge, but we soon found that there were hardly any academic answers to the questions we wanted to ask with this exhibition, which from the start intended to include disciplines such as history, science and art in order to create and present a bigger picture. A first drawn mind-map – which AL and KB named 'Koralle' (Engl. coral) – in the early conceptual phase (2014) 'quickly laid bare the fundamental gaps in knowledge about people with Down's syndrome' and 'it became clear to us that we would have to generate new knowledge on our own' (AL). This exhibition definitely required a 'three-dimensional' group effort. For the research project TOUCHDOWN 21, led by KB and AL, it was crucial to increase the state of knowledge about trisomy 21 *for* and *with* people with Down's syndrome, but independent from other stakeholder groups which – with best intentions, of course – have all too often represented only the perspective of parents of people with Down's syndrome, but have not paid enough attention to supporting their autonomy (KB and AL, interview).

One of the most important preconditions at the start of our teamwork was that we had to 'tune in' to a joint working culture, in which everybody had different abilities, expertise and subsequently also different tasks, but the main point about participation in this project was the flow of information and the warranting of a mutual understanding (KB and AL, interview). Lerchster and Lesjak state with respect to interdisciplinary research: 'Only the communication about the unifying and divisive aspects (within a team) enables a joint beginning. This already creates orientation and a (joint) culture' (Lerchster and Lesjak 2014, p. 89, transl. HP). During the process of developing the exhibition, we worked on various aspects of the content in separate subgroups, but all results had to 'go through the brains' (AL) of our colleagues with Down's syndrome, for example in a workshop about the discriminatory and racist history

of the term 'mongolism'.[20] Therefore, in this specific exhibition case, even the moments of separation during the process of content development might be viewed as necessary steps in an *interdisciplinary* and transdisciplinary (instead of a merely multidisciplinary) research setting, in which a mutual understanding of the research process is crucial. Apart from contributing their own expertise to the exhibition content, KB and AL were our 'communication experts' – like lAPONION from the Second Mission – acting as 'interpreters' (RGL, interview) between the two worlds divided by one additional chromosome.

This process of creating a joint working culture also involved a special training for HG, GW, RGL and me, as we were invited to take part in a number of editorial meetings of the magazine *Ohrenkuss* in 2014 to get to know their mode of operation. On another autoethnographical note, on one unforgettable evening – I had rarely been so nervous before an event – I was asked by the editorial team to explain to them how Chinese characters work, because they wanted to write a letter to the Chinese artist Ai Weiwei[21], and they knew that I had earned an MA degree in Chinese studies. After I had told them about the historical abstraction process of pictograms while drawing the etymological evolution of the Chinese character for 'cat', I looked into their faces and asked what they had taken from my lecture. One astonishing response was: 'The Chinese language seems to be quite difficult, but I know one thing for sure: The Chinese don't know how to draw.' I had no clever answer to that at the time, but while I had been giving my brief presentation, another member of the team, Paul Spitzeck, had drawn a picture for me that played with the idea of visual abstraction in pictograms so deeply and beautifully as I had never seen before.

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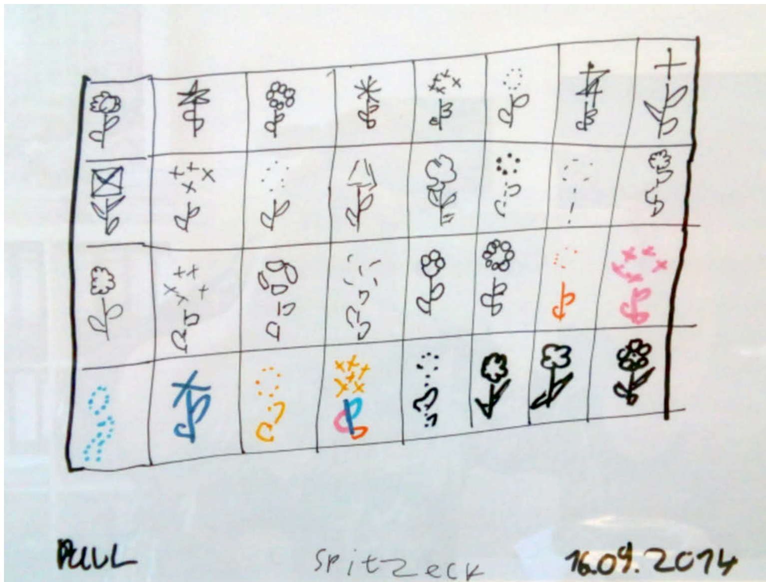
20 In order to understand how the authors of the magazine *Ohrenkuss* work, it should be added that a few years before the exhibition development started, the team had made a trip to Mongolia to underpin their research on 'mongolism'. This journey was documented in *Ohrenkuss* (no. 15, October 2005): https://ohrenkuss.de/ausgaben/46-mongolei.html) and had some repercussions in the exhibition, as a Mongolian yurt was set up in the museum square during the opening weekend in Bonn in October 2016 as a deliberately provocative and ironic invitation to the exhibition.

21 See *Ohrenkuss*, no. 34, March 2015: https://ohrenkuss.de/ausgaben/25-wer-bin-ich-wer-bin-ich-nicht.html).

Fig. 4.12: Paul Spitzeck, Pictograms, 16 September 2014. Photo: © Henriette Pleiger, 2021.



This experience helped enormously to get to know each other's way of thinking and to earn each other's trust and respect as co-curators, which are essential ingredients for a successful participatory and transdisciplinary research process. 'Participation [...] means going back and forth, exchanging looks and thoughts [...]' (Hamers et al. 2017, p. 61), it means taking the time to engage with each other. KB and AL took it upon themselves to safeguard each organizational step of this integrative process particularly in terms of the developed content of the exhibition which was thoroughly discussed in numerous workshops with people with Down's syndrome in a long process of explanation, negotiation, consultation, and feedback over a period of three years (2014–2016, and after the opening in Bonn continuing for the following venues). Weekly smaller meetings and several multi-day workshops focussed on their understanding of, opinions about and suggestions for the exhibition content, especially regarding the extremely difficult topics of 'euthanasia' and

prenatal diagnosis and its consequences (an abortion rate of over ninety per cent in Europe).[22]

Fig. 4.13: Members of the core exhibition team and the director of the Bundeskunsthalle, Rein Wolfs (2013–2019), on the opening day, 28 October 2016. From left to right: Heinz Greuling, Julia Bertmann, Rikola-Gunnar Lüttgenau, Henriette Pleiger, Rein Wolfs, Heinz Schott, Anne Leichtfuß, and Katja de Bragança. The portraits on the left wall show other core team members with Down's syndrome as individually named in section 2 of this chapter. Photo: Jirka Jansch, 2016, © Kunst- und Ausstellungshalle der Bundesrepublik Deutschland GmbH, Bonn.

Sadly, it was not wise planning that provided this seemingly comfortable timeframe of about three years, which proved to be absolutely necessary in hindsight, but the initial hesitance of the Bundeskunsthalle to accept the exhibition. HG said in the interview that he had felt an 'apparent timelessness'

22 Mansfield, C., Hopfer, S., Marteau, T. M. (1999). 'Termination rates after prenatal diagnosis of Down syndrome, spina bifida, anencephaly, and Turner and Klinefelter syndromes: a systematic literature review. European Concerted Action: DADA (Decision-making After the Diagnosis of a Fetal Abnormality)', in: *Prenatal Diagnosis* 19(9): pp. 808–812. doi:10.1002/(sici)1097-0223(199909)19:9<808::aid-pd637>3.0.co;2-b.

when working with our colleagues with Down's syndrome, which was contradicted especially by me, who, as the exhibition manager and internal curator of the Bundeskunsthalle, had to deal with a continuously increasing time-pressure and had to act as the 'midwife' (HG) of the exhibition. KB and AL reflected in their interview that, when the initial idea for an exhibition had come up in 2013, they had estimated that it would take five years to realize this project. While for me three years seemed comfortable compared to the usual pace of exhibition-making in our institution it still seemed short from their perspective.

4.4 Developing a joint narrative and struggling with a joint language

The work on the actual exhibition concept had started with merely good intentions amongst the curatorial team without Down's syndrome (at the beginning consisting of KB, AL, HG, GW, RGL, and me), whose first aim was to develop the basic narrative of the exhibition in an *interdisciplinary* process among ourselves, in order to introduce the exhibition to the director of the Bundeskunsthalle, back then Rein Wolfs. It took almost two years, from 2013 to early 2015, for the exhibition to finally be accepted by the institution and for the curatorial team to be contracted. When that important milestone within the project history was reached, the team had already been working on the exhibition for many months. Apart from me as the institutional co-curator none of the curators had been paid for this work until early 2015.

As mentioned above, the initial team combined expert knowledge from disciplines such as human genetics, history, medical history, ethnography and art history, complemented by a strong expertise in journalistic, dramaturgical and exhibition-making methods, but nevertheless we just had a few thematic bits and pieces to start from: The scientific question 'What is a trisomy 21?', the almost complete lack of historical evidence before the syndrome was described by John Langdon Down in 1866, Langdon Down's photographic estate preserved in archives in London and Surrey, the devastating history of around 300,000 disabled people murdered during the German Nazi period, and the more recent question of prenatal diagnosis and abortion, to name just the most important facts with which we set out. How on earth would we be able to address all these topics in one narrative that would also be accessible and under-

standable for people with Down's syndrome, many of whom do not know about 'euthanasia' and abortion?

Regarding the latter question, we decided from the outset to only describe the facts around prenatal diagnosis and its consequences in order to inspire a better-informed public debate instead of providing set answers. We did not want to 'deliver a moral judgement' but instead 'provide neutral facts' (AL, interview) about this emotionally and politically highly contested topic, today also involving activists with Down's syndrome (see the conclusion of this chapter). Nevertheless, the exhibition clearly attempted to strengthen and empower not only grown-up people with Down's syndrome themselves but also parents of children with the syndrome, by creating a public and easily accessible exhibition as a forum for dialogue, where they were welcome, and by providing concise and comprehensible information as well as spreading hope regarding a fear-laden and often still socially tabooed topic. Apart from using a clear and barrier-free language, dialogue amongst visitors was, for example, also supported by creating an intimate atmosphere with the exhibition design (see section 5), and also by training guards and docents to be open to and supportive in case of questions and conversations.

But ultimately these real-life bits and pieces from the historical and present-day experience of people with Down's syndrome only started to make sense when we managed to weave them into an overall storyline. Of course, we could have just lined them up as an array of important facts in what would have probably turned out to be a very informative –multidisciplinary – exhibition, but as Victoria Forster writes in her excellent book *Collaborative Arts-based Research for Social Justice*, 'arts-based storytelling in research' can result in 'immersive tales' that 'are constructions, just as accounts produced by more conventional methods are, but they arguably offer something extra, some temptation to *listen*' (Forster 2016, p. 52, emphasis added). Storytelling may help 'to reach out and engage with an audience in order to raise awareness of marginalised groups and challenge stereotypes' (p. 52). It is exactly this, what we wanted to achieve with the science-fiction story that we came up with (see section 1 of this chapter). But this story had to be tried and tested by our colleagues with Down's syndrome. Was this a story they could relate to? And did they want to adopt and transform it into their own story, as we hoped?

Four important methodological vehicles or tools were crucial to engaging and including colleagues with Down's syndrome into the creative process and thus enabling transdisciplinary research by integrating different ways of knowing: (1) thinking through and embellishing the basic science-fiction

story that we set out with, and working on its visualization (section 4.4.1), (2) using clear language throughout the process and in all texts to uphold communication and information among the diverse team (section 4.4.2), (3) continuously working with a model of the exhibition space, and (4) choosing and creating objects for the exhibition. Points (3) and (4) will be discussed in section 5 of this chapter.

4.4.1 Exclusive superheroes

When presenting the science-fiction story that introduced people with Down's syndrome as a 'species from outer space' in an early meeting at the Bundeskunsthalle in 2015, a colleague from the institution's education team asked, whether we were not afraid that the story might be received negatively as being 'exclusive' rather than 'inclusive'. KB and AL took this question to their next meeting with the colleagues with 47 chromosomes and came back to us with the following answers, which confirmed, what we had already known and what had inspired our fictitious narrative in the first place: the perception of them as 'aliens' is, sadly, a part of their reality.

> Down syndrome is beautiful.
> And the Down syndrome for others not knowing I came from the moon
> or I may have fallen from the sky.
> (Ruth Schilling, transl. HP)[23]

> I have Down syndrome, but I stand by it and I am not an alien, because I am like I am,
> and everybody should understand and respect me.
> (Svenja Giesler, transl. HP)[24]

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23 Quoted from: https://touchdown21.info/de/seite/5-trisomie-21/article/38-welt-down-syndrom-tag.html (last accessed 10 July 2023).

24 Quoted from: *Ohrenkuss*, 'Du bist ein Mensch' (You are a human being), no. 34, October 2010: https://ohrenkuss.de/ausgaben/34-du-bist-ein-mensch.html (last accessed 10 July 2023).

People with Down's syndrome know the uncomfortable feeling of alienation very well, and they are used to being stared at. We wanted to work with this predominantly negative experience and turn it into something strong and special. These new 'aliens' in our science-fiction story were, in fact, superheroes: They were cool, intelligent, and highly specialized astronauts, who had travelled through space and were able to move on Earth with a confidence that was based on their 'exclusivity' in a very positive and empowering sense. In the second exhibition chapter 'Today – Here and Now' (see Fig. 4.5), which focused on the social and everyday-life conditions of people with Down's syndrome, we juxtaposed the life-sized comics depicting the Second Mission with a very telling installation. Anna-Lisa Plettenberg and Daniel Rauers had agreed to being filmed just standing upright and gazing into the camera for some minutes. These two filmed portraits were displayed in almost life-size. They were deliberately inviting visitors to look at them – stare at them – without having to fear an awkward reaction, but in doing so, people gradually felt ashamed of their own awkward behaviour, as several visitors expressed to guards and docents during their visit.

Being literally stared at, as if they were 'aliens', is a reality that people with trisomy 21 do not like, of course, but – to our great relief – our colleagues still welcomed the analogy and its irony, and enjoyed immersing themselves into embellishing the story of the Second Mission's adventurous journey from the planet kUMUSI to Earth in all its wondrous details. The comic artist Vincent Burmeister was essential in this process as he developed the characteristics of the crew of the Second Mission as well as all their technical gadgets and the design of their spaceship together with the co-curators with Down's syndrome (de Bragança et al. 2016, pp. 10–33; see also Fig. 4.3 and 4.4 in this chapter). This extremely creative and inventive process in itself (see *Ohrenkuss*, no. 38, February 2017, pp. 8–11) could be described in terms of an arts-based research method, for not only did it deepen all participants' factual knowledge (for example about space travel and planet Earth as seen from outer space (pp. 17–19), but it also opened up a window to the way in which our colleagues with Down's syndrome viewed themselves. The fictitious crew of the Second Mission resembled some members of the group in many details (such as their interests and favourite food, for example). The crew apparently turned out to become an alternative version of themselves, just in a slightly freer, cooler, and perhaps also a little bit brighter parallel universe.

> Earth is dark is. Dark is, all of stone. And the moon, too.
> (Björn Langenfeld, in: de Bragança et al. 2016, p. 21, transl. HP)

The science-fiction story held together the diverse array of topics, objects and artworks on display and had therefore also an important methodological function with regard to exhibition-making. James Quina and Jean Greenlaw have early on advocated science fiction as a method for interdisciplinary education (Quina and Greenlaw 1975, pp. 104–111), because a future-oriented 'broad spectrum approach' to knowledge and education allows for speculation and creativity by cutting 'across broad fields of knowledge' (p. 106). 'Science fiction provides a bridge to possibly an infinite range of knowledge' (p. 111), and it is this open approach to and perception of knowledge that suited our endeavour with this exhibition project, which was also about exploring 'strange new worlds, to seek out new life and new civilizations, to boldly go where no man [and no woman] has gone before.'[25] However, we were not aiming to merely speculate on our topic – although the scarcity of facts about Down's syndrome might have suggested it – but we definitely wanted to cross disciplinary boundaries to increase knowledge about the topic from more than just a medical perspective.

4.4.2 A joint foreign language

Both, using a fictional storyline as well as using a clear language as a joint language (or meta-language) – that for some of us felt like a foreign language – were, in fact, *interdisciplinary* and transdisciplinary tools or methods to synthesize our exhibition narrative and to integrate our mutual understanding of the exhibition's content. Both tools were essentially 'bridges' between two different ways of seeing the world. Klein mentions 'the epistemological challenge that transdisciplinarity presents' as it calls 'into question disciplinary thinking', as opposed to 'forms of multi- [...] and *inter*disciplinarity' (Klein 2004, p. 524, italics added). This means that transdisciplinarity admits other forms of knowledge into the realm of predominantly disciplinary knowledge production. Transdisciplinarity 'is not a new discipline', it is 'the science and art of discovering bridges between areas of knowledge and different beings' in order to 'permit genuine dialogue' (Klein 2004, p. 516).[26]

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25 *Star Trek*, the starship's mission: https://en.wikipedia.org/wiki/Star_Trek:_The_Original_Series (last accessed 11 July 2023).

26 Based on Nicolescu, B. (1996). *La transdisciplinarité: manifeste*. Paris: Editions du Rocher.

AL was the professional translator and interpreter in this exhibition project. Being very experienced in all regulated forms of simplified language in German,[27] she chose for us, what we called a *clear* language, a free form closer to 'Simple Language' rather than 'Easy Language'. This clear language was supposed to be understandable for all participants and visitors to the exhibition and all readers of the accompanying publication, without being easy in an infantile way. Unlike regular Easy German, we included foreign words and complex technical terms, but always explained them. The readers were taken seriously as intelligent adults, being the main target audience, while at the same time supporting them in case of a learning disability. It turned out to be a language the great majority of our visitors seemed to be comfortable with, as many of them remarked on this after their visit to the exhibition (see Jacob 2017, p. 78, 86).[28]

In his interview, RGL observed that by using clear language we refused to be divided in an 'us' and 'them', which would have been the case if we had simultaneously used standard and easy language. All texts were either written by people with Down's syndrome or, judging from the language, could have been written by people with Down's syndrome, and thus seemed to be entirely speaking from their 'inner perspective' (RGL, interview). This appearance did not match reality, but with the decision to only use 'their' language, the curatorial

27 The German system largely discerns between 'Simple Language' (Einfache Sprache) and 'Easy Language' (Leichte Sprache). 'Simple language is a simplified version of standard language. Another name for simple language is "citizen-oriented language". It often differs only slightly from the original texts and is also not visually recognisable at first glance as an easily understandable text. In Simple Language, sentences are shorter and the sentence structure simpler than in standard German. Simple Language avoids foreign words, technical terms and metaphors wherever possible. The aim of Simple Language is to inform and reach as many people as possible. This includes people with low reading skills. Easy language is often confused with simple language – but there are clear differences. This is also due to the fact that Easy Language was developed specifically for people with disabilities and learning difficulties. Unlike Simple Language, Easy Language follows clear rules. These include language rules, content rules and spelling rules. There are also recommendations for text design, because barriers can also occur in media design. Unlike Simple Language, Easy Language follows its own rules for spelling.' Cited from: https://www.capito.eu/en/what-is-easy-to-understand-language/ (last accessed 22 March 2023).

28 The texts in the exhibition were provided in clear German and Easy English. Unlike the freer handling of our native language German, we decided to stick to the official rules in the case of Easy English.

team without Down's syndrome built a strong bridge towards a marginalised group of people and expressed firm solidarity with them and their families.

HG admitted in his interview, that, in all honesty, he wished that we had allowed ourselves to speak in our own languages (standard German and clear or simple German) respectively, as he was struggling with having his own texts translated into clear language. I, myself, had felt an initial reluctance about this radical step, too, as it meant to let go of the control over the text production for the exhibition and the accompanying book. As the responsible exhibition manager, I was not used to sharing responsibility in such an important part of the project. But we all supported this joint decision, and the result proved us right. This was a joint language that enabled the transdisciplinary integration of knowledge as well as a socially participatory and empowering dialogue by supporting a mutual understanding.

4.5 Experts in their own right: Object choices and the production and dissemination of different types of knowledge

Our exhibition narrative and choice of objects had to enable two things: Firstly, a storyline and language that *all* visitors with 46 and 47 chromosomes would be able to follow, and secondly, a flexible choice of objects, open to suggestions and personal creations by people with Down's syndrome. One method to achieve – and continuously adapt to – this aim was working with a scale model of the exhibition space from the start in order to document and comprehend our joint progress.[29] This method[30] can likewise be understood as an *interdisciplinary* and transdisciplinary tool to facilitate the integration of knowledge.

29 Jade French describes a similar method in her excellent practical guide for inclusive curating (French 2020, pp. 99, 100).

30 And this method lives on until today. After the exhibition's three museum venues, the research project TOUCHDOWN 21 transformed the exhibition into a high-quality model that is still used as a performative and educational tool, called *TOUCHDOWN mini*. This tool evolved from the didactical model that was used for the workshops and docent training with people with Down's syndrome during the exhibition-making process. Numerous performances and educational workshops have been staged in universities, schools, theatres and at festivals since 2018, not only in Germany, but for example also in Kiev, Ukraine. See https://touchdown21.info/de/seite/6-vermittlung/article/291-touchdown-21-mini.html (last accessed 11 July 2023).

Fig. 4.14: The first draft of a layout for the exhibition TOUCHDOWN *and the remains of an early exhibition model. Photo: © Henriette Pleiger, 2021.*

The exhibition model not only helped with developing, understanding, and memorising the exhibition storyline, but it also helped us all with finding out what kind of objects would speak to all the questions and content mentioned earlier that we wanted to include in the exhibition. Apart from historical and scientific objects, mostly chosen by the curators without Down's syndrome – for example from the estate of John Langdon Down or from a medical context for explaining trisomy 21 – we naturally wanted to also incorporate objects either chosen or created by people with Down's syndrome as experts in their own rights. These could be objects from their everyday life – we later called these objects 'Sprechende Gegenstände' (Engl. talking objects; see Daston 2004) – or artistic creations. One of these 'talking objects' was a plastic imitation of slices of cold cuts.

Julia Bertmann's slices of cold cuts: Addressing people with 'Du' and 'Sie'[31]

Many people with Down's syndrome look younger than they are.
Therefore, it is often difficult to estimate their age.

'How I feel: I don't feel old. And you cannot tell that I am 35 years old.
People say to me: "One does not see it."
An example: I go to Edeka and do shopping.
First, I go to the meat counter and buy cold cuts.
The seller asks: "Do you [German: Du] want a slice of cold cuts?"
Then I say: "No, thanks. You can address me with "Sie"."
Then she is perplexed and says sorry.
Then I buy bread. The bread seller asks: "Which bread do you [German: Du] want?"
I roll my eyes and say the sentence again: "You can address me with 'Sie'."
Then the bread seller says: "Sorry. I didn't know that."
When I came to the same supermarket next time, the same thing happened again.
Then I said: "I want to talk to the manager".'
(Exhibition text by Julia Bertmann, see also de Bragança et al. 2016, p. 50, transl. Ute Schulz)

These 'talking objects' provided stories that were both written out on exhibition labels and were also publicly told by docents with Down's syndrome during their tours through the exhibition. Other 'talking objects' included a set of keys from Julian Göpel representing the autonomy of living in one's own flat, or an alarm clock chosen by Verena Günnel to explain that many people with Down's syndrome have difficulties with comprehending time and time periods, turning clocks into essentially important devices for mastering their daily schedules (de Bragança et al. 2016, pp. 46, 47).

Apart from these everyday-life objects, we also wanted to include art by people with Down's syndrome as one of their most important means of ex-

31 'Du' is the German informal form of 'you' used to address children, family members, and close friends, while 'Sie' is the polite form that is used to address adult strangers.

pression apart from texts, but not in a – nowadays quite common – display of 'outsider art'[32] without giving any context of the artists' biographies and living conditions. We were looking for art that expressed a freely chosen idea or reflected on a situation or topic from their everyday lives. Two especially moving artworks were the wedding suit by Pascal Tassini and the wedding dress by Birgit Ziegert. They expressed the longing for love and marriage which for many with Down's syndrome stays unfulfilled due to social and legal obstacles.

We wanted to look at our topic from a multitude of perspectives and present it in a way understandable for all our visitors, and this aim informed our choice of objects which we clearly also wanted to be of educational value. Revisiting the term 'contact zone',[33] from the visitors' point of view, Philipp Schorch advocates '*humanizing* the "contact zone" through interpretive actions [...] made by museum visitors' (Schorch 2013, p. 68). This is what we tried to facilitate by using, in both the exhibition texts and the accompanying publication, a clear (not just easy) language that everybody can be comfortable with, and, perhaps most significantly, by employing trained and paid docents with Down's syndrome. Schorch criticizes James Clifford's notion of 'contact zones' as being imbalanced in only focussing on the museum's interpretive actions and content translations, and he argues for a 'shared symbolic terrain which can convert translations into understandings' (p. 78). Offering curatorial translations of content does not necessarily ensure understanding. Although Schorch talks about the interpretive relationship between curators and visitors, the interplay between the conveying, translating, and understanding of content is also important for the relationship within an *interdisciplinary* team of curators from different disciplinary backgrounds and working cultures on the producing end, which is my research focus. And it is even more important within a transdisciplinary team setting.

32 Judging from my professional experience I personally doubt that the term 'outsider art' is always understood in an empowering way.

33 A term coined by Mary Louise Pratt in her work 'Arts of the Contact Zone' (1991) describing social spaces in a cultural context.

Fig. 4.15: Wedding suit by Pascal Tassini and wedding dress by Birgit Ziegert in the second exhibition chapter 'Today – Here and Now' at the first venue in Bonn. Photo: Jirka Jansch, 2016, © Kunst- und Ausstellungshalle der Bundesrepublik Deutschland GmbH, Bonn.

Creating a 'shared symbolic terrain' is also reminiscent of the term 'common ground', originally established in communication theory. Kockelmans (1979, pp. 141–145) borrowed the term as a fundamental element of all *interdisciplinary* research (Repko 2008, p. 272). A large aspect of the knowledge production in this particular exhibition revolved around a mutual understanding. The exhibition became a daily 'contact zone' with visitors talking to each other and sharing their stories and knowledge in often surprisingly intimate conversations in a frequency and intensity we had not witnessed at the Bundeskunsthalle before. People with and without Down's syndrome became part of the knowledge production of this exhibition, simply by trying to 'make sense of each other' (Schorch 2013, p. 78). Schorch calls the awareness that we can do just that, 'one of the greatest achievements of anthropology' (p. 78).

Fig. 4.16: Jeanne-Marie Mohn presenting her (at the date of the photograph unfinished) scientific artwork, an embroidered set of chromosomes (karyogram) to explain trisomy 21, 2016. Photo: © Raw Art Foundation, Frankfurt am Main.

Fig. 4.17: Daniel Rauers, Paul Spitzeck and Björn Langenfeld working in the exhibition room 'The Great Appearance – John Langdon Down' in Bonn. Photo: © Sandra Stein, 2016, www.sandra-stein.de.

Amongst many possible examples of the knowledge production in this exhibition was an *interdisciplinary* collaboration regarding the genetic examination of a 2,500-year-old skeleton of a woman excavated in the early 1970s in southern Germany. According to the anthropological literature (Starbuck 2011, p. 22, 44), it had been suggested, based on her bone structure, that she might have had Down's syndrome. For the third exhibition chapter 'The Invisibles', RGL had consulted an interdisciplinary research cluster at the University of Bremen called 'Homo debilis. Premodern Dis/ability History', searching for evidence of disabled people in archaeology, history, and art history (see Halle et al. 2019). In the course of our collaboration, the colleagues in Bremen applied for a grant to conduct the first ever ancient DNA testing of an archaeological specimen with the research question of Down's syndrome, hoping to later present their findings in our exhibition. As the grant decision was continuously deferred, the Bundeskunsthalle finally paid for this scientific premiere. One week before the opening in October 2016, the skeleton already having been installed (see Fig. 4.6), the results came in. We had proven that this ancient woman did *not* have Down's syndrome, but our docents with Down's syndrome loved her all the same and proudly presented her as a scientific sensation, probably because the process up to this point had been very exciting and had endeared the woman of Tauberbischofsheim to them. We had expected to find them disappointed on this seemingly bad news, but they were obviously lacking our positivist thinking in terms of knowledge production. The woman from Tauberbischofsheim thus became part of their own history and historical identity, partly because of the emotional attachment that they had formed towards her during this scientific experiment but also because of the accompanying workshops in which the group had intellectually worked on understanding the research question and scientific procedures. RGL observed in his interview, that this has been one of his favourite experiences with regard to this project. With attracting and inspiring archaeologists and anthropologists to conduct pioneering research, our exhibition project has been transdisciplinary in another sense, namely by transcending their academic disciplinary horizons.[34]

34 In 2020, the earliest incidence of Down's syndrome in an infant who was buried before 3200 BC was found in an excavation in Ireland. See https://www.rte.ie/news/2020/0617/1148049-genomes-study/ (last accessed 11 July 2023). But as far as we know, we were the first to inspire such a DNA analysis on an ancient person, asking the question of trisomy 21. Regarding the display of human remains we complied with the established guidelines: https://www.museumsbund.de/wp-content/uploads/2021/07/dmb-leitfaden-umgang-menschl-ueberr-en-web-20210625.pdf, pp. 42–44.

4.6 Working culture clashes and institutional limitations: Exhibition design

There was one task within the process of making this exhibition in which we – as a diverse curatorial team – failed to collaborate in the integrative way we had planned and managed to do in other areas of the project. After months of constructive joint work with our self-built in-house model of the exhibition (see Fig. 4.14), the Bundeskunsthalle hired Harry Vetter to design the exhibition graphics. Mainly because of time constraints, the director of the institution together with me as the exhibition manager decided on the submitted design ideas by Vetter very quickly without consulting the whole curatorial team. When we presented the outcome of our internal decision, the team was very happy with the suggested design, but they clearly missed having been part of the process of arriving at this decision. KB recounted in the interview that Vetter's ideas 'were sensational. But it would have been cooler if he had explained them [to us himself]. I would have loved to know why he decided on these colours, for example. [...] I have a knowledge gap [about this], and with such knowledge gaps people with Down's syndrome must live all their lives, a hundred times a day.'

We as an institution – and I as an exhibition manager and institutional curator – had left our colleagues behind at this point. We had not been able to adjust our allegedly required work speed to a level that would have enabled their participation in the decision-making process. Jade French writes that 'inclusive curating is "slow curating"', which can 'challenge systemic inequalities within museums' (French 2020, p. 3). She also aptly describes (p. 104) how tight and pressured exhibition schedules can become, especially towards the end of the development process nearing the installation of an exhibition. In her practical guide to inclusive curating, she offers the interesting solution 'to record the chain of events' (p. 104) to enable transparency to all project participants. We sadly didn't take the time and thought to come up with such a good idea, which would have 'democratized' the curatorial process (see French 2020, p. 111) in this important task. We had failed in 'the enabling of multiple subjectivities' (MacLeod 2021, p. 9) with regard to the design of the exhibition space. MacLeod writes that 'museums have the opportunity [...] to nurture [...] parts of our human being' such as 'reflection, empathy, [...] imagination, compassion, [...] solidarity, curiosity [... and] criticality [...] which [...] enable all of us to play an active part in shaping our shared social world' (p. 9). Despite this gap in our mutual understanding and knowledge transfer within our diverse team,

the exhibition design of *TOUCHDOWN* did meet many of these criteria in all its three venues.

The exhibition space (comprising about 400 square metres) at the first venue in Bonn was kept in a light and friendly atmosphere (see figures above). The life-size comics as well as graphics details in pink to purple colour gradients, reminiscent of NASA-imagery from outer space, created a warm and intimate setting which aimed at an 'emotional and intellectual involvement – without involvement no participation' (Schnegg 2012, p. 180). In our case the size of the comics, apart from their high visual attractiveness, considerably contributed to the feeling of involvement.

> I just went into the exhibition.
> It is very beautiful to be in the exhibition.
> I want to come back always and forever.
> I am proud.
> (Anna-Lisa Plettenberg, in: *Ohrenkuss*, no. 38, February *2017, p. 30)*

In her interview, KB described that the choice of partner with whom to develop such an exhibition was very important for her. The Bundeskunsthalle as an institution with a multidisciplinary programme scope, including natural sciences but programmatically leaning towards the arts, seemed to her an ideal choice to place the topic of Down's syndrome, because there were no disciplinary biases to overcome. We literally started with a blank canvas. The two further exhibition venues were extremely openminded but, rooted in their permanent collections, narrower in their disciplinary focus. And indeed, the exhibition felt different at its three venues, the multidisciplinary exhibition hall Bundeskunsthalle in Bonn, the psychiatry museum KulturAmbulanz in Bremen and the art museum Zentrum Paul Klee in Bern.

4.7 Transdisciplinarity and participation: Positioning the exhibition in accordance with the theoretical framework

Based on the previous chapters, I would like to postulate that this exhibition should be understood as a transdisciplinary research project. According to the terminology established in the methodology chapter (see 3.2.3), multi-, *inter*- and transdisciplinarity are terms which describe a growing intensity and qual-

ity of integrative and collaborative research practices (see Klein 1996, p. 6 and Klein 2010, p. 18).

Let us remind ourselves that transdisciplinarity has been defined in a twofold way: Firstly, as a research strategy towards a more universal understanding of knowledge, which transcends disciplinary divides 'with the intent of developing an overarching synthesis' (Lattuca 2001, p. 83), mostly with regard to a problem or question of a more universal societal relevance. Secondly, transdisciplinarity can be defined as an academic outreach strategy which integrates knowledge from stakeholders in society, other than from the academic realm. It is this second – sector transcending – understanding which has brought transdisciplinarity to the forefront of the discourses in interdisciplinarity studies[35] since the millennium, especially at European universities and science academies.[36] The fact that transdisciplinarity has gained momentum in recent years, is thus a consequence (and subsequent driver) of increased outreach activities at universities.

In the definition of the Network for Transdisciplinary Research (td-net) of the Swiss Academies of Arts and Sciences, transdisciplinarity involves three types of knowledge[37]: (1) 'target knowledge' representing 'values' and 'politics' ('What ought to be?'), (2) 'systems knowledge' representing 'facts' and 'science' ('What is?), and (3) 'transformation knowledge' representing 'agency' and 'practice' ('How to?'). A transdisciplinary research project therefore tries to acknowledge and integrate these three aspects and potential sources of knowledge production: 'values', 'facts', and 'agency', or using a different terminology: (1) political and ethical goals, (2) academic theories and results, and (3) practical experiences, claims and solutions. The latter type of practical knowledge might perhaps be linked to anthropological concepts of 'embodied knowledge'. In her

35 Allen F. Repko states that transdisciplinarity studies have established themselves as a separate field, different from interdisciplinarity studies (Repko 2008, p. 15).

36 Most importantly the Network for Transdisciplinary Research (td-net) of the Swiss Academies of Arts and Sciences (active since 2008): https://transdisciplinarity.ch/en, and the EU initiative SHAPE-ID (Shaping interdisciplinary practices in Europe, launched in 2019): https://www.shapeid.eu/. In May 2021, I had the opportunity to introduce my research in the SHAPE-ID Blog: https://www.shapeid.eu/interdisciplinary-exhibition-making/ (all links last accessed 11 July 2023).

37 The three types of knowledge which constitute transdisciplinary research: https://transdisciplinarity.ch/de/transdisziplinaritat/was-ist-td/drei-arten-von-wissen/ (last accessed 11 July 2023).

PhD thesis *Doing Dis/ordered Mapping/s: Embodying Disability in the Museum Environment*, Janice Rieger speaks of 'the embodied know-how' (also referring to the concept of 'techné') of people with disabilities and argues that it is important 'that the everyday experience of people is recognized as knowledge that can inform other kinds of practice' (Rieger 2016, p. 32, 33).

Based on these theoretical frameworks, I argue that the exhibition *TOUCHDOWN. An exhibition with and about people with Down's syndrome* can serve as an example for good practice in a transdisciplinary research project from the realm of arts and humanities, especially because it managed to integrate different ways of knowing and of producing knowledge (as outlined in the discussion of transdisciplinarity in the methodology chapter). Some of the examples and their analysis given earlier in this chapter might have supported this claim: (1) The exhibition advocated political activism *by* (and not only for) people with learning disabilities, specifically people with Down's syndrome; (2) It aimed to comprehensively inform the public about Down's syndrome using the available academic facts drawing on a wide range of disciplines such as history, archaeology, law, social sciences, genetics, medicine, art history, and art, just to name the most important ones; and (3) The exhibition integrated the everyday life experiences, knowledge, and opinions of people with Down's syndrome. It documented their questions and suggested possible societal solutions, as well as empowering them by strengthening their views – not only those of their parents or caregivers – and by including them in the decision-making processes during the development of the exhibition.

The concept of *participation* – quite aptly defined by one author from the field of arts and design (and with a focus on practice) as empowering but with 'risky trade-offs between makers and participants' (Huybrechts 2014, p. 14) – has played a decisive role in justifying the categorization of this exhibition project as transdisciplinary. I have already elaborated on the relationship between transdisciplinarity and participation in section 2.2 of the literature review. The production process of the exhibition had strong *interdisciplinary* qualities and dynamics regarding the integration of knowledge, for example in building a diverse team as well as in content development and interpretation. But this process and all its products additionally had to *pass the approval and welcome the input* of one group of people within the exhibition team, i.e. the colleagues with Down's syndrome, who – apart from their own intellectual knowledge about their condition – also brought to the table a practical, 'embodied' kind of knowledge, which made them experts in their own right. Furthermore, their participation in this project was of utmost social relevance.

Whilst the multi- and *interdisciplinary* aspects of the development process of this exhibition were reflected in the word '*about* People with Down's Syndrome' in the exhibition title, the part of the title that read '*with* People with Down's Syndrome', spoke of its transdisciplinarity. Liesbeth Huybrechts[38] adds an important characteristic to the established definition of transdisciplinary collaborations, in which 'people work together in a way that is *new to all participants* [emphasis added]' whereas in multidisciplinary 'zones, everyone works from the perspective of their own expertise' (Huybrechts 2014, p. 143). And this exhibition project was indeed new to all its participants, not only in its envisioned research content but also in its attempted production process, requiring from each of us to cross the borders of our disciplinary and non-disciplinary comfort zones, including, for example, our own language, as was discussed in section 4.4 of this chapter.

Participation, understood here predominantly as the co-production of knowledge, seems to be situated at the interstices between multi-, *inter-* and transdisciplinarity, because, as outlined in the literature review and methodology chapter, it is the level of knowledge integration and social participation that delineates the differences between these three categories or qualities of collaborative research (Klein 1996, p. 6, and Klein 2010, p. 18). Nina Simon, the author of *The Participatory Museum*, discerns between different models of participation that are quite similar to the introduced taxonomy of interdisciplinarity. Describing a growing intensity of audience participation, she distinguishes between 'contribution projects' (which can be viewed as similar to multidisciplinary projects), 'collaborative projects' (which can take on interdisciplinary qualities), and 'co-creation projects' (which might reach a transdisciplinary quality of integration between makers and participants) (Simon 2010, p. 187). In the case of *TOUCHDOWN*, participation was not explicitly directed towards the exhibition audience, but to a group of participants who co-curated the exhibition and, by doing so, also guaranteed that a very important part of the audience – people with Down's syndrome – were enabled and empowered to engage with the exhibition.

In this case, participation was conducted with an intensity that could be called radically innovative, as it had never been tried on this scale together with

38 Herself citing from Nigten, A. (2000). *Processpatching: Defining new Methods in aRtD*. London: SMARTlab Programme in Performative New Media Arts, Central Saint Martin's College of Arts & Design, University of Arts, PhD thesis, Processpatching.net/Publishing (without page reference).

people with a learning disability, at least not in Germany – and it really felt revolutionary during the production process: We were treading on new land – both in content and method – and, remembering a phrase by Jens Hoffmann, as already mentioned in the literature review (chapter 2), this exhibition truly felt like an 'anthropological endeavour' opening up a 'passage through unfamiliar territories' (Hoffmann 2015, pp. 56–57). Perhaps the most important predecessor of *TOUCHDOWN* was the exhibition *Der (im)perfekte Mensch* (The [Im-]perfect Human) at the Deutsches Hygiene-Museum, Dresden, in 2000.[39] This pioneering project, also yielding two excellent publications (Vogel and Staupe 2001, and Lutz et al. 2003), was a revelation regarding its conceptual aim 'to consistently put the perspective of disabled people in the foreground' (Vogel and Staupe 2001, p. 9), and to be as 'barrier-free' and accessible as possible. But, some fifteen years later, we took the idea of barrier-free access – and especially the aim of participation – much further, at least with respect to people with learning disabilities. Jade French describes a similar breakthrough with regard to 'inclusive curatorship' in her exhibition project *Auto Agents*, which happened parallel to our exhibition in 2016/2017 in Liverpool (French 2019).[40] Key aims in her project such as the support of 'self-advocacy' and 'disability activism' by people with learning disabilities, especially with regard to autonomy (French 2019, pp. 152, 153) in all aspects of life, were also driving forces of the exhibition *TOUCHDOWN*.

39 That exhibition had two venues: Deutsches Hygiene-Museum, Dresden: 20 December 2000 – 12 August 2001, Gropius-Bau, Berlin: 16 March – 2 June 2002: https://www.berlinerfestspiele.de/en/berliner-festspiele/programm/bfs-gesamtprogramm/programmdetail_293729.html (last accessed 11 July 2023).

40 See also: https://www.jade-french.com/autoagents.html (last accessed 11 July 2023).

4.8 Conclusion

> We are proud of ourselves. We are proud of the exhibition.
> I wish you a lot of fun. Take a look at everything.
> Ask questions. Tell us what you like.
> And what you don't like. And if you are courageous,
> you are also welcome to speak to us.
> (Closing lines of the opening speech by Julia Bertmann on 28 October 2016)

During the opening weekend in Bonn (28–30 October 2016), around 500 people with Down's syndrome visited the Bundeskunsthalle. This was breathtaking for all of us, and KB is quite sure that 'this had never happened before, nowhere' (KB, interview).

It is probably palpable from my writing that this project still deeply enthuses and affects me, but this is not only rooted in its success but also in its difficulties. In her PhD thesis on art curating as collective knowledge production, Corina Oprea speaks of the need to create 'a space for dissensus' (Oprea 2016, p. 106), and I agree with her that a collaborative process of exhibition-making necessarily needs to allow for constructive debate and even conflict. We had many disputes along the way, especially about institutional barriers. But the feedback conversations (interviews) that we – that is the curators with 46 chromosomes – had in preparation for this case study had a healing and clarifying effect, especially for me. I was reminded once again of the joy and enthusiasm that we had set out with, which had sometimes been overshadowed by the pressures and obstacles along the way.

Fig. 4.18: Advisory board member and opening speaker Julia Bertmann giving a press interview on the opening day in Bonn, 28 October 2016. Photo: Jirka Jansch, 2016, © Kunst- und Ausstellungshalle der Bundesrepublik Deutschland GmbH, Bonn.

Fig. 4.19 and 4.20: The opening night in Bonn on 28 October 2016: The Democratic Disco. The graffiti on the wall in the left picture reads 'Free of primary caregivers.' Photos: Jirka Jansch, 2016, © Kunst- und Ausstellungshalle der Bundesrepublik Deutschland GmbH, Bonn.

This exhibition has certainly been the most important, most satisfying and, at the same time, most exhausting exhibition of my career as a curator and exhibition-maker so far, occupying and accompanying me for altogether almost five years (2013–2018). This exhibition is an interesting case both in terms of the complexity of the collaborative processes for realising a transdisciplinary and participatory exhibition, but also because of its significant results in the production of new knowledge. And it holds important institutional lessons about the resources needed for interdisciplinary and participatory exhibition-making. I will elaborate on these lessons in the overall conclusion to this book.

People with learning disabilities are a rather quiet group compared to other groups for disability activism (KB and AL, interview). But the exhibition was and is still conceived as an important step towards more 'self-advocacy' (for this term, see French 2019, p. 152). Natalie Dedreux, a member of the exhibition team, for example, became a so-called 'incluencer', working as an activist, blogger and journalist.[41] She became famous nationwide, when she asked the German chancellor Angela Merkel in the pre-election live TV programme of the ARD *Wahlarena* (Engl. election arena) on 11 September 2017: 'In Germany, nine of ten babies with Down's syndrome are not being born, they are aborted. […]

41 Natalie Dedreux's website: https://www.nataliededreux.de/ (last accessed 11 July 2023).

How do you feel about the issue of late terminations?'[42] Earlier that year, on 27 January 2017, the German Bundestag acknowledged and commemorated for the first (!) time that more than 300,000 disabled people were murdered in Germany during the Nazi period.[43] One of the speakers was Sebastian Urbanski, an actor with Down's syndrome, who invented the symbol of our Second Mission (see caption to Fig. 4.3). These two topics can, by no means, be compared to each other, but they both hurt people and continue to do so. And both examples show that the exhibition *TOUCHDOWN* has contributed to a change in the way we remember and debate the historical and present living conditions of disabled people in Germany.

During the interview with HG, he said that for him the exhibition was transdisciplinary in yet another sense. Whilst it seemed to be about the 'otherness' of people with Down's syndrome, for him, one of the exhibition's 'overtones' evoked – or 'transcended' to – something larger than just 'the other' personified by people with Down's syndrome. It evoked a feeling that, despite all differences, we are all one. HG said, 'There is no otherness, only wholeness' (HG, interview), because wholeness for him incorporates otherness. 'We are all one in the acceptance of our diversity' (HG on 30 August 2023).[44] The given realities in mind, KB strongly countered this notion in the interview I conducted with her and AL: 'We are not one. The mix is what matters.' Diversity is what rules. Interestingly, this indirect conversation between HG and KB in two separate interviews sounds like a description of the twofold understanding of transdisciplinarity in a nutshell. Are we aiming at a universal body of knowledge (and joint rules such as human rights) or is the specialization and acceptance of diversity sparking more innovative ideas and better solutions for the big questions we are facing as human beings? Both notions seem convincing in their own rights.

This exhibition has been a major accomplishment, but it turned out to be very difficult to repeat it in its integrative quality and depth, mostly for institutional reasons. The two following case studies will speak of these obstacles.

42 Quoted from: https://de.wikipedia.org/wiki/Natalie_Dedreux (last accessed 11 July 2023).

43 See https://www.bundestag.de/dokumente/textarchiv/2017/kw04-de-gedenkstunde-490478 (last accessed 11 July 2023).

44 HG asked for a further conversation after reading the interview transcript. This conversation took place on 30 August 2023.

5 The 'inter-disciplined' exhibition: Art meets science – *Weather Report. About Weather Culture and Climate Science*

5.1 Introduction

Like the first case study, which introduced a predominately transdisciplinary exhibition project, this chapter also aims to contribute to the critical analysis and transparency of the practical processes of interdisciplinary exhibition-making by identifying the academic discourse on interdisciplinarity as having the potential to provide a meaningful input to the theory formation on temporary exhibition-making. It does so by tracing the production process, from forming an *interdisciplinary* team, negotiating conceptual ideas and methods, on to object choices, interpretation and finally, exhibition design. This second case study investigates these development processes through what I argue was primarily an *interdisciplinary* exhibition.[1] *Weather Report. About Weather Culture*

1 This case study was published in an earlier version in November 2020 (Pleiger 2020). It was first drafted in 2018, shortly after the exhibition *Weather Report* had closed its doors. By the time the article was published in 2020 (and even more so by the time this book is published), our perception of the problems and dangers of climate change has changed considerably: The Fridays for Future Movement, starting in 2019, brought a yet unknown public attention to the topic that we could only have dreamt of in 2017 and 2018. However, the early months of 2020 briefly silenced this new spirit of activism and optimism, as the worldwide COVID-19 pandemic suddenly seemed to overshadow all other pressing societal and political issues. But apart from us standing in awe and wonder at amazingly low pollution levels during lockdown in spring 2020, the problem of climate change itself has not yet changed for the better. Instead, an increasing number of extreme weather events requires urgent action, also by museums and other cultural institutions. The current international museum definition negotiated by ICOM in August 2022 at least acknowledges this by including the aim to 'foster […] sus-

and Climate Science, which was developed and presented at the Bundeskunsthalle (Kunst- und Ausstellungshalle der Bundesrepublik Deutschland) in Bonn from 7 October 2017 to 4 March 2018. Based on the assumption that the global problem of climate change cannot be solved by one discipline alone (see, for example, Schipper et al. 2021), the exhibition attempted a multi-perspective take on its topic, combining objects from the fields of art, cultural history, and the natural sciences. I led this exhibition project as internal curator and exhibition manager of the Bundeskunsthalle, together with a team of two external curators. After introducing the exhibition *Weather Report* and its curatorial team in sections 5.2 and 5.3, section 5.4 is dedicated to a detailed analysis of the interdisciplinary production process, starting from forming the team (5.4.1) and jointly developing the exhibition concept (5.4.2), moving on to negotiating and choosing objects (5.4.3), and finally to struggling to achieve a joint curatorial language for interpretation and exhibition design (5.4.4). The conclusion (5.5) will discuss possible institutional consequences and collaborative standards.

In this case study, I am taking the exhibition *Weather Report* as an example to reflect on how it worked as an interdisciplinary project by documenting critical moments and developments during its production process. I hope that more general lessons might be learned from this example both for museum and interdisciplinary studies. My perspective[2] is that of a project participant, and as such I am again especially interested in the internal processes that took place before the exhibition was finally opened and presented to the public. Here, my focus primarily lies in the dynamics within our curatorial team for this exhibition.

As in the first case study (chapter 4), I will use Klein's taxonomy of interdisciplinarity (Klein 2010, p. 16) as a theoretical framework for a finer understanding and a more detailed description of this second exhibition case, again, understanding multi-, *inter*-, and transdisciplinarity as three different qualities or degrees of the integration of knowledge from a multitude of disciplines.

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tainability' (https://icom.museum/en/resources/standards-guidelines/museum-definition/, last accessed 14 March 2023).

2 As it turned out, I was not the only one taking a research interest in this specific exhibition, as two substantial BA dissertations and one MA thesis were completed about our exhibition *Weather Report*. Luisa Melloh's work *The Stories We Tell: Examining Climate Change Narratives Through the Art and Science Exhibition 'Weather Report'* in the field of Sustainable Development at the University of St. Andrews (Melloh 2018) brings a rewarding additional perspective on this exhibition, especially regarding its narrative and audience responses. See also Madea 2018 and Bathow 2020.

I aim to identify instances where these three forms of interdisciplinarity were at play, both during the production process and in the resulting exhibition itself, and to discuss their differences, benefits, and limitations. Although I am here focusing on *interdisciplinary* aspects in the narrower sense, the analysis will show that all three kinds of interdisciplinarity can be at work at the same time, and even in a meaningful way. Making an interdisciplinary exhibition means allowing for complexity, and it is this complexity that asks for a more precise, differentiated, and practice-oriented usage of the general term interdisciplinarity. In a more critical sense, interdisciplinarity can also mean placing a heavy burden on a project by aiming to emulsify sometimes incompatible views, work cultures, methods, and contents for political or institutional reasons, resulting in an 'inter-disciplined' project in an almost penalising sense, as the title of my case study suggests. So, this is in effect also a story about coping with a not entirely self-chosen interdisciplinary collaboration.

5.2 The exhibition *Weather Report*

The exhibition *Weather Report. About Weather Culture and Climate Science* was developed and staged by the Bundeskunsthalle in Bonn in cooperation with the Deutsches Museum, Germany's largest science museum, with its main institution in Munich and a smaller branch, located in Bonn. In May 2017, as the exhibition entered the crucial phase of its production process, it became part of the cultural programme for the World Climate Summit COP 23 of the United Nations Framework Convention on Climate Change (UNFCCC) which took place in Bonn at rather short notice during the exhibition period from 6 to 17 November 2017. This perfect coincidence and the political elevation of our exhibition associated therewith, had significant curatorial implications as it changed the exhibition concept by further increasing our level of political awareness.

The main theme of the exhibition *Weather Report* was how short-term weather events and long-term climate change influence human civilization and culture. Our central presumption was that the term *climate* is abstract, while *weather* is all around us. Thirty years of weather data are needed to identify a climate state. Weather is climate made tangible, and it is therefore much easier to grasp and communicate. Adopting an experimental and interdisciplinary approach, this large show not only aimed to unite these two rather artificially separated terms, but also planned to include objects from the realms of art, cultural history, ethnography, and the natural sciences from

all around the world – altogether a maximum of 400 objects from around 100 lenders from all over Europe (Andreae et al. 2017, see also section 4.4 of this case study).

The original focus of the exhibition concept was on the poetic, existential and phenomenological qualities of the weather and humankind's approach to it, which oscillates between religious belief, superstition, and attempts of rational explanation, not following a reputed historical chronology of increasing rationality. As the project developed, scientific themes such as the history of meteorology and current aspects of global climate change became more and more important, ultimately also because of our cooperation with the UNFCCC.

Fig. 5.1: First draft of the layout for the exhibition Weather Report*, 2017, © Bertron Schwarz Frey, Berlin/Ulm.*

The exhibition was divided into twelve rooms that described the constituting elements and diverse phenomena of the weather as they unfold over the course of a day. The visitors would move from a mythically charged 'Dawn'[3] to rooms dedicated to 'Sun', 'Air' and 'Sea' (which together with the land masses form the four constituting elements of the weather system), then – on the exhibition's fictional time scale around noon – moving on to 'Fog', 'Clouds', 'Rain' and 'Wind' in the afternoon, and from 'Gale', 'Thunderstorm', and 'Snow and Ice' into 'Dusk'. The exhibition grew darker from room to room (Fig. 5.1), culminating in a more or less apocalyptic night. The exhibition run's intensifying weather threat during its fictional course of a day was associated with the growing climate change threat on a larger time scale.

The aim was to give equal billing to the wonder and beauty of the individual weather phenomena and to their still fragmentary scientific explanations. The exhibition clearly wanted to serve educational purposes, but mainly aimed to reach its visitors emotionally and aesthetically in order to raise awareness of the essential importance of all weather phenomena in our daily lives and during our entire lifetimes (Fig. 5.2 and 5.3). Thus, it also aimed to raise awareness of the immense contingency, complexity and fragility of the Earth's atmosphere with its short-term weather and long-term climate systems.

3 This first room named 'Dawn' presented an array of weather gods from different parts of the world (Andreae et al. 2017, pp. 66–73), along with art works by Gerhard Richter (p. 65) and Hiroshi Sugimoto (p. 61). Although this entrance to the exhibition may have seemed like a chronological start, putting religious belief and superstition before scientific explanation and rationality in a historical timeline, references to the irrational aspects of our relationship with the weather were made throughout the exhibition.

Fig. 5.2: The exhibition room 'Sun' with historical parasols in the foreground, Parasolerie Heurtault, Paris. Photo: David Ertl, 2017, © Kunst- und Ausstellungshalle der Bundesrepublik Deutschland GmbH, Bonn.

Fig. 5.3: The exhibition rooms 'Gale' and 'Thunderstorm' with Germaine Richier's Storm Man (L'Orage) *and* Hurricane Woman (L'Ouragane) *in the foreground. Photo: David Ertl, 2017, © Kunst- und Ausstellungshalle der Bundesrepublik Deutschland GmbH, Bonn.*

5.3 The curatorial team

The curatorial team of this exhibition project was interdisciplinary in a more specific sense, as it involved curators from differing museum contexts, whereas other academic experts (non-museum-professionals) were only involved as advisors or lenders but were not part of the curatorial team. The most important external advisor to the exhibition was the renowned meteorologist and TV weather presenter Karsten Schwanke, hereafter referred to as the *meteorological advisor*. The actual curatorial team consisted of two external guest curators from very different museological backgrounds and me as the responsible institutional curator of the Bundeskunsthalle, taking on a predominantly coordinating, organizing, and synthesizing role. The two guest curators were an *art curator*, who had the initial idea for the exhibition, and a *science curator* who joined the team at a later point in time. Although these titles might suggest that the curatorial team predominantly involved a meeting of different disciplines, it, of course, also involved the meeting of three very different individuals and personalities.

Stephan Andreae (STA), with his consent, introduced and referred to as the art curator in this study, is an independent artist and very experienced senior exhibition curator, who worked at the Bundeskunsthalle for more than twenty years until his retirement in 2014. He had been developing the idea for this exhibition since 1999, but it took many years until the project made it into the institution's scheduled programme. His approach on exhibition-making is rooted in the conceptual tradition of the 1970s *Musée Sentimental* by the Swiss artist Daniel Spoerri, who invented a new associative, poetic, and anti-authoritarian take on historical exhibitions, including objects from everyday life and notwithstanding traditional museological material categories, narratives, and conventions. Objects were chosen according to their emotional and anecdotal qualities – meaning the stories behind them – rather than their established historical or art historical value[4] (Plessen 1979, p. 15). In this spirit, STA curated

4 For example, for the exhibition *Le Musée sentimentale de Cologne* (1979), the renowned German writer Heinrich Böll was asked to contribute a personal object and – much to the curators' joy – he sent in twelve pencil stubs which he had used to edit his manuscripts (Plessen 1979, p. 36). Instead of representing himself in this exhibition with a more prominent item such as an award or his autograph, Böll chose the simple but emotionally charged tools of his daily work.

several very successful exhibitions in the history of the Bundeskunsthalle, often approaching natural science themes from an artistic point of view, for example in the exhibitions *Arctic – Antarctic* (1997) and *Outer Space* (2014).

Ralph Burmester (RB), with his consent, introduced and referred to as the science curator here, is a member of the curatorial staff of the Deutsches Museum Bonn, the Bonn branch of the Deutsches Museum in Munich, which contributed a significant number of loans to the exhibition. His original expertise is military history (a surprisingly useful discipline in connection with the field of meteorology), but during his museum career he has become a very experienced and broadly interested science curator. His work focuses on the history of natural sciences as well as on new scientific inventions and developments, and he is especially interested in innovative ways to communicate complex contents to a general audience. He joined the curatorial team in 2015, two years before the opening in 2017.[5]

As the third team member, I led this project as the institutional curator and exhibition manager of the Bundeskunsthalle in a mainly organizing and synthesizing role from late 2014. Having originally majored in Chinese studies, I had mainly focused on ethnographic and cultural history exhibitions in my earlier years at the Bundeskunsthalle, but simultaneously had also developed a strong interest in contemporary art and natural science topics over the years since 2002. As already discussed, as a curator, or more precisely an exhibition-maker, I now see myself more and more as a thematic generalist, at the same time becoming a 'bridge-specialist' (Klein 1990, p. 131), as I am especially drawn to complex and interdisciplinary thematic exhibitions that require an 'intercultural competence' (Lerchster and Lesjak 2014, p. 86), amongst other curatorial and management skills.

In this team of three, the art curator, who had originally suggested the project, was more or less forced by our institution to enter into the collaboration with the science curator, the latter having the task to add a more educational approach to the already existing artistic exhibition concept. These

5 At that time the director of the Deutsches Museum Bonn, Andrea Niehaus, was also briefly an active member of the curatorial team, her original expertise being art history, which moved to the background of her research interests as she entered the science museum context. She stayed in the team but her administrative duties at the DMB did not leave her enough time for a continued active participation. That is the only reason why her supportive role is not further considered in this case study.

unequal tasks and conditions of the two external curators – explained in detail later in this case study –, along with a tight time schedule, were not ideal (but perhaps also not entirely untypical) for establishing a creative interdisciplinary team. The process of negotiating a joint exhibition concept (and of clarifying which type of exhibition was intended in the first place) oscillated between collaborative creativity and individual resistance.

While analysing our team structure, power-balance and production process in greater detail, I will draw on two semi-structured interviews that I separately conducted with both external curators shortly after our exhibition closed its doors in March 2018. For these interviews I developed a set of general questions for external exhibition/museum curators, who collaborated in interdisciplinary exhibitions co-curated and managed by myself at the Bundeskunsthalle (see Appendix). The interview questions aimed at a retrospective analysis of the process of making the exhibition, starting from jointly developing an exhibition concept, on to negotiating and choosing objects in an interdisciplinary team and to finding a joint curatorial language for interpretation and exhibition design. The questions especially focused on key issues and moments of decision-making as well as knowledge production. The set of questions allowed for a deep feedback conversation, which in itself was a most valuable undertaking as it was not an established milestone within the institutional project management procedures. And it allowed me to reflect on my own curatorial and managing role in this team system – especially my role of enabling and suppressing individual and even joint creativity, as the following discussion will show.

5.4 *Interdisciplinary* exhibition-making: Thickening the plot and being ‘inter-disciplined’

5.4.1 Forming an interdisciplinary team

Admittedly, our team had a difficult start. The beginning of an interdisciplinary collaboration can be essentially important both regarding the development of the project content as well as the social team structure in order to avoid future conflicts (Lerchster and Lesjak 2014, p. 79). It is therefore recommended to clarify the roles of each team member regarding his or her professional identity, research interests, aims and motives, as well as the distribution of space, both literally and figuratively speaking (pp. 83–85). Furthermore, it is important that

the team members start working together in an atmosphere of openness and trust (p. 85). The actual circumstances of our exhibition project unfortunately did not allow for such a clear and open beginning of our teamwork.

When I was assigned the task to realize the exhibition *Weather Report* (scheduled for autumn 2017) in late 2014, the idea for this project had just been revived, after it had been postponed for an indefinite period around the year 2000. By 2014 the topic of weather and climate had become a matter of increasing public concern and had therefore finally been included in the scheduled programme of the Bundeskunsthalle. As a former colleague, the art curator had been working on this idea since 1999, and had from the beginning adopted a multidisciplinary approach, consulting with a large number of academics, artists, and museum curators to compile a preliminary database of around 500 possible exhibits. He had even started to set up an advisory board, but up to this point he understood himself as the inventor and sole curator of this exhibition.

In 2015, the art curator's renewed enthusiasm for his rediscovered project was slowed down by the institution's condition to collaborate with a science curator. This decision by the artistic director of the Bundeskunsthalle was explained with the notion that the art curator's previous exhibitions on natural science topics had been of exceptional artistic quality but might have profited from a clearer educational structure. So, in early 2015, shortly after I took on the project, we started to form a new curatorial team including the science curator from the Deutsches Museum – a very desirable institutional partner for the Bundeskunsthalle both regarding its scientific reputation as well as potential loans – and occasionally also the meteorological advisor mentioned above.

Instead of being clear about the roles, aims, and territories of each team member right from the start, the science curator diagnosed the initial situation in hindsight as 'unclear and unfortunate.'[6] Despite the attempt to integrate and encourage him by reassuring him that the exhibition concept was still open for discussion and yet to be re-developed in a joint effort – and also out of an initial indecisiveness on our institutional part – there was the underlying yet clear message that the basic structure of the original concept by the art curator (describing different weather phenomena during the course of a day) was 'sacrosanct'. This meant that the science curator should keep to adding an informa-

6 All direct and indirect quotes from the science curator are drawn from the interview I conducted with him on 8 March 2018 in Bonn. The interview recording cannot be accessed and will be deleted after a mutually agreed on period of time.

tive layer on top of it – a clearly limited space for creativity. He instantly had the suspicion that this exhibition was supposed to be an art exhibition in disguise of a science show, instead of both disciplines meeting on an equal footing. And from the start, he felt as the 'junior partner' with everybody deliberately trying to convince him that we were all meeting at eye level.

For the art curator the situation at the beginning of working in this new team was likewise rather unsatisfactory, as he had a clear idea of the exhibition and was trying to evade any kind of substantial curatorial interference. Feeling that he had been 'inter-disciplined' in an almost penalising sense, he initially still hoped that the science curator's input would only be 'supportive'[7] of his own ideas by substantiating them with scientific facts and objects, while at the same time not altering his artistic concept.

But the science curator – despite his own initial scepticism and the art curator's noticeable resistance – proved to be as enthusiastic as the art curator himself, determined to enter into an interdisciplinary 'battle', striving for nothing less than an integrative new exhibition concept. Against all institutional odds – such as a narrow time frame and the fact that I was simultaneously still curating and managing an earlier exhibition project which opened in 2016 – we embarked on this endeavour together, me trying to support and encourage both curators, while still searching for my own curatorial position in this project. As the institutional curator and exhibition manager, I was struggling with the aforementioned initial indecisiveness of our institution that had, on the one hand, embraced this interdisciplinary experiment and its necessarily open result (Heimerl et al. 2014, p. 304), and on the other hand kept the (in our context conventional) concept of an art exhibition with a few engaging scientific add-ons on standby, as one of several possible 'tried and tested formulae' (Macdonald and Basu 2007, p. 18). We all felt that 'inter-disciplining' this project meant taking a risk, but the yet unforeseeable result promised to be at least innovative, or as Macdonald and Basu put it: 'Experimentalism […] is a risky process of assembling people and things with the intention of producing differences that make a difference' (p. 17). What we tried to do was nothing less than creating a new – and on this

7 All direct and indirect quotes from the art curator are drawn from the interview I conducted with him on 18 March 2018 near Bonn. The interview recording cannot be accessed and will be deleted after a mutually agreed on period of time.

scale unprecedented[8] – exhibition in which different fields of knowledge and different categories of objects would be allowed to 'interact with each other, generating new and unanticipated outcomes' (p. 9).

5.4.2 Concept development: Negotiating ideas, methods and identities

The joint revision of the original exhibition concept by the art curator meant to transform an originally multidisciplinary – mainly additive and only loosely structured – concept into an interdisciplinary concept by negotiating, linking, focussing, and integrating (Klein 2010, p. 16) our mutual ideas and stories. The first step was asking the science curator to develop and formulate his own ideas for an exhibition about weather and climate, if possible, by keeping the basic structure suggested by the art curator consisting of a sequence of twelve rooms: Dawn, Sun, Air, Sea, Fog, Clouds, Rain, Wind, Gale, Thunderstorm, Snow and Ice, and Dusk. The original concept mainly concentrated on art works and anecdotally charged historical objects associated with each of these weather elements and phenomena.

An apparently not uncommon sense of mutual unfamiliarity (Heimerl 2014, pp. 303, 306) was palpable between both curators (and in hindsight confirmed by both interviewees), when the science curator set out to revise the exhibition concept. Before, we had mutually agreed on the most important premise of this exhibition: all rooms should include objects from the fields of art, cultural history or ethnography and the natural sciences. And these objects were not to be divided by disciplines but should be allowed to freely associate with each other. The science curator then developed a series of what he called 'weather stories' and 'climate histories' for each of the twelve rooms in which he wanted to unfold the history and future perspectives of meteorology and climate science.[9]

Perhaps the most prevalent research theme of both disciplines is the improvement of short- and long-term weather and climate change forecasts.

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8 At least in Germany the topics weather and climate, and more recently climate change, have been dealt with in exhibitions either in the field of science or art, but not combining both fields on a larger scale.

9 For the majority of the curatorial team members, including the meteorological advisor and our institution, it was important from the start that our exhibition should take a stand for climate protection not only based on scientific evidence but also in a political sense, for example, regarding the social imbalance of global pollution. This politicization of the original exhibition concept was a joint achievement of the curatorial team.

Longing for a clear structure, he therefore suggested combining each weather phenomenon to its matching meteorological measurement: in the room 'Sun', for example, we measured the temperature, in the room 'Air' the air pressure, in the room 'Fog' the humidity etc., because only the collection of such diversified weather data allows a forecast. These measurements, exemplified with historical and modern instruments, were supposed to culminate in an additional educational room at the end of the exhibition called 'Weather Studio', in which the complexity and prevailing uncertainty of forecasts were explained. We all welcomed this idea and together with our meteorological advisor planned yet another educational room at the beginning of the exhibition called 'Weather Kitchen', which was dedicated to the explanation of the global weather system, its immense contingencies, and visible human influences.

With this additional narrative the science curator had successfully 'thickened' our 'plot'[10] (Rugoff 2015, p. 44) and had added a convincing structure to it. But when asked during the interview, whether he had been able to tell his story or whether he had to leave out important content for compromise's sake, he answered that he had only realized about thirty percent of his own ideas.

> In this collaboration I felt like a rejected organ during a transplantation. It fills me with great melancholy in hindsight that I never succeeded in entering the art curator's cosmos to initiate a truly harmonic interplay between us (Science curator).

This disillusioned and disillusioning reflection originated in his notion of never being able to fully participate in the content development of his counterpart in this collaboration, as the art curator not only had a very different approach towards exhibition-making in general, but also had a decidedly artistic, non-academic and rather evasive way of researching and conceptualizing.[11] While the

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10 Although relating to group art shows and their potential to create new layers of content, I find Rugoff's straightforward and unpretentious word choice of a 'thickened plot' very useful for describing our practical process.

11 The science curator's notion of participating in an unclear and incalculable exhibition also resulted from a technical disadvantage on his part, as he did not have constant access to the ever-evolving loans database, which the art curator had originally set up while still working in our institution and which I continued to work with. The science curator was provided with regular updates of the list of loans but not with a direct access to the loans database. The art curator was allowed to keep his direct access after becoming an external curator, because joint access made it easier to handle and contin-

science curator's ideas and concepts were scrutinized by the curatorial team in great detail, the art curator's original ideas – manifested in his extremely inspiring but only loosely connected choice of objects, bursting with stories around them, rather than in larger structured narratives – were mostly treated as established facts. During the entire process both curators saw some of their ideas being rejected by the curatorial team, but admittedly in unequal proportions. This is mirrored in the quantitative proportion of their chosen objects, the art curator contributing around three quarters of the final list of loans, also due to his immense preliminary work in setting up a research database largely covering the artistic and cultural history aspects of the exhibition's theme.

> I am making exhibitions like a sculptor, I create. Which objects will I dare to bring together? What happens when two unfamiliar objects meet? Will there be a spark, or even a lightning between them? By the way, forming a team can be a similarly creative process (Art curator).

The art curator's idea of an exhibition as an artwork – a 'sculpture' on its own, a 'sumptuously laid table' on which 'the crumbs are as important as the centrepieces' – was not made for compromise, and in hindsight the art curator in fact also confirmed that this collaboration for him had involved 'too many compromises'. For the science curator the main purpose of an exhibition was conveying knowledge in a creative and attractive way, but he was *curious* to cross boundaries by entering the unfamiliar art world and experimenting with object categories and their interpretation. Ruth Phillips convincingly argues 'that wonder and curiosity can move us to accept messiness' (Phillips 2019, p. 338). Curiosity thus expresses 'a willingness to recognize and accept the irreconcilable multiplicity, plurality, and hybridity of the world' (p. 338). The science curator's curiosity was stifled, however, when the art curator was only reluctantly willing to admit him into his realm, which the science curator experienced as 'more unfamiliar than expected'.

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uously adjust the sheer quantity of loans between the art curator, who had chosen the majority of loans, and myself. In hindsight, I am considering this unequal treatment of the two curators as a mistake on my part regarding possible collaborative standards for interdisciplinary exhibitions, which should necessarily include equality amongst the curatorial team members. In this case equality was at least partly sacrificed for the sake of management efficiency.

> Our teamwork might be compared to the experiment of trying to dissolve iron filings in water. At the beginning you have the impression of an increasingly homogenous emulsion, but then you see the iron filings slowly separating again (Science curator).

The science curator also described this collaboration as working in 'parallel universes', in which each curator defended his individual creativity. We did have moments of collaborative creativity, but these were the exception rather than the rule. Our experience is reminiscent of Ken Arnold's notion that while 'research-led art curators still seem predominantly concerned with questions circumscribed by the world of art, [...] science curators seem often intent on reaching out their home territory into other domains. Certainly, the considerable number of projects that champion an intermingling of science with art seem more likely to originate from science than the art side of the divide' (Arnold 2015, p. 333). In our case, the processes within our curatorial team proved Arnold right, but the overall decision for this art-science collaboration was made by a mainly art-oriented institution, a fact we perhaps should draw some satisfaction from in the light of Arnold's statement. In his interview, the art curator described his own attitude towards working on this exhibition as 'dancing and playing', while his colleague, the science curator, was 'walking' on a self-restricting line (referring to his 'science trail' through the exhibition, a line the science curator had only retreated to out of resignation). So, who was the freer thinker? Regarding the openness and flexibility to enter into an interdisciplinary collaboration, the answer is different to what might have been expected.

To take the art curator's metaphor further, I was aptly described as 'marching' through this process. These almost poetic descriptions of our differing working styles and attitudes have actually helped us to articulate and explore our roles within the team and within our institution at large, and it seems that poetry can offer a revealing 'alternative voice to the dominant organisational discourse' (Armitage and Ramsay 2020, p. 213). 'Exhibitions as a product are a complex interaction of institutional norms, wider cultural and political agendas [...] and [...] conventions' (Souhami 2011, p. 9). My role was to enforce and live up to these norms, agendas, and conventions, and at the same time I tried to create free spaces for creativity within our curatorial team. Especially interdisciplinary exhibitions require a certain amount of experimentation, which itself needs time, space, and other resources in order to flourish (Macdonald and Basu 2007, pp. 17, 18). And these collaborations need time for negotiation

and compromise, but time was a rare commodity in this project, and all too often I indeed felt like 'running' through the process. We did 'negotiate' this exhibition 'into being' (Macdonald 2002, p. 7), reaching perhaps a partial integration, but many creative ideas were suppressed during the process, and not only because of mutual resistance on the external curators' part. I myself as the exhibition manager had to suppress our individual creativities time and again, including my own. In a good sense, this perhaps served the task to stimulate and insert a larger, new layer of joint creativity to the exhibition concept. In a more problematic sense, my workload in this institutionally-regulated collaborative process forced me to press on with the production process just to meet institutional deadlines and eventually the opening date. No wonder that the science curator equally and rightly described me as 'dedicated but overburdened'. There are several reasons why we only partially achieved a creative synthesis of ideas and contents, required for characterizing this exhibition as *interdisciplinary* in the stricter sense defined above (Klein 2010, p. 16). Our exhibition, although having its *interdisciplinary* moments and aspects (for example its thematic instead of disciplinary order), largely remained multidisciplinary in combining its diverse contents and objects in an accumulative rather than integrative way. But what we did achieve was a multi-perspective and convincingly 'thickened plot'.

5.4.3 Object lessons: Blurring the lines

The exhibition *Weather Report* comprised 370 objects and 38 videos, graphics, audio-installations (soundscapes), and both informative and inclusive interactive stations from altogether 106 lenders from all over Europe. 168 lenders had been contacted with loan requests out of which we received 62 refusals. As the Bundeskunsthalle is an institution without a collection of its own, the exhibition completely relied on loans. In his book with the telling title *Müde Museen* (Tired Museums), Daniel Tyradellis identifies a weak spot when he observes that the practical requirements of loan negotiations and the resulting time pressures too often serve as arguments for preventing further changes and improvements to an exhibition's contents and main ideas, and thus for suppressing creativity, to put it in the terms I have used earlier. He criticizes the accumulative practice of researching and securing loans as a predominant part of curatorial work, which eventually leads to a significant lack in deeply thought through and carefully developed exhibition concepts that are allowed to grow and improve during the exhibition-making process (Tyradellis 2014,

pp. 73–75). Referring to museum collections, Gabriela Nicolescu speaks of 'curators (…) trapped in these everyday practices', restricting their own imagination (Nicolescu 2016, p. 485). A strong, diligently developed concept (without a preconceived outcome) is even more needed when it comes to meaningfully uniting the often disparate voices and materials in interdisciplinary thematic exhibitions, such as *Weather Report*.

It is a fact that the acquisition of loans constituted the major part of our work, especially of my own workload. But I cannot say that the process of choosing, requesting, and securing loans was altogether ruled by constraint. Although both curators had developed their lists of objects separately, it was when we discussed objects, the stories behind them, and possible connections between them, that we had our best moments of creativity and playfulness within the curatorial team. In an ideal setting, the 'continuous balance between liberty and constraint' and the need for compromise lead to a 'particular porosity' of museum displays, a productive space open for free ideas and interpretation on the curators' and audience's part (Nicolescu 2016, p. 486). Our intentionally disparate choice of objects left a lot of this desirable 'porosity' or 'interstices' between them. For the art curator these spaces – open to be filled with free thinking – could not be wide enough, while the science curator opted for closer-knit references and connections between the chosen objects. For example, in the exhibition room dedicated to 'Air', he narrated and explained the discovery and measurement of air pressure and the layers of the Earth's atmosphere with a number of outstanding scientific instruments, amongst them the original Magdeburg hemispheres and pump by which Otto von Guericke proved the existence of vacuum in the mid-seventeenth century (Andreae et al. 2017, pp. 118, 119). But what unfolded around him was very different. The materiality and the natural (and increasingly artificial) components of air, the aerosols, were for instance exemplified by twelve life size plaster casts of animal noses (sense of smell), an alto saxophone by Adolphe Sax junior (sound waves) and the wing skeleton of a black-headed gull (p. 121) alongside an old propeller (the dream of being able to fly). Watercolours by J.M.W. Turner spoke of ash contaminated air after the Tambora's eruption leading to a year without summer in 1816 (pp. 110, 111), while an eighteenth-century Chinese acupuncture mannequin (pp. 112, 113) referred to a possible cure for the unwanted symptoms of weather sensitivity.

Although the science curator reported in retrospective that he had often felt like making a separate science exhibition within a larger and for him seemingly unpredictable art and cultural history exhibition, he enjoyed the inspir-

ing one-two passes with the art curator and me evolving from surprising object encounters all the same. In his catalogue foreword, he wrote that the exhibition presented historically and thematically connected objects of different material categories which had often only been separated in the first place due to the specialization of museum collections (Andreae et al. 2017, p. 13).

Luisa Melloh, who completed a substantial BA dissertation on our exhibition in the field of sustainable development, described her 'first most obvious observation' when visiting our show, 'that this exhibition wants to bring together what belongs together' (Melloh 2018, p. 27). In this atmosphere of open dialogue, the objects themselves became 'accessible at multiple levels' (Thomas 2010, p. 9), blurring the lines between 'cultural' and 'natural' as well as 'human and nonhuman' (Baker 2015, pp. 63, 73). In an old hiking boot and sock lacerated by lightning (Andreae et al. 2017, p. 270), displayed in the exhibition chapter 'Thunderstorm', nature had forcefully manifested itself in a human product of everyday life, reaching us at the level of 'conscious thought' (Baker 2015, p. 63) as well as speaking to our 'affective intelligence' (direct sensation)[12] about the 'preconscious' (p. 69) qualities of weather phenomena. Our exhibition was therefore not just stuck somewhere in between being multi- and interdisciplinary in a narrower sense, but even had its transdisciplinary moments – or moments of 'transsector interaction' (see Klein 2010, p. 16) – by enabling a dialogue of disciplines from the fields of science, cultural history, and art with the realm of everyday life, at times even within a single object such as the old hiking boot. Antique scientific instruments were admired for their aesthetic value as well as the complexity of their function, whereas an exquisite landscape painting by Thomas Enders turned into a climate change witness depicting a long-lost glacier of the Austrian Alps in 1832 before the beginning of industrialization. The re-contextualization of this particular painting is a telling example of knowledge produced in this exhibition, showing that works of art – apart from

12 The latter form of perception was supported by a large installation called 'Shake Hands with a Flash of Lightning' in which visitors, protected by a Faraday cage, could put their hand in a metal glove (as part of the cage) to touch an artificial lightning produced by a Tesla coil every half an hour. Inspired by high-voltage demonstrations at the Deutsches Museum, this installation was a matter of controversial discussion within the curatorial team and with other members of our institution, because whereas science museums have a long tradition in such hands-on demonstrations, we had to cross our conventional boundaries to install this demonstration within what we still largely conceived as an art exhibition, for example because of the huge noise it created.

the well-known (and historically earlier) examples of Dutch paintings depicting the Little Ice Age – can make a significant contribution to climate science (Andreae et al. 2017, pp. 296, 297).

Despite all the controversies and the parallel instead of collaborative developments within and beyond our curatorial team, we all became more and more convinced throughout the process that the theme of our exhibition urgently required this multi-perspective approach. In her article 'The Liquid Museum', Fiona Cameron argues that museums should try more 'radical ideas' instead of retreating to a position of providing a 'safe place' (Cameron 2015, p. 347) of 'certainty' (p. 348) in a world of uncertainty. Instead of 'cleansing' an exhibition's theme 'of its 'controversial aspects', museums should 'embrace complexity' (p. 349) and 'acknowledge nonlinearity' and 'unpredictability [...] in the way the relations between human societies and nonhuman actants operate as open-ended processes' (p. 350). Cameron explicitly applies this to the global matter of climate change.

In our case the diversity of objects and contents created a complex bigger picture in which also nonhuman things such as the air, the sun and the oceans emerged as 'stakeholders' (p. 357) in their own right, 'outside of human-centered linear historical time and space' (Baker 2015, p. 68). In the room 'Sea' (Fig. 5.4), human and nonhuman works of art like August Strindberg's psychologically charged, dramatic and timeless seascapes (Andreae et al. 2017, pp. 128, 129) and the sadly beautiful specimen of a dead Caribbean Elkhorn coral bearing witness to the acidification of the oceans caused by the increased uptake of carbon dioxide (CO_2) from the atmosphere (p. 134), stood side by side and seemed to belong to each other quite naturally. Cameron states that breaking the 'human/nature divide' may 'help build [...] affective relationships between humans and the nonhuman world' (Cameron 2015, p. 357). And this is exactly what we tried to achieve, although it might sound pathetic at first glance: we wanted our visitors to simply fall in love with the weather around us in order to find the emotional and rational determination to protect our climate. As an institution we were operating as what Cameron calls a 'soft power' instead of a 'hard disciplinary power' (p. 375) within the climate change debate, but we were subtly but persistently trying to sneak into people's hearts.

While COP 23 was taking place in Bonn, this strategy was especially welcomed by a group of professional weather presenters called *Climate without Borders* from TV stations from around the world. During a discursive public tour on 16 November 2017, they experienced the exhibition as extremely inspiring regarding new narratives for enhancing the general public's climate

awareness. Today many scientists researching climate change are embracing a wider understanding of interdisciplinarity, which combines natural sciences with social sciences and humanities, also with regard to finding and 'accepting a plurality of narratives' (Schipper et al. 2021, p. 1). Such narratives should reach beyond conveying quantitative numbers and statistics by including qualitative methods such as storytelling (p. 3).

Fig. 5.4: The exhibition room 'Sea'. Photo: David Ertl, 2017, © Kunst- und Ausstellungshalle der Bundesrepublik Deutschland GmbH, Bonn.

5.4.4 Interpretation and exhibition design: The fear of complexity

As much as the curatorial team enjoyed the juxtaposition of disparate materials in order to draw a bigger picture, this process also saw a number of conflicts rooted in diverging working cultures regarding research and interpretation. These differences between the art curator and the science curator were reminiscent of Simon Sheikh's distinction between an artistic research practice which 'is not necessarily concerned with authorisation' (Sheikh 2015, p. 46) and a 'scientific model of research' (p. 37). While these differences were still mutually accepted during the process of compiling our list of loans, they became ever more perceptible and evident when it came to possibly finding a joint curatorial language for public relation and press purposes, interpretation, and the exhibition catalogue. A mutually agreed on short text for public relation and press purposes was achieved surprisingly quickly, but we struggled a great

deal with finding a single poster and book cover motif, representing our exhibition in all its diversity. This mirrors Macdonald and Basu's observation that experimental exhibitions can be 'hard to place' regarding their genre (Macdonald and Basu 2007, p. 19). We encountered this problem, for example, also when we were trying to find a publisher who was willing to produce a book fitting in more than one category, namely art, science, and cultural history. When both curators took on the task to write about their chosen objects for the label texts and the accompanying book, I was confronted with a severe problem, at least from our institutional perspective: While the science curator delivered too much text, the art curator seemed to write not enough. The science curator was used to a systematic and encyclopaedic method of interpretation and advocated a highly educational approach, whereas the art curator did not want to provide the audience with preconceived explanations in order to allow for ambiguity and free association. He strived for 'poetical and suspenseful' connections between intentionally unfamiliar objects and feared that too many texts in both the exhibition and the catalogue would hinder such an inspiring interplay.

This perhaps foreseeable but yet unexpected methodological discrepancy led the book editor (an art historian) and me to extend the art curator's texts while cutting the science curator's contributions in order to create a homogeneous flow of texts, that would support the desired blending of diverse object categories instead of unwillingly dividing them methodologically. But while the science curator largely supported this editorial strategy, the art curator was against it and was not convinced otherwise until the end of the project. Linn Burchert's review of the exhibition catalogue from an art historian's perspective makes it clear though, that this methodological gap is still apparent and has not been levelled out completely. Her criticism was that, although the exhibition *Weather Report* attempted to contribute to the question of the role of the arts in recent sustainability debates, the choice and interpretation of art works was lacking 'thematic contouring and analytical depth', as opposed to the systematically treated science themes in the exhibition (Burchert 2018, p. 215). This raises a fundamental question regarding interdisciplinary collaborations, as they obviously do not only involve the negotiation of different bodies of knowledge but also of a variety of methodologies (Heimerl 2014, p. 299). Are these diversities to be levelled out or to be made transparent? This question in itself should be a matter of discussion within an interdisciplinary team. But in our case these differences were not kept or overcome as a result of negotiation and compromise but were (or at least were attempted to be) institution-

ally suppressed by me, in my function as exhibition manager responsible for the timely delivery of a final product. Or did I perhaps contribute something positive after all, by acting as a third curator or 'bridge-specialist', constructively synthesizing disparate contents and ideas in order to create something new? Both explanations are true to a certain extent, but the act of suppression remains apparent in the fact that we ignored the art curator's wishes instead of jointly trying to convince him.

Another controversial matter within the curatorial team, which was quite revealing regarding our struggle with interdisciplinarity, was the exhibition architecture and design. Although we had mutually agreed that all rooms included objects from the fields of art, cultural history and the natural sciences, and that these objects should not be divided by disciplines but should be allowed to freely associate with each other, it turned out to be difficult to communicate this to the exhibition designer, who instead recommended a clear 'science trail' throughout the exhibition in the form of distinctly coloured (blue) islands. We spent some time arguing for a more integrative, floating architecture not clearly distinguishing between object categories, but eventually surrendered to the more conventional and educationally more convincing idea of the designer.

As much as we enjoyed the inspiring originality and complexity of our choice of objects, we were also afraid of a confusing kind of ambiguity that would be lacking a clear narrative and engaging structure. This fear, based on previous experiences in earlier exhibition projects, had been the initial reason for matching the art curator with an educationally more experienced science curator. In the beginning of our discussion with the designer the science curator had also advocated an integrative exhibition design not divided by disciplines, but the idea of a clear structured exhibition narrative was his priority as well as that of our institution, especially given the tight time schedule which regrettably did not allow for more complexity in this late phase of the production process. The emerging distinctive 'science trail' did perhaps deepen the science curator's notion of having created 'an exhibition within the exhibition', but from the audience's perspective – judging from frequent guided tours through the exhibition and our docent's feedback – this trail was welcomed as a visible additional narrative (apart from the exhibition's equally visible overall storyline of evolving weather phenomena during the course of day) in the midst of an inspiring but also enigmatic environment (Fig. 5.5 and 5.6).

Fig. 5.5 and 5.6: The exhibition rooms 'Air' (left) and 'Fog' (right). The blue islands served as a distinct 'science trail'. Photo: David Ertl, 2017, © Kunst- und Ausstellungshalle der Bundesrepublik Deutschland GmbH, Bonn.

Regarding other design decisions, our institution supported the art curator's ideas. While the science curator advocated a 'high-context' (Spock 2015, pp. 386–388) exhibition design, more frequently used in science museums, the art curator and I spoke in favour of an elegantly reduced 'low-context' design in order not to outshine the great disparity of art works and historical and scientific objects. This choice was more in line with an art museum's conventions but was in hindsight perhaps not 'meaningful' (p. 386) and 'captivating' (p. 398) enough, and we might have perhaps reached a more interesting result, if we had had more time. In the final design the rooms had a colour palette from white, light to dark shades of blue, towards a dark grey. The rooms were thus increasingly darkening and at the same time becoming narrower, starting from wide rooms like 'Dawn', 'Sun', and 'Air' in the beginning of the exhibition towards a rather claustrophobic end in the last two rooms called 'Snow and Ice' and 'Dusk'. This architecture was subtly trying to correspond to the global threat of climate change without using the usual 'depictions of natural disasters' or 'images of Climate Change mitigation methods' which have proven to be of 'limited efficacy' to 'spur both Climate Change awareness and action' (Melloh 2018, pp. 13–15). We added immersive measures such as occasional soundscapes, multi-sensual inclusive and interactive stations conceptualized by our education department[13] and hands-on demonstrations developed by the science curator.

Apart from the institutional final decisions, the exhibition design was at least to a certain extent the result of negotiations and compromise. Although each of the two curators regretted the necessity of too many concessions in

13 See Tellmann and Knaup 2019.

hindsight, it was just these compromises that elevated our exhibition at least gradually from a mere multidisciplinary towards an interdisciplinary collaboration, as a certain amount of interaction and even integration was involved. And although these compromises might have weakened and blurred the traditional forms of presentation and interpretation of both art and science contents and objects respectively, we managed to create something new and innovative by acknowledging the complexity of our topic, intentionally complicating the exhibition-making process, and thus 'reconfiguring the way in which exhibitions work' (Macdonald and Basu 2007, p. 16).

5.5 Conclusion: Institutional consequences and possible collaborative standards

This case study showed that interdisciplinary (in the general sense of the term) exhibitions do not necessarily belong to either the multi-, *inter-* or transdisciplinary type (Klein 2010, p. 16). By understanding these three terms as describing different qualities of interaction, they can serve as a finer vocabulary for a detailed description and analysis of the practical processes of exhibition-making – all three applicable even in one and the same case. The exhibition *Weather Report* was multidisciplinary in its choice of themes, objects, and even methods, as it lacked integration in these aspects. But it was *interdisciplinary* in some of its curatorially negotiated measures to unite disparate materials, and it even had its rare transdisciplinary moments. Taking a multidisciplinary collaboration to a more interactive level of being *interdisciplinary* (in a narrower sense), means to achieve a closer degree of integration amongst its participants, methods and contents. This is hard work and requires openness and flexibility – and a certain amount of experimentation – on all sides, and these claims themselves require a larger number of institutional resources (see Heimerl 2014, p. 308), different to monographic or mono-disciplined exhibitions.

When trying to formulate feasible collaborative standards, interdisciplinary projects (similar to participatory projects) first and foremost need a longer time frame – and thus also larger financial[14] resources – for nego-

14 I am aware of the fact that our institution is fortunate in having such funds allowing for disciplinary input by hiring external experts as co-curators or advisors, as our internal team of curators would not be able to cover the expert knowledge required for our institution's wide programme scope.

tiations and joint decision-making processes. The increasing speed of the production of temporary exhibitions stands against a more thoughtful and independent way of conceptualizing and realizing exhibitions, adjusted to the individual case at hand (Hegewisch 1991, pp. 13–14). Apart from resources, interdisciplinary exhibitions need equality amongst the curatorial team members regarding their honorary, decision-making procedures and a shared access to project development tools such as databases. Different methodological approaches must be negotiated in order to develop a joint methodological canon for the exhibition at hand. Emotional and intellectual differences in expression and understanding should not be disregarded or even eliminated. And the collaborative process should allow for joint critical feedback.

Another aim of this case study was to contribute to the transparency of the processes of exhibition-making from a curatorial and managing perspective. Undertaking this retrospective research and conducting interviews with my co-curators in this exhibition project was in itself both a revealing and healing process that unveiled conflicts but also possible solutions, personally as well as institutionally. In an ideal setting we would have developed a joint curatorial language, and also a joint approach to interpretation and exhibition design, but in this exhibition these approaches remained at least partly disparate. However, our discussions during the production process and the retrospective interviews were immensely inspiring and thought-provoking, especially with regard to institutional resources and consequences. Although the curatorial team has not succeeded in reaching a complete consensus – if at all possible or desirable – the mere fact that we saw the project through despite all conflicts and contradictions corresponds well with the determination needed to pursue the aim of climate protection despite all political odds, scientific complexities and social uncertainties. This type of interdisciplinary exhibition is certainly not useful for all themes, but it proved to be very meaningful in this context, especially as the global issue of climate change cannot be solved by one discipline alone, but definitely requires joint forces by political organizations, universities, cultural institutions, and all parts of society.

6 A multidisciplinary exhibition and the political dimension of *interdisciplinarity – We Capitalists. From Zero to Turbo*

6.1 Introduction

The first two case studies on the temporary exhibitions *TOUCHDOWN. An exhibition with and about people with Down's syndrome* (2016–2018) and *Weather Report. About Weather Culture and Climate Science* (2017/18) explored the theoretical and practical implications of conceptualizing and organizing a, in the first case, largely transdisciplinary and, in the second case, largely *interdisciplinary*[1] exhibition. But especially the latter case study also showed that the established procedural categories or qualities of interdisciplinarity can all occur in one and the same exhibition project, when examining the various phases and constellations of its production process in greater detail. This third case study on the temporary exhibition *We Capitalists. From Zero to Turbo* (2020) will now introduce and analyse a predominantly multidisciplinary exhibition.

Based on the premise that all three exhibitions were institutionally labelled as 'interdisciplinary' and were thus apparently aiming at an *interdisciplinary* production process, this chapter will focus on describing and discussing the specific actions that were taken to '*create* interdisciplinarity' (Lattuca 2001, book title, emphasis added), at least to a certain extent, by allowing for interaction and integration during the process of curation. In this chapter I argue that *interdisciplinarity* has to be created and enabled and is thus a predominantly practical and process-oriented tool.

1 I am differentiating between a more general understanding of interdisciplinarity and a more narrowly defined kind of *interdisciplinarity* (in italics) following Klein's taxonomy (Klein 2010, p. 16) as established earlier in the introduction to this book.

All three exhibitions introduced in this book had a significantly political dimension – by making the socially relevant topics of (1) disabilities, (2) climate change and (3) capitalism subjects of discussion. This also had a bearing on the fact that an interdisciplinary approach was chosen for their production processes. Interdisciplinarity here not only represents a research strategy of 'simply bring[ing] [...] different disciplines together' (Moran 2010, p. 15) when it comes to addressing academic, societal, or cultural questions that no discipline (or societal/cultural stakeholder) can solve alone, but a practical tool to support and enhance the political claim of these three exhibitions. In Moran's analysis of the role interdisciplinarity played in the emergence of cultural studies (and critical humanities) this correlation is evident (Moran 2010, pp. 45–73; see also Klein and Parncutt 2012, pp. 139–141) as the increased advocacy for interdisciplinarity in academia since the 1970s has often been directly linked to critical or political research and activism. Although Klein points out that interdisciplinarity as such 'does not imply an inherent or a particular kind of social consciousness or ideological agenda' (Klein 2005, p. 62), Moran plausibly concludes that 'interdisciplinary approaches often draw attention, either implicitly or explicitly, to the fact that what is studied and taught within universities is always a political question' (Moran 2010, p. 15). This equally applies to knowledge that is researched for and conveyed in museums (and exhibitions), being both 'expert institutions' and 'community platforms' (Sandahl 2020, p. 234). Interdisciplinarity in all its shades and grades is perhaps not useful for all exhibitions, because some topics require or profit from an in-depth monographic and monodisciplinary perspective, but the above observations support the assumption that interdisciplinarity – similar to participation – can be an especially productive and desirable research and work practice for exhibitions that are aiming to be politically relevant or participate in a democratic public debate. As Hans Joas observes, interdisciplinarity needs 'substantial research questions', or topics, as interdisciplinary dialogues that 'cannot happen in a vacuum' (Joas 2005, p. 89). The topic of capitalism, which is at the centre of this third case study, certainly met this requirement.

Throughout this book, I have been discerning between multi-, *inter-*, and transdisciplinary exhibition-making (Klein 2010, p. 16). The term multidisciplinarity, and the descriptive vocabulary associated with it, will play an especially important role in this third case study. 'Multidisciplinarity refers to the placing side by side of insights from two or more disciplines [...] in a serial fashion but makes no attempt to integrate the insights produced by these perspectives into an interdisciplinary understanding' (Repko 2008, p. 13). Multi-

disciplinarity is thus 'failing to engage in the hard work of integration' (p. 13) amongst the participating disciplines. On the surface, the final result may perhaps seem to be integrated, but it is missing a collaborative research or work process that would have allowed the involved disciplines to interact with each other.

Multidisciplinary research projects – in this case an exhibition project[2] – can thus present an overtly interdisciplinary understanding of their subjects, but their production process is a separated and lonely one. Whilst a multidisciplinary exhibition might, as a whole, represent something new and – for example educationally – highly valuable, and whilst each disciplinary insight or contribution might have been intentionally chosen, the involved disciplines remain unchanged in both theory and practice, because they were not involved or integrated in the production process. Multidisciplinarity certainly still has its own merits because it often constitutes a first step towards *interdisciplinarity* by taking on a broader, multi-perspective view on a relevant topic, but the involved disciplines are still speaking 'with separate voices on a problem of mutual interest' (Repko 2008, p. 17), because they are not invited to partake in dialogue, debate, or even constructive dissent amongst each other during the research process. At best, the resulting (academic or cultural) product, such as a publication or an exhibition, sparks a subsequent discussion, but in most cases, this does not affect the finished product by retrospectively adding to its substance or depth.

The exhibition *We Capitalists* earned considerable public recognition and positive feedback for its new and unusual narrative and approach to the purportedly rather abstract topic of capitalism. However, the aim of this chapter is not to critique the resulting exhibition, but to investigate the mechanisms and reasons behind the fact that this overtly multi-perspective exhibition lacked integrative depth. Therefore, I argue that it has to be categorized as a largely multidisciplinary product based on an analysis of its developmental process. However, apart from this more general, initial 'judgement' about the exhibition, the analysis will show that this exhibition case also had its *interdisciplinary*

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2 The question, whether curating is a *research* activity, has been addressed at length in the literature review of this study (sections 2.3.2 'The innovative and experimental potential of temporary exhibitions', and 2.5 'The exhibition curator's role') and in the second case study about the exhibition *Weather Report*. It was also discussed in an interview with Wolfger Stumpfe (WS), my co-curator for the exhibition *We Capitalists*. This discussion will be reflected on in section 6.4.2.

moments, which served significant purposes, such as the meaningful *politicization* and *emotionalization* of the exhibition. But rather than just being coincidental 'moments', they were the consequences of deliberate curatorial actions on the institution's part to improve the integrative depth and dialogical quality of this exhibition.

Similar to the structure of the previous two exhibition case studies, this chapter will follow the practical sequence of curatorial steps along the chronology of the exhibition-making process. The analysis of the exhibition *We Capitalists* will trace the curatorial process, from forming a curatorial team (section 6.3) and developing conceptual ideas and methods (6.4.1), to object choices (6.4.2), conceptualizing an accompanying publication (6.5.1), education tools such as a digital game (6.5.2), and finally the exhibition design (6.5.3).

This practice-based investigation again includes autoethnographical notes and observations and will rely on a number of other sources: Apart from my own reflections as an institutional 'insider' as well as existing project files,[3] I draw on a long qualitative, semi-structured interview with Wolfger Stumpfe (WS), my co-curator for the exhibition *We Capitalists*, conducted on 24 April 2020 in Bonn.[4] On 24 September 2020, in Bonn, I had another important (but unrecorded) feedback conversation with Lisa Philippen from the Federal Agency for Civic Education (Bundeszentrale für politische Bildung / bpb), who will be introduced as an external partner in sections 6.3 and 6.5.2. On 8 October 2020, I conducted a recorded online conversation about the digital game, which was developed for this exhibition, with Thomas Lilge and Christian Stein from Playersjourney UG, who will likewise be introduced as external partners in sections 6.3 and 6.5.2.

3 This concerns general notes and files that do not reveal any critical personal or institutional data.

4 This interview with WS was recorded, transcribed, and translated from German into English by the author.

6.2 The exhibition *We Capitalists*

Fig. 6.1: Entrance of the exhibition We Capitalists *showing Julian Röder,* Available for Sale, *2007, © Julian Röder, courtesy Galerie Russi Klenner. Photo: Laurin Schmid, 2020, © Kunst- und Ausstellungshalle der Bundesrepublik Deutschland GmbH, Bonn.*

> This exhibition about the system of capitalism clearly deserved a multi-perspective approach, as this topic equates to nothing less than our daily lives. Basically, everybody would be able to say something about it because we are all part of the system. That is also the reason why we called the exhibition *We Capitalists*. This was not an exhibition theme for specialists – like Picasso's blue or pink periods – but a question concerning all of us (WS).[5]

The temporary exhibition *We Capitalists. From Zero to Turbo*,[6] developed and presented at the Bundeskunsthalle in Bonn, Germany, was opened on 12 March

5 This passage is quoted from the interview with WS on 24 April 2020 in Bonn mentioned above.

6 A filmed guided tour through the exhibition by the exhibition curators, WS and me, can be found here: https://vimeo.com/403953993 (with English subtitles, last accessed 2 April 2024).

2020 and locked down again two days later, on 14 March 2020, due to the coronavirus pandemic. The exhibition, curated by Wolfger Stumpfe (WS) and me, stayed shut for almost two months before reopening on 12 May 2020 under a strict routine of safety measures to protect visitors and employees from a COVID-19 infection. The show was on display until 30 August 2020 and reached a total number of 17,830 visitors.[7]

We Capitalists encircled the seemingly abstract topic of capitalism from a mainly cultural historical perspective, but deliberately resisted presenting a supposed chronology in the historical development of capitalism. It was instead narrated along 14 chapters introducing the fundamental characteristics of the system. Debora J. Meijers calls such exhibitions 'ahistorical' (Meijers 1996, p. 18), observing in the context of art history that there 'are more general indications today that traditional notions of chronological development [...] are no longer acceptable. There are doubts regarding history as an evolutionary process' (p. 18). Whilst opting for a thematic structure, the exhibition nevertheless drew on history-based framings to identify historical preconditions which supported the emergence of capitalism. The exhibition concept was narrated along the following chapters:

Fig. 6.2: The exhibition chapters introducing the basic characteristics of capitalism and their theoretical references within the exhibition.

Exhibition chapters	**Theoretical references ('talking heads') introduced in the wall texts**
Introduction: *We Capitalists. From Zero to Turbo*	

7 I have reflected on the implications of the COVID-19 pandemic for this exhibition in a short article that was published online on 29 July 2020 in the *Cultural Practice Magazine* of the Institute for Cultural Practices of the University of Manchester: '#ClosedButActive? An exhibition trying to find its voice during lockdown' (https://www.culturalpractice.org/article/closedbutactive-an-exhibition-trying-to-find-its-voice-during-lockdown). It was also published online in German on 13 August 2020 under the title '#ClosedButActive? Kann eine Ausstellung auch geschlossen „aktiv" sein'? (https://magazin.bundeskunsthalle.de/2020/08/closedbutactive/ (both links last accessed 19 July 2023)).

(1) Rationalism: More Structure, More Order	Max Weber (sociologist, economist)
(2) Efficiency and Productivity: More Goods, More Consumption	Lillian Gilbreth (psychologist, industrial engineer)
(3) Individualism: More Ego	Emile Durkheim (sociologist)
(4) Accumulation: The Goal is Profit	Karl Marx (philosopher, economist, historian, sociologist, political theorist)
(5) Resources: My, Your, Our Property	Elinor Ostrom (political economist)
(6) Money	Georg Simmel (sociologist, philosopher)
(7) Economy and Religion: Matters of Faith	Christina von Braun (cultural scientist, gender studies)
(8) Art Costs Money: The Art Market Emerges	Adam Smith (economist, philosopher)
(9) Growth: Always More	Ulrike Herrmann (economic journalist)
(10) Luxury and Innovation: Always Different	Eva Illouz (sociologist)
(11) Acceleration: Faster and Faster	Karl Polanyi (economic historian, anthropologist, sociologist, philosopher)
(12) The Uncertainty Factor: Humankind	Reinhard Selten (economist)
(13) Creative Crises	Joseph Schumpeter (political economist)
(14) Wastefulness and Abundance	Christine Frederick (home economist)
Epilogue: The World – Where Is It Going?[8]	

Each of the chapters (see Fig. 6.2) displayed a wall text introducing the term in question alongside an eminent academic or entrepreneur as a 'testimonial' to the respective aspect of capitalism. These 14 'talking heads', as we unofficially called them, where not only from diverse academic disciplines, but comprised

8 The title of the final exhibition chapter was named after Aldous Huxley's novel *Brave New World*, and more precisely after its first German language edition from 1932. In this edition the title was translated with *Welt – Wohin?*, before the more literal German translation *Schöne neue Welt* was used.

almost as many women (6), as men (8), which was positively noticed and commented on by several visitors.[9]

During the conceptualizing process we – that is the curatorial team and its external partners – came to compare this investigation of capitalism by its characteristic components to a DNA analysis in order to reveal the internal structure of the system. Figuratively speaking, this 'DNA of capitalism' has long since entered our own DNA, our own identities, with capitalism being far more than just an economic system. Capitalism as a social order has shaped our thinking, perception, and existence for centuries. The exhibition itself and the *Capitalism Game* – a digital game[10] integrated in the exhibition – invited visitors to explore and experience their own position within the system of capitalism, a structural phenomenon that has entered every corner of our daily lives. With this educational tool we deliberately tried to personalize and emotionalize the exhibition topic (see section 6.5.2).

The exhibition comprised a wide array of about 250 objects taken from the realms of art, history, archaeology, ethnography, science, and everyday popular culture. The artworks and objects were of great diversity in historical age, materiality, as well as cultural, local, and disciplinary origin (see section 6.4.2). Over 70 museums, galleries, collectors, and artists from all over Europe and from New York supported the exhibition with loans.

Several objects originated from art forms that seem particularly close to life, such as photography, film, and video art. There were no geographic limits: Ethnographical objects such as a piece of stone currency from Micronesia that contributed to the history of money were exhibited, as well as, for example, archaeological finds from Mexico questioning luxury and wastefulness as a human condition. Since, however, the system of capitalism developed in the Western European culture over the past centuries, the primary focus was on this region of the world.[11] It is, in fact, difficult to describe the abundance and diversity of the displayed material that was freely associated with the structural characteristics of capitalism. The exhibition showed rare archival documents

9 We drew upon these thinkers separately as multidisciplinary 'witnesses', but how interesting would a – necessarily fictitious – *interdisciplinary* discussion amongst them have been, not only bridging generational and historical gaps, but also political and gender differences.

10 The game was developed in cooperation with the German Federal Agency for Civic Education and Playersjourney UG of gamelab.berlin.

11 The first half of this paragraph is partly drawn from the exhibition concept written by WS.

such as one of the oldest accounting books from Genova, classical oil paintings depicting motifs ranging from an idyllic communal village pond (as shared property) to the legendary treasures of King Croesus, wooden models of Amsterdam harbour from colonial times or an early German windmill, technical devices from everyday life such as a small mobile phone that once belonged to Angela Merkel (famous for networking by means of countless text messages), as well as poignant art installations such as the *Two Workers* by Duane Hanson.

Fig. 6.3: Wolfger Stumpfe and Henriette Pleiger with one of Duane Hanson's Two Workers. *Photo: © Claudia Friedrich, 2020.*

The exhibition architecture (see section 6.5.3) and design consisted of a monotone modular industrial shelf system, which was supposed to evoke images of storage halls, server facilities or DIY stores. In this architecture the artworks and objects, in a subtly unsettling way, assumed the character of commodities.

After this short introduction of the final exhibition, the following sections of this chapter will look back at its development to understand and investigate this practical process regarding its shades and grades of interdisciplinarity. This analysis will start with the chronological question of how the curatorial team for this exhibition was built, and by exploring its interdisciplinary potential, in hindsight.

Fig. 6.4: In the foreground: Matthias Böhler and Christian Orendt, Give Us, Dear, *2013. A cooperation of the Neues Museum Nürnberg with Elke Antonia Schloter and Volker Koch. Photo: Laurin Schmid, 2020, © Kunst- und Ausstellungshalle der Bundesrepublik Deutschland GmbH, Bonn.*

6.3 Aspiring to *interdisciplinarity*: Appearance over substance?

6.3.1 Initial concept ideas and forming the curatorial team

The Bundeskunsthalle was starting to think about an exhibition about capitalism as early as 2013. That year, Rein Wolfs had become the artistic director (2013–2019) of the institution, and in one of his first curatorial meetings, in which we discussed ideas for new exhibitions, WS suggested we develop an exhibition for the bicentenary of the birth of Karl Marx (1818–1883) in 2018. Rein Wolfs immediately welcomed the idea and shortly afterwards met with the president of the Federal Agency for Civic Education (bpb),[12] Thomas Krüger, who had been an important figure in the late 1980s GDR opposition and during the German unification. Already at that first meeting, they both agreed to collaborate on this exhibition project, in which the bpb eventually became a strong institutional – and *interdisciplinary* – partner. However, in 2014, at a meeting of the Bundeskunsthalle's board of trustees, consisting of representatives from all sixteen German states, Rhineland-Palatinate expressed the wish that the Bundeskunsthalle abandon the plan for an exhibition focusing on Karl Marx,

12 This institution is online accessible at www.bpb.de or in English at https://www.bpb.de/die-bpb/ueber-uns/federal-agency-for-civic-education/ (last accessed 17 July 2023).

because the state itself planned a series of large exhibitions involving several local museums in Karl Marx's birth town Trier for 2018. Since important loans were reserved for this event, the Bundeskunsthalle postponed its own plan and changed its thematic focal point. Instead of concentrating on Karl Marx, the institution's conceptual ideas now adopted a widened thematic approach by presenting capitalism as an economic and political system, its history, present form and possible alternative systems.[13] However, WS seemed to be less interested in this economic and political focus and, from early on, especially when he was finally assigned to develop a detailed exhibition concept in 2015, he argued for a more explicitly cultural historical and social perspective on the topic of capitalism.

With regard to the building of a curatorial team for the planned exhibition, an important shift seemed to take place after 2013, when the project was first introduced to the Bundeskunsthalle's programme board, an advisory board consisting of eminent national and international museum directors. According to the first very brief project outline for this occasion, WS had been assigned as internal exhibition manager[14] (at that time working at the Bundeskunsthalle), and an external 'academic curatorial team of historians, art historians and sociologists' was envisioned by WS with the initial approval of the institution. The choice of these three disciplines is revealing in two ways: Firstly, and more generally speaking, it shows that initially there existed a plan to establish an *interdisciplinary* team of academics for developing the exhibition concept and content. Secondly, the choice of disciplines demonstrates a rather hesitant attitude towards a more political approach to the topic as evidenced in WS's first ideas about the exhibition, which could be felt – and was later openly discussed – throughout the exhibition-making process. This palpable divergence regarding the politicization of the exhibition between WS and the Bundeskunsthalle made an additional cooperation with a decidedly political

13 Apart from the several exhibitions about Karl Marx planned for 2018 in Trier, other planned exhibitions later served as thematic references, for example, *Das Kapital* (The Capital) at the Museum für Arbeit, Hamburg (2017/18, https://www.hsozkult.de/exhibitionreview/id/rezausstellungen-303, last accessed 19 July 2023) and *Revolution! Für Anfänger*innen* (Revolution! For Beginners) at the Badisches Landesmuseum Karlsruhe (2018).

14 In the institution's internal understanding the title 'exhibition manager' at that time comprised the organization and realization of the exhibition as well as content-developing curatorial tasks.

partner, such as the Federal Agency for Civic Education (bpb), even more important from the institution's perspective.

Despite this content-related question, the organizational shift regarding the project team that must have taken place after 2013[15] was of fundamental importance for my research question: The idea of an *interdisciplinary* curatorial team was abandoned and WS became the sole curator of this exhibition until I was assigned co-curator and exhibition manager in 2018 (WS had meanwhile left the institution). The institution had thus established a rather *monodisciplinary* curatorial duo for the last two years of the exhibition-making process until the opening in 2020. At a curatorial level, the opportunity for an *interdisciplinary* project – by definition requiring a certain level of interaction with and integration of other disciplines – was missed, but according to a later project outline for the Bundeskunsthalle's programme board from May 2018 the exhibition was still categorized and labelled as 'interdisciplinary', at a point in time when it was already clear that this project was going to be multidisciplinary at most. This reveals the rather vague sense in which the term was applied. Seen in the light of the established definitions regarding *interdisciplinarity*, this attribution seemed to be more about appearance than substance in hindsight. The notion that 'interdisciplinarity' is regarded as a desirable hallmark of high quality in both academic and cultural contexts was already discussed in chapter 2 of this study. But here, the institution's 'quality control' – of what practical measures and resources an *interdisciplinarity* development process would have actually required –, and perhaps also its strength of purpose seemed to have been lacking. However, it is to the Bundeskunsthalle's credit, as the analysis of the development process of this exhibition will show, that the additional cooperation with the bpb functioned as a – if not equivalent, but highly significant – replacement for the abandoned idea of establishing an *interdisciplinary* curatorial team, as this external partner's *interdisciplinary* interventions added considerable depth to the resulting exhibition and its by-products.

15 This information was acquired from the archived evolving versions of project outlines and was confirmed in the interview with WS.

6.3.2 The *interdisciplinary* potential of the exhibition team including its external partners

Fig. 6.5: The disciplinary backgrounds of all participants of the exhibition team (curators and external partners).

In the following section I will introduce the project participants, firstly the curatorial duo, consisting of WS and myself, and secondly our additional external partners. Prior to this autoethnographical recounting of events, I have purposefully listed the various disciplines (see Fig. 6.5) the participants brought to this joint project[16], which comprised the development of an exhibition, a publication, and a digital game, to set the scene for the subsequent analysis of our collaboration (starting from section 6.4). This analysis will try to identify moments of purposeful and constructive *interdisciplinarity* within an overall predominantly multidisciplinary – meaning rather isolated – project environment. It will also show how the *interdisciplinary* potential of the exhibition team was only hesitantly used and largely remained an unretrieved treasure trove.

The art historian Wolfger Stumpfe (WS) had worked at the Bundeskunsthalle as exhibition manager and curator from 2010 until 2014. Before that period, he had been a freelance docent at the Bundeskunsthalle for many years and was therefore very familiar with the institution's programme history and museological approaches to temporary exhibition-making. Later he worked at the Deutsches Filminstitut & Filmmuseum (DFF) in Frankfurt am Main and

16 I asked the participants to name their studied disciplines during the interviews and feedback conversations.

at the Humboldt Forum in Berlin. In 2016, WS was contracted by the Bundeskunsthalle as external curator for the exhibition *We Capitalists*. In March 2018, the actual work on the exhibition finally began, when I was assigned to join the project. By then the show was scheduled to start in March 2020, giving us two years to realize the project. In the five years prior to this, WS had had ample time to develop his ideas and conceptual thoughts, which gave him a considerable lead over me regarding his knowledge on the topic. But what clearly united us from the start was our love for thematic exhibitions in general and our ambition to encircle the topic from multiple perspectives using diverse material object categories and educational tools.

Also in March 2018, I had just completed the exhibition *Weather Report* (see chapter 5) and had another exhibition titled *California Dreams. San Francisco – a Portrait* coming up from 12 September 2019 to 12 January 2020.[17] While I had served mainly as an organizing and managing curator in *Weather Report*, I was not only managing the latter exhibition but was also heavily involved as a co-curator in its content development and text production. This short description of my workload might partly account for my being a comparatively weak sparring partner – at least content-wise – for my co-curator WS in the exhibition *We Capitalists*. However, I had volunteered to take over this exhibition project, first and foremost, because the topic promised the chance to engage in a socially highly relevant political debate. Additionally, I cherished the opportunity this thematic exhibition seemed to provide regarding an *interdisciplinary* exhibition-making process. Perhaps, I remembered too vividly my political engagement as a student teenager during the 1980s, envisioning us in long and animated political discussions reflecting on capitalism. But, although this latter hope soon faded as it was quite unrealistic, I nevertheless very much enjoyed the multidisciplinary quality of the exhibition content and object choices suggested by WS and was looking forward to the collaboration with him and the additional external partners.

I am not an art historian like most of my curatorial colleagues at the Bundeskunsthalle but graduated in Chinese studies and have become more of a thematic generalist in two decades of temporary exhibition-making. Since 2016, I have been deeply engaged in theoretical research in museum studies,

17 The exhibition *California Dreams* had to be postponed for almost one year and had then moved dangerously close to the next exhibition I had to manage and co-curate, namely *We Capitalists*, which was scheduled to open in March 2020. This led to a double burden in my workload from 2018 until early 2020.

and all these facts in combination perhaps explain some of the differences between WS's and my approach to the topic, and to curating in general, but these will be addressed in more detail in sections 6.4.1 and 6.4.2.

After WS and I had spent most of 2018 working on the exhibition concept, the list of loans, and loan requests (see the following sections 6.4.1 and 6.4.2), towards the end of 2018 we entered a close collaboration with the Federal Agency for Civic Education (bpb). This cooperation was twofold:

(1) With the bpb's Print Department we conceptualized a publication that promised to become an *interdisciplinary* add-on to the exhibition *We Capitalists* as it tried to interweave our specific exhibition narrative and diverse choice of objects from art, history, archaeology, ethnography, science, and everyday life with several essays by eminent authors on the political, economic, and social implications of capitalism. In this collaboration, which will be described in more detail in section 6.5.1, the bpb's two editors, Miriam Shabafrouz and Benjamin Weiss, became important *interdisciplinary* sparring partners.

(2) Until early 2020, the bpb had a Project Group for Political Education and Culture (now dissolved within the bpb's Funding Department), led by Sabine Dengel. In addition to her, Lisa Philippen, research officer in this former project group, became another crucial external partner in the exhibition project *We Capitalists*, with whom I worked closely to initiate, conceptualize, and organize the development of a digital game for the exhibition. This project group was an exceptionally interesting experiment in the history of the bpb as it promoted a stronger outreach to cultural institutions like museums, for example, to find and create new methods and narratives for *political education* by exploring the potential of *cultural education*.[18] The resulting game for the exhibition also became a milestone regarding the Bundeskunsthalle's ambitions to develop new digital educational tools.[19]

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18 See https://www.bpb.de/gesellschaft/bildung/kulturelle-bildung/59956/neue-wege-fuer-politische-bildung (last accessed 19 July 2023). The specific distinction between these two terms in the German context will be addressed in section 6.5.1.

19 The *Capitalism Game* was nominated for the DigAMus Award 2020 which honours the best digital projects by German museums. Amongst 129 projects, the *Capitalism Game*

The latter collaboration involved another external partner, namely Playersjourney UG, a spin-off company of the research cluster gamelab.berlin/ Interdisziplinäres Labor Bild Wissen Gestaltung of the Humboldt-Universität zu Berlin, consisting of Thomas Lilge and Christian Stein, and also involving gamelab.berlin's research assistant Julia Trinkle. Defining itself as an 'interdisciplinary laboratory' on its website,[20] gamelab.berlin aims to reach out beyond the academy in its 'interdisciplinary, multiperspectival research into the phenomenon of play. [...] By linking university research and practical design, we [the website owners] hope to help open up entirely new dimensions in the interaction between theory and practice'. The inspiring cooperation with this research cluster for the development of a digital game for the exhibition *We Capitalists* will be discussed in section 6.5.2.

In autumn 2019, the last external partner to join this exhibition project came in with a surprisingly strong voice – given their late arrival in the process and considering the exhibition was to open in March 2020 – and was at least partially able to constructively disrupt the mostly monodisciplinary curatorial dialogue between WS and myself. These were the exhibition designers Markus Miessen and Lena Mahr. Their *interdisciplinary* contribution to this exhibition project will be a focus in section 6.5.3.

6.4 Multidisciplinary exhibition-making: Lonely decisions

The following sections of this case study will analyse the exhibition-making processes with respect to my research question, which aims to identify critical moments in our collaboration which created *interdisciplinarity* by enabling debate, or even dissent, and subsequent integration. Sections 6.4.1 and 6.4.2 will concentrate on the development of the exhibition concept and the research and loan acquisition of the exhibited artworks and objects. These two steps in the curatorial process did not yet involve the additional external partners but were conducted amongst the curatorial duo, consisting of WS and myself.

As postulated earlier, multidisciplinary exhibitions are typically curated by a single curator or a monodisciplined curatorial team controlling their production process, and this is what happened in this case. The exhibition concept and

was chosen in the category 'Apps & Games' for the shortlist of 24 projects: https://digamus-award.de/auswahlverfahren/digamus-shortlist/ (last accessed 19 July 2023).

20 See http://www.gamelab.berlin/en/home_en/ (last accessed 19 July 2023).

choice of objects were almost completed when the additional external partners entered the project. These two already completed components of the overall project must have seemed like a hermetical 'monolith' to which the partners, nevertheless, still tried to contribute. And, to a certain extent, they did succeed in pushing the exhibition concept's boundaries after all, instead of confining themselves to only engaging with the exhibition's two by-products (the accompanying book and the digital game) and the exhibition architecture (listed here as the last part of the production process according to the actual course of events). But the initial content development for the exhibition involved even lonelier decision-making processes, because even between the two curators a continuous collaboration was not possible during the production process, as the following diagram[21] exemplifies.

Fig. 6.6: Diagram showing the distribution of workloads and the different collaborating groups amongst the team members (including the external partners) charted along the tasks of the exhibition-making processes.

PROCESSES & PARTICIPANTS ***We Capitalists***	Institution (various colleagues)	WS Curator (external)	HP Curator (internal)	bpb External partner	Playersjourney External partner	Miessen External partner
Idea and Team Building						
Exhibition Concept						
Object Choice						
Book						
Exhibition Texts						
Game and Education						
Architecture						

Dark grey: high input
Light grey: low input

21 I owe the idea for this diagram (Fig. 6.6) to Weber 2012, p. 250. Katja Weber presents a diagram describing the intensity of participation regarding exhibition content development and decision-making processes along project phases, discerning between institutional (museum) and external participants.

The diagram attempts to visualize the imbalance (and division of responsibilities) during our collaboration, especially within the curatorial duo. None of the tasks that constituted the development of this exhibition were, in fact, jointly executed regarding a balanced size of input or desired intensity of collaboration. While WS was – for good practical reasons – predominantly in charge of the development of the exhibition concept, the initial research, and choice of objects as well as the production of the exhibition texts, the administrative loan acquisition, and the collaboration with the three additional external partners were mainly falling into my responsibility. My tasks also included negotiating the exhibition architecture and graphic design and organizing the actual realization of the exhibition and its by-products together with the internal team of the Bundeskunsthalle. As internal curator representing the institution, I was also authorized to take or convey the institution's 'final decisions' regarding the realization of the exhibition and its accompanying products. In crucial moments of the production process, this added an additional *hierarchical* imbalance to the working climate within our curatorial duo. Only in rare moments did my institutional obligations allow for a 'hierarchy-free room' (Lerchster and Lesjak 2014, p. 80) for negotiations within our curatorial team – ideally a moderated space without immediate institutional pressure (p. 80).

Nora Sternfeld, who advocates for a democratization of institutional processes in museums, warns of 'made-impossible conflicts, which have turned curators and educators into resources themselves' (Steinfeld 2018, p. 122), meaning a working environment that hinders democratic, creative, and productive debate and dissent. She writes of unspoken, 'sedimented and petrified conflicts' (pp. 121, 122) that are inherent in museums, both in objects and the people who work with them. Steinfeld asks how these conflicts 'could be kissed awake by us, and how they are kissing us awake' (p. 122). In the feedback conversation and interview between WS and me, it became clear that we both would have loved to have more time (and less additional workload) to risk 'acting out' existing conflicts instead of suppressing them, and that more dissent and active integration of our at times conflicting views would have probably further improved the resulting exhibition.

6.4.1 Concept development: Neutrality and open-minded resistance

The following section tries to trace the evolution of the exhibition concept especially regarding the dynamics and divergent viewpoints in our curatorial duo. Concerning the creative process of developing the exhibition concept, WS and

I regretfully agreed in hindsight (during the interview with him on 24 April 2020) that it was a lonely one. The concept, in fact, mainly resembles WS's reflections on the topic, as my organizational workload and curatorial engagement in the preceding exhibition did not allow an earlier and stronger involvement in the content development. By 2018, WS had already created an exhibition concept and preliminary list of objects on his own, which greatly impressed the involved representatives of the institution, including myself. The broad scale, on which WS's knowledgeable and imaginative concept addressed the complex topic of capitalism, and its explanatory clarity, were highly appreciated as well. But there were still aspects of his concept that prompted discussion.

> It must be borne in mind that capitalism cannot, any more than any other form of organisation, be judged by economic results alone. Account must also be taken of the social and cultural achievements for which the capitalist process provides both the means and the psychological prerequisites (J. A. Schumpeter 1946[22]).

This quote by the political economist Joseph Alois Schumpeter, which was plotted in large letters on a wall in the introductory room to the exhibition, already held the seeds for an at least multidisciplinary approach to the topic. But it also supported two important programmatic aims of WS's approach, (1) his *cultural historical* perspective on the topic, and (2) a *neutral* view on capitalism which also allowed for mentioning its historical achievements, such as its innovative power, alongside the legitimate criticism of the capitalist system's more extreme consequences for society and the environment, such as severe inequality. This second notion of neutrality was strongly disputed amongst the whole exhibition team including the artistic director of the Bundeskunsthalle and the additional external partners. Whilst we all agreed to discuss both pros and cons of the system of capitalism in our exhibition, we felt that WS avoided stronger critical statements, while hiding behind his aim of a 'neutral' presentation of the topic. Mieke Bal points out that 'neutrality is an actual rhetorical strategy rather than just a theoretical possibility' (Bal 2002, p. 31). In an attempt to add a more critical voice to the above quote by Schumpeter, I suggested Mark Fisher's

22 Schumpeter, J. A. (1946). 'Capitalism', in: Schumpeter, J. A., edited by Clemence, R. (1989). *Essays: On Entrepreneurs, Innovations, Business Cycles, and the Evolution of Capitalism*. New Brunswick and London: Transaction Publishers, p. 197.

famous ironic quote (after Fredric Jameson): 'It is easier to imagine the end of the world than to imagine the end of capitalism' (Fisher 2009, p. 2), which implies that it might still be useful to imagine alternative systems to capitalism after all. This quote was then plotted on the same wall in the introductory room to add some food for thought and discussion at the beginning of the show.

Fig. 6.7: This image shows the introductory room to the exhibition We Capitalists. *The entrance to the exhibition space is located in a side wall to the right (not in the picture), which also held the overall introductory text to the exhibition. Quotations by Joseph Schumpeter and Mark Fisher followed on the right side of the wall depicted in this image. Next came the opening sequence of the film* Teorema *by Pier Paolo Pasolini, Italy, 1968, c. 1:30 minutes, © Mondo TV s.p.a. Rome (centre), an initial text for* The Capitalism Game *(left on wall) and another part of Julian Röder's work,* Available for Sale*, 2007, © Julian Röder, courtesy Galerie Russi Klenner (left on floor). Photo: Laurin Schmid, 2020, © Kunst- und Ausstellungshalle der Bundesrepublik Deutschland GmbH, Bonn.*

Apart from WS, we all doubted the feasibility and reasonableness of a 'neutral' approach and would rather have agreed with Janes and Sandell who call neutrality a 'myth' (Janes and Sandell 2019, p. 8) as far as museum practice is concerned. Still, WS advocated an objective view on the topic, with multiple

voices and perspectives – *of his choice* – constituting a possible way towards objectivity (see Dubin 1999, p. 14). But by 'objective' he actually meant 'non-political'. As stated in the interview, WS believed it to be his educational duty as a curator to convey an analysis of capitalism as 'neutral' and 'non-political' as possible, for example, by not repeating the well-known comparisons between the systems of capitalism and socialism or communism. Instead, he wanted to fully concentrate on an in-depth, multi-perspective analysis of capitalism itself. We welcomed this latter approach, but at the same time doubted that it could (and should) ever be 'neutral' or 'non-political'.

This discussion is important with respect to this research because it constituted one of our very few interventions in WS's concept, which had already been largely viewed as set and ready for realization when I joined the project. The further *politicization* of the exhibition, or at least the open acknowledgement that the exhibition had been political all along (see Gesser et al. 2020, p. 26), could be described as an *interdisciplinary* moment within our collaboration, as it involved at least some degree of negotiation and integration. And this integration of multiple disciplinary voices and perspectives[23] – *chosen by other participants of the exhibition team* – did, after all, not lead to a non-political kind of objectivity but to an enhanced politicization of the exhibition and its by-products. Interestingly, visitor reactions proved WS right to a certain extent, as some, according to their own oral statements more conservative, visitors expressed their surprise and approval of the seemingly more balanced description of capitalism, because they had expected 'the usual' critical stance. In this environment they felt more open to also take in the more critical aspects of the exhibition narrative.

When WS and I explained the exhibition concept (as outlined in section 6.2) to the external partners, the colleagues from the bpb contributed a very important 'conceptual metaphor' (Bal 2002, p. 110) that changed our take on the topic. During a discussion about the structure of the planned publication they played with the idea of comparing the investigation of capitalism by its characteristic components to a DNA analysis, in order to reveal the internal structure of the system. This and subsequent creative discussions with colleagues from the bpb (which, for example, revolved around the psychological consequences of 'lifestyle capitalism') led not only to a necessary politicization but also to a

23 These other disciplinary perspectives especially included more critical views on capitalism from the fields of sociology, political science, and economics, but also, for example, questions concerning the psychological impact of capitalism on our lives.

palpable *emotionalization* of the topic, as we (the exhibition team) now asked ourselves to what extent this 'DNA of capitalism' has entered our own DNA, metaphorically speaking. WS welcomed this idea, which also changed the way in which we talked about the exhibition concept.

In the interview, WS said that he had hoped for more dialogue and integration, especially between the two of us, and that more time and energy for collaboration, mostly prevented by my workload, would have improved the concept. But during the exhibition-making process I often felt that he defended his ideas quite strongly and resisted a more substantial interference. I would therefore like to describe his attitude as an 'open-minded resistance', with all its ambivalent implications. On the one hand (and under different circumstances), WS would have welcomed my input and was clearly supporting *interdisciplinarity* in general:

> Interdisciplinary exhibition-making is useful in principle. I believe that the result is good, *but the process is difficult* [emphasis added]. For the resulting exhibition, I feel that this is the right way and that it is important to struggle and cope with other people's perspectives. I think this should be done with all exhibitions, actually. What sometimes makes exhibitions feel monotone or even boring, is perhaps that they are mostly done only by museum people who decide on whose voice is heard and whose perspective is included. Cultural scholars or curators often have a certain perspective that is not as diverse as it might seem (WS).

On the other hand, he seemed quite content – under the given circumstances, perhaps rightly so – with the multidisciplinary concept he had created by himself.

> The concept was created in a multi-perspective way within my own head. While I was taking in several perspectives from different disciplines, digesting them and spilling out this input in the form of the exhibition concept, I tried to minimize my own tunnel vision (WS).

This perfectly describes a multidisciplinary research process, in which knowledge from multiple disciplines is filtered through and controlled by one mind. Haas and Helmer suggest that this one mind can be understood as monodisciplinary in its methodological setting, although seemingly drawing from diverse disciplines, but not entering in any kind of negotiation. Under this definition 'the achieved synthesis remains […] mono-disciplinary' (Haas

and Helmer 2014, p. 55). Both of our positions within the curatorial team were 'monodisciplinary' in yet another way: Regarding our tasks, WS was the 'scholar' in this project, whereas I was the practical 'exhibition-maker'. Since each of us had been working in both (in my opinion both *curatorial*) roles in the past, we were rather reluctant to confine ourselves to these separated realms in this specific project, but the real – instead of ideal – circumstances still required this 'division of labour'.

Not surprisingly, WS described in the interview that he felt a certain 'open-minded resistance' on my part as well, because I, too, did repeatedly reject contributions from his side, but also for understandable practical reasons rooted in institutional requirements and deadlines. The pressure to realize the exhibition led to an almost complete stop in mutual negotiations between the two of us towards the end of the production process, as especially I was simply lacking the strength for them. This was especially the case in the last six months before the opening and predominantly concerned the exhibition design and installation, which I mostly saw through alone. However, that both of us stayed 'open-minded' until the opening despite all obstacles speaks to the quality of our curatorial partnership.

6.4.2 Object choices: A 'fascinating chaos'

> It is an ambitious undertaking to make an exhibition on such a complex topic. The experiment can be called successful, although only a few of the 250 objects are as captivating as the installation of the ransacked monkey's body [Mathias Böhler and Christian Orendt, *Give Us, Dear*, 2013, see Fig. 6.4]. What makes the exhibition appealing is that – compiled under general terms such as 'individualism', 'accumulation' or 'rationalization' – artworks, historical artefacts, and documents as well as objects from everyday life are presented together (Christoph Driessen about the exhibition *We Capitalists*, dpa [German Press Agency], 12/13 March 2020, transl. HP).

The diverse artworks and objects in the exhibition were contextualized in often surprising settings, sometimes seemingly communicating with each other for the first time. For example, a marble sculpture from around 1600 of the Roman philosopher Seneca, who had promoted that 'time is money' long before Benjamin Franklin, was presented in close proximity to an A net car phone from 1966 representing the acceleration in communication technology. Presumably, Seneca would have loved having this early mobile phone at hand while pursuing

his shady business deals. Nicholas Thomas describes the potential and often surprising relationships between objects as similar to 'a relationship between myself and a cousin of whose existence and identity I am ignorant' (Thomas 2016, p. 81). To put it in another way, Chris Dorsett frames this idea through Eilean Hooper-Greenhill (Hooper-Greenhill 2000) and her understanding of curatorial practice as 'inter-artefactual', referring to Julia Kristeva's concept of 'intertextuality' (Dorsett 2010, p. 249). In the case of our wide range of objects, this idea of the inter-artefactual was both exciting and frightening at the same time, because I doubted that we were fully aware of all the possible semiotic layers and relations that could have unfolded between each grouping of objects (pp. 249, 250). Amongst the exhibits there was a considerable amount of what Dorsett calls 'storage stuff' (p. 244) that had seemingly just been waiting for a new context and a 're-meaning' (p. 248, after Hooper-Greenhill 2000, p. 122). Dorsett's 'storage stuff', also described as 'a mass of "found objects"' (p. 245) interestingly relates to the term 'assemblage' that Klein uses to characterize multidisciplinary research (Klein 2010, p. 17). In art history an assemblage is defined as a three-dimensional collage, typically using found or bought objects.[24] Klein also mentions the term 'bricolage' regarding its usage in the humanities and identifies it as

> a trendy term for taking bits and pieces from various disciplines and fields. The positive connotation is the free play of creativity. Interdisciplinarity, however, requires more than an eclectic mix of concepts, methods, and terminology. It entails conscious triangulation of depth, breadth, and synthesis (Klein 2005, p. 66).

This quite accurately mirrors the research process for this exhibition, as many of the objects were admittedly found along the way of associatively encircling the exhibition's key themes, rather than chosen in a more targeted – and negotiated – research strategy. Both WS and I enjoyed this free style of research, and also took pleasure from the feeling that quite often objects seemed to find us rather than the other way round, and I regretted having only limited time for taking part in this adventurous quest, as compared to my co-curator.

What did these free associations produce? 'Chaotic, but entertaining', was how the culture columnist Thomas Kliemann described the 'fascinating exhibition' *We Capitalists* one day after the opening (*General-Anzeiger Bonner Stad-*

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24 https://www.tate.org.uk/art/art-terms/a/assemblage (last accessed 18 July 2023).

tanzeiger, 13 March 2020, transl. HP). Although I am not methodologically using examples of how the exhibition was perceived by media and critics, nevertheless some phrases in these sources are interesting and reaffirming regarding the taxonomy of interdisciplinarity. This press response is reminiscent of what Moti Nassani called a multidisciplinary 'fruit salad' as opposed to an *interdisciplinary* 'smoothie' (Repko 2008, p. 13, after Nissani 1995, p. 125) as an analogy for differing research processes and their results in an academic context. Another journalist used the word 'brainstorming' to describe our obviously diverse take on the cultural history of capitalism (*Kölner Illustrierte*, March 2020, transl. HP). The diverse pieces of disciplinary knowledge gathered in this exhibition were at least juxtaposed and assembled in an intentional and 'coordinated mode' rather than just in a 'sequencing mode' (Klein 2010, p. 17), but, although certainly forming new 'inter-artefactual' (Dorsett 2010, p. 249) relations, they largely remained 'non-integrative' bits and pieces reminiscent of a – nevertheless delicious – fruit salad.

The stories the diverse artworks and objects had to tell within the context of this exhibition, proved my co-curator wrong – in a very positive sense – in two respects: (1) They were not neutral and (2) many of them were potentially highly political regarding their usage and context. Sarah Pierce said in an interview with the bold title 'It's the thing that's going to mess everything up': '[…] for me it's quite a political proposition to bring things together for a moment of exhibition' (Pierce 2019, p. 275). And I would agree with her that curation itself is a political act in the first place (see also Sandell 2020, p. 52). WS certainly knew of the political potential of each and every object in this exhibition, because he himself conducted the research for most of them, and chose them exactly for their narrative potential, but for some reason, he was reluctant to acknowledge their political aspects. There was a certain kind of modesty and hesitation to raise his voice in his approach to curating when I would perhaps have preferred to be more outspoken about these aspects. For WS, his own achievement of conceptualizing the exhibition and researching possible exhibits, surprisingly, had not been a scholarly or academic research activity but had mainly served an educational purpose.

> In my opinion, curating is not an academic task, but an educational or perhaps translating kind of work. This is why I, as an art historian, can work on the topic of capitalism. I am translating the work of other academics – specialists – into the medium of an exhibition and prepare its content appro-

> priately. This means working with academic content, but it is not itself an academic activity (WS).

I would not see my work as a curator as modest and quiet as that and would instead view certain aspects of curatorial work as academic. In *The Return of Curiosity* Nicholas Thomas points out that the role of the curator needs to comprise 'enquiry' and 'exploration' as well as 'experimentation', and that 'research, exhibition and public engagement ought to be in dialogue' (Thomas 2016, p. 141) as parts of curatorial work. I understand exhibition-making as capable of producing *new knowledge*, for example, by re-discovering, re-thinking, re-interpreting or re-contextualising objects in a new and inspiring way. If I were not convinced of this, the application of the theories of interdisciplinarity studies (evolving from an academic context) to the field of exhibition-making would not work in the first place.

6.5 Creating *interdisciplinarity*: Allowing for interaction

The following observations will try to unpack further whether this exhibition project also allowed for integrative *interdisciplinary* moments and contributions that were more than just 'overtly interdisciplinary components' (Klein 1990, p. 56) in a multidisciplinary project. This section of the case study describes and analyses those parts and tasks of the exhibition-making processes in which I was able to take on a more active curatorial role as indicated in Fig. 6.6 (chapter 6.4), namely with respect to the by-products of the exhibition, a publication (6.5.1) and a digital game (6.5.2), as well as the exhibition architecture (6.5.3). In all three areas of the project, I deliberately understood myself as an enabler of *interdisciplinarity*, trying to purposefully open up our so far quite hermetical curatorial duo. With the support of the institution, this meant increasing the complexity of the overall project by enlarging the team and inviting disparate voices and potential dissent. This was done with the corresponding aim to enlarge the depth and horizon of the exhibition's content and ways of presentation.

6.5.1 The book: An *interdisciplinary* experiment between cultural and political education

As introduced in section 6.3 of this case study, the Bundeskunsthalle entered a close collaboration with the Federal Agency for Civic Education (bpb) in late 2018, first and foremost, to develop a joint and multi-perspective publication on the subject of capitalism. Thomas Krüger, president of the bpb, had been enthusiastic about the idea to produce not only a 'reading book' – the usual format of the bpb's publications –, but also a 'picture book' on this seemingly 'dry' topic.[25] We were not just attempting an illustrated reader, but the images in the book (representing a meaningful selection of artworks and objects from the exhibition) were supposed to tell their own story, following their own narrative amidst an array of political essays in the sense of an 'art meets science'-concept. With this Thomas Krüger and Rein Wolfs planted the seeds for a collaboration that would involve very different disciplinary research methods and working cultures. However, we all shared their enthusiasm and light-heartedly entered the cooperation, which rather surprisingly turned out to be more difficult – and more *interdisciplinary* – than expected.[26]

In addition to differing views about the book's content and aesthetics, especially our disparate understandings of its educational purpose led to persistent misunderstandings. Christian Stein (see section 6.5.2) has investigated how disciplinary language codes can provide considerable obstacles to interdisciplinary collaborations (Stein 2016, p. 20, see also Bal 2002, p. 34). As different as, for example, the term 'system' is understood within disciplines such as biology, computer sciences, and sociology (Stein 2016, p. 20), in our case different notions of the term 'education' led to persisting misunderstandings and conflicts, and were, unfortunately, revealed and fully understood only in hindsight.

As a matter of fact, both the resulting book as well as the digital *Capitalism Game* (see section 6.5.2) that were developed in collaboration with the bpb,

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25 These quotes are from my notes taken during a meeting at the bpb in Berlin on 30 November 2018.

26 The Bundeskunsthalle's first cooperation with the bpb's Print Department for the exhibition *TOUCHDOWN* starting from 2015 (see chapter 4), had been less controversial during its production process, probably also because the Bundeskunsthalle in that case provided the complete content for the joint publication, whereas in the case of *We Capitalists* the content development was a joint effort.

had to bridge a deep disciplinary gap between *political* and *cultural education*, which has its roots in German history. The political indoctrination of the Nazi era had led to an attempted clear cut between these two fields of education, which found one of its most prominent expressions in the Beutelsbacher Consensus[27] from 1976. This declaration advocated a mainly cognitive strategy of political education in order to prevent 'overpowering' effects (German: 'Überwältigungsverbot'), and to enable and empower pupils and students to conduct analytical controversy and debate. In this historical context, cultural education was met with a certain amount of scepticism, mainly because of the emotionalising and aestheticising aspects of its contents and methods. This scepticism was caused by the fear of political instrumentalization, and only in recent years a dialogue has started between the realms of political and cultural education, which had been separated for decades. This led to institutional and strategic barriers as well as divided professional networks which had also prevented a closer collaboration between the bpb (the political educationist) and the Bundeskunsthalle (the cultural educationist) before 2013. The fact that our joint project contributed to this significant discourse about a legitimate 'politicization of culture' and 'culturalization of politics', has been an *interdisciplinary* challenge – and success – in its own right.[28]

As much as this publication achieved an inspiringly integrative quality judged from its contents, the development process, at several times, seemed disparate beyond the hope of integration and often felt like a prejudiced 'culture clash' between the (perhaps sometimes merely imagined) differing demands and claims of political versus cultural education, or even science versus art. As representatives of the Bundeskunsthalle, we (allegedly only representing the arts and culture side of the collaboration) encountered, for example, substantial doubts regarding our exhibition practice that was perceived as ephemeral, as if this endangered or even ruled out a serious dedication to producing a lasting publication meeting academic standards.

However, these discussions and constructive conflicts amongst the team constituted the decidedly *interdisciplinary* moments and achievements of this book's production. Apart from his considerable textual contribution to the

27 See https://www.bpb.de/die-bpb/51310/beutelsbacher-konsens (last accessed 18 July 2023).

28 I owe the discussion of these correlations to a substantial feedback conversation with Lisa Philippen (bpb) on 24 September 2020 in Bonn. She has kindly given her consent to use information from our conversation in this chapter.

publication, WS participated in the structural and content discussions only at the beginning and then left the details to Miriam Shabafrouz (MS) and Benjamin Weiss (BW, both editors of the bpb), as well as Jutta Frings (the Bundeskunsthalle's head of media and publication) and me. Perhaps rooted in their differing disciplinary backgrounds, MS (focused on economic and political questions) had more difficulty accepting our cultural and art historical approach to the topic than BW (with his background in media and communication studies). MS suggested new artworks for the exhibition with a stronger focus on economics and, in some cases, criticized WS's choice of objects as being too historical and not up to date. WS and I defended our side of the book's content, and by defending it had to sharpen our arguments. The discussions about the book content and structure felt tiresome at the time but were in fact also strengthening the exhibition's content.

Fig. 6.8: The accompanying book of the exhibition We Capitalists, *Stumpfe et al. 2020, pp. 74/75. Photo: © Henriette Pleiger, 2023.*

RESSOURCEN: PRIVATEIGENTUM UND GEMEINGUT

In der frühen Neuzeit wandeln sich die Verhältnisse. Privateigentum gab es zwar vorher schon, es wurde aber selten ausschließlich verstanden. Auch wenn das Land Eigentümer hatte, besaßen andere oft Nutzungsrechte, durften auf abgeernteten Feldern Vieh weiden oder im Wald Brennholz suchen.

Die neue Vorstellung von Privateigentum orientiert sich an der Rechtsform des römischen *dominium*. Im Gegensatz zum *patrimonium*, dem Erbgut, das man von den Eltern erhält, nachhaltig nutzt und an die Kinder weitergibt, ist das *dominium* zum Verbrauch freigegeben, ohne Rechenschaftspflicht, solange man keine Rechte Dritter verletzt.

Rücksicht auf andere fordert auch John Locke, der in der Natur einen Überfluss an unkultivierten Rohstoffen sieht. Durch des Menschen Arbeit werden diese wertvoll und sein Eigentum. Als *homo faber*, als Schaffender verändert der Mensch aktiv seine Umwelt. Arbeit ist nicht mehr nur mühevolle Konsequenz der Vertreibung aus dem Paradies.

Die Aneignung der Natur ist bei Locke nur soweit erlaubt, wie Erworbenes verwertet werden kann, ohne zu verderben. Alles, was darüber hinausgeht, gehört den anderen. Akkumulation ist dennoch möglich, denn durch Tausch darf weniger Verderbliches erlangt werden, Äpfel gegen Nüsse, Schafe oder – Geld.

1 – **Alice Aycock, *Sands and Fans*, 1971. Galerie Thomas Schulte, Berlin**

The *interdisciplinary* quality of the resulting book lies in the combination of alternating image series and essays. The image series of chosen objects from the exhibition are not merely illustrating the essays but are following a separate and independent narrative throughout the book. The book is organized along the same structural keywords characterizing the system of capitalism

that could be found in the exhibition. Each chapter starts with an introduction to the term in question (for example, 'rationalism') and an image series (five to eight images with captions) from the exhibition, followed by one to three essays related to the keyword. The graphic designer supported this structure with an alternating colour scheme to highlight the artistic and cultural contributions to the book and to create a layout that was different to the bpb's usual publications in political education.

To exemplify the repeating structure of each chapter, I will describe one of them here. The chapter on 'Resources: Private and Common Property' (Stumpfe et al. 2020, pp. 74–93), for example, starts with a short text introducing the term 'property' (p. 74, see Fig. 6.8). These short texts introducing each chapter, written by WS, were also applied as wall texts in the exhibition, but in that context, they used a slightly less complex and thus more accessible language. A series of five images depicting artworks and objects from the exhibition follows, including captions which encircle and deepen the chapter's idea (pp. 74–81).

1. The artwork *Sands and Fans* (1971) by Alice Aycock (see Fig. 6.8). The included caption did not explain the artwork which consists of four fans blowing towards a large heap of sand in the middle of them. Instead, the caption introduced the global question of whether sand should be a common property instead of being subject to an enormous and unfair trade business. The sand trade between Singapore and Indonesia is given as an example, with extreme environmental consequences for the latter, weaker trade partner.
2. The *Salbuch* (Engl. urbarium or register of ownership) of the Saxonian Naumburg Monastery (1514) exemplified the emergence of private property in medieval times.
3. Still photograph from the film *Landraub* (Engl. land grab) by Kurt Langbein (2015). The film narrated the loss of land of small farmers in Cambodia to so-called development and investment projects by international financial groups.
4. Two maps of the De Beemster region (1607 and 1658) in the Netherlands and a model of a polder windmill (c. 1790) exemplified the creation of (exploitable) new land.
5. The artwork *Give Us, Dear* (2013) by Matthias Böhler and Christian Orendt (see Fig. 6.4). Hundreds of tiny figures are working on an almost eight meters long lying creature resembling a large monkey. The little figures harvest the animal's resources – its hair, flesh, teeth, nails and body fluids – and are carting them away through a hole in the wall. The animal – which

was perhaps the most impressive object in the whole exhibition – seems to be sleeping, but there is a feeling that it might wake up at any time.

Three essays follow this series of images: Vandana Shiva's 'Land and Ground as Common Property', Dirk Böttcher's 'The Curse of Raw Materials', and Susanne Heeg's 'Living in Capitalism: Who Must Stay Outside?' (Stumpfe et al. 2020, pp. 82–93, titles transl. HP). All three address very different recent aspects of the overall chapter theme. Although this mixture of times, places and questions might seem random and chaotic, it created an associative space around this specific aspect of capitalism reaching far down in history and beyond the Global North.

The multidisciplinary compilation of political essays adds to the quality of the book. The disciplines listed in the 24 biographies of the authors have an astoundingly wide range from economics, sociology, political sciences, mathematics, philosophy, anthropology, history, gender and feminist studies, and psychology to perhaps less expected fields such as physics, geography, theology, art history, archaeology, and drama. Typically for a multidisciplinary academic publication, the contributing authors were not invited to enter into a mutual dialogue, but their contributions were collected in an 'encyclopaedic' fashion (see Klein 2010, p. 17 or Potthast 2010, p. 180). But whilst the encounter of essays, artworks and objects in one publication was not that unusual from our side of the collaboration, it was rather new for the bpb, also causing fears of weakening the publications academic rigour. Their courage has to be applauded as the book received positive feedback, especially because of its unusual and integrative approach. For both institutions the experiment of this publication, which required complex negotiations and curatorial mediation on my part, proved to result in a valuable *interdisciplinary* product supporting the exhibition with respect to the depth of its content.

6.5.2 The *Capitalism Game*: Breaking disciplinary barriers

In cooperation with the bpb and the company Playersjourney UG of gamelab.berlin at the Humboldt-University, a digital game was developed, which was integrated into the exhibition *We Capitalists* as an educational tool. While the exhibition ended on 30 August 2020, the game remains available as an online offer on the websites of the Bundeskunsthalle (within the exhibition archive) and the Federal Agency for Civic Education (bpb). This permanent online version of the *Capitalism Game* was also realized within the context of

the significant increase of virtual educational formats during the coronavirus pandemic in 2020.

With the *Capitalism Game*, which was closely interwoven with the exhibition content, we tried together to find and create new methods and narratives for both political and cultural education. The game raises the question of identity construction in capitalism. During the game, the players collect 'egos', the in-game currency, by performing and 'selling' their emotions and are drawn into a 'shopping experience'. In advertised 'chats' with twelve individual exhibits offered for sale, the aim is to emotionally recognize one's own capitalist identity in the age of 'lifestyle capitalism'. Each player's consumerist behaviour is anonymously tracked throughout the game and results in an ostensibly individualized film, serving as both 'receipt' and 'prize'. The game is experienced as both fun and unsettling at the same time.

While the wall and label texts in the exhibition could be described as rather conventional, with regard to interpretation, the *Capitalism Game* proved to be an experimental and inventive educational tool that was welcomed by many visitors of all ages: 58.2 per cent (10,383 out of the total number of visitors of 17,830) played the game. Especially because of its chat dialogues that were both knowledgeable and entertaining, the game disrupted and at the same time supported the curatorial narrative. It also enabled visitors to – at least digitally – invade some showcases within an overall 'don't-touch place' (Dudley 2010, p. 11, see also Saunderson 2012) in much more intimate encounters than would be usually allowed in a museum, with the objects featuring in the game. The 'gamification' of the exhibition also helped with synthesizing the diverse material categories and contents of the exhibition.

On 8 October 2020, I conducted a feedback conversation about the joint development process of the game with Thomas Lilge (TL) and Christian Stein (CS) from Playersjourney UG.[29] This conversation was especially fruitful and instructive, as both my dialogue partners identify themselves as interdisciplinary researchers and are very familiar with the theoretical frameworks of interdisciplinary studies. In the literature review I discussed the similarities between interdisciplinary researchers and interdisciplinary curators, and many

29 Apart from this internal feedback conversation, the Bundeskunsthalle also published an online conversation about the game between Lisa Philippen (bpb), Christian Stein (Playersjourney UG), Benjamin Doum (Bundeskunsthalle's social media expert) and me on 20 August 2020: https://magazin.bundeskunsthalle.de/2020/08/das-kapitalismus-game/ (last accessed 19 July 2023).

of these observations regarding the potential and obstacles of our respective work practices were palpable during our conversation. As for our collaboration in this particular project, both TL and CS clearly described it as an *interdisciplinary* experience. The fact that both contracting institutions (the bpb and the Bundeskunsthalle) had managed to create time and space for a joint 'process of negotiation' and had expressed a 'sincere interest' in a joint production, including long 'swirling spirals of discussion' in which our respective 'source disciplines' did play a significant role regarding our differing perspectives, was named by CS as one of the reasons for this perception. Speaking from experience, CS emphasized that *interdisciplinarity* too often fails because the participants cannot agree on joint aims, values, and methods (see also Lerchster and Lesjak 2014).

From the academic perspective of TL and CS, this project also had a transdisciplinary component. As much as the development of the game's content resembled an *interdisciplinary* research process, they both understood its practical implementation as transdisciplinary, resembling an academic outreach activity. I provocatively asked them, whether the museum was merely sort of a 'front yard' or 'playground' of the university, in which they had left academic (and thus disciplinary) territory behind them. They answered with a theoretical definition which is circulated in online teaching material of the Humboldt-University: 'While interdisciplinary work aims at *more* knowledge, transdisciplinary work aims at *different* knowledge' (emphases added).[30]

In this sense, TL characterized the game narrative as a different way to *frame* and *convey* knowledge, at least different from an academic way of narration. Klein goes further in advocating '*rethinking* knowledge instead of only replicating it'[31] in an (academic or cultural) educational setting, and the game to a certain extent did that: It re-thought and extended the twelve chosen objects' stories (as presented in their exhibition labels) and enabled the game users to address and engage with these objects in a different way by entering into a fictitious conversation with them. In the first case study about the exhibition *TOUCHDOWN*, I discussed (and to a certain extent acknowledged) the definition of 'different knowledge' constituting transdisciplinarity, but I seriously doubt the above notion of viewing museums and exhibitions as

30 See https://www.rewi.hu-berlin.de/de/lf/ls/bae/wissen/intertransdisziplinaritaet (last accessed 19 July 2023).

31 Oral quote by Klein from the online conference of AIS (Association of Interdisciplinary Studies) on 6 December 2020.

non-academic places, and thus would refrain from categorising the game as transdisciplinary in the sense of it being an outreach activity. However, the game should be viewed as an *interdisciplinary* intervention and extension of the original exhibition concept, and thus it considerably added to the exhibition's interpretive and dialogical quality.

6.5.3 The exhibition architecture: An *interdisciplinary* intervention as enhanced politicization

The architecture and graphic design for this exhibition, which was developed comparatively late during the production process (less than half a year before the opening) entered the project with its strong individual voice that required negotiation and integration, moderated by me in my function as the exhibition manager, and can thus be understood as an *interdisciplinary* intervention. Exploring 'collaborative co-curation', Tricia Austin advocates to acknowledge and deploy exhibition designers 'as creative strategists, social mediators, user-centred enablers [and] inventive storytellers' to support museums as 'agents of change' (Austin 2018, p. 45). She attributes a stronger than usual role to designers, also in terms of enhancing and creating content, thus allowing them to contribute to originally curatorial tasks. This approach proved to be worthwhile in this particular exhibition case.

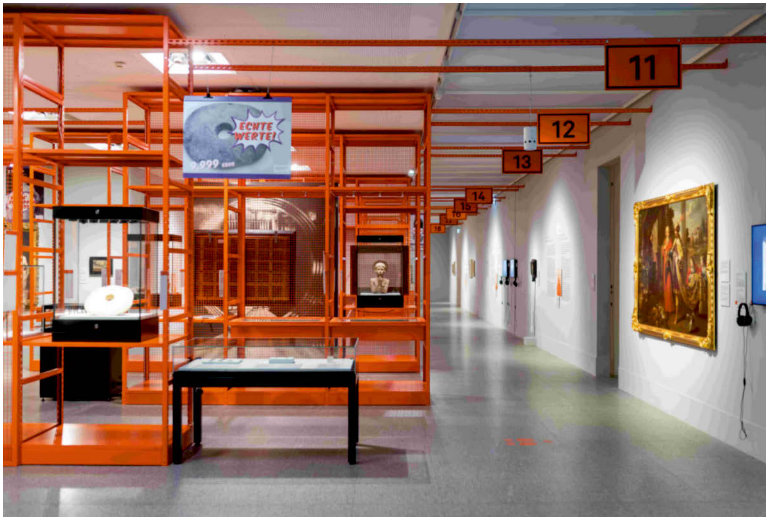
In their submission to the competition amongst four exhibition architects in November 2019, Markus Miessen Studio suggested an exhibition architecture consisting of a modular metal shelf system (meeting museum standards) in the colour RAL 2004 (pure orange). This bright – but also deliberately monotone – shelf system was supposed to 'rob the curated exhibits of their hierarchical references' (here and in the following quotes from Miessen's concept for the exhibition architecture: transl. HP). The overall aesthetics were 'oriented towards multinational logistic companies and data centres', evoking images of storage halls, server facilities or the like. Shelf numbers corresponding to the exhibition chapters supported the visual appearance which a radio report by the Westdeutscher Rundfunk (WDR, West German Broadcasting) aptly described as 'DIY store optic'[32] (see Fig. 6.9).

32 In German: 'Baumarktoptik', http://www1.wdr.de/kultur/wir-kapitalisten-bundskunst halle-bonn-102.html, published 12 March 2020. The cited content from this website is not available anymore.

> These aesthetics of rationalism and optimization reveal the processes of geopolitical reality in the microcosm of a specific architecture: as a physical spatialization of our virtual reality, in which every object is de-hierarchized, indexed and made distributable. Here capitalism shows itself in its purest form: in a spatialized and accelerated technocracy (Markus Miessen, transl. HP).

During the 1980s, the Swiss exhibition curator Harald Szeemann had been postulating that art needs protection in safe places such as museums to present 'an alternative to everything in our society that is geared to consumption and reproduction' (Meijers 1996, p. 7). Miessen's provocative architecture invaded this 'safe place' and came as a direct assault on the artworks and objects on display, overtly ignoring their diverse needs regarding materiality and style.

Fig. 6.9: Exhibition view We Capitalists*: rooms 6–12 / shelves 11–18. Photo: Laurin Schmid, 2020, © Kunst- und Ausstellungshalle der Bundesrepublik Deutschland GmbH, Bonn.*



While the objects within the exhibition assumed the character of commodities – or seemingly even hardware market goods –, the architecture of standardized industrial metal shelves had a second connotation as it was also

deliberately reminiscent of an archive system, suiting the rather encyclopaedic character of the exhibition.[33] This radical or even brutal concept-architecture, which assigned the same value to all objects, also helped unify the diverse materials on display. But to see oil paintings or fine art sculptures displayed in glaring orange metal shelves was at first very much against our usual ideas and aesthetic views.

At the beginning, WS and I were reluctant to accept this design – which was favoured by the institution's artistic director Rein Wolfs – as we had previously dreamt of the exhibition resembling, for example, the floor of a classic department store, in which the exhibition chapters would have been separated in a colourful and visually diverse array of differently designed rooms resembling fair booths. The monotony of the shelf system and its suggested bright orange colour frightened us. It also frightened us because of its curatorial strength. But, to our surprise, we soon began to embrace the idea as well as the fact that the shelf system became a strong exhibit – and political statement – in its own right. The whole exhibition had suddenly turned into a coherent art installation. And even though some encounters between objects and architecture really hurt the eye they felt somehow refreshing – and at the same time these moments of seemingly mere aesthetic pain strongly resembled the pain felt when encountering the capitalist commodification (commercialization) of things of emotional value. The exhibition thus also became a bodily experience in a subtly unsettling way, because the architecture itself had an 'interpretive function' as a 'spatial setting' (Hale and Back 2018, p. 343) that had 'transformed the act of curating into one of "staging"' (p. 341). In fact, this vivid setting even breathed new life into some of the more scholarly and allegedly old-fashioned objects, such as traditional wooden models. This was more than a merely supportive exhibition design. It was another strong curatorial voice entering – and *politicizing* – the exhibition, and can thus likewise be described as an *interdisciplinary* intervention. It embodied what Cristina Lleras et al. call 'activism through architecture' (Lleras et al. 2019, p. 147).

33 'Encyclopaedic' is amongst the descriptive vocabulary Klein uses for multidisciplinarity (Klein 2010, p. 17).

6.6 Conclusion

The exhibition-making process of *We Capitalists* was largely multidisciplinary regarding its content development and object choice, mainly because of the low intensity of integration within the curatorial duo, but the exhibition unfolded a significant *interdisciplinary* quality in the cooperation with its three additional external partners. The partners especially added political strength and courage to this project, which was already an inherent part of many object biographies (see Hill 2012) in this exhibition, but needed to be given a stronger voice, and that was reached through negotiation and collaboration. This integrative task formed a considerable part of my curatorial role and ambition in this particular exhibition project. Apart from the enhanced politicization of the exhibition's content and aesthetics, it was the digital game that added an emotional, individual experience and quality to the exhibition.

But this case study also showed that a multidisciplinary exhibition can still be a good exhibition. Notwithstanding the critique of this exhibition's internal development process, its wide encyclopaedic horizon, diversity of object categories and yet explanatory clarity have earned considerable public recognition and were by no means a failure. However, especially because its topic was of such social and political relevance, it profited from *interdisciplinary* interventions and extensions, and would have profited even more if its *interdisciplinary* potential had been used more purposefully. That this was not the case is also due to the fact that we viewed the production process of an exhibition as ending with the opening although the process of knowledge production definitely does not end on that date.

> Exhibitions have to get 'ready' in order to be opened. […] 'Voices from outside' will be let inside at a point in time, when the topics are set, when the basic ideas are defined, and when the remaining time until the opening runs short (Bose 2020, p. 273, transl. HP).

The exhibition *We Capitalists* coincided with a severe economic and social crisis after the global coronavirus outbreak in spring 2020. Capitalism, in many of its aspects that are affecting our daily lives, seemingly came to a halt, also causing a huge amount of anxiety and existential fear. The exhibition *We Capitalists* – even in its two months of lockdown – suddenly became a relevant commentary on the daily news, more relevant perhaps than it would have become without the COVID-19 crisis. In this situation, the cultural sector quickly became 'non-

essential' and deprived of substantial income due to closure and lockdown. However, mostly through social media, culture became an essential tool to help people cope with a very difficult situation. The exhibition showed that cultural education (and this was surprising only at first glance) can contribute to the analysis of an economic system at large or an economic state at a particular point in time, and thus may also play an important role in political education without the (well-founded) fear of indoctrination.

A press quote from the opening day summed the exhibition up as: 'A glance into the abyss of what we are. And how we became it.'[34] This quote shows that the exhibition was indeed understood as a political statement, despite our internal discussions. Museums and exhibition centres such as the Bundeskunsthalle need to join what Janes and Sandell (2019) call 'museum activism' and should contribute to tell and explain the stories of our political, social, economic, and environmental realities from multiple perspectives. Even more so with news like these, published shortly after the exhibition closed: An educational guidance of the conservative UK government from September 2020 equated anti-capitalism to an 'extreme political stance', which should not be taught in schools.[35] This showed once more how important it is to aim for and deliver a diverse cultural and political education in order to create an active and responsible society. I argue that interdisciplinarity as a method can support activism in museums, and I will further discuss this in the overall conclusion of this book.

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34 Westdeutscher Rundfunk (WDR, West German Broadcasting), http://www1.wdr.de/kultur/wir-kapitalisten-bundskunsthalle-bonn-102.html, published 12 March 2020, transl. HP. The cited content from this website is not available anymore.

35 *The Guardian*, 27 September 2020: https://www.theguardian.com/education/2020/sep/27/uk-schools-told-not-to-use-anti-capitalist-material-in-teaching (last accessed 19 July 2023).

7 Conclusion

7.1 Claiming interdisciplinarity as a method for museum practice: Is an interdisciplinary approach to exhibition-making also a matter of confidence?

This book contributes to a methodologically grounded discussion on interdisciplinary exhibition-making by applying a rich theoretical vocabulary from both museum and interdisciplinary studies to analyse three recent cases of thematic temporary exhibitions from my curatorial practice at the Bundeskunsthalle in Bonn, Germany. These case studies of specifically interdisciplinary exhibitions have been presented through the eyes of a researcher-participant with a transparent behind-the-scenes investigation of our practical production processes. By introducing, testing, and applying a more precise taxonomy of interdisciplinarity to exhibition theory and practice, based on the groundbreaking work of Julie Thompson Klein, this study has enabled a deeper understanding of this cultural practice, and acts as an advocate for institutional environments and standards which facilitate such interdisciplinary practice. It can perhaps also act as a helpful example for other museum and exhibition curators who are working on interdisciplinary exhibitions.

I have argued throughout that museums are in fact places where interdisciplinary research can happen in all its shades and grades. They are not just institutions that 'support humanities' (Klein 2005, p. 8) and other fields of academia, as Klein contestably writes in her book *Humanities, Culture, and Interdisciplinarity*, but places of research in their own right. This still prevailing notion of museums as front (or back) yards of academic knowledge production can perhaps help explain the continuing hesitancy in the museum context to use the general term interdisciplinarity when describing applicable collaborative work and research processes to begin with – let alone to use a precise terminology around interdisciplinarity, as it allegedly seems to ap-

ply and belong to academia rather than to cultural institutions. Instead, the production of knowledge in museums, when achieved through a collaboration including multiple perspectives, is often attributed the apparently more neutral (but closely related) term *participation*, which seems to be far more easily and readily used and researched in the field of museum studies than interdisciplinarity.[1] In *The Participatory Museum*, Nina Simon, for example, describes 'co-development collaboration' (Simon 2010, p. 237) as a model of participation, which in some cases could also well be framed as an *inter-* or transdisciplinary research strategy. Tellingly, she delineates the collaborative co-development of exhibitions and programs as 'often personally focused' 'creative projects', in which participants rather focus on sharing 'personal knowledge and experience', as opposed to 'institutionally focused' 'research collaborations […] with participants […] adding to institutional knowledge' (Simon 2010, p. 253), which seems to imply that exhibition-making is not a research activity. I oppose this distinction in the first place, but if the former were at least characterized as participatory and transdisciplinary projects[2], inviting different kinds of disciplinary and non-disciplinary knowledge (including the embodied and the everyday), and the latter as participatory and *interdisciplinary* projects, involving other disciplinary perspectives, these contributions to the knowledge production of a cultural institution could be empowered and enhanced in their value and appreciation.

Therefore, I have argued for a more *confident* usage and implementation of the theoretical discourse around interdisciplinarity and its terminology in museum studies as well as museum practice. Likewise, interdisciplinary studies (and academia at large) can learn more about and should acknowledge the potential of museums as sites of research, and specifically exhibition-making as a meaningful and available research method (see, for example, Thomas 2010) with the capacity to spark and create new knowledge.

Throughout this book I have been advocating for an interdisciplinary approach to exhibition-making in all its forms, especially when the topics of such exhibitions are of significant societal relevance, asking for multiple perspectives and voices to be included into their development process, as was in fact the case with the themes of the three discussed exhibitions in this study: learning disabilities (chapter 4), climate change (chapter 5) and capitalism (chap-

1 Interestingly, the literature in interdisciplinarity studies seems, in turn, to shun the term 'participation' as I elaborated on in section 2.2 of chapter 2.

2 As I deliberately chose to frame the exhibition *TOUCHDOWN* (see chapter 4).

ter 6). But this research journey – starting out from exploring its scope in the fields of museum studies and interdisciplinary studies in the literature review (chapter 2), on to establishing its theoretical framework in chapter 3, followed by applying the consulted and discussed literature as well as the theoretical tools and practical methods to the analysis of three interdisciplinary exhibition cases – also revealed the real-life complexities and possibilities for conflict in this cultural practice. Interdisciplinarity is basically about complicating things in a fruitful way. One might ask whether an interdisciplinary approach to exhibition-making is worth all these complexities? Moran has a convincing answer with regard to research and beyond it, stating that:

> interdisciplinary approaches [...] can challenge ossified, outmoded systems of thought and produce new, innovative theories and methodologies which open up the existing disciplines to new perspectives; and they can help people to think more creatively about the relationship between their own subject and other ways of doing things both within and outside universities (Moran 2010, p. 165).

It is this disruptive, creative, and experimental potential that makes interdisciplinarity a valuable tool or method for universities and museums alike, especially in times in which museums are starting to embrace the idea of activism as a way 'to shape a more sustainable, equitable and fair world' (Janes and Sandell 2019, p. xxvii).

7.2 Interdisciplinary exhibition-making: What does it take and what do you get?

In chapters 2 and 3 I have attempted to characterize multi-, *inter-* and transdisciplinary exhibitions in the sense of a typology, based on Klein's taxonomy of interdisciplinarity. And it has become clear, especially by testing these typologies during the analysis of the three case studies in chapters 4–6, that *interdisciplinary* and transdisciplinary exhibitions can be regarded as of a certain higher quality than multidisciplinary exhibitions. But what constitutes this specific higher quality? While multidisciplinarity does not include a fundamental discourse between the participating disciplines, *inter-* and transdisciplinarity require a growing intensity of cooperation and negotiation between disciplinary and non-disciplinary partners. Such projects have an experimental and discur-

sive quality that allows for an open outcome. And they enable innovation and novelty, categories I have discussed in the literature review (chapter 2) as desired merits of exhibition-making. But *inter-* and transdisciplinarity facilitate a different kind of innovation and novelty, different from the concepts of these terms that are first and foremost associated with economic growth. Instead of an encyclopaedic accumulation of innovative and new knowledge, these methods create and enable a greater depth and density of knowledge by contributing to its interwovenness. This increased integrative quality can spark new ideas, for example, by recognizing new connections and contexts. It is not only the 'accumulation of more and more knowledge' (Frodeman et al. 2010, p. xxx, as cited in the introduction to this book) that leads to a deeper understanding of the world, but the integration of the bits and pieces that we already know about the world, which leads us on to develop larger narratives, new insights, and better solutions for the big questions we are facing as a society.

But what does it take to use these methods in exhibition-making? Both in academia and culture, institutions that are promoting interdisciplinarity are not necessarily themselves providing an enabling environment for this research approach to thrive. All too often funding realities and economic goals clash with political ideals and even basic institutional needs. But what should such an environment that facilitates *inter-* and transdisciplinarity look like? An institutional consequence of applying the methods suggested here would be a degrowth in work speed, because interdisciplinary projects, like participatory projects, need a longer time frame – and thus also larger financial resources – for negotiations and joint decision-making processes. This means that institutions need to invest both time and money into these collaborative methods, in order to allow for slower curating that enables a more thoughtful and independent way of conceptualizing and realizing exhibitions. Apart from resources, interdisciplinary exhibitions need equality amongst the curatorial team members regarding their salaries, decision-making procedures, and a shared access to institutional work tools (as already stated in the conclusion of chapter 5). As the case studies have shown, it is not easy to adjust the curatorial and institutional roles to the needs of such projects, because their integrative quality can go along with not only the breakdown of disciplinary barriers but also of hierarchical levels. *Interdisciplinarity* and transdisciplinarity are also about overcoming hierarchies in joint decision-making processes that ideally lead to a synthesis of methods and content resulting in a collaboratively developed research project, such as an exhibition.

The research for this study, taking place over a period of eight years (2015–2023), has made my own curatorial practice both more purposeful and more realistic, as the chronology of the exhibition cases discussed in this book has shown. After one very ambitious transdisciplinary exhibition, namely *TOUCHDOWN. An exhibition with and about people with Down's syndrome* (see chapter 4), the institutional realities regarding time, finances, and workload did not allow for another exhibition project of that intensity of integration. Over the course of these years, I have become more aware of both the potentials but also the obstacles when using the method of interdisciplinary exhibition-making, and I have been trying to translate this awareness and deepened theoretical understanding into further exhibition projects.

After the exhibition *We Capitalists* in 2020 (see chapter 6), I worked on another large *interdisciplinary* exhibition in which positions from art, cultural history and the natural sciences were incorporated into the thematic enquiry, exhibition narrative and diverse object choice. This exhibition was titled *The Brain. In Art & Science*[3] (28 January until 26 June 2022 at the Bundeskunsthalle, Bonn) and involved an *interdisciplinary* curatorial team spanning the disciplines of medical history, brain research, philosophy, psychology, art history, and contemporary art to encircle the complex topic of the human brain. While finishing this study, I have been working on a new exhibition project on the ecological topic of land restoration that, again, plans to combine art and science, and I hope I will be able to conduct the method of *inter-* and transdisciplinary exhibition-making in the conceptual and procedural depth this both environmentally and socially important topic deserves. Originally entering this research as a practitioner, I have now transitioned back from researching and theorizing my curatorial work towards a more informed practice.

7.3 Limitations of this study and a plea for museum activism

As much as I have tried to advocate for the use of interdisciplinarity in museum practice and to incorporate some of the theories around this research method into the theory formation in museum studies, I am also aware of the

3 A comprehensive book accompanied the exhibition: https://www.hirmerverlag.de/de/titel-1-1/das_gehirn-2307/. A second slightly modified venue has been presented at the Berlin Museum of Medical History: https://bmm-charite.de/en/exhibitions/das-gehirn (both links last accessed 2 April 2024).

limitations of my research. I have been arguing for a wider and more pluralistic thematic horizon in exhibition-making, but the scope of my own research has been quite limited, as I have mainly focused on the content-creation in exhibition-making (including narratives and objects as well as their display and interpretation) and the knowledge production that the involved creative and at the same time rigorous development processes entail. With this focus, the perspective of my research has been that of a curator, not least because this is what I do in my professional practice. But apart from this fact, the reason for this narrow choice of research scope was also the notion that in museum practice the institutional processes that are taking place before the grand openings are not revealed, discussed, and analysed often enough, especially not in public. But I am keenly aware that such a discussion and analysis must also involve all the other museum professionals and related experts involved in exhibition-making to truly implement *interdisciplinarity* and transdisciplinarity as methods in museums and other cultural institutions. The works by Nina Simon (2010) and Susanne Gesser et al. (2012) have delivered more comprehensive studies about how to implement participation in museum work (see also Bjerregaard 2020, p. 10), and this is certainly something we should strive for in future research projects regarding interdisciplinarity in museum practice and theory.

Apart from a more differentiated and multivocal institutional viewpoint, another very important perspective is missing in this study, and that is an analysis of the visitors' reception. Do these different processes of collaborative research and knowledge production in a multi-, *inter*-, or transdisciplinary form that happen before an exhibition is finally opened, matter for the audience of an exhibition? As Peter Bjerregaard stated in what I used as the opening quote to this book, '[...] museums would be more attractive to both researchers and audiences if we consider exhibitions as *knowledge-in-the-making* rather than platforms for disseminating already-established insights' (Bjerregaard 2020, *Exhibitions as Research*, synopsis). My notion is that the audiences we work for and with, do appreciate a less apodictical approach to exhibition-making not only by presenting a creatively and deeply thought through 'thickened plot' (Rugoff 2015, p. 44), but also by

> bringing researchers and non-researchers together, by asking people to think through objects and space, and by asking research to transgress its internal jargon and formulate questions that can be shared by a general audience', inserting 'a layer of playful imagination to the research process

> that has the potential to guide research in new directions (Bjerregaard 2020, p. 11).

As much as we should not underestimate our own curatorial activities in the context of research, our audiences are also curious about and engaged with our research activities. And they can contribute to the research process themselves if we facilitate it, for example, by questioning the importance of the exhibition opening as a signal of an allegedly finished product. Therefore, in a spirit of allowing for change, open outcomes, and creative solutions, I would like to see *interdisciplinarity* and transdisciplinarity as additional tools for nurturing and enabling, what Robert Janes and Richard Sandell call 'museum activism', which should 'stimulate and inform new ways of thinking' (Janes and Sandell 2019, p. xxviii).

Bibliography

Adam, J., Haynes, J. D., Hauptmeier, A. and Pleiger, H. / Kunst- und Ausstellungshalle der Bundesrepublik Deutschland (ed) (2022). *Das Gehirn. In Kunst & Wissenschaft* [Brain. In Art & Science], München: Hirmer (https://www.hirmerverlag.de/de/titel-1-1/das_gehirn-2307/; last accessed 7 September 2023).

Adams, T. E., Holman Jones, S. and Ellis, C. (eds) (2013). Handbook of Autoethnography. Abingdon, Oxon and New York: Routledge.

Adams, T. E., Holman Jones, S. and Ellis, C. (eds) (2015). Autoethnography: Understanding Qualitative Research. Oxford: University Press.

Aldrich, J. H. (2014). Interdisciplinarity. Its Role in a Discipline-based Academy. Oxford and New York: Oxford University Press.

Anderson, L. (2006). 'Analytic Autoethnography', in: *Journal of Contemporary Ethnography*, 2006.35 (4), pp. 373–395.

Andreae, S. et al. (2017). *Wetterbericht: Über Wetterkultur und Klimawissenschaft* [Weather Report: About Weather Culture and Climate Science]. Dortmund: Kettler.

Armitage, A. and Ramsay D. (2020). 'A Poetic Approach to Researching Silence in Organisations', in: Ward, J. and Shortt, H. (eds). *Using Arts-based Research Methods*, Cham (Switzerland): Palgrave Macmillan, pp. 209–236.

Arnold, K. (2015). 'From Caring to Creating: Curators Change Their Spots', in: McCarthy, C. (ed). *International Handbooks of Museum Studies: Practice*. Hoboken, NJ: Wiley, pp. 317–339.

Arnold, M. et al. (2014). 'Interdisziplinär forschen' [Interdisciplinary Research], in: Dressel, G. et al. (eds). *Interdisziplinär und transdisziplinär forschen: Praktiken und Methoden* [Interdisciplinary and Transdisciplinary Research: Practices and Methods]. Bielefeld: transcript, pp. 105–119.

Augé, M. (2019). *Die Zukunft der Erdbewohner. Ein Manifest* [The Future of the Inhabitants of the Earth. A Manifesto]. Berlin: Matthes & Seitz.

Austin, T. (2018). 'The designer's role in museums that act as agents of change', in: MacLeod, S. et al. (eds). *The Future of Museum and Gallery Design: Purpose, Process, Perception*. Abingdon, Oxon: Routledge, 2018, pp. 45–58.

Baker, J. (2015). 'Anarchical Artifacts: Museums as Sites for Radical Otherness', in: Witcomb, A. and Message, K. (ed). *International Handbooks of Museum Studies: Museum Theory*. Hoboken NJ: John Wiley & Sons, Inc., pp. 63–77.

Bal, M. (2002, reprinted 2012). *Travelling Concepts in the Humanities: A Rough Guide*. Toronto, Buffalo, London: University of Toronto Press.

Balsamo, A. and Mitcham, C. (2010). 'Interdisciplinarity in Ethics and the Ethics of Interdisciplinarity', in: Frodeman, R. et al. (eds). *The Oxford Handbook of Interdisciplinarity*. Oxford: Oxford University Press, pp. 259–272.

Balzer, D. (2015). *Curationism: How Curating Took Over the Art World and Everything Else*. London: Pluto Press.

Bammer, G. (2013). *Disciplining Interdisciplinarity: Integration and Implementation Sciences for Researching Complex Real-World Problems*. Canberra: Australian National University E Press.

Barry, A. and Born, G. (eds) (2013). *Interdisciplinarity: Reconfigurations of the Social and Natural Sciences*. London and New York: Routledge.

Bartetzko, D. (1992). 'Sachlichkeit und Magie' [Objectivity and Magic], in: *Gustav Peichl. Von der Skizze zum Bauwerk* [Gustav Peichl. From the Sketch to the Building], Berlin, Ernst & Sohn, pp. 13–23.

Basualdo, C. (2015). 'The Unstable Institution', in: Marincola, P. (ed). *What makes a great exhibition: Questions of Practice*. Philadelphia: The Pew Center for Arts & Heritage, pp. 52–61.

Bathow, L. (2020). *Museen als Impulsgeber für nachhaltige Entwicklung? Untersuchung zu Möglichkeiten der Vermittlung von Nachhaltigkeit in der praktischen Museumsarbeit am Beispiel der Ausstellung 'Wetterbericht. Über Wetterkultur und Klimawissenschaft' der Bundeskunsthalle Bonn* [Museums as a source of impulses for sustainable development? Investigation into the possibilities of communicating sustainability in practical museum work using the example of the exhibition 'Weather Report. About Weather Culture and Climate Science' at the Bundeskunsthalle Bonn]. MA thesis, Stiftung Universität Hildesheim.

Baumgart, B. and Pleiger, H. (2018). 'Workshop "Partizipative Zugänge"' [Workshop 'Participatory Approaches'], in: Maul, B. and Röhlke, C. (eds). *Museum und Inklusion: Kreative Wege zur kulturellen Teilhabe* [Museum and Inclusion. Creative Ways of Cultural Participation]. Bielefeld: transcript (Edition Museum), pp. 111–119. https://doi.org/10.14361/9783839444207-011.

Baxandall, M. (1991). 'Exhibiting Intention: Some Preconditions of the Visual Display of Culturally Purposeful Objects', in: Karp, I. and Lavine, S. D. (eds). *Exhibiting Cultures: The Poetics and Politics of Museum Display*. Washington and London: Smithsonian Institution Press, pp. 33–41.

Bencard, A., Whiteley, L. and Thon, C. H. (2019). 'Curating experimental entanglements', in: Hansen, M. V., Henningsen, A. F. and Gregersen, A. (eds.). *Curatorial Challenges: Interdisciplinary Perspectives on Contemporary Curating*, London and New York: Routledge, pp. 133–146.

Bennett, T. (1995). *The Birth of the Museum: History, Theory, Politics*. London and New York: Routledge.

Bjerregaard, P. (2020). *Exhibitions as Research: Experimental Methods in Museums*. Abingdon, Oxon: Routledge.

Bjerregaard, P. (2020). Introduction, in: Bjerregaard, P. (ed.). *Exhibitions as Research: Experimental Methods in Museums*. London and New York: Routledge, pp. 1–16.

Boden, M. A. (1999). 'What is interdisciplinarity?', in: Cunningham, R. (ed). *Interdisciplinarity and the Organization of Knowledge in Europe*. Luxemburg: Office for Official Publications of the European Communities, pp. 13–24.

Börner, K. (2010). *Atlas of Science: Visualizing What We Know*. Cambridge MA, London: MIT Press.

Börner, K. and Boyack, K. W. (2010). 'Mapping Interdisciplinary Research', in: Frodeman, R. et al. (eds). *The Oxford Handbook of Interdisciplinarity*. Oxford: Oxford University Press, pp. 457–460.

Bose, F. (2020). 'Das Museum der Zukunft ist auch nicht mehr das, was es mal war: Zur Zeitlichkeit im Museum' [The museum of the future is no longer what it used to be: On temporality in the museum], in: schnittpunkt and Baur, J. (eds). *Das Museum der Zukunft: 43 neue Beiträge zur Diskussion über die Zukunft des Museums* [The museum of the future: 43 contributions to the discussion about the future of the museum]. Bielefeld: transcript, pp. 269–274.

Brett, B. M. and Wheeler, K. (2022). *How to do Qualitative Interviewing*. Thousand Oaks: Sage.

Burchert, L. (2018) 'Kunst instrumentalisiert im Kontext von Klimakonferenzen' [Art Instrumentalized in the Context of Climate Summits], in: *Zeitschrift Kunstchronik*, 2018(4), pp. 214–222.

Cameron, F. (2015). 'The Liquid Museum: New Institutional Ontologies for a Complex, Uncertain World'. in: Witcomb, A. and Message, K. (ed). *Interna-*

tional Handbooks of Museum Studies: Museum Theory. Hoboken NJ: Wiley, pp. 345–361.

Crew, S. R. and Sims, J. E. (1991). 'Locating Authenticity: Fragments of a Dialogue', in: Karp, I. and Lavine S. D. (eds). *Exhibiting Cultures: The Poetics and Politics of Museum Display*. Washington and London: Smithsonian Institution Press, pp. 159–175.

Dahlgren, P. and Hermes, J. (2015). 'The Democratic Horizons of the Museum: Citizenship and Culture', in: McCarthy, C. (ed). *International Handbooks of Museum Studies: Theory*. Hoboken NJ: Wiley, pp. 117–138.

Daston, L. (ed) (2004). *Things that Talk: Object Lessons from Art and Science*. New York: Zone Books.

De Bragança, K. et al. (2016). *TOUCHDOWN. Die Geschichte des Down-Syndroms* [TOUCHDOWN. The History of Down's Syndrome]. Kunst- und Ausstellungshalle der Bundesrepublik Deutschland and Bundeszentrale für politische Bildung (eds). Bonn: Bundeszentrale für politische Bildung, www.bpb.de.

Defila, R. et al. (eds) (2006). *Forschungsverbundmanagement: Handbuch für die Gestaltung inter- und transdisziplinärer Projekte* [Management of Research Clusters: Handbook for Inter- and Transdisciplinary Projects]. Zürich: vdf Hochschulverlag AG an der ETH Zürich (funded by the Austrian, German, and Swiss Education and Research Ministries).

Deutscher Museumsbund e.V. and ICOM-Deutschland (2023). *Standards für Museen* [Standards for Museums]. Berlin: https://icom-deutschland.de/images/Publikationen_Buch/dmb-leitfaden-standards-fuer-museen-online.pdf (last accessed 7 September 2023)

Dorset, C. (2010). 'Making Meaning Beyond Display', in: Dudley, S. (ed). *Museum Materialities: Objects, Engagements, Interpretations*, London and New York: Routledge, pp. 241–259.

Dressel, G. et al. (eds) (2014). *Interdisziplinär und transdisziplinär forschen: Praktiken und Methoden* [Interdisciplinary and Transdisciplinary Research: Practices and Methods] Bielefeld: transcript.

Dubin, S. (1999). *Displays of Power: Controversy in the American Museum from the Enola Gay to Sensation*. New York and London: New York University Press.

Dudley, S. (ed) (2010). *Museum Materialities: Objects, Engagements, Interpretations*, London and New York: Routledge.

Dudley, S., Barnes, A. J., Binnie, J., Petrov, J. and Walklate, J. (eds) (2012). *The Thing About Museums: Objects and Experience, Representation and Contestation*. Abingdon, Oxon and New York: Routledge.

Fisher, M. (2009). *Capitalist Realism: Is There No Alternative?* Winchester: Zero Books.

Flügel, K. (2014 [2005]). *Einführung in die Museologie* [Introduction to museology]. Darmstadt: Wissenschaftliche Buchgesellschaft.

Flyvbjerg, B. (2006). 'Five Misunderstandings About Case-Study Research'. In: *Qualitative Inquiry*, 12(2), April 2006, pp. 219–245.

Foster, V. (2016). *Collaborative Arts-based Research for Social Justice*. Abingdon, Oxon and New York: Routledge.

French, J. (2019). 'Auto Agents: Inclusive curatorship and its political potential', in: Janes, R. R. and Sandell, R. (eds). *Museum Activism*. London and New York: Routledge, pp. 152–163.

French, J. (2020). *Inclusive Curating in Contemporary Art: A Practical Guide.* Leeds: Arc Humanities Press.

Frodeman, R. (2014). 'The End of Disciplinarity', in: Weingart, P. and Padberg, B. *University Experiments in Interdisciplinarity. Obstacles and Opportunities*. Bielefeld: transcript, pp. 175–198.

Frodeman, R. et al. (eds) (2010). *The Oxford Handbook of Interdisciplinarity*. Oxford: Oxford University Press.

George, A. (2015). *The Curator's Handbook: Museums, Commercial Galleries, Independent Spaces*. London: Thames and Hudson.

Gesser, S., Gorgus, N. and Jannelli, A., (eds) (2020). *Das subjektive Museum* [The subjective museum]. Bielefeld: transcript.

Gesser, S., Handschin, M., Jannelli, A. and Leichtensteiger, S. (eds) (2012). *Das partizipative Museum* [The participatory museum]. Bielefeld: transcript.

Graff, H. (2015). *Undisciplining Knowledge: Interdisciplinarity in the Twentieth Century*. Baltimore: John Hopkins University Press.

Greenberg, R., Ferguson, B. W. and Nairne, S. (eds) (1996). *Thinking about Exhibitions*. Abingdon, Oxon and New York: Routledge.

Gurian, E. H. (2005). 'Threshold Fear', in: MacLeod, S. (ed). *Reshaping Museum Space: Architecture, Design, Exhibitions*. London: Routledge, pp. 203–214.

Haas, W. and Hellmer S. (2014). 'Differenzen wahrnehmen und erfahren' [Perceiving and experiencing differences], in: Dressel, G. et al. (eds). *Interdisziplinär und transdisziplinär forschen: Praktiken und Methoden* [Interdisciplinary and Transdisciplinary Research: Practices and Methods]. Bielefeld: transcript, pp. 51–64.

Hale, J. and Back, C. (2018). 'From body to body: architecture, movement and meaning in the museum', in: MacLeod, S. et al. (eds). *The Future of Museum*

and Gallery Design: Purpose, Process, Perception. Abingdon, Oxon: Routledge, 2018, pp. 340–351.

Halle, U., Hähn, C., Krause, S., Krause-Kyora, B., Nothnagel, M., Drichel, D. and Wahl, J. (2019). 'Die Unsichtbaren. Menschen mit Trisomie 21' [The Invisibles. People with a trisomy 21], in: *Archäologie und Anthropologie*, vol. 42, pp. 219–236, https://doi.org/10.11588/ai.2019.0.

Hamers, D., Bueno de Mesquita, N., Vaneycken, A. and Schoffelen, J. (eds) (2017). *Trading Places: Practices of Public Participation in Art and Design Research*. Barcelona: dpr-barcelona (Traders Series).

Hanks, L. H., Hale, J. and MacLeod, S. (2012). 'Introduction: Museum Making. The place of narrative' in: MacLeod, S., Hanks, L. H. and Hale, J. (eds). *Museum Making: Narratives, Architectures, Exhibitions*. Abingdon, Oxon: Routledge.

Hansen, M. V., Henningsen, A. F. and Gregersen, A. (2019). Introduction, in: Hansen, M. V., Henningsen, A. F. and Gregersen, A. (eds). *Curatorial Challenges: Interdisciplinary Perspectives on Contemporary Curating*, Abingdon, Oxon: Routledge, pp. 1–5.

Hansen, M. V., Henningsen, A. F. and Gregersen, A. (eds) (2019). *Curatorial Challenges: Interdisciplinary Perspectives on Contemporary Curating*, Abingdon, Oxon: Routledge.

Hauser, W. (2010). Exhibition Making as Knowledge Production or: Struggling with Artefacts, Visuals and Topographies, in: Lehmann-Brauns, S. et al. (eds). *The Exhibition as Product and Generator of Scholarship*. Berlin: Max Planck Institute for the History of Science, Preprint 399, pp. 49–58.

Heckhausen, H. (1972). 'Discipline and Interdisciplinarity', in: Apostel, L. et al. (eds). *Interdisciplinarity: Problems of Teaching and Research in Universities*. Paris: Organisation for Economic Cooperation and Development (OECD).

Hegewisch, K. (1991). 'Einleitung' [Introduction], in: Klüser, B. and Hegewisch, K. (eds). *Die Kunst der Ausstellung: Eine Dokumentation dreißig exemplarischer Kunstausstellungen dieses Jahrhunderts* [The Art of the Exhibition: Documenting Thirty Examples of Art Exhibitions of this Century]. Frankfurt am Main and Leipzig: Insel, pp. 8–15.

Heinich, N. and Pollak, M. (1996). 'From Museum Curator to Exhibition Auteur: Inventing a Singular Position', in: Greenberg, R., Ferguson, B. W. and Nairne, S. (eds). *Thinking about Exhibitions*. London: Routledge, pp. 231–250.

Heimerl, K. et al. (2014), 'Doing Inter- und Transdisziplinarität' [Doing Inter- and Transdisciplinarity], in: Dressel, G. et al. (eds). *Interdisziplinär und transdisziplinär forschen: Praktiken und Methoden* [Interdisciplinary and

Transdisciplinary Research: Practices and Methods]. Bielefeld: transcript, pp. 297–312.

Hennig, J. et al. (eds) (2010). *Weltwissen: 300 Jahre Wissenschaften in Berlin* [World Knowledge: 300 Years of Sciences in Berlin]. München: Hirmer.

Henting, H. von (2015[1987]). 'Polyphem oder Argos? Disziplinarität in der nichtdisziplinären Wirklichkeit' [Polyphem or Argus? Disciplinarity in a Non-disciplinary Reality], in: Kocka, J. (ed). *Interdisziplinarität: Praxis – Herausforderung – Ideologie* [Interdisciplinarity: Practice – Challenge – Ideology]. Frankfurt: Suhrkamp, pp. 34–59.

Herle, A. (2013), 'Exhibitions as research: Displaying the technologies that make bodies visible', in: *Museum Worlds*, 1(1): July 2013, https://doi.org/10.3167/armw.2013.010108.

Herle, A. et al. (2009). *Assembling Bodies: Art, Science & Imagination*. Cambridge: Museum of Archaeology and Anthropology, University of Cambridge.

Hill, K. (ed) (2012). *Museums and Biographies: Stories, Objects, Identities* (in the series *Heritage Matters*, vol. 9). Woodbridge (Martlesham), Suffolk: Boydell (& Brewer) Press.

Hoffmann, J. (2015). *Theater of Exhibitions*. Berlin, New York: Sternberg Press.

Hoffmann, S., Deutsch, L., Klein, J. T. and O'Rourke, M. (2022). 'Integrate the integrators! A call for establishing academic careers for integration experts', in: *Humanities and Social Sciences Communications*, 9(147), https://doi.org/10.1057/s41599-022-01138-z

Hooper-Greenhill, E. (2000). *Museums and the Interpretation of Visual Culture*. London: Routledge.

Huber, D. H. (2011). 'Presumptuous Claims', in: Trantow, K. et al. (eds). *Measuring the World: Heterotopias and Knowledge Spaces in Art*. Graz: Kunsthaus, pp. 224–235.

Huybrechts, L. (ed) (2014). *Participation Is Risky: Approaches to Joint Creative Processes*. Amsterdam: Valiz (Antennae Series).

International Handbooks of Museum Studies (2015). 4 volumes – Theory, Practice, Media and Transformations. Hoboken NJ: Wiley.

Jacob, T. (2017). *Partizipatives historisches Lernen im Museum. Untersuchung der Ausstellung 'TOUCHDOWN mit und über Menschen mit Down-Syndrom' (sic!) als Produkt der Public History* [Participatory historical education at the museum. Investigating the exhibition 'TOUCHDOWN with and about people with Down's syndrome' (sic!) as a product of public history], unpublished MA dissertation. Berlin: Freie Universität.

Jacob, W. (1992), 'Die Kunst- und Ausstellungshalle' [The Art and Exhibition Hall], in: Kunst- und Ausstellungshalle der Bundesrepublik Deutschland (ed), *Die Kunst- und Ausstellungshalle der Bundesrepublik Deutschland: Architekt Gustav Peichl* [The Art and Exhibition Hall of the Federal Republic of Germany: The Architect Gustav Peichl], Ostfildern bei Stuttgart: Hatje, pp. 9–12.

Janes, R. R. and Sandell, R. (eds) (2019). *Museum Activism*. Abingdon, Oxon and New York: Routledge.

Joas, H. (2005). 'Neue Aufgaben für die Sozialwissenschaften: Eine handlungstheoretische Perspektive' [New tasks for the social sciences: An action theory perspective], in: Joas, H. and Kippenberg, H. G. (eds). *Interdisziplinarität als Lernprozeß: Erfahrungen mit einem handlungstheoretischen Forschungsprogramm* [Interdisciplinarity as learning process: Experiences from a research programme based on action theory]. Göttingen: Wallstein, pp. 79–93.

Jungert, M (2010). 'Was zwischen wem und warum eigentlich? Grundsätzliche Fragen der Interdisziplinarität' [What is Actually Between Whom and Why? Fundamental Questions of Interdisciplinarity], in: Jungert, M. et al. (eds). *Interdisziplinarität: Theorie, Praxis, Probleme* [Interdisciplinarity: Theory, Practice, Problems]. Darmstadt: Wissenschaftliche Buchgesellschaft, pp. 1–12.

Jungert, M. et al. (eds) (2010). *Interdisziplinarität: Theorie, Praxis, Probleme* [Interdisciplinarity: Theory, Practice, Problems]. Darmstadt: Wissenschaftliche Buchgesellschaft.

Karp, I. (1991). 'Culture and Representation', in: Karp, I. and Lavine S. D. (eds). *Exhibiting Cultures: The Poetics and Politics of Museum Display*. Washington, London: Smithsonian Institution Press, pp. 11–24.

Keestra, M. (2019). 'Imagination and actionability: Reflections on the future of interdisciplinarity, inspired by Julie Thompson Klein', in: *Issues in Interdisciplinary Studies*, 37(2). pp. 110–129.

Klein, J. T. (1990). *Interdisciplinarity: History, Theory, and Practice*. Detroit: Wayne State University Press.

Klein, J. T. (1996). *Crossing Bounderies: Knowledge, Disciplinarities, and Interdisciplinarities*. Charlottesville: University Press of Virginia.

Klein, J. T. (2004). 'Prospects for transdisciplinarity', in: *Futures*, 36, pp. 512–526.

Klein, J. T. (2005). *Humanities, Culture, and Interdisciplinarity: The Changing American Academy*. Albany: State University of New York Press.

Klein, J. T. (2010). 'A taxonomy of interdisciplinarity', in: Frodeman, R. et al. (eds). *The Oxford Handbook of Interdisciplinarity*. Oxford: Oxford University Press, pp. 15–30.

Klein, J. T. and Parncutt, R. (2012). 'Art and Music Research', in: Frodeman, R. et al. (eds) (2010). *The Oxford Handbook of Interdisciplinarity*. Oxford: Oxford University Press, pp. 133–146.

Kocka, J. (ed) (2015 [1987]). *Interdisziplinarität: Praxis – Herausforderung – Ideologie* [Interdisciplinarity: Practice – Challenge – Ideology]. Frankfurt: Suhrkamp.

Kockelmans, J. J. (ed) (1979), *Interdisciplinarity in Higher Education*. Pennsylvania State University Press.

Krainer, L. and Smetschka, B. (2014). 'Ein Forschungsteam finden' [Finding a research team], in: Dressel, G. et al. (eds). *Interdisziplinär und transdisziplinär forschen: Praktiken und Methoden* [Interdisciplinary and Transdisciplinary Research: Practices and Methods] Bielefeld: transcript, pp. 65–78.

Latour, B. and Weibel, P. (eds) (2005). *Making Things Public: Atmospheres of Democracy*. ZKM, Center for Art and Media Karlsruhe. Cambridge MA, London: MIT Press.

Lattuca, L. R. (2001). *Creating Interdisciplinarity: interdisciplinary research and teaching among college and university faculty*. Nashville: Vanderbilt University Press.

Lehmann-Brauns, S. et al. (eds) (2010). *The Exhibition as Product and Generator of Scholarship*. Berlin: Max Planck Institute for the History of Science, Preprint 399.

Lerchster, R. and Lesjak B. (2014), 'Forschungsteams organisieren' [Organizing Research Teams], in: Dressel, G. et al. (eds). *Interdisziplinär und transdisziplinär forschen: Praktiken und Methoden* [Interdisciplinary and Transdisciplinary Research: Practices and Methods]. Bielefeld: transcript, pp. 79–89.

Lleras, C. et al. (2019). 'Memory Exercises: Activism, symbolic reparation, and non-repetition in Colombia's National Museum of Memory', in: Janes, R. R. and Sandell, R. (eds). *Museum Activism*. Abingdon, Oxon and New York: Routledge, pp. 139–151.

Löffler, W. (2010). 'Vom Schlechten zum Guten: Gibt es schlechte Interdisziplinarität?' [From Bad to Good: Is There Bad Interdisciplinarity?], in: Jungert, M. et al. (eds). *Interdisziplinarität: Theorie, Praxis, Probleme* [Interdisciplinarity: Theory, Practice, Problems]. Darmstadt: Wissenschaftliche Buchgesellschaft, pp. 157–172.

Lord, B. and Dexter Lord, G. (2002). *The Manual of Museum Exhibitions*. Walnut Creek, Lanham, New York, Oxford: Altamira Press.

Lorimer, A. (2007). 'Raising Specters: Welcoming Hybrid Phantoms at Chicago's Museum of Science and Industry', in: Macdonald, S. and Basu,

P. (eds). *Exhibition Experiments*. Malden MA, Oxford, Carlton: Blackwell, pp. 197–218.

Lutz, P., Macho, T., Staupe, G. and Zirden, H. (2003). *Der (im-)perfekte Mensch: Metamorphosen von Normalität und Abweichung* [The (im-)perfect human being: Metamorphoses of normality and divergence]. Köln: Böhlau.

Macdonald, S. (2002), *Behind the Scenes at the Science Museum*. Oxford: Berg.

Macdonald, S. and Basu, P. (eds) (2007). *Exhibition Experiments*. Malden MA, Oxford, Carlton: Blackwell.

MacLeod, S. (2021). *Museums and Design for Creative Lives*. Abingdon, Oxon: Routledge.

MacLeod, S., Hourston Hanks, L. and Hale, J. (2012). *Museum Making: Narratives, Architectures, Exhibitions*. Abingdon, Oxon: Routledge.

MacLeod, S., Austin, T., Hale, J. and Hing-Kay, O. H. (eds) (2018). *The Future of Museum and Gallery Design: Purpose, Process, Perception*. Abingdon, Oxon: Routledge.

Madea, A. (2018). Untersuchung zur Kommunikation des Anthropogenen Klimawandels anhand der Ausstellung 'Wetterbericht: Über Wetterkultur und Klimawissenschaft' in der Bundeskunsthalle Bonn [Investigation into the communication of anthropogenic climate change on the basis of the exhibition 'Weather Report: About Weather Culture and Climate Science' at the Bundeskunsthalle Bonn]. BA dissertation, Hochschule Bonn-Rhein-Sieg, Sankt Augustin.

Mai, E. (1986). *Expositionen: Geschichte und Kritik des Ausstellungswesens* [Expositions: History and Critique of the Exhibition Trade]. München, Berlin: Deutscher Kunstverlag.

Mannay, D. (2016). *Visual, Narrative and Creative Research Methods. Application, reflection and ethics*. Abingdon, Oxon and New York: Routledge.

Marincola, P. (ed) (2015). *What Makes a Great Exhibition: Questions of Practice*. Philadelphia: The Pew Center for Arts & Heritage.

Maul, B. and Röhlke, C. (eds) (2018). *Museum und Inklusion: Kreative Wege zur kulturellen Teilhabe* [Museum and Inclusion: Creative Ways of Cultural Participation]. Bielefeld: transcript (Edition Museum).

McCarthy, C. (2015). 'Introduction: Grounding Museum Studies: Introducing Practice', in: McCarthy, C. (ed). *International Handbooks of Museum Studies: Practice*. Hoboken NJ: Wiley, pp. xxxvi–lii.

Meijers, D. J. (1996). 'The museum and the "ahistorical" exhibition: the latest gimmick by the arbiters of taste, or an important cultural phenomenon?',

in: Greenberg, R., Ferguson, B. W. and Nairne, S. (eds). *Thinking about Exhibitions*. Abingdon, Oxon and New York: Routledge, pp. 7–20.

Melloh, L. (2018), *The Stories We Tell: Examining Climate Change Narratives Through the Art and Science Exhibition Weather Report*, unpublished BA dissertation, University of St Andrews.

Message, K. and Witcomb, A. (2015). 'Introduction: Museum Theory: An Expanded Field', in: Witcomb, A. and Message, K. (eds). *International Handbooks of Museum Studies: Theory*. Hoboken, NJ: Wiley, pp. xxxvi–lii.

Milliard, C. (2016). *The New Curator: Researcher, Commissioner, Keeper, Interpreter, Producer, Collaborator*. London: Laurence King Publishing.

Moran, J. (2010 [2002]). *Interdisciplinarity*. Abingdon, Oxon and New York: Routledge.

Morris, Hargreaves, McIntyre (2013). *Unpacking Exhibitions*. Manchester: Morris, Hargreaves, McIntyre.

Nicolescu, G. (2016). 'The Museum's Lexis: Driving Objects into Ideas', in: *Journal of Material Culture*, 21(4), pp. 465–489.

Nissani, M. (1995). 'Fruits, Salads, and Smoothies: A Working Definition of Interdisciplinarity', in: *The Journal of Educational Thought (JET) / Revue De La Pensée Éducative*, 29(2), pp. 121–128 (retrieved from www.jstor.org/stable/23767672).

Norton-Westbrook, H. (2015). 'The Pendulum Swing: Curatorial Theory Past and Present', in: McCarthy, C. (ed). *International Handbooks of Museum Studies: Practice*. Hoboken, NJ: Wiley, pp. 341–356.

Ohrenkuss ... da rein da raus – 2017 – Ein Update, 38, Bonn: downtown – Werkstatt für Kultur und Wissenschaft gGmbH, www.ohrenkuss.de.

Oprea, C. (2016). *The end of the curator: on curatorial acts as collective production of knowledge*, PhD thesis. Loughborough University: https://dspace.lboro.ac.uk/dspace-jspui/handle/2134/25605.

Osborne, T. (2013). 'Inter that Discipline!', in: Barry, A. and Born, G. (eds). *Interdisciplinarity: Reconfigurations of the Social and Natural Sciences*. London, New York: Routledge.

Phillips, R. (2019). 'Making Fun of the Museum: Multidisciplinarity, Holism, and "The Return of Curiosity"', in: *Museum and Society*, 17(3), pp. 316–341, https://journals.le.ac.uk/ojs1/index.php/mas/article/view/3216/2990.

Pickstone, J. V. (2000). *Ways of Knowing: A New History of Science, Technology and Medicine*. Manchester: University Press.

Pierce, S. (2019). '"It's the Thing That's Going to Mess Everything Up": Sarah Pierce in Conversation with Beatrice von Bismarck and Benjamin Meyer-

Krahmer', in: Von Bismarck, B. and Meyer-Krahmer, B. (eds). *Cultures of the Curatorial: Curatorial Things*. Berlin: Sternberg Press, pp. 270–278.

Pleiger, H. (2020). 'The "Inter-disciplined" Exhibition: A Case Study', in: *Museum and Society*, 18(4), pp. 349–367, https://journals.le.ac.uk/ojs1/index.php/mas/article/view/3132/3177 (last accessed 7 September 2023).

Pleiger, H. (2020). '#Closedbutactive? An exhibition trying to find its voice during lockdown', in: *Cultural Practices*, 28 July 2020, https://www.culturalpractice.org/article/closedbutactive-an-exhibition-trying-to-find-its-voice-during-lockdown (last accessed 25 February 2023).

Pleiger, H. (2021). 'Interdisciplinary exhibition-making as research practice', in: *SHAPE-ID Blog*, 18 May 2021, https://www.shapeid.eu/interdisciplinary-exhibition-making/ (last accessed 25 February 2023).

Pleiger, H. (2022). 'The Brain. In Art & Science': Curating an interdisciplinary exhibition' , in: *Cultural Practices*, 4 April 2022: https://www.culturalpractice.org/article/the-brain-in-art-and-science-curating-an-interdisciplinary-exhibition (last accessed 7 September 2023).

Plessen, M.-L., Spoerri, D. and Herzogenrath, W. (1979). *Entwurf zu einem Lexikon eines Musée Sentimental de Cologne: Reliquien und Relikte aus zwei Jahrtausenden 'Köln incognito'* [Draft for an Encyclopedia of a Musée Sentimental de Cologne: Relics and Relicts from 2000 Years 'Cologne Incognito']. Cologne: Kölnischer Kunstverein.

Polk, M. (2014). 'Achieving the promise of transdisciplinarity: a critical exploration of the relationship between transdisciplinary research and societal problem solving', in: *Sustainability Science*, 9(4), pp. 439–451. https://doi.org/10.1007/s11625-014-0247-7.

Potthast, T. (2010). 'Epistemisch-moralische Hybride und das Problem interdisziplinärer Urteilsbildung' [Epistemic-moral Hybrids and the Problem of Interdisciplinary Judgement Formation], in: Jungert, M. et al. (eds). *Interdisziplinarität: Theorie, Praxis, Probleme* [Interdisciplinarity: Theory, Practice, Problems]. Darmstadt: Wissenschaftliche Buchgesellschaft, pp. 173–191.

Quina, J. and Greenlaw, M. J. (1975). 'Science Fiction as a Mode for Interdisciplinary Education', in: *Journal of Reading*, 19(2), pp. 104–111. (Published by: International Literacy Association and Wiley: https://www.jstor.org/stable/40031448).

Reestorff, C. M. et al. (2014). 'Introducing cultural participation as a transdisciplinary project', in: *Conjunctions. Transdisciplinary Journal of Cultural Participation*, 1(1), https://doi.org/10.7146/tjcp.v1i1.18601.

Repko, A. F. (2008). *Interdisciplinary Research: Process and Theory*. Thousand Oaks: Sage.

Rieger, J. (2016), *Doing Dis/ordered Mapping/s: Embodying Disability in the Museum Environment*, PhD thesis, University of Alberta: https://era.library.ualberta.ca/items/72964556-d167-4126-8373-f1a97931185b/view/b4e84abf-3d26-43cf-bbf0-c277a8684633/Rieger_Janice_L_201609_PhD-20.pdf (last accessed 10 July 2023).

Rugoff, R. (2015). 'You Talking To Me? On Curating Group Shows that Give You a Chance to Join the Group', in: Marincola, P. (ed). *What Makes a Great Exhibition: Questions of Practice*. Philadelphia: The Pew Center for Arts & Heritage, pp. 44–51.

Salter, L. and Hearn, A. (1996). *Outside the Lines: Issues in Interdisciplinary Research*. Montreal & Kingston, London, Buffalo: McGill-Queen's University Press.

Sandahl, J. (2020). 'In Place of Denial: The Skills of Honoring Difference and Disagreement', in: schnittpunkt and Baur, J. (eds). *Das Museum der Zukunft: 43 neue Beiträge zur Diskussion über die Zukunft des Museums* [The museum of the future: 43 contributions to the discussion about the future of the museum]. Bielefeld: transcript, pp. 235–240.

Sandell, R. (2020). 'Statement: "Das subjective Museum"', in: Gesser, S., Gorgus, N. and Jannelli, A. (eds). *Das subjektive Museum* [The subjective museum]. Bielefeld: transcript, pp. 52–53.

Saunderson, H. (2012). '"Do not touch": A discussion on the problems of a limited sensory experience with objects in a gallery or museum context', in: Dudley, S., Barnes, A. J., Binnie, J., Petrov, J. and Walklate, J. (eds). *The Thing About Museums: Objects and Experience, Representation and Contestation*. Abingdon, Oxford and New York: Routledge., pp. 159–170.

Schipper, E. L. F., Dubash, N. K. and Mulugetta, Y. (2021). 'Climate change research and the search for solutions: rethinking interdisciplinarity', in: *Climatic Change*, 168(18), pp. 1–11. https://doi.org/10.1007/s10584-021-03237-3.

Schnegg, M. (2012). 'Szenografie partizipativ. Der Ausstellungsraum und die partizipative Formfindung' [Participatory scenography. The exhibition space and the participatory form-finding]), in: Gesser, S., Handschin, M., Jannelli, A., Leichtensteiger, S. (eds). *Das partizipative Museum* [The participatory museum]. Bielefeld: transcript.

Schorch, P. (2013). 'Contact Zones, Third Spaces, and the Act of Interpretation', in: *Museum and Society*, 11(1), pp. 68–81.

Sheikh, S. (2015). 'Towards the Exhibition as Research', in: O'Neill, P. and Wilson, M. (eds). *Curating Research: Occasional Table*. London: Open Editions, pp. 32–46.

Silverman, D. (2017). 'How was it for you? The Interview Society and the irresistible rise of the (poorly analysed) interview', in: *Qualitative Research*, 17(2), pp. 144–158. https://doi.org/10.1177/1468794116668231.

Simon, N. (2010). *The Participatory Museum*. Santa Cruz: Museum 2.0.

Souhami, R. (2011). Exhibition Production as Processes of Translation. University of Manchester: *PhD thesis.*

Spock, D. (2015). 'Museum Exhibition Tradecraft: Not an Art, but an Art to It', in: McCarthy, C. (ed). *International Handbooks of Museum Studies: Museum Practice*. Hoboken NJ: Wiley, pp. xxxvi–lii.

Starbuck, J. M. (2011). 'On the Antiquity of Trisomy 21: Moving Towards a Quantitative Diagnosis of Down Syndrome in Historic Material Culture', in: *Journal of Contemporary Anthropology*, II(1), pp. 19–44: https://docs.lib.purdue.edu/cgi/viewcontent.cgi?article=1019&context=jca (last accessed 11 July 2023)

Stein, C. (2016). 'Einen neuen Sprachraum definieren: Für Interdisziplinarität braucht es mehr als nur eine fachübergreifende Zusammenarbeit' [Defining a new language area: Interdisciplinarity needs more than cross-disciplinary collaboration], in: *Junge Akademie Magazin*, 21, pp. 19–21.

Sternfeld, N. (2018). *Das radikaldemokratische Museum* [The radically democratic museum], in the series: *curating. austellungstheoorie & praxis*, vol. 3, Edition Angewandte, Berlin/Boston: de Gruyter.

Storr, R. (2015). 'Show and Tell', in: Marincola, P. (ed). *What Makes a Great Exhibition: Questions of Practice.* Philadelphia: The Pew Center for Arts & Heritage, pp. 14–31.

Strathern, M. and Khlinovskaya Rockhill, E. (2013). 'Unexpected Consequences and Unanticipated Outcome', in: Barry, A. and Born, G. (eds). *Interdisciplinarity: Reconfigurations of the Social and Natural Sciences*. London, New York: Routledge, pp. 119–140.

Stumpfe, W., Pleiger, H., Shabafrouz, M. and Weiss, B. (2020). *Wir Kapitalisten* [We Capitalists], Bundeszentrale für politische Bildung/bpb and Kunst- und Ausstellungshalle der Bundesrepublik Deutschland (eds), in the series: *Zeitbilder*. Bonn: bpb.

Szostak, R. (2017). Why we should not ignore interdisciplinary's critics. https://blogs.lse.ac.uk/impactofsocialsciences/2017/12/07/why-we-sh

ould-not-ignore-interdisciplinaritys-critics/ (last accessed 7 September 2023).

Sukopp, T. (2010). Interdisziplinarität und Transdisziplinarität. Definitionen und Konzepte [Interdisciplinarity and Transdisciplinarity. Definitions and Concepts], in: Jungert, M. et al. (eds). *Interdisziplinarität: Theorie, Praxis, Probleme* [Interdisciplinarity: Theory, Practice, Problems]. Darmstadt: Wissenschaftliche Buchgesellschaft, pp. 13–29.

Tabassomi, L. (2010). 'Was ist eine gute Ausstellung?' [What is a Good Exhibition?]. Interviews with six curators, in: *Bulletin Seedamm Kulturzentrum* (Vögele Kultur Bulletin), 88, Pfaeffikon: Charles und Agnes Vögele Foundation.

Te Heesen, A. (2012). *Theorien des Museums zur Einführung* [Introduction to Museum Theories]. Hamburg: Junius.

Tellmann, B. and Knaup, M. (2019). 'Workshop "Mit allen Sinnen"' [Workshop 'With all senses'], in: Maul, B. and Röhlke, C. (eds). *Museum und Inklusion: Kreative Wege zur kulturellen Teilhabe* [Museum and Inclusion: Creative Ways of Cultural Participation]. Bielefeld: Transcript (Edition Museum), pp. 121–129.

Thomas, N. (2010). 'The Museum as Method', in: *Museum Anthropology*, 33(1), pp. 6–10.

Thomas, N. (2016, reprint 2017), *The Return of Curiosity: What Museums Are Good For in the 21st Century*. London: Reaktion Books.

Tyradellis, D. (2014) *Müde Museen: Oder wie Ausstellungen unser Denken verändern könnten* [Tired Museums: Or How Exhibitions Can Change our Ways of Thinking], Hamburg: Edition Körber.

Tyradellis, D. et al. (eds) (2011). *Wunder: Kunst, Wissenschaft und Religion vom 4. Jahrhundert bis zur Gegenwart* [Wonder: Art, Science and Religion from the 4th Century to the Present]. Köln: Snoeck.

Vanover, C. F., Mihas, P. A., Saldana, J. (eds) (2021). *Analyzing and Interpreting Qualitative Research: After the Interview. Thousand Oaks: Sage.*

Vienni-Baptista, B. (2023). 'Disentangling Interdisciplinarity and Transdisciplinarity: The Beauty of Differing Definitions', in: Pombo, O., Gärtner, K. and Jesuíno, J. (eds). *Theory and Practice in the Interdisciplinary Production and Reproduction of Scientific Knowledge: ID in the XXI Century*. Cham: Springer, pp. 59–76. DOI: 10.1007/978-3-031-20405-0_2.

Vogel, K. and Staupe, G. (2001). *Der (im-)perfekte Mensch: Vom Recht auf Unvollkommenheit* [The (Im-)perfect Human: About the right to imperfection].

Stiftung Deutsches Hygiene-Museum and Deutsche Behindertenhilfe – Aktion Mensch e.V. (eds). Ostfildern-Ruit: Hatje Cantz.

Vollmer, G. (2010). 'Interdisziplinarität – unerlässlich, aber leider unmöglich?' [Interdisciplinarity – necessary, but sadly impossible?], in: Jungert, M. et al. (eds). *Interdisziplinarität: Theorie, Praxis, Probleme* [Interdisciplinarity: Theory, Practice, Problems]. Darmstadt: Wissenschaftliche Buchgesellschaft, pp. 47–75.

Von Bismarck, B. (2002). 'Verhandlungssachen: Rollen und Praktiken in der Projektarbeit' [Matters of Negotiation: Roles and Practices in Project Work], in: Huber, H. D. et al (eds). *Kunst des Ausstellens: Beiträge, Statements, Diskussionen* [The Art of Exhibiting: Articles, Statements, Discussions], Ostfildern-Ruit: Hatje Canz, pp. 229–236.

Waterfield, G. (2015). 'The Temporary Exhibition: Nest or Cuckoo?', in: Waterfield, G., *The People's Galleries: Art Museums and Exhibitions in Britain, 1800–1914*. New Haven and London: Yale University Press, pp. 175–195.

Weber, K. (2012). 'Ostend//Ostanfang. Ein Stadtteil im Wandel: Die erste partizipative Stadtlabor-Ausstellung des historischen museums frankfurt' [Ostend//Ostbeginning. A city quarter in transition: The first city laboratory exhibition of the historischen museums Frankfurt], in: Gesser, S., Handschin, M., Jannelli, A. and Leichtensteiger, S. (eds). *Das partizipative Museum* [The Participatory Museum]. Bielefeld: transcript, pp. 246–250.

Weingart, P. and Padberg, B. (2014). *University Experiments in Interdisciplinarity: Obstacles and Opportunities*. Bielefeld: transcript.

Whatmore, S. J. (2013). 'Where Natural and Social Science Meet? Reflections on an experiment in geographical practice', in: Barry, A. and Born, G. (eds). *Interdisciplinarity: Reconfigurations of the Social and Natural Sciences*. London and New York: Routledge.

Whitehead, C. (2009). *Museums and the Construction of Disciplines: Art and Archaeology in Nineteenth-century Britain*. London: Duckworth.

Appendix: Interview questions

These interview questions for external exhibition/museum curators and other academics/professionals (during the process becoming curators), who collaborated in the three interdisciplinary exhibitions that were discussed in this book and were managed and co-curated by the author at the Bundeskunsthalle in Bonn, Germany, were used in six semi-structured qualitative interviews:

(1) In 2018: Two separate interviews with two colleagues about the exhibition *Weather Report. About Weather Culture and Climate Science* (2017/2018)
(2) In 2020: One interview with one colleague about the exhibition *We Capitalists. From Zero to Turbo* (2020)
(3) In 2021: Three separate interviews with four colleagues about the exhibition *TOUCHDOWN. An exhibition with and about people with Down's syndrome* (2016–2018)

Introduction to the interview

We have collaborated in the interdisciplinary exhibition project XXX, and I would like to reflect on our collaboration together with you by asking you the following questions. I am especially interested in the process of developing an interdisciplinary exhibition, rather than in its reception by the audience and the media. Additionally, I am interested in the question of whether we have inspired and created new knowledge while researching and developing this exhibition.

The terminology of 'interdisciplinarity': Following the established taxonomy in science theory, I discern between three types of interdisciplinarity.

Multi-, *inter-* (in a narrower sense) and transdisciplinarity describe increasing qualities and intensities of integration in the collaboration between different academic disciplines and possibly also other non-academic stakeholders. Multidisciplinarity is defined as the loosest form of collaboration between different disciplines, whereas transdisciplinarity is understood as the most integrative form. However, transdisciplinarity also refers to the integration of non-academic, embodied, or everyday knowledge. *Interdisciplinarity* requires the joint questioning and rethinking of pieces of knowledge with regard to a research question, instead of merely assembling them encyclopaedically in a multidisciplinary way.

General questions

1. Did you already have experiences in interdisciplinary exhibitions or interdisciplinary academic collaborations prior to this project?
2. How did you expect to benefit from our collaboration of making an interdisciplinary exhibition at the beginning of the process?

Developing a joint exhibition concept

3. Did the exhibition topic deserve a conceptual approach from multiple perspectives? If yes, why so?
4. How would you describe the creative process during which we developed a joint exhibition concept? Was there enough room for interaction and creativity?
5. Can you give an example for differing working cultures within our interdisciplinary curatorial team, especially regarding work/research methods?
6. If you compare your early conceptual ideas about this exhibition with the final result, have you been able to tell your story or did you have to leave out important contents or objects for compromise's sake?
7. How did we resolve moments of crisis within the curatorial team? Was there enough mediation?
8. Do you find that the resulting exhibition concept covered all important aspects of the topic? Or did we perhaps even cover too many aspects of the topic, so that the exhibition turned out to be too complex?

Choosing objects in an interdisciplinary team

9. Was there enough discussion and negotiation about the object choices within the team?
10. Was there a point in the process where you feared that the objects finally approved for loan would seem like a random rather than a well curated choice?
11. Did you learn something new in this project about exhibiting objects both in choosing and interpreting them, especially with regard to disciplinary boundaries and museum conventions? If yes, please give an example.

Agreeing on the exhibition design/architecture

12. Did the objects that you researched and chose get enough space within the exhibition, and what would you have done differently?
13. Do you think that diverging aesthetic viewpoints within our curatorial team were also rooted in our differing disciplinary backgrounds?

Interpretation

14. Were there controversies within the curatorial team about the need for the explanation and interpretation of contents and objects, and about didactical tools such as label texts, explanatory films, interactive media, models, and hands-on exhibits? If yes, please give an example. Were we able to find/create joint solutions that helped us to unite disparate materials and perspectives?
15. How did the publication accompanying the exhibition turn out as an interdisciplinary product?

Knowledge production in an interdisciplinary exhibition

16. Has the exhibition in any way enabled you to organize, map, model, or simulate a piece of knowledge that is useful for your current or future research? In other words, were you able to experiment during the development process of the exhibition?

17. Did making this exhibition spark any new research questions, theoretical thoughts, or new project ideas, for example by seeing objects or pieces of knowledge in a new context? Or did it trouble any existing knowledge or research practice?
18. Did you learn something from other members of the curatorial team?

General feedback

19. Are you happy with the overall result of this exhibition? What could we have done better, especially during the process of making it?
20. What did the exhibition contribute to the public and/or academic discourse around the topic? How was the exhibition innovative in your opinion?