ANNA JULIANE HEINRICH,
SÉVERINE MARGUIN, ANGELA MILLION,
JÖRG STOLLMANN (EDS.)

HANDBOOK OF QUALITATIVE AND VISUAL METHODS IN SPATIAL RESEARCH

Listening, experiencing, drawing or interpreting spaces: narratives, experiences, visualizations and discourses can be helpful for the empirical investigation of spaces. This interdisciplinary handbook presents a broad spectrum of established methods and innovative method development to capture and understand different facets of spaces. Instructive explanations and concrete examples make the varied qualitative methods of spatial research understandable and applicable across disciplines. The theoretical and methodological aspects of qualitative spatial research form the framework of this handbook.

RE-FIGURATION OF SPACES [transcript]

Anna Juliane Heinrich, Séverine Marguin, Angela Million, Jörg Stollmann (eds.)
Handbook of Qualitative and Visual Methods in Spatial Research

Re-Figuration of Spaces | Volume 7

Anna Juliane Heinrich (Dr.-Ing.), born in 1987, is a researcher and lecturer at the Chair of Urban Design and Urban Development of Technische Universität Berlin. She is principal investigator of the research project "The Spatial Knowledge of Young Adults: The Constitution of Online, Offline and Hybrid Spaces" and Co-Head of the graduate school of the Collaborative Research Centre "Re-Figuration of Spaces" (CRC 1265) at Technische Universität Berlin. Her research focuses on participation and co-creation in urban development, spatial knowledge, social infrastructures as well as methodologies and methods of research in planning and design.

Séverine Marguin (Dr.), born in 1985, sociologist, is head of the methods lab at the Collaborative Research Centre "Re-Figuration of Spaces" (CRC 1265) at Technische Universität Berlin. Her interdisciplinary research focus lays on cultural and knowledge production, sociology of space, experimental and design-based methods. She currently leads two research projects: "Museum Knowledge Space" at Humboldt-Universität zu Berlin and "Afronovelas: Spatial Stories and Production Regime in West-African Soaps" at the Collaborative Research Centre "Re-Figuration of Spaces" (CRC 1265) of Technische Universität Berlin.

Angela Million (Dr.-Ing.), born in 1974, is a professor for urban design and urban development at the Institute of Urban and Regional Development of TU Berlin. She is the director of the Global Center of Spatial Methods for Urban Sustainability and a principal investigator at Collaborative Research Centre 1265 Re-Figuration of Spaces at TU Berlin. Her most current research explores educational landscapes, neurourbanism, multifunctional infrastructure as well as hybrid spatial constructions of young people.

Jörg Stollmann, born in 1968, is a professor for urban design and urbanization at the Institute for Architecture at Technische Universität Berlin. He is a member of the Collaborative Research Centre "Re-Figuration of Spaces" (CRC 1265) at TU Berlin. He graduated from Universität der Künste Berlin and Princeton University and taught among others at UdK Berlin and ETH Zurich.

Anna Juliane Heinrich, Séverine Marguin, Angela Million, Jörg Stollmann (eds.)

Handbook of Qualitative and Visual Methods in Spatial Research

[transcript]

Funded by the Deutsche Forschungsgemeinschaft (DFG, German Research Foundation) - Projektnummer 290045248 - SFB 1265

Bibliographic information published by the Deutsche Nationalbibliothek
The Deutsche Nationalbibliothek lists this publication in the Deutsche Nationalbibliografie; detailed bibliographic data are available in the Internet at https://dnb.dnb.de/

First published in 2024 by transcript Verlag, Bielefeld

Cover concept: Studio Gretzinger (https://www.studiogretzinger.de)
Proofread: Emil Widmer
translated by Zachary Mühlenweg
Printed by: Majuskel Medienproduktion GmbH, Wetzlar
https://doi.org/10.14361/9783839467343
Print-ISBN: 978-3-8376-6734-9
PDF-ISBN: 978-3-8394-6734-3
ISSN of series: 2748-5714
eISSN of series: 2749-2028

Printed on permanent acid-free text paper.

Contents

II. Conversing and storytelling

III. Observing and experiencing

IV. Drawing and visualizing

V. Reading and reflecting

Appendix

Introduction

Spatial research from an interdisciplinary perspective

Anna Juliane Heinrich, Séverine Marguin, Angela Million, and Jörg Stollmann

For the first time ever, this handbook offers a comprehensive overview of the qualitative and visual methods used in interdisciplinary spatial research. In the wake of the paradigm shift referred to as the *spatial turn* (Läpple 1991; Löw 1998), the social sciences have begun to focus more on the concept of space. The argument that the social cannot be conceived without taking space into account (Löw/Knoblauch 2017, 2020) is based on the observation that societies have been experiencing dramatic transformations in their social and spatial structure since the 1960s. This sweeping restructuring can be attributed to the rise of transnational economic systems, geopolitical upheavals, the development and spread of digital communication technologies, and the increase in the global circulation of people and goods. The prominence of spatial complexities demonstrates the need for a methodological toolkit to assess the complexity of these phenomena empirically (Baur et al. 2014).

We believe that it is only possible to overcome this challenge with an interdisciplinary approach. Only by combining different stocks of knowledge and methods is it possible to develop a methodological toolkit that allows for a comprehensive empirical analysis of the current dynamic transformation of spaces. Therefore, the need for an appropriate set of methods arose from our own endeavor to satisfy the ambitious empirical research agenda of our Collaborative Research Centre 1265 *Re-Figuration of Spaces*. However, combining different methodologies required close collaboration and collective reflection. Our Collaborative Research Centre comprises disciplines with a highly advanced repertoire of methods, such as geography and sociology, as well as urban planning, architecture, and visual arts. Although the latter disciplines can fall back on an extensive arsenal for the analysis and design of spaces, they have only recently started to discuss relevant methods and methodologies. These differences could have easily resulted in an imbalance. However, because the Collaborative Research Centre explicitly intends for the researchers involved to cooperate with one another, we saw this disparity as an opportunity to learn from each other and grow together.

In the social science disciplines, there is a clear need for focused reflection on the use of tools intended specifically to investigate spaces. The central work on methods in

empirical social research by Baur and Blasius (*Handbuch Methoden der empirischen Sozialforschung*), for example, can only serve as a first step in this reflective process. Therefore, in this handbook we strive not only to illustrate how interviews can be operationalized, for example, but also how interviews can be used as a tool to explore spaces and which challenges should be taken into consideration when doing so. Accordingly, all papers in this publication explicitly address space-related issues, while at the same time providing practical guidelines on how to apply their approaches. The how-to character of our handbook sets it apart from the few other handbooks that deal with space-related qualitative social research (in English literature see DeLyser et al. 2009; Silva et al. 2015; MacCallum et al. 2019; Giseke et al. 2020; Schafer/Borer 2023; in German literature see Glasze/Mattissek 2009; Rothfuß/Dörfler 2013; Wintzer 2018), all of which focus more on the issues and theory than on the tools and techniques.

Two other aspects distinguish us from the existing literature. Firstly, the scope of the selected methods is particularly wide since we have integrated tools from design and practice-based disciplines. Secondly, this resulted in a focus on visual methods, which we believe are especially insightful and promising for spatial research and which we therefore address in more detail. Compiling this toolbox of methods represents an important product of our interdisciplinary collaboration. With this in mind, we would like this handbook to be accessible to a wide group of readers: as a guide to understanding and learning how to use methods, testing them in your own projects, and developing them further.

Handbook structure and contents

We have designed this handbook so that it can be read from any disciplinary, and non-disciplinary, perspective. The first chapter on exploring space is dedicated to the theoretical and overarching methodological aspects of qualitative spatial research and a discussion of basic spatial theories. We arranged the subsequent chapters into different approaches to exploring space: conversing and storytelling, observing and experiencing, drawing and visualizing, reading and reflecting. This structure allows us to mix the different disciplinary approaches within the chapters. Moreover, we are able to cast off the conventional handbook structure—data collection, analysis, and presentation of results—which did not prove practical, especially for the purpose of reflecting on methods such as mapping: Collecting, analyzing, and presenting overlap with one another repeatedly in this context. By and large, this proved to be the right approach as many of the papers combine the data collection and analysis processes in their respective methodology and examine their interdependence. Many authors also integrate the preparation and presentation of results. In this case, graphical elements are by no means just a way to show the results, but rather many papers illustrate how they can also serve as collection and analysis tools. During the editing process, we discovered that the distinction between "established" and "new" methods is only helpful to a certain extent. It became apparent that all methods can readily be developed further, especially if they are used in an interdisciplinary research process and adapted accordingly.

Exploring space

The first chapter on *exploring space* presents the theoretical and overarching methodological aspects of qualitative spatial research, taking into account basic methodological considerations that are relevant for every research project. The chapter begins with two papers illustrating positions in distinct social theories when conducting spatial research. In the form of a dialogue, sociologist Martina Löw talks to two of the editors, spatial planner Anna Juliane Heinrich and sociologist Séverine Marguin, about the relationship between spatial theory, social theory, and research methods. The three shed light on how research design, research questions, and underlying theoretical assumptions (both spatial and social) are interconnected and influence one another. A paper by anthropologists Ignacio Farías and Julio Paulos addressing the question of space in actor-network theory (ANT) follows. After describing the periods of development of ANT (pre-ANT, post-ANT, near-ANT), the authors use an original approach to demonstrate the implicit yet close relationship between ANT and space, thus illustrating the potential of the ANT method for spatial research. Afterward, several papers address overarching methodological topics: First, spatial planner Sandra Huning describes the role of queer/feminist perspectives in qualitative spatial research. Her paper is a call for self-reflection on how researchers can deal with gender bias, presenting accurate and helpful examples from her own work. Second, artist and design theorist Anke Haarmann asks from an epistemological point of view what qualifies certain practices in dealing with space as aesthetic research techniques and how these specific methods can be developed as a reflective methodology. She illustrates her proposition with two artistic projects, the radio ballet of the performance group LIGNA and the land art project of the Argentinian artistic-political environmental organization Ala Plástica, to show the potential of artistic research for spatial research. Two papers by sociologists Nina Baur and Gabriela Christmann follow, related to the development of the research design: They start by focusing on comparative cultural studies and show which specific opportunities and difficulties are associated with them. Next, they address how to select cases and discuss (spatial) challenges that should be considered in the process. The first chapter closes with a paper by spatial planner Anna Juliane Heinrich on the integration of visual and text-based data. The author analyzes the connection between visual and verbal data in various research contexts, which she uses as a basis to discuss different methodological approaches to data integration.

Conversing and storytelling

The second chapter of this handbook is devoted to interview methods, which can be used to gain insight into space by means of *conversing and storytelling*. In the first paper, sociologists Maria Norkus and Gunter Weidenhaus discuss the use of biographical-narrative interviews. The authors illustrate how the method can be especially effective when applied to the analysis of spatial knowledge. Urban scholar Sarah Klepp and urban designer Felix Bentlin offer an alternative approach to the biographical method with a visual dimension, which is particularly well suited for the analysis of learning and spatial experiences. They show how it is possible to evoke the socialization of the interviewee aptly by

using a timeline in the interview situation. Sociologist Cornelia Thierbach focuses on the guided interview method, reflecting on the fundamental structure of the guidelines. She presents the challenges of talking about space and letting others talk about space that are associated with the (purely verbal) interview technique. The last paper in this chapter introduces an elicitation technique for interviews, which can be seen as a solution for this difficulty: Together with anthropologist Carolin Genz, geographers Janina Dobrusskin, Ilse Helbrecht, and Anthony Miro Born present photo-interviewing as a means of studying spatial knowledge. They demonstrate how the photo-elicitation method can make it possible to analyze spatial imagination.

Observing and experiencing

The third section of this handbook takes a look at methodological approaches and methods used to generate knowledge by means of *observing and experiencing*. Anthropologist Carolin Genz introduces the topic together with cultural anthropologist and architect Aylin Yildirim Tschoepe by explaining the methodology behind the ethnographic exploration of spaces and spatial practices. They discuss participant observation as a key method of ethnographic spatial research. Sociologists Hubert Knoblauch and René Tuma focus on the spatial dimension of videographic investigations. They present the basic methods and methodologies underlying the videography of space and reflect on how subjective, embodied spatial knowledge can be made relevant in the analysis and interpretation. Sociologist Michael Wetzels elaborates on the concept of focused ethnography with a special emphasis on space as a category. He explains how to employ this method based on his research into localized collective affectivity. Sociologist Eric Lettkemann illustrates how spatial practices can at times be difficult to observe in spatial research if processes of spatial constitution are largely shaped by mobile, georeferenced digital information—above all when using certain apps on smartphones. With Webnography 2.0, he has developed a procedure to combine methods, which can then be used to study hybrid spaces. Urban designer Zuzana Tabačková examines the atmospheric quality of spaces and their exploration. She provides a comprehensive overview of methods and tools for site visits and presents possibilities for documentation in the field and for the final synthesis of findings.

Drawing and visualizing

The fourth chapter concentrates on producing knowledge by means of *drawing and visualizing*. Urban planner and urban designer Angela Million discusses the application of mental maps and narrative maps. In combination with guided interviews, these are particularly suited for investigating subjective spatial knowledge, spatial perceptions, and attributions of relevance at a low level. It is clear that both the data collection settings and the analysis methods entail challenges, but they also provide a great deal of flexibility and prospects for further development. Urban designer Felix Bentlin describes the urban layer analysis: a tool used in design and planning disciplines to analyze spatial principles

of organization in the city. Here, he emphasizes the importance of making it easy, even for non-planners, to understand the key design principles of graphically reducing the potential objects of investigation and organizing them into layers. As if to build on the urban layer analysis, planning sociologist Emily Kelling and architects Dagmar Pelger and Jörg Stollmann write about the multiscalar mapping method. During the mapping process, the lifestyles that constitute and that are constituted by urban spaces are included in the analysis of those spaces. Similar to mental mapping, this method is complemented by stories and is characterized by spheres of activity being depicted collectively on various scales, thus revealing their interdependencies. Geographers Julia Fülling and Elmar Kulke, together with sociologist Linda Hering, also discuss the mapping method in their paper, but they add the elements of mapping and photo-documentation in accordance with a mixed-method design. Placing symbolic and aesthetic properties (photo-documentation) within a spatial and structural context (mapping makes it possible to draw conclusions about the spatial constitution that could not be obtained using a pure text-based approach. In her paper on image-based techniques in artistic research artist Stefanie Bürkle sheds light on the intuitive and process-oriented approach to knowledge production in the fine arts. Using criteria and examples from her own artistic research practice, she explains the value of ambiguity and unpredictability in this approach and describes how to manage these challenges. Sociologist Séverine Marguin and architects Jörg Stollmann and Dagmar Pelger contribute to the discourse on mixed-method research with their paper on mapping as joint spatial display. In connection with the concept of joint displays, which serve to integrate and synthesize heterogeneous data by visual means using a chart, they illustrate how mapping itself can achieve this integration and describe which methodological steps have to be considered for this purpose.

Reading and reflecting

The final chapter is dedicated to *reading and reflecting* as methodologies and methods for exploring space. First, sociologist Jannis Hergesell highlights the particular requirements associated with taking into account historicity and temporality in spatial research. He discusses the duration, progression, and periodization of processes as key dimensions of a process-oriented methodology in spatial research and clarifies how they can be used to analyze specific objects of investigation. Afterward, urban researcher Ignacio Castillo Ulloa and sociologist Jona Schwerer present a protocol for carrying out a qualitative meta-analysis. Step by step, they explain how even large volumes of material can be synthesized to investigate new space-related issues. The two sociologists Vivien Sommer and Kamil Bembnista introduce another synthesis method: the multimodal discourse analysis. Their concept can be used to analyze discursive practices; instead of restricting themselves to (written) language, they develop an innovative approach to integrating different types of media, such as images or artifacts. The publication closes with a paper by communication scientists Daniela Stoltenberg, Barbara Pfetsch, and Annie Waldherr on the geolocalization of digital data. They provide an overview of the different methods used for automatic geocoding and propose potential applications

for mixed-method research. As examples, the authors use two of their own research strategies for the spatial localization of *Twitter* networks.

Outlook for future topics and requirements for further research

By introducing 19 different tools, this handbook provides an initial overview of the possibilities offered by a qualitative empirical analysis of spaces. During the first four years of our Collaborative Research Centre, we focused on an exploratory, qualitative approach. As such, the qualitative methods of spatial research were pushed to the forefront, which is why they define the focus of this handbook. However, we see a clear need for generalization in the future, with mixed-method approaches playing an increasingly important role in spatial research (Baur et al. 2014; Baur et al. 2017; Thierbach et al. 2020). Some of the papers presented here have already paved the way for this to happen by combining qualitative and quantitative approaches: Baur/Christmann on how to select cases, Fülling/Hering/Kulke with the supply mapping tool, Marguin/Pelger/Stollmann with their joint spatial display, Stoltenberg/Pfetsch/ Waldherr with methods for geolocating digital data. Many papers illustrate the numerous possibilities offered by combining different methods. This aspect highlights the great potential for development, which should be addressed in future qualitative spatial research more than in the past. For example, how can different types of data be integrated productively? In addition to the qualitative/quantitative aspect, the mediality of data merits greater attention. Multimodal approaches, such as the one demonstrated by Anna Juliane Heinrich in her paper on combining visual and verbal data, are very promising for spatial research.

Aside from the need to develop mixed-method approaches, it is also clear that most debates about intercultural comparison assume that *cultures* can be spatially defined in a relatively clear manner and that *space* itself is a unit that can be delimited. Even though space is being redefined, this also has consequences for intercultural comparisons. At the same time, postcolonial discourses play an increasingly important role. These aspects are being addressed from different disciplinary perspectives as a subject area in *Forum Qualitative Social Research* (FQS) (Baur et al. 2021).

The world of today clearly demonstrates how the relationship between science and society is dynamic and in a constant state of flux, allowing for "new forms of knowledge production" while also causing "participatory approaches to attract increased interest" (von Unger 2014: 6). Although this assertion pertains to applied qualitative social research, it is also promising for spatial research—especially when studying subjective views on conceptualizations of space. This also raises the question of how participatory research practices can become more meaningful for basic space-related research and to what extent combining methodologies from applied participatory research practice can enrich the design and planning disciplines. In particular, visual methodological approaches that supplement the possibilities of linguistic expression are suited for collective knowledge production, making it possible to study spaces collaboratively and even shape them, if necessary, in the spirit of participatory research practice. We see a great deal of potential in this regard.

The two lines of discussion mentioned above—postcolonialism and participatory research—place emphasis on the positionality and reflexivity of the researchers during the research process. The associated methodological challenges are presently being debated at length: for example, in the special issue *Positionality Reloaded. Debating the Dimensions of Reflexivity in the Relationship Between Science and Society* in the journal *Historical Social Research* (HSR) (Marguin et al. 2021). We would like to wrap up the introduction to our *Handbook of Qualitative and Visual Methods in Spatial Research* with some food for thought regarding (spatial) research: What is your motivation and what are your objectives when conducting (spatial) research? What is your background and what is your point of view, and how do they influence your (spatial) research? With whom would you like to collaborate to produce knowledge, and what type of knowledge would you like to produce (inter/multi/transdisciplinary)? And lastly: Who reads your (spatial) research, and how can and should your research contribute to society? There are no uniform or easy answers to these fundamental questions. Rather, they are intended to encourage researchers to self-reflect and develop their own position. Please use the papers compiled in this publication as inspiration for your reflection.

References

Baur, Nina/Hering, Linda/Raschke, Anna L./Thierbach, Cornelia (2014): *Theory and Methods in Spatial Analysis: Towards Integrating Qualitative, Quantitative and Cartographic Approaches in the Social Sciences and Humanities*. In: *Historical Social Research*, 39(2), pp. 7–50.

Baur, Nina/Kelle, Udo/Kuckartz, Udo (2017): *Mixed Methods – Stand der Debatte und aktuelle Problemlagen*. In: *KZfSS Kölner Zeitschrift für Soziologie und Sozialpsychologie*, 69 (S2), pp. 1–37.

Baur, Nina/Blasius, Jörg (Eds.) (2019): *Handbuch Methoden der empirischen Sozialforschung*. Wiesbaden: Springer VS.

Baur, Nina/Mennel, Stephen/Million, Angela (Eds.) (2021): The Refiguration of Spaces and Methodological Challenges of Cross-Cultural Comparison. In: *Forum Qualitative Sozialforschung*, 22(2).

DeLyser, Dydia/Herbert, Steve/Aitken, Stuart/Crang, Mike/McDowell, Linda (Eds.) (2009): *The SAGE Handbook of Qualitative Geography.* Thousand Oaks, CA: SAGE.

Giseke, Undine/Löw, Martina/Million, Angela/Misselwitz, Philipp/Stollmann, Jörg (Eds.) (2020): *Urban Design Methods*. Berlin: jovis.

Glasze, Georg/Mattissek, Annika (Eds.) (2009): *Handbuch Diskurs und Raum: Theorien und Methoden für die Humangeographie sowie die sozial- und kulturwissenschaftliche Raumforschung*. Bielefeld: transcript.

Knoblauch, Hubert/Löw, Martina (2017): *On the Spatial Re-Figuration of the Social World*. In: *Sociologica*, XI(2), pp. 1–26.

— (2020): *The Re-Figuration of Spaces and Refigured Modernity – Concept and Diagnosis*. In: *Historical Social Research*, 45(2), pp. 263–292.

Läpple, Dieter (1991): Essay über den Raum. Für ein gesellschaftswissenschaftliches Raumkonzept. In: Häusermann, Hartmut/Ipsen, Detlev/Krämer-Badoni, Thomas/

Läpple, Dieter/Rodenstein, Marianne/Siebel, Walter: *Stadt und Raum: Soziologische Analysen*. Pfaffenweiler: Centaurus-Verlagsgesellschaft, pp. 157–207.

Löw, Martina (2018): *Vom Raum aus die Stadt denken. Grundlagen einer raumtheoretischen Stadtsoziologie*. Bielefeld: transcript.

MacCallum, Diana/Babb, Courtney/Curtis, Carey (2019): *Doing Research in Urban and Regional Planning. Lessons in Practical Methods*. New York, NY: Routledge.

Marguin, Séverine/Haus, Juliane/Heinrich, Anna Juliane/Kahl, Antje/Schendzielorz, Cornelia/Singh, Ajit (Eds.) (2021): *Positionality Reloaded: Debating the Dimensions of Reflexivity in the Relationship Between Science and Society: An Editorial*. In: *Historical Social Research*, 46(2), pp. 7–34.

Rothfuß, Eberhard/Thomas Dörfler (Eds.) (2013): *Raumbezogene qualitative Sozialforschung*. Wiesbaden: Springer VS.

Schafer, Tyler/Borer, Michael Ian (Eds.) (2023): *Researching City Life. An Urban Field Methods Text Reader*. Thousand Oaks, CA: SAGE

Silva, Elisabete A./Healy, Patsy/Harris, Neil/Van den Broek, Pieter (Eds.) (2015): *The Routledge Handbook of Planning Research Methods. Routledge Handbooks*. New York, NY: Routledge.

Thierbach, Cornelia/Hergesell, Jannis/Baur, Nina (2020): Mixed Methods. In: Atkinson, Paul/Delamont, Sara/Cernat, Alexandru/Sakshaug, Joseph W./Williams, Richard A. (Eds.): *SAGE Research Methods Foundations*. London/Thousand Oaks, CA/New Delhi: SAGE, pp. 23–30.

Unger, Hella von (2014): *Partizipative Forschung. Einführung in die Forschungspraxis*. Wiesbaden: Springer VS.

Wintzer, Jeannine (Ed.) (2018): *Sozialraum erforschen. Qualitative Methoden in der Geographie*. Berlin: Springer Spektrum.

I. Exploring space: Theoretical and overarching methodological aspects of qualitative spatial research

Conceptualizing and practicing spatial theory

A discussion about the relationship between theories and methods in qualitative spatial research

Martina Löw, Anna Juliane Heinrich, and Séverine Marguin

Juliane and Séverine: Martina, the *spatial turn* has prompted (renewed) interest in space. Research is focusing more and more on the effects of spatial relationships on social processes. In the wake of this growing focus, a wide range of different theories about space have been proposed. You have largely defined the discourse in the German-speaking world by describing and advancing various concepts of space and contrasting them with one another. In a nutshell, we have seen a shift in our understanding of space from the territory as the dominating spatial organizational logic in the modern age and the associated idea of space as a container to a network of different concepts of space, characterized in particular by the spread of a relational understanding of space. Now we are motivated by the question of whether we can understand these different concepts of space, which are in a constant state of flux themselves, using conventional research methods or whether modified and/or new methods are required in spatial research. To phrase this as a provocative question: Might the set of methods from the traditional spatial disciplines (including geography, urban planning, architecture) promote the concept of a container space, for example, with classic maps? And might interviews and other standard methods from the social sciences favor a certain spatial obliviousness? In short: What challenges are researchers facing given the different theoretical understandings of space (absolute, relative, relational, etc.)? With this in mind, what should we take into account when designing projects in qualitative spatial research?

Martina: The methods established in urban planning, geography, and architecture offer a major advantage in that they actually seek to understand spatial arrangements, unlike sociological methods. However, many of these methods were developed as the territory or container still dominated the spatial leitmotif. This is easy to illustrate on a map. Maps are an expression and means of territorialization, colonialism, and homogenization of space by way of surveying. Historian Ulrike Jureit illustrates this using the example of

colonialism.[1] Explorers, surveyors, and adventurers followed clearly indicated routes on foot or by horse through the colonies with the goal of "discovering" and mapping land. The information gathered in this manner was shaped into a single map, with the spaces beyond the route remaining white and being perceived as "empty space." The map transformed the experienced space into a flat, confined layout.

Ulrike Jureit shows how revolutionary and narrow this achievement was in a wider historical context: "The fundamental shift in political perceptions of space during the early modern period can be expressed as follows: *from the place to the territory*. If you read travel notes from the 16th and 17th century, they bear witness to the fact that although space was no longer fixed along select points, as was the case during the Middle Ages, travelers conceived the space they traversed as a succession of places and not as a spatial surface."[2] Nevertheless, the place was supplanted as the dominant spatial figure guiding spatial perception or political action. The territory took its place as a container space until it became just one possible construct in a varied spatial structure starting in the 1970s. Now we have to ask ourselves how we can adapt maps and visualizations. Dynamic mappings and hybrid mappings are the answer. Developing these mappings further is currently a major challenge.

Sociology has relied on texts as the most important source of interpretative data for some time. The problem with texts, and also with interviews, is that people are often unable to describe spaces and to verbalize spatial arrangements. This can be traced back to the legacy of container space. Whoever lives "in space" as they would in a container has little concern for spatial issues. As a matter of course, time became the problem of the modern age: social development, progress, life course, and biography were the big topics of the 20th century. In contrast, spaces were homogenized and standardized. They were zoned (e.g., playgrounds) and territorialized (e.g., nation-states). Society was less interested in quality, whereas distribution and storage were more of a priority. Today, under the auspices of networking and virtualization, the distinctive place is regaining its significance. However, this place is rarely the only place. In particular, the growing relevance of networking spaces makes it possible for places to base their meaning on their position in the network as well. The quality of the uniqueness of the place and the quality of the spatial relationships move to the fore. Interviewees are becoming increasingly better at talking about spaces because spaces are becoming a problem for them. Researchers are also learning that all interviews contain important information about spatial constructs in everyday life, even if spaces are not mentioned explicitly. Indeed, it is not possible to talk about most everyday experiences without referring to spaces. We can make use of this narrative to understand the communicative construction of spaces in everyday life. The interview situation itself is also a spatial situation that is subject to interpretation.

But of course communicative action is more than just verbal communication. It also includes body language and arrangements of objects. Because spaces in communicative action are created based on how subjects relate to one another and how they relate to objectivations, spaces are also made meaningful by the fact that they become part of the

1 See Jureit 2012.

2 See Jureit 2012: 36.

communication through subjective, physical experiences. This can be understood best by means of observations, ethnography, or video analysis.

Juliane, you work at the interface between planning and sociology. And Séverine, you work at the interface between architecture and sociology. Do you see similarities between the methods, problems, theories, and practices of the disciplines, or do you see instead different approaches to space?

Séverine: At the moment, you can observe a (renewed) convergence of architecture and sociology, which has resulted from the pressure to think of the social and the spatial as one. Even though this means materiality is increasingly important for sociologists and users are becoming a higher priority for architects and planners, the heritage of the respective knowledge and research cultures is still an influential factor and characterizes their strategies when it comes to such spatial-social research endeavors: From a spatio-sociological standpoint, the "observed" users of spaces are also regarded as producers of those spaces. This is widespread primarily among researchers in planning and architecture, who focus on participation, collaboration, and incrementality; nevertheless, it is not uncommon in architecture and planning to understand spatial production predominantly as the construction of materialities. Integrating the different perspectives so as to take into account users and materialities can enrich efforts to cooperate. I would like to illustrate these fundamentally different approaches using an anecdote: As part of an interdisciplinary research project at Technische Universität Berlin, I collaborated with a colleague from the field of architecture to address the question of accessibility at a cultural institution in Berlin.[3] When drafting the research design, we discussed what type of data should be collected. In the process, the different approaches became clear: While I as a sociologist considered how to collect socio-demographic data using questionnaires and interviews in order to determine potential social exclusion mechanisms by analyzing the composition of the audience, the architect proposed reproducing the sidewalks, streets, and other paths leading to the cultural institution and photographing the entrances, for example. This demonstrates not only how the objects of observation can vary (in this case schematically with people, social classes, doors, bus stops, etc.), but also how different tools (textual or visual) might be selected to evaluate the space empirically. However, I see great potential in combining these complementary approaches since a physical-material factor and an entry point can both be socially exclusive with the proper connotation.

Juliane: From my experience in interdisciplinary research projects with sociologists and educationalists, I can confirm that we "approach space" differently, although the differences are not always as obvious as in Séverine's example. In their research, planners rely on the repertoire of methods from other disciplines, especially those from sociology.[4] For example, a module on methods of empirical social research, which is generally taught by sociologists, is established in planning degrees.[5] Beyond this general orientation on cer-

3 See Marguin et al. in this handbook.

4 Also see Sturm 2000.

5 Also see Baur/Blasius 2014.

tain methods, several individual methodological guidelines—such as interviewing and observational techniques—originated primarily from sociology handbooks (in part from political science as well). But if we take a closer look, we can see that neither planners nor architects simply adopt the methods without further ado: rather, they appropriate them and develop them further by incorporating their craft and their individual practices.[6]

Furthermore, I have observed in interdisciplinary cooperation that we go into the field with a different focus. To put it in concrete terms, admittedly exaggerated and simplified: When I go into the field with my sociologist colleague and make observations, he focuses explicitly on people and their behavior. He writes down his thoughts in field notes. When planners observe, the physical-material setting takes center stage. In preparation for the observations, drawing materials are arranged for the documentation; for example, hand sketches or photos are copied as a basis for drawings. Of course in this day and age, I can also take a picture with my tablet and then sketch my observations directly on it. As a rule, an in-depth urban design analysis would probably precede this. This means the observed behavior is considered within the context of the materiality of the location, and then it is documented visually. As a result, the focus of what is observed and the type of documentation vary between disciplines.

I can draw the same conclusion from my observations as Séverine: These different approaches to space are precisely what make interdisciplinary cooperation so exciting and enriching. I see great potential here, not only with regard to our research findings, but also for the purpose of fostering methodological development. The field of visual spatial research is a great example of this. In planning degree programs, a rich selection of visual research methods are taught and then applied to both planning sciences and practice. However, the knowledge of these methods remains within the discipline as it is passed on in university courses, as part of research projects, or between colleagues. Publications on this subject are limited. Without a doubt, this is problematic since reflections on and improvements to the methods are not particularly systematic. The intersubjective verifiability of research also poses a challenge, especially in an interdisciplinary context. The situation is different in sociology. Although the tradition of visual research is less pronounced, the increased interest in this subject is illustrated by the growing scientific discourse on methodology and methods of visual research. However, the practical application and discourses of the two disciplines have seldom been brought together so far[7]—although the mutual use of both seems obvious.

Juliane and Séverine: After our initial question about the relationship between methods and spatial theory, we would like to ask you about the relationship between methods and social theory. In this handbook, various epistemic positions are represented: communicative constructivism, practice theory, actor-network theory, etc. Do you think that we need different methods depending on the theoretical framework?

Martina: Depending on the theoretical approach, there are methods that are obvious and methods that are more surprising. I will illustrate this using a classic comparison. At the

6 See, for example, Bentlin/Klepp and Marguin et al. in this handbook.

7 Also see Pauwels 2011.

beginning of the last century, Max Weber defined sociology as "a science which attempts the interpretive understanding of social action in order to arrive at the causal explanation of its course and effects."[8] Weber thus combines the tradition of interpreting cultural achievements in the social sciences with the tradition of finding universal laws in the natural sciences. It starts from the subjective meaning people intentionally ascribe to their actions. Sociology is now challenged to reconstruct meaningful action situations in a comprehensible manner and to seek regularities and legitimacy.

Émile Durkheim pursues a different conception of sociology. In his opinion, investigating subjective meaning is not enough. Social order, which sociology endeavors to study, cannot be explained by individual actions alone. Rather, it exists independently of these actions to some extent and predetermines them.[9] Therefore, he believes the subject of sociology has less to do with individual action, since this is fleeting, and more to do with collective consciousness, which applies equally to all groups in a society and connects one generation to the next. For him, sociology is the "science of institutions, including their formation and function."[10] Sociology is tasked with analyzing the "social truths" that give rise to individual actions.

Now, searching for meaning in interviews or in pieces of text is an obvious choice for Weber's line of thought. In his essay *Zur Sache* (English: *On Point*), Ulrich Oevermann presented a full analysis of society based on the interpretation of the words "Good evening, ladies and gentlemen," as they are spoken every day on the evening news.[11] According to Durkheim, it would seem logical to collect quantitative data. A historical analysis would hardly be surprising either. But of course it is more complicated than that: It is also possible to survey the social order of a society based on small gestures such as greetings or to reconstruct the collective consciousness by interpreting images (for instance, if it is a particularly important image like Brandt's genuflection in Warsaw). Or you can investigate social meaning compared to economic statistics. The method you choose depends on your question and not on the given theory. Nevertheless, how the question is formulated cannot be separated from the theoretical approach.

Séverine and Juliane: We would like to interject here: *Firstly* we talked about the relationship between methods and spatial theory and *secondly* about the relationship between methods and social theory. *Thirdly*, to complete the triangle, we would like to ask about the relationship between social theory and spatial theory. We are interested in your perspective on whether there are certain social theories that help answer specific socio-spatial questions or that facilitate particularly profitable thought? And if so, what are they? Moreover, what might we have to accept in return?

8 Weber 1980 [orig. 1921]: 1 (own translation)

9 See Durkheim 1999: 128; see also Durkheim 1961 [orig. 1895].

10 Durkheim 1961 [orig. 1895]: 100 (own translation)

11 See Oevermann 1983.

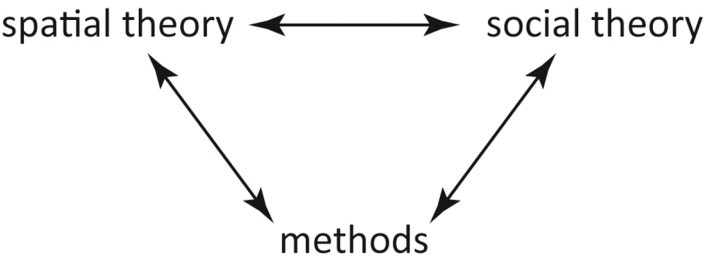


Fig. 1: Links between spatial theory, social theory, and methods. | © Author's own diagram

This question is especially polemic within the context of interdisciplinary cooperation between sociologists and designers: Currently, there is a strong tendency among designers toward *more-than-human* or *post-human* approaches with the justification that these social theory approaches "really" take the materiality of the space seriously and thus understand it better. The work by anthropologist Tim Ingold, for example, is quintessential.[12] However, these approaches, which reinforce the concept of flat ontology, conflict with social theories that still aim to understand society and in doing so focus on the dialectics between individual actions and social structures.

Martina: In order to answer this question, I first have to discuss the term social theory. In the Anglo-American context, by which I primarily mean the US, *social theory* is a field that emphasizes the relevance of theoretical principles (in contrast to the demand to always base theory on empirical statements).[13] As such, *social theory* is primarily positioned opposite or alongside (mostly) quantitative research. By contrast, the German-speaking world differentiates between social and societal theory. Both are theoretical concepts in the social sciences, but each has a different focus. While social theory inquires into the conditions of potential social phenomena, societal theory emphasizes the specific characteristics of society.

Social theory strives to determine the basic concepts underlying the social sciences and humanities. From a sociological standpoint, the main question is how to define and measure social phenomena across societies and eras. It is dedicated to the scientific approach within a social context. Societal theory is based on the conceptual foundation established by social theories and endeavors to describe the systems and substance of specific societies (as a rule, contemporary modern society) or to explain their basic principles.[14] Social theory is then challenged by the findings of societal theory and is forced to change. The social theory terms are defined in such a way that they can be used to analyze different societies at different periods of time. Even if the definitions often fail to meet this objective in individual cases and have a historical bias, the purpose of social theory is

12 See Ingold 2012.

13 For the difference between social and sociological theory, see Lindemann 2014; Reckwitz 2016: 8 et seqq.; Knoblauch 2017: 11 et seqq.

14 See Joas/Knöbl 2004.

to capture the concept of action, communication, or space so as to understand socialist and capitalist societies, as well as societies from early modern and modern times. Georg Simmel, for example, sets out to define space from the perspective of social theory (over long sections of his text *The Sociology of Space*[15]), whereas he works from a societal theory angle in his essay *The Metropolis and Mental Life*.[16]

Space and time are fundamental structures of every society and thus of the social in general. As such, spatial theory is a necessary explanatory connection, both for understanding modern societies and for further developing the tools used to analyze social phenomena. However, sociology has long since neglected space and materiality—sociologists, like most modern people, believe in the division of labor and assume that space and materiality belong to other disciplines. For all intents and purposes, the material and the relational arrangement of material objects to spaces have played a role in many theories—for example, those of Émile Durkheim and Maurice Halbwachs, Erving Goffman and Alfred Schütz—but they attempted to understand the social using terms such as action, interaction, or communication. Space and materiality played a less important role than time or meaning. This is changing now. For example, Hubert Knoblauch wrote that we are "naturally returning […] to a basic social theory dimension of communicative action with space."[17]

Therefore, my first answer to your question would be: Social theory needs spatial theory to understand how social phenomena are constituted in terms of space. How does space structure human action, and is it always independent of the social system? Or to put it another way: Which spatial concept can help us compare societies with very different characteristics (for example, translating Western preconceptions to Eastern societies unchecked)? Which understanding of space helps us comprehend the actions of people in periods when there were communities but no societies yet?

These questions are at a different epistemic level than questions in societal theory, inquiring into which spatial forms modern society produces and how space is used to structure action in this society. Therefore, my second answer to your question is that societal theory needs spatial theory to analyze specific spatial forms and spatial logics, along with their accompanying power structures in—in the case of Europe—late modern societies.

In my opinion, however, it is not enough for spatial theory to be just a means to an end, to reflect capitalism, late modernism, etc. Sometimes one gets this impression from theorists such as Henri Lefebvre or David Harvey. It is good when spatial theory helps to understand a specific society, especially if that society is built on exploitation and colonialism. But, and this brings us to ANT and *post-human* approaches, there are more and more proponents of expanding the use of spatial analyses beyond conflicting interests and who are curious about spaces, cities, and architecture as a materialized form of cohabitation. Ignacio Farías, for example, rightly asks in my opinion: "The central question we need to pose is whether we study cities as an instance of something else, of capitalism in this case, or we engage in an inquiry into the city and urbanization as a positive,

15 Simmel 1995 [orig. 1903] (own translation)

16 Simmel 1957 [orig. 1903] (own translation)

17 Knoblauch 2017: 294 (own translation)

actual and selfentitled process."[18] Similarly, Helmuth Berking and I presented the conceptual idea of the "intrinsic logic of cities" in 2008: "To no longer research exclusively in cities, but to study cities themselves, to make 'this' city in contrast to 'that' city the object of analysis."[19] The objective is to no longer reduce cities and spaces to a laboratory for the big sociological questions. Therefore, my third answer to your question is: Although neither social nor societal theory can exist without spatial theory, spatial theory does not merely serve as an aid for the larger theories, rather it acts as an independent correlation of well-founded statements. Spatial theory is a perspective of order used to connect the social to the material. Doreen Massey emphasized time and again that a spatial-theoretical perspective makes it possible to take into account both the contemporaneous plurality (for space to unfold, at least two elements must be positioned) and the interrelation of the elements that have been positioned simultaneously (namely the spatial dependence that is experienced socially).[20] Spatial theory is not bound to a single discipline. Spatial theory can be based on philosophy, anthropology, sociology, architecture, planning sciences, etc. Spatial theory—or to be precise, the analysis of spatial phenomena—is therefore particularly suited for interdisciplinary collaboration.

Juliane and Séverine: For the readers of this handbook, it would undoubtedly be helpful to have some indications of how to select their own spatial and social theory approach and what the advantages and disadvantages of that approach might be. After all, the field is quite broad and difficult to capture as it includes communicative constructivism, practice theory, the ANT approach, and Bourdieu's field theory—just to name a few.

Martina: When deciding on the approach, it is important to clarify what you are interested in finding. Am I interested in enduring spatial structures or terminological work (social theory), in analyzing the modern, capitalist society (societal theory), or in spatial orders without knowing (initially) whether they are characterized by capitalist, neoliberal, or late modern politics (spatial theory)? Once I have decided this, I ask which system of statements is either more convincing for me in general or appears more compelling for the problem at hand. For example, if I am interested in social reproduction, I can quickly apply Pierre Bourdieu's theoretical construct,[21] whereas I would be more likely to use Judith Butler's theoretical architecture to understand the influence of language on action, especially if I am also interested in gender roles.[22]

Almost all new social science theories strive to think consistently in relational terms. I use the terms theoretical constructs or architectures because theories are systems of statements based on coherent inferences that have been recognized as plausible (from a critical perspective). Tim Ingold, for example, makes many references to anthropological debates to form his theories.[23] He also has philosophical inclinations. He endeavors

18 Farías 2011: 368.
19 Berking/Löw 2008: 7 (own translation)
20 See Massey 2005.
21 See Bourdieu 1987.
22 See Butler 1991.
23 See Ingold 2012.

to make general statements about the nature of relationships, at the same time contemplating the role of knowledge. In contrast, Hubert Knoblauch draws on interaction and communication.[24] He is interested in how manners of existing in the world are reflected in a simple gesture, such as pointing with the finger. Both theorists take materiality seriously, but in different ways. Now how do I decide between Ingold and Knoblauch (two relatively recent theories that were formulated in relational terms and with materiality in mind, in addition to having an affinity for space)?

In my opinion, the answer consists of two equivalent influences (unless we need to change our views completely due to revolutions, disasters, etc.): the biographical/professional upbringing and the demands of the object. The first requires us to develop a system of thought that helps to understand the world based on studies and within an academic career. Which theoretical approaches you decide to use later on in your work depends greatly on which explanations can be plausibly integrated into your own (verified, successfully tested) system of thought. After all, we do not want to redescribe the world from scratch with every paper or every essay. As scholars, we strive to identify correlations between phenomena, and that is a lifelong undertaking. Therefore, it is all the more important for students to try out and apply different types of theories, to know the lines of thought in their own field, and at the same time to expand their thinking continuously through interdisciplinary working groups so that they can develop plausible theoretical perspectives.

This is where the second influence comes into play. If we are not dogmatic, then we can also be steered into new realms of theory by the objects we are investigating. When I was working on prostitution, I started to take the structuring of actions through emotions more seriously. This idea would (probably) never have crossed my mind had I continued working with electromobility. So how can you choose your own theoretical approach? Read a lot and select the most plausible arguments!

Let us return to the qualitative methods once more. If we assume that space is dynamic, that it can be understood relationally and always has material and symbolic aspects: Which qualitative methods do you consider particularly suitable and for what reasons?

Juliane and Séverine: The fact that you mention methods—plural—already suggests that your question about particularly suitable methods for spatial research can be answered only with an openness for a diverse range of methods, which is characteristic of qualitative research. Of course there is not just one method that can be used to comprehend the many different facets and characteristics of relational and dynamic space.

Like you, we endorse theoretical preference; the selection of the methods should depend, first and foremost, on the research question or the demands of the object, but also on the biographical/professional upbringing—for example, the educational background of the researchers and the skills they possess (such as drawing, coding, writing, etc.).[25] Selecting a method is anything but trivial since each method is associated with

24 See Knoblauch 2017.

25 At the same time, one's personal methodological expertise should not be an impediment to acquiring new methods. After all, the purpose of this anthology is ultimately for readers to discover

a certain conception of science, serving as a guarantee: "Books on research methods expressly prescribe how something should be done. As mentioned, their normativity lies in this scientific methodology as well. […] It is what makes it possible to understand, justify, and even criticize the veracity of the statements."[26] Lastly, there are already privileged "relationships" between methods and social theory, such as ANT and ethnography; communicative constructivism and videography or focused ethnography; Foucault and discourse analysis; Bourdieu and correspondence analysis, etc.[27] But beware: This by no means implies that we should or must always follow the established pairings. Methods are constantly being refined, and their limits should always be considered, contested, and transcended. We also see opportunities to break new ground in qualitative research with methods—and with epistemological caution—and to call into question and perpetuate recent discoveries about spaces (and society).

In qualitative spatial research, we can grasp specific aspects especially well with each method presented in this publication. For example, by using methods to collect and analyze verbal or text-based data, we can reconstruct individual and collective points of view, opinions, meanings, experiences, motivations, reasons for a course of action, and discourses. Furthermore, ethnographic research allows us to examine observed behavior and representations, among other things. Thus, this range of methods offers us approaches to analyzing perceptions of space and spatial imaginations. By contrast, working with methods to collect and analyze visual data can allow researchers to investigate visual documentations of social action, to examine objects as symbols of social meaning, or to reconstruct the unintentional and unnoticed consequences of human action and inaction. Hence, appropriate methods enable us to comprehend the materiality of space, spatial arrangements, and spatial practices.

This can be summed up as follows for this handbook: Photo-interviewing, mental maps and narrative maps, and biographical interviews make it possible to capture spatial knowledge effectively, among other things.[28] Ethnography and go-along interviews are especially suited for researching spatial practices.[29] Focused ethnography or videography can be used to investigate communicative situations in spatial terms,[30] while visual and cartographic methods such as site visits, layer analyses, or maps focus on the

---

new methods, to expand their methodological horizons, and to dare to break new methodological ground!

26 Marguin/Knoblauch 2021: 452 (own translation)

27 This handbook contains chapters on several of these different methods (and their privileged "relationships" with social theories): see Farías/Paulos for actor-network-based methods of spatial research, Genz/Yildirim Tschoepe for ethnography as a methodology, Knoblauch/Tuma for videography and space, Wetzels for (spatially) focused ethnography, and Sommer/Bembnista for multimodal discourse analysis.

28 Refer to the following sections in this handbook: Dobrusskin et al. for image-based interviewing, Million for mental maps and narrative maps, Weidenhaus/Norkus for biographical-narrative interviews, and Bentlin/Klepp for visual-biographical interviews.

29 Refer to the following section in this handbook: Genz/Yildirim Tschoepe for ethnography as a methodology.

30 Refer to the following sections in this handbook: Wetzels for (spatially) focused ethnography and and Knoblauch/Tuma for videography and space.

materiality of spaces.[31] But as we said, such correspondences should be treated with caution. Based on our own research practice, we would always advocate combining methods: *First*, this could be the combination of complementary methods (as is typical in the sociology of space at least), such as ethnography (for observing spatial practices) together with interview formats (for exploring subjective spatial knowledge or interpreting spatial practices). Or *second*, it would be conceivable to combine different media (e.g., visual and verbal data),[32] which might involve using visual data (such as photographs, aerial images, plans) to capture the materiality of spaces and combining them with verbal data (such as newspaper articles, interview protocols, comments on social networks) to ascribe them meaning accordingly (this could entail photo-interviewing, multimodal discourse analysis, cartography and photo-documentation, or go-along interviews). *Third*, mapping can be used as a synthesizing tool, which is currently receiving considerable attention in the spatial sciences—as illustrated by many of the chapters in this handbook—because it represents an attempt to grasp the procedural, socio-material dimension of spatial constitution.[33] And *fourth*, mixed-method combinations can be employed in an effort to integrate qualitative and quantitative data, as is the case in joint spatial displays,[34] for example.

Martina, we would like to give you the final word and ask you about a dream project. Imagine you have *carte blanche* to pursue whatever you would like: Without having to submit a proposal for third-party funding in advance, you have the liberty to carry out a research project or experiment of your choosing. What would you like to do? And why?

Martina: I like how you differentiate between spatial knowledge, spatial practices, spatially structured communicative situations, and the materiality of spaces. This helps a great deal in determining which method addresses which aspects of spatial constitution. Dream project: Sex, gender, and space. We know so little about how sexuality is experienced today (including for specific genders). We also know nothing about which spaces are relevant in this regard and how. For example, what role does personal space or unfamiliar space play in the development of a young girl's sexuality? How does space structure intimate communication? Such a project is quite challenging from a methodological perspective. I would combine interviews with dynamic maps.

Séverine and Juliane: The project sounds exciting, but it would indeed require a certain degree of sensitivity. Perhaps the readers of this handbook will offer you suggestions on how to develop your idea further. Dear Martina, thank you for sharing with us your insights into the triad of spatial theory, social theory, and methods.

---

31 Refer to the following sections in this handbook: Tabačková for site visits, Bentlin for urban layer analysis, and Fülling et al. for mapping and photo-documentation.

32 Refer to Heinrich in this handbook.

33 Refer to the chapter on drawing and visualizing in this handbook.

34 See Marguin et al. in this handbook.

References

Baur, Nina/Blasius, Jörg (2014): Methoden der empirischen Sozialforschung. In: Id. (Eds.): *Handbuch Methoden der empirischen Sozialforschung*. Wiesbaden: Springer Fachmedien, pp. 41–62.

Berking, Helmuth/Löw, Martina (Eds.) (2008): *Eigenlogik der Städte. Neue Wege für die Stadtforschung*. Frankfurt a. M./New York, NY: Campus.

Bourdieu, Pierre (1987): *Die feinen Unterschiede – Kritik der gesellschaftlichen Urteilskraft*. Frankfurt/Main: Suhrkamp

Butler, Judith (1991): *Das Unbehagen der Geschlechter*. Frankfurt/Main: Suhrkamp

Durkheim, Émile (1961 [orig. 1895]): *Die Regeln der soziologischen Methode*. Neuwied: Luchterhand.

— (1999): *Erziehung, Moral und Gesellschaft*. Vorlesung an der Sorbonne 1902/1903. Frankfurt a. M.: Suhrkamp.

Farías, Ignacio (2011): The Politics of Urban Assemblages. In: *City: Analysis of Urban Trends, Culture, Theory, Policy, Action*, 15(3–4), pp. 365–374.

Ingold, Tim (2012): Toward an Ecology of Materials. In: *Annual Review of Anthropology*, 41, pp. 427–42.

Joas, Hans/Knöbl, Wolfgang (2004): *Sozialtheorie. Zwanzig einführende Vorlesungen*. Frankfurt a. M.: Suhrkamp.

Jureit, Ulrike (2012): *Das Ordnen von Räumen. Territorium und Lebensraum im 19. und 20. Jahrhundert*. Hamburg: Hamburger Edition.

Knoblauch, Hubert (2017): *Die kommunikative Konstruktion der Wirklichkeit*. Wiesbaden: Springer VS.

Lindemann, Gesa (2014): *Weltzugänge. Die mehrdimensionale Ordnung des Sozialen*. Weilerswist: Velbrück.

Massey, Doreen (2005): *For Space*. London: SAGE.

Marguin, Séverine/Knoblauch, Hubert (2021): Empirische Wissenschaftstheorie. Wissenschaftsethnografie, experimentelle Methodenentwicklung und Sensitizing Visits im SFB 1265 »Re-Figuration von Räumen«. In: Löw, Martina/Sayman, Volkan/Schwerer, Jona/Wolf, Hannah (Eds.): *Am Ende der Globalisierung. Über die Refiguration von Räumen*. Bielefeld: transcript.

Oevermann, Ulrich (1983): Zur Sache. Die Bedeutung von Adornos methodologischem Selbstverständnis für die Begründung einer materialen soziologischen Strukturanalyse. In: Friedeburg, Ludwig von/Habermas, Jürgen (Eds.): *Adorno-Konferenz: 1983*. Frankfurt a. M.: Suhrkamp, pp. 234–289.

Pauwels, Luc (2011): An Integrated Conceptual Framework for Visual Social Research. In: Margolis, Eric/Pauwels, Luc (Eds.): *The SAGE Handbook of Visual Research Methods*. London/Thousand Oaks, CA/New Delhi/Singapore: SAGE, pp. 3–23.

Reckwitz, Andreas (2016): *Kreativität und soziale Praxis. Studien zur Sozial- und Gesellschaftstheorie*. Bielefeld: transcript.

Simmel, Georg (1957; [orig. 1903]): Die Großstädte und das Geistesleben. In: Landmann, Michael (Ed.): Brücke und Tür: *Essays des Philosophen zur Geschichte, Religion, Kunst und Gesellschaft*. Stuttgart: K. F. Koehler, pp. 227–242.

— (1995 [orig. 1903]): Soziologie des Raumes. In: Kramme, Rüdiger/Rammstedt, Angela/ Rammstedt, Otthein (Eds.): *Georg Simmel Gesamtausgabe*. Vol. 7: Aufsätze und Abhandlungen 1901–1908. Vol. I. Frankfurt a. M.: Suhrkamp, pp. 132–183.

Sturm, Gabriele (2000): *Wege zum Raum: Methodologische Annäherungen an ein Basiskonzept raumbezogener Wissenschaften*. Opladen: Leske + Budrich.

Weber, Max (1980 [orig. 1921]): *Wirtschaft und Gesellschaft. Grundriss der verstehenden Soziologie*. Tübingen: Mohr.

Actor-Network Theory as a Theory of Space

Ignacio Farías and Julio Paulos

Actor-network theory (ANT), sociology of translation, sociology of associations, and material semiotics are some of the terms used in the 1980s and 1990s by a group of scholars in the field science and technology studies (STS) to describe a singular, constantly evolving approach to the study of knowledge production and technology development characterized by its strong appreciation of two types of indeterminacy concerning the nature of the social.

The first type involves the indeterminacy of actors. ANT scholars argue that no assumptions could be made with regard to what should be considered an actor, for this is precisely what is at stake in the social: what, who, and how can make a difference in the trajectories of technoscientific objects. What is regarded as an actor is thus the result of both: processes of translation, by which certain entities become associated with others forming larger or smaller actor-networks, and trials of force, that is, conflicts and controversies in which the capacity of such actor-networks to make a difference is tested. In this understanding of the social, the difference between humans and nonhumans is irrelevant. Actor-networks are hybrids.

The second type of indeterminacy concerns the contexts of action. Here, ANT theorists again refuse to make any generalizations concerning the contexts in which action might happen, regardless of whether they are imagined as institutional, structural, or even spatial contexts. Indeed, analytical distinctions between the context and content of a practice, between the depth and surface of a discourse, or between global or local scales of action are understood as pre-emptive empirical analysis. ANT theorists are interested in the continuities between such distinctions, and thus avoid descriptions that assume that there is a qualitative or ontological difference between them. Instead the aim is to show how actor-networks create their own contexts, discourses, times, and, yes, spaces. Actor-networks are worlds.

The invitation to discuss the methodological contributions of actor-network theory to spatial research can be extremely productive for various reasons. Firstly, it allows us to engage with key analytical premises of actor-network theory from an uncommon standpoint: namely, spatial theory. Indeed, ANT might be easily associated with various turns in the social sciences and humanities, such as the practice turn or the ontological turn. The so-called "spatial turn" has hardly played an explicit role in the development of ANT,

and yet ANT has much to say about how to study space and various spatial formations – contributions that go beyond the mobilization of a specific spatial figuration, the network, to rethink the social. Secondly, it allows us to challenge the common understanding of ANT as a new theory of the social. Bruno Latour's remark that ANT is not a theory is often cited to argue that ANT, if anything, should be understood as a methodology committed to following actors as they fluidly move across nature and culture, technology and society, the big and the small. This is certainly accurate, yet what Latour was after was something different: "ANT," he argued, "is not a theory of the social, it is a theory of a space in which the social has become a certain type of circulation" (Latour 1999, 22). We take this definition as a cue to reconstruct ANT's contributions to the study of space.

We have divided this article into three main sections. In each of these sections we outline the broad and diverse field of ANT and, as the French philosopher Michel Serres would say, "betray" it in at least two ways. Firstly, we focus on very punctual contributions and interpret them as representatives of different moments in the history of ANT.[1] Secondly, we translate their content into a methodological contribution to the study of space. We start with "early ANT" as captured by Michel Callon's (1986) statement of methodological principles for a sociology of translation and reframe this as a critique of the most influential approach to the critical study of space, that is, Henri Lefebvre's (1991) theory of the production of space. Next, we engage with what has come to be known as "post-ANT" (Gad and Jensen 2010) or rather "after-ANT" (Law 1999) and discuss John Law and Annemarie Mol's (2001) topological approach to studying the circulations of technoscientific objects. We conclude with "near-ANT" (Farías et al. 2019), explorations of the Anthropocene, as put forward by Bruno Latour's most recent collaborations aimed at a re-mapping of the terrestrial (Arènes et al. 2018).

1 Early ANT: Toward a critique of the social production of space

When speaking of ANT and its broader reception in the world of social theory, it all comes down to one figure, the actor as a network of humans and non-humans, and especially one underlying concept: the network. Does this refer to globalization and digital infrastructures? Does this imply imagining a world of heterarchical relations? And what about hierarchies? Boundaries? Exclusion? What is often misunderstood in such discussions is that "network" does not describe the context or space within which actors would act. Rather, network is used to describe the practical work by means of which actors shape the webs in which they exist. A network describes both a (spatial) object and a (spatial) practice, and it reflects the concomitance of the two (Callon 1986; Law 1992). A second important point is that actor-networks are the result of material-semiotic processes of translation (Callon 1986; Law 2008). Early ANT takes the form of a sociology of translation that studies the "negotiations, intrigues, calculations, acts of persuasion and violence, thanks

1 Although we focus on the work of a few authors, it must be stressed that ANT was a collective effort even before it was known as such. It involved Madeleine Akrich, Michel Callon, Antoine Hennion, Bruno Latour, John Law, Anne-Marie Mol, Arie Rip and Helen Verran, to name but a few of its most prominent early representatives.

to which an actor or force takes, or causes to be conferred on itself, authority to speak or act on behalf of another actor or force" (Latour and Callon 1981: 279). We can now qualify the previous definition: Actor-networks as object-spaces are made of physical and social, material and semiotic relations between humans and nonhumans. This understanding of actor-networks as more-than-spatial figures invites us to imagine ANT as part of the broader "spatial turn" in the social sciences and humanities.[2]

The "spatial turn" has laid the ground for a more praxeological exploration of society, paying attention to the hybrid ecologies of elements that shape action, as well as the modes in which spaces are socially produced. At the very core of this development, we encounter Henri Lefebvre's theory of the social organization of space and his radical rejection of a container model that imagines space as a system of physical and absolute coordinates. Space, Lefebvre argues at the beginning of his book *The Urban Revolution* (2003), is a social product. In his acclaimed book The *Production of Space*, Lefebvre (1992) develops insights into a fully fledged theory of the historical and analytical dialectics between three components or moments in the production of space:

- *Representations of space* shape the dominant space of society—a space conceived by experts and ordered by means of technoscientific knowledge for the circulation of capital
- *Spaces of representations* refer to space as experienced by inhabitants and users through public or collective symbols and imaginaries—these are the lived spaces of everyday life
- *Spatial practices* entail the non-representational spatial perceptions and competences of people and embrace both conceived and lived space

These moments, he proposes, are to be understood as opposing each other, but dialectically connected. The dual tension delineated between the conceived and the lived, as well as between the representational and non-representational, has been extremely influential in socio-spatial research (see De Certeau 1984, Low 2016, Zukin 1996). Many scholars are indeed concerned with the conflicts and contradictions between different modes of doing space, paying attention to how a professionally conceived and produced space alienates everyday experiences and imaginaries, while at the same time never losing hope in the subversive capacity of everyday tactical improvisations and logics.

In order to understand ANT's methodological contribution to the study of space, it seems crucial to begin by underscoring how it differs from a dialectical approach as proposed by Lefebvre and widely adopted in socio-spatial research to date. We would like to highlight three key methodological principles of ANT (agnosticism, generalized sym-

2 This may also explain the great interest that ANT arouses in disciplines concerned with the design of social spaces, especially in architecture and planning. According to Guggenheim (2019: 68), "the difference between science and design is that in the latter, the agency attributed to designers and the terms 'fabrication' and 'construction' used to describe their work fit perfectly with their self-descriptions […] There are therefore no critical effects that the descriptions of ANT could have on architecture".

metry, and free association—see Callon 1984) and explore their critical implications for Lefebvre's trialectics of space.

The principle of "agnosticism" is not only directed toward what is considered self-evident in specific fields of practice. What ANT proposes is expanding agnosticism to include the sociological categories used to analyze the construction of truths, evidences, or values. Especially when it comes to the role played by actors, we need to let go of the sociological definition of action as human competence for intentional activity. Seen from this perspective, Lefebvre's framework, while agnostic in terms of what we commonly understand as space, appears shaped by unquestioned assumptions concerning the social as composed by groups of individuals divided by class, occupation, and gender, as well as institutions, such as the state. His conceptualization of the city as an *oeuvre* (Lefebvre 1996) produced by historical subjects, while at the same time producing the material conditions for their existence, duly expresses Lefebvre's attachment to conventional sociological categories. Early ANT invites us to go beyond the understanding of space as the construction of social actors.

The principle of "generalized symmetry" is often misunderstood as suggesting that all entities and forces forming actor-networks are equally powerful, as though the social were a heterarchical space without inequality, asymmetry, and difference. Such misunderstandings forget that ANT was first conceived as a sociology of power that takes Foucault's relational understanding of power very seriously. Generalized symmetry implies that our analytical frameworks and conceptual languages should not make an *apriori* differentiation between types of actors or action. Human and nonhuman, expert and lay, powerful and weak, global and local, institutional and individual actors—all such analytically distinct categorizations should be avoided and treated as empirical questions. From this perspective, Lefebvre's trialectics of space would ultimately preempt the study of space, reducing empirical research to the task of finding already prefigured tensions between lived, conceived, and perceived spaces.

The third methodological principle of early ANT is what Callon calls "free association." The social, and for that matter space, is made of hybrid relations, where anything can be connected with anything else, hence the description of ANT as a "sociology of associations" (Latour 2005). The crucial consequence of this principle is that the social is, so to speak, unfinished, that is, always expanding and shrinking, combining new entities while separating others. Accordingly, the key methodological principle is to follow the actors as they go about hybridizing the social. This understanding is, of course, diametrically opposed to the dialectical method, which conceives of the social as shaped by logical contradictions. Instead of approaching the production of space by means of abstract (and universal) tensions between different modalities, ANT's methodological challenge is to chart the multiplicity of means and forms in which spaces come into being and/or beings come into space.

2 After-ANT: A topological turn in the study of technoscientific objects

Early ANT had an important implication for the study of space (and time), which are to be thought as "consequences of the ways in which bodies relate to each other" (Latour

1997). Or more drastically: "We never encounter time and space, but rather a multiplicity of interactions with actants that have their own timing, spacing, goals, means, and ends" (ibid: 182). Whereas early ANT developed a highly differentiated vocabulary to describe such interactions, the network metaphor came to dominate its imagination of space.

In the 1990s, friendly fire suggested that the figure of the network was anything but neutral. Instead, it implied a very specific imaginary of the social: one that puts emphasis on control, univocity, and coherence (Star 1999). Accordingly, one of the most prominent issues in what has come to be called post-ANT or after-ANT is an exploration of the empirical varieties of object-spaces in actor-networks (Mol and Law 1994, Murdoch 1998). Latour and Hermant's (1998) book *Paris Invisible City* offers a good example of this. On the one hand, it introduces the concept of urban *oligoptica* to characterize the small offices at the center of large technical networks in which knowledge of urban ecologies and infrastructures is produced and used to coordinate their functioning, maintenance, and repair. Oligoptica are centers of coordination in network spaces, places in which only a very small portion or aspect of the city can be seen, albeit in great detail. One the other hand, the authors explore and theorize about other spatial figures: urban space as a "juxtaposition" of objects and regimes of intelligence formatting urban inhabitants in different ways and urban space as a "plasma", as the virtual, unknown space that none of the urban networks and oligoptica cover and that is the source of potential associations.

More generally, after-ANT participates in a broader turn to topology in social theory, thus joining the ranks of authors such as Martina Löw (2016 [2001]), who pointed out early on that despite a broad consensus about space as something embodied, flexible, and relational, most authors do not accurately describe how space results from relational arrangements of objects (understood as both things and persons). After-ANT is thus in good company moving from a sociology of translation to a topology of multiplicity (see Mol 2010). Indeed, whereas early ANT was mainly concerned with how an actor engages others to generate a network that speaks with one voice, after-ANT was mainly concerned with the multiplicity of translations, voices, and versions of objects and networks. Multiplicity is well summarized by the slogan that things are "less than many but more than one" (Mol 2001). Multiplicity does not simply suggest the existence of a plurality of objects, or the existence of many objects. Rather, it is an ontological claim about the multiple identities of every object, or its capacity to adopt different forms simultaneously. Yet multiplicity is not primarily an argument about time but an argument about space. Objects, John Law would then argue, "are always enacted in a multi-topological manner, and are dependent for their constancy on the intersection of different spaces" (Law 2002: 98).

After-ANT's topology of multiplicity thus conceptualizes four interrelated research questions. The first is the problem of homeomorphism or, to put it differently, of deformation without transformation. Topology, Law (1999) describes, is the study of the abstract set of relationships that define the form of an object. From a topological perspective, objects might be physically deformed—that is, bent or stretched—yet they still hold their form. In such abstract terms, there is no difference between a cube and a sphere or between a donut and a needle, as each pair might be deformed into one another without transforming their topological structure. The early ANT concept of network, Law argues, is aimed precisely at mapping such topological continuities of technoscientific objects.

A good example of this is Sophie Houdart's (2015) analysis of the architectural studio as a multi-local practice intended to facilitate the smooth circulation of models, ideas, and people between the architectural studio and the building site. Similarly, Monika Kurath and Julio Paulos (2019) have studied the ways in which planning becomes an issue of public interest, moving from the secluded spaces of bureaucracy to new sites of participation. In both accounts, we see how architecture and planning work involve the deformation, but not transformation, of highly heterogeneous inscriptions of urban things: A building is transformed into a survey which is then drawn by hand in the shape of a diagram or fabricated as a model, which is subsequently transformed into a rendering, etc.

The second question that arises is whether there are other modes of producing homeomorphic object-spaces. Two contributions seem particularly propitious. First, de Laet and Mol (2000) speak of "fluid objects" to describe objects whose ability to operate in a certain way remains stable despite the exchangeability, subtle mutability, and local adaptability of its parts. The case presented by de Laet and Mol is a technical object, a water-pump, that holds itself together as an object not despite but actually because of its local adaptation and the slight change of shape and scope of the sociotechnical networks that constitute it. Law and Singleton (2005) speak of "fire objects" in reference to objects that radically change their shape and even their name as they are constantly coping with discontinuous realities that cannot be made present simultaneously. A good example of a fire object-space is provided by Tironi (2010) in his study of the eventful urban topology of an alternative music scene. Rather than having a fixed topography of locations, the scene regularly crystallizes at different locations in different forms. Tironi speaks of a *gelleable space*, in which "what counts as a 'project' or as a 'band' is the performative effect of a momentary association that has 'gelled' into a unitary agent" (44). So, rather than proposing abstract concepts for describing topological relationships, ANT invites us to open up the list of topological formations that allow objects to maintain their identity while being radically deformed. While the trilogy of network, fluid, fire object-spaces has been mostly received as a typological classification, the research agenda set up by after-ANT is to continue adding topological formations.

The third question refers to the multi-topological nature of objects. Using the example of renovation in processes of urban renewal and gentrification, Guggenheim and Söderström (2010) argue that buildings exist in different spaces: Euclidean space, where the building form is physically homeomorphic and defined by stable or changing uses, and network space, where it is historically or conceptuality related to the adaptability and flexibility of classifications concerning its type. Guggenheim and Söderström argue that the instability of buildings as types is a result of their dual existence as a topography that becomes the object of reuse and a typology that is adaptable and flexible. After-ANT's commitment to multiplicity, we see here, is about understanding how objects become more robust or unstable. It is tempting to contrast this multi-topological approach with Lefebvre's trialectics of space. But in contrast to multiplicity, Lefebvre's frame implies a zero-sum articulation of different types of space: the more "conceived space," the less "lived space," and vice versa.

Finally, and perhaps the most unexpected turn of the argument, a multi-topological approach allows after-ANT not to simply reject Euclidean space but to incorporate

it into its analysis as a crucial topological formation: "The old unspoken hierarchical ANT view—that network-objects and network-spatiality underpin Euclidean-objects and spatiality—is misleading" (Law, 2002: 97). John Law's suggestion is fascinating as it involves adopting a symmetric perspective on the relationship between Euclidean and other topologies. Using the example of tourist maps, Farías (2011) argues that instead of accusing such maps of propagating confusion, "Imagine that—the real world confused with the white expanse of a piece of paper!" (Latour, 2009: 142), we should underscore how tourist maps decompress and expand destination space. By visualizing the destination as a *res extensa*, tourist maps counteract the possibility of a synecdoche of the tourist destination and render physical movement into a necessary condition to cover the material extensions making up destination space. Rather than overcoming Euclidean conceptions of space, the analytical challenge is to equate Euclidean space to other types of spaces.

3 Near-ANT: Speculative cartography for the study of critical zones

John Law's observation that a relational turn should not mean leaving physical space untheorized resonates in important ways with Bruno Latour's most recent work on redressing our understanding of the Anthropocene and the terrestrial through the notion of the *critical zone*. In geoscience, the critical zone refers to the thin layer of the earth's surface where life, human and non-human, has come to physically and chemically modify the cycles of matter. Critical zones are therefore locations on the envelope of the earth where geological, biophysical, and techno-social processes intermingle and which "under stress […] may break down entirely or shift to another state" (Latour 2014: 4). Latour's own term for the critical zone is that of a *metamorphic zone*, a space where heterogeneous entities come together and undergo fundamental morphogenetic transformations, exchanging properties and changing their form and identity.

The critical zone, to be clear, is not a topological but rather a metamorphic space. It is a space of life and death, and it involves the radical transformation, not the smooth deformation, of life forms. Rather than an after-ANT or post-ANT project aimed at fixing the shortcomings of early-ANT, Latour's work with critical zones can be regarded as a "near-ANT" project, one that is obviously inspired and very close to ANT but not primarily committed to the development of ANT (Farías et al. 2019). Something bigger and more urgent seems to be at stake: namely, the question of whether and how we can live together. Learning to live in the Anthropocene or, as Latour would put it, "facing Gaia" requires radically changing our understanding and perception of our planetary condition, making visible the interconnections and ecological transformations occurring in the critical zones of the earth (Latour 2017).

In recent years, Latour has embarked on just such an intellectual project in close collaboration with geoscientists, designers, and visual artists. His objective is to develop a new visual language, a post-cartographic mode of representation, to stage the earth as what it is: not a planetary system that can be viewed from above with a global perspective but rather a terrestrial rhizome that needs to be represented from the inside, taking into account the interconnections of life on the earth (see Aït-Touati 2012). One of the

key challenges, Alexandra Arènes, Bruno Latour, and Jérôme Gaillardet (2018) argue, is how to give depth and volume to the thin layer occupied by critical zones. The common visual representation of critical zones, they explain, follows the conventions of a "block diagram," meaning a cross section of the earth's surface with the atmosphere on top, the critical zone in the middle, and various geological layers on the bottom.

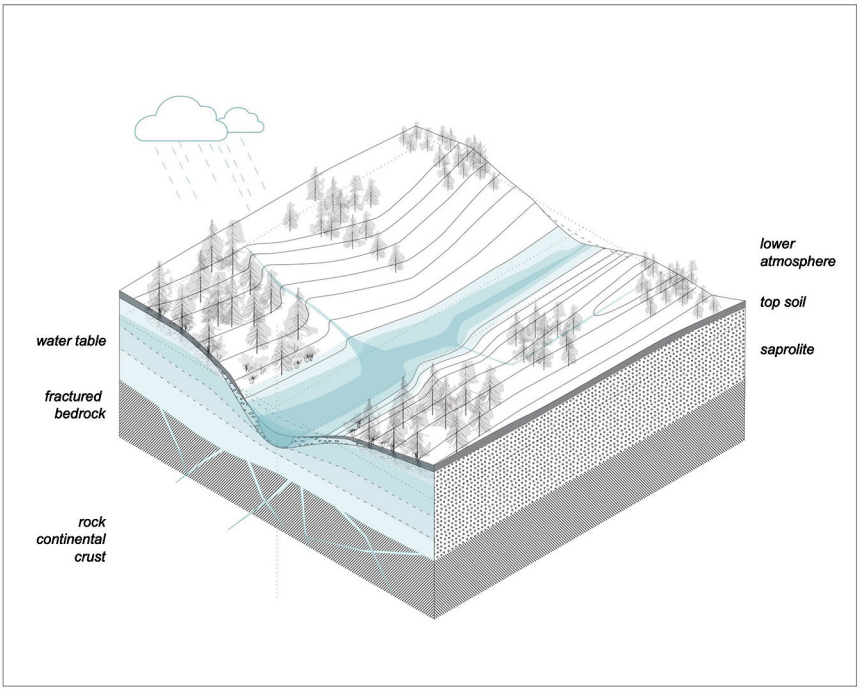


Fig. 1: Block diagram of a critical zone by Arènes, Latour, und Gaillardet

One of the problems with these representations is that they are incapable of displaying the complex ecological processes and metabolic dynamics that shape life in the critical zone. Block diagrams represent critical zones as local ecologies, thus missing how their dynamics result from complex distributions of the microscopic and the planetary, quick reactions and geological time, the local and the global.

In order to develop an alternative visual representation of critical zones, Latour and his colleagues rely on what is called anamorphosis in projective geometry: that is, a deformation of the scales and relations between the elements of a space without transformation. The first anamorphic operation consists of flattening the cross section of the critical zone to produce a two-dimensional circular representation of the geological layers that come together at a specific point in space. A critical zone is not represented as a local region of the planet (like the cross section) but as a series of concentric circles with the continental crust in the center and the atmosphere on the borders. The second anamorphic operation involves simply reversing the order of the layers so that the atmosphere

is at the center and the mantle on the borders of the plane. The third operation entails adding a third dimension to represent the sun as a source of energy for biochemical processes.

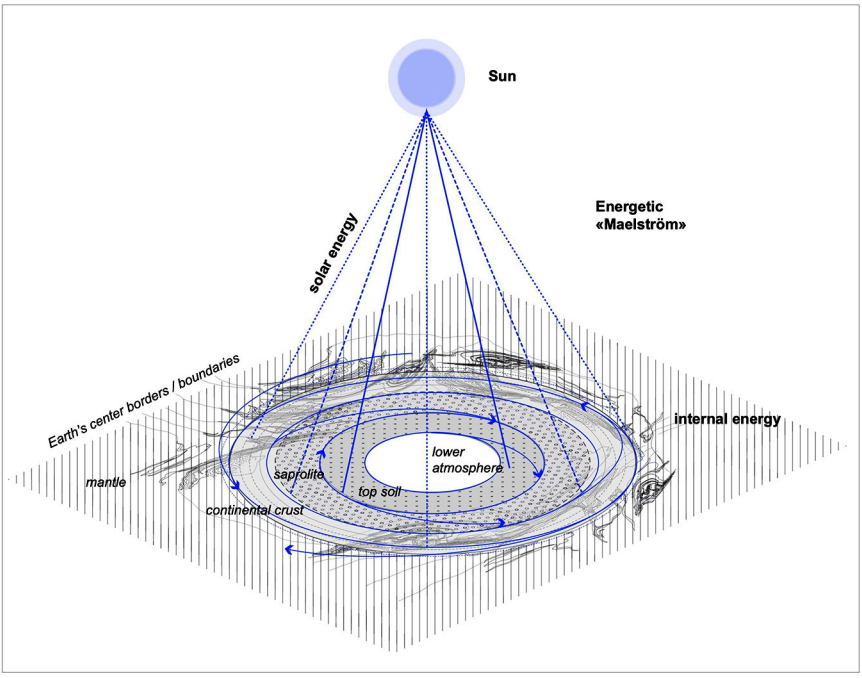


Fig. 2: Anamorphic view of a critical zone by Arènes, Latour, und Gaillardet

The result is surprising. In the center of the map is the lower atmosphere and the top soil: the critical zones in which life unfolds. The biochemical processes, feedback processes, and other dynamic relations between inhabitants of the critical zone can be represented in this space and related to both the sun and the earth mantle as two major sources of energy: tectonic and solar energy. The distributions of local and global, microscopic and planetary processes can be traced both by moving from the soil to the atmosphere and from the soil to the mantle. A system of spiral arrows is also proposed to represent the processes cutting across layers with different intensities and velocities. Latour and his colleagues exemplify this notation system with a map of the carbon biogeochemical cycle.

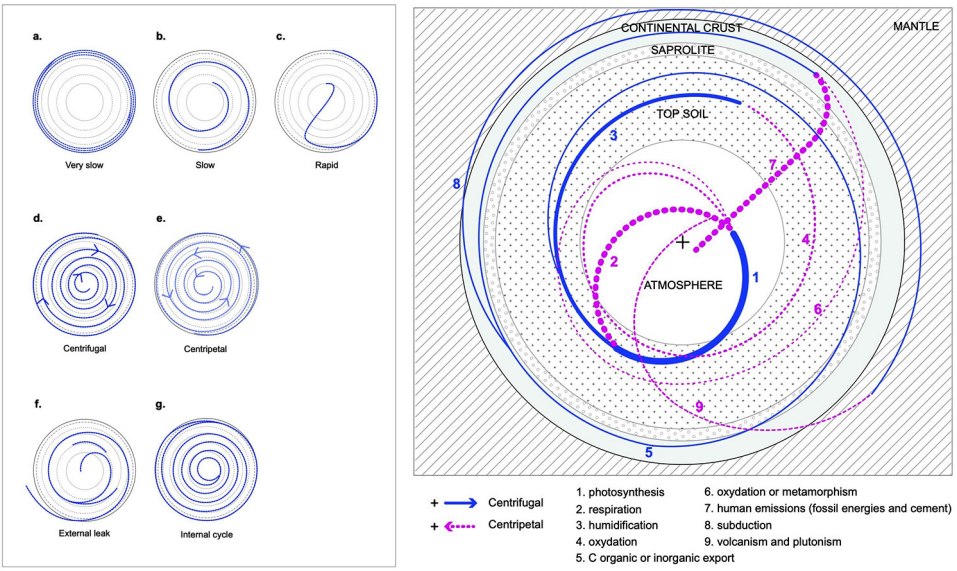


Fig. 3: Notational system for dynamic processes in a critical zone by Arènes, Latour, und Gaillardet

Have we finally arrived at ANT's ultimate contribution to the study of space? The answer is, of course, a resounding no. The value of these cartographic experiments, we believe, is less a possibility for establishing a new set of visual conventions to represent the terrestrial and more an invitation to experiment with anamorphic and topological representation of spaces, center-staging the multiple and complex interactions between different kind of actors, humans and nonhumans. ANT is indeed nothing but a theory of the spaces through which the social, understood as a more-than-human issue, circulates.

References

Aït-Touati, Frédérique (2012): *Fictions of the Cosmos: Science and Literature in the Seventeenth Century.* Chicago, IL: The University of Chicago Press.

Arènes, Alexandra/Latour, Bruno/Gaillardet, Jérôme (2018): *Giving Depth to the Surface: An Exercise in the Gaia-Graphy of Critical Zones*. In: The Anthropocene Review, 5(1).

Callon, Michel (1984): Some Elements of a Sociology of Translation: Domestication of the Scallops and the Fishermen of St Brieuc Bay. In: The Sociological Review, 32, pp. 196–233.

Callon, Michel (1986): *The Sociology of an Actor-Network: The Case of the Electric Vehicle*. In: Callon, Michel/Law, John/Rip, Arie (Eds.): Mapping the Dynamics of Science and Technology: Sociology of Science in the Real World. London: Palgrave Macmillan UK, pp. 19–34.

Certeau, Michel de (1984): *The Practice of Everyday Life*. Berkeley, CA: University of California Press.

Farías, Ignacio (2011): *Tourist Maps as Diagrams of Destination Space*. In: Space and Culture, 14(4), pp. 398–414.

Farías, Ignacio/Blok, Anders (2016): *Introducing Urban Cosmopolitics: Multiplicity and the Search for a Common World*. In: Blok, Anders/Farías, Ignacio (Eds.): Urban Cosmopolitics. Agencements, Assemblies, Atmospheres. London/New York, NY: Routledge, pp. 1–22.

Farías, Ignacio/Blok, Anders/Roberts, Celia (2019): *Actor-network theory as a companion: an inquiry into intellectual practices*. In: Blok, Anders/Farías, Ignacio/Roberts, Celia (Eds.): A Routledge Companion to Actor-Network Theory. London/New York, NY: Routledge, pp. xx-xxxv.

Gad, Christopher/Bruun Jensen, Casper (2010): *On the consequences of post-ANT*. In: Science, Technology & Human Values, 35 (1), pp. 55–80.

Guggenheim, Michael (2019): *How to Use ANT in Inventive Ways so That Its Critique Will Not Run out of Steam?* In: Blok, Anders/Farías, Ignacio/Roberts, Celia (Eds.): The Routledge Companion to Actor-Network Theory. Abingdon: Routledge, pp. 64–72.

Guggenheim, Michael/Söderström, Ola (2010): *Mobility and the Transformation of Built Form*. In: Guggenheim, Michael/Söderström, Ola (Eds.): Re-Shaping the City. How mobility shapes architecture and urban form. London: Taylor & Francis, pp. 3–19.

Houdart, Sophie (2015): *Architecture in the Wild: The Studio Overflowed*. In: Farías, Ignacio/Wilkie, Alex (Eds.): *Studio Studies. Operations, topologies and displacements.* Abingdon/New York, NY: Routledge, pp. 138–154.

Kurath, Monika/Paulos, Julio (2019): *Materielle Partizipation in Der Stadtplanung*. In: Bürgin, Reto/Kurath, Monika (Eds.): *Planung ist unsichtbar: Stadtplanung zwischen relationaler Designtheorie und Akteur-Netzwerk-Theorie*. Bielefeld: transcript, pp. 185–214.

Laet, Marianne de/Mol, Annemarie (2000): *The Zimbabwe Bush Pump: Mechanics of a Fluid Technology*. In: Social Studies of Science, 30(2), pp. 225–63.

Latour, Bruno (1997): *Trains of Thoughts-Piaget, Formalism and the Fifth Dimension*. In: Common Knowledge, 6(3), pp. 170–191.

— (1999): *On Recalling ANT*. In: The Sociological Review, 47(S1), pp. 15–25.

— (2005): *Reassembling the Social: An Introduction to Actor-Network-Theory*. Oxford/New York, NY: Oxford University Press.

— (2009): *Spheres and networks: two ways to reinterpret globalization*. In: Harvard Design Magazine, 30(Spring/Summer), pp. 138–44.

— (2014): *Some Advantages of the Notion of 'Critical Zone' for Geopolitics*. In: Procedia Earth and Planetary Science, 10, pp. 3–6.

— (2017): *Facing Gaia: Eight lectures on the new climatic regime*. Hoboken, NJ: John Wiley & Sons.

Latour, Bruno/Callon, Michel (1981): *Unscrewing the Big Leviathan: How Actors Macro-Structure Reality and How Sociologists Help Them to Do So*. In: Knorr-Cetina, Karin/Cicourel, Aaron V. (Eds.): Advances in Social Theory and Methodology. Abingdon: Routledge.

Latour, Bruno/Hermant, Emilie (1998): *Paris Ville Invisible*. Paris: La Découverte.

Law, John (1992): *Notes on the Theory of the Actor-Network: Ordering, Strategy, and Heterogeneity*. In: Systems Practice, 5(4), pp. 379–93.

— (1999): *After ANT: Complexity, Naming and Topology*. In: The Sociological Review, 47(S1), pp. 1–14.

— (2002): *Objects and Spaces*. In: Theory, Culture & Society, 19(5–6), pp. 91–105.
— (2008): *Actor Network Theory and Material Semiotics*. In: Turner, Brian S. (Ed.): The New Blackwell Companion to Social Theory. Hoboken, NJ: Wiley-Blackwell, pp. 141–58.
Law, John/Mol, Annemarie (2001): *Situating technoscience: an inquiry into spatialities*. In: Environment and Planning D: Society and Space, 19(5), pp. 609–21.
Law, John/Singleton, Vicky (2005): *Object Lessons*. In: Organization, 12(3), pp. 331–55.
Lefebvre, Henri (1992): *The Production of Space*. Hoboken, NJ: Wiley.
— (2003): *The Urban Revolution*. Minneapolis, MN: University of Minnesota Press.
Löw, Martina (2016): *The Sociology of Space: Materiality, Social Structures, and Action*. New York, NY: Palgrave Macmillan.
Low, Setha (2016): *Spatializing Culture: The Ethnography of Space and Place*. Abingdon/New York, NY: Routledge.
Mol, Annemarie (2010): *Actor-Network Theory: Sensitive Terms and Enduring Tensions*. In: *Kölner Zeitschrift Für Soziologie Und Sozialpsychologie*, *Sonderheft 50*, pp. 253–69.
Mol, Annemarie/Law, John (1994): *Regions, Networks and Fluids: Anaemia and Social Topology*. In: *Social Studies of Science*, 24(4), pp. 641–71.
Murdoch, Jonathan (1998): *The Spaces of Actor-Network Theory*. In: Geoforum, 29(4), pp. 357–74.
Star, Susan Leigh (1991): *Power, technologies and the phenomenology of conventions: on being allergic to onions*. In: Law, John (Ed.): A Sociology of Monsters. Essays on Power, Technology and Domination. *Sociological Review Monographs 38*. London/New York, NY: Routledge, pp. 26–56.
Tironi, Manuel (2010): *Gelleable Spaces, Eventful Geographies: The Case of Santiago's Experimental Music Scene*. In: Farías, Ignacio/Bender Thomas (Eds.): Urban assemblages: How actor-network theory changes urban studies. London/New York, NY: Routledge, pp. 27–52.

Queer/feminist perspectives on qualitative spatial research

Sandra Huning

> "In the field of women's studies, it is not enough to simply fill in unknown 'white spots' on the map; rather, the outlines of the continents have to be drawn anew." (Bauhardt 1996: 41, own translation)

Using the image of a map that is to be fundamentally redrawn instead of filled in, Christine Bauhardt illustrated in the mid-1990s the aspiration of contemporary women's studies: to provide new categories, concepts, and methodologies for spatial and planning research. In urban and planning research, this inspiration has been picked up repeatedly and is now well established in the individual disciplines related to the exploration of space, especially in geography, sociology, urban and spatial planning, and architecture. Meanwhile, the current focus in feminist research is much wider today than it was in the 1990s. All topics from these disciplines are potentially part of feminist inquiry. Approaches from queer theory and postcolonial studies have also been employed successfully for feminist research. The objective mentioned in the opening quotation continues to apply: Feminist research aims to go beyond simply filling in knowledge gaps about previously "overlooked" social groups and positions, unknown territories, or underexposed issues. Rather, it is also concerned with fundamentally challenging the relevance, categories, and basic methodologies of scientific disciplines. These aspects should themselves become objects of study (Hark 2009: 32) in order to uncover power structures and epistemic gaps in the production of knowledge. Insights beyond what is currently known are to be gained; at the same time, new blind spots emerge, which serve to encourage further research.

In this paper, I present selected key feminist perspectives for the empirical study of spaces using qualitative methods. I start with a brief summary of queer/feminist critiques of science, which reveal epistemic gaps and propose a specific understanding of objectivity (Section 1). This results in (at least) two methodological conclusions. On the

one hand, a deconstructive strategy can help to situate categories and concepts within the context of their creation and to illustrate different—in particular, marginalized—lifeworlds and experiences (Section 2). On the other hand, researchers are called to reflect on their own positionality to reveal the social and political context of knowledge production, as well as their own role therein (Section 3). Finally, I discuss how these reflections can be incorporated into the qualitative exploration of spaces (Section 4).

1 Queer/feminist critique of science

Queer/feminist critique of science rejects the premise of universalistic knowledge production, which was promoted in the sciences for centuries, characterized by an androcentric bias in the wake of enlightenment (Althoff et al. 2001: 27). Starting in the early 1990s, feminist geographers began to contemplate the epistemic gaps (Rose 1993: 5). They criticized how many of their colleagues saw themselves as "detached explorers" who assumed they could produce knowledge that was "universal, neutral, objective, unproblematically communicable, and singularly true" (Bondi/Domosh 1992: 202 et seq.). In particular, the "white bourgeois heterosexual masculine theorist" (Rose 1993: 149) was criticized for doing research from an undefined standpoint in order to discover true and universal knowledge, while conceding other scientists—predominantly women—particularist viewpoints at best as alleged representatives of partial groups.

Contemporary feminist architecture and planning made a similar critique of male claims of universality and the so-called "god-father model" in planning. Many planners regarded themselves as neutral experts acting on behalf of an "objective" common good and able to make impartial decisions thanks to their extensive technical and scientific knowledge. Feminist critique of urban and planning theory was directed both toward professional exclusions and toward the contextual gaps that followed (see Fainstein/Servon 2005; Rodenstein 2005).

In contrast, feminist critique of science underscores that knowledge production takes place within social relationships, which are riddled with power relations, and that researchers cannot assume a neutral position outside of these relationships.[1] This gives rise to (at least) two conclusions: on the one hand, the need for researchers to reflect on their own positioning and their own experiences and perceptions because these influence the research process and the research findings, for example, with regard to the topic of interest, the selected methods, interactions, or the interpretation of the data; on the other hand, the demand to deconstruct concepts, certainties, and normalities to "situate and explain the production of truths within a societal framework as materialized forms that are created in relation to the context" (Gutiérrez Rodriguez 1996: 172, own translation).

1 This also applies to feminist researchers themselves: 'White' feminist researchers have themselves been accused of trying to represent a universalistic feminist standpoint that concealed racist social relations, among other things (Schuster 2019: 1). Today, feminism is thought of much more in terms of plural feminisms, providing space for different perspectives (Ankele et al. 2010).

Queer theory takes this one step further by advocating for the complete rejection of universal epistemic and normative principles in order to "dismantle and de-hierarchize normalized social relationships and especially sex and gender hierarchies, thus making heterogeneous understandings of the self and the world, as well as diverse modes of existence, conceivable" (Engel 2007: 285, own translation). Many queer analyses focus on the deconstruction of normality, normativity, and their role in stabilizing power relations (Browne et al. 2017: 1380). This also involves rejecting "ahistorical, universal truths and norms, as well as the concept of a holistic subject" (Engel 2007: 285, own translation). Terms, concepts, and identities are contextualized within space and time and thus become ambiguous. They can then be regarded (and investigated) as effects of symbolic-discursive processes that regulate, normalize, and stabilize concrete social (power) relations.

Queer and feminist critique of science addresses scientific objectivity as "situated knowledge" (Haraway 1988). According to this understanding, researchers can adopt neither a universalistic nor a relativistic position, but rather must situate themselves explicitly within power-ridden discourses and processes. In doing so, their own positioning inevitably remains ambiguous, open-ended, and partial, but this is the only possibility to establish a relationship with a research topic, with interviewees, and with other participants:

> "The split and contradictory self is the one who can interrogate positionings and be accountable, the one who can construct and join rational conversations and fantastic imaginings that change history. […] Here is the promise of objectivity: a scientific knower seeks the subject position, not of identity, but of objectivity, that is, partial connection." (Haraway 1988: 586)

2 Deconstruction

Against this backdrop, exploring spaces does not mean investigating something that is "there" and simply needs to be discovered. Instead, many queer/feminist researchers assume that every research (re)constructs its object itself by selecting categories, methodological premises, and methods. Therefore, they do not attempt to identify the "true" qualities of (container) spaces and spatial phenomena by applying scientific methods in a controlled environment. Rather, many projects are based on a relational understanding of space (Schuster 2019: 2). Spaces are "a cut through the myriad stories in which we are all living at any one moment" (Massey 2013: 3) and can be experienced in entirely different ways at the same time. The preconceptions, categories, and methods of the researchers determine which perspectives become visible and which remain hidden.

Critical feminist sciences are always caught in a field of tension between the critique of power relations and the reproduction of hegemonic knowledge. Deconstruction as the "practice of feminist critique of science" means enduring this tension (Wartenpfuhl 1996: 207, own translation). For example, research related to gender relations inevitably reproduces the hegemonic interpretation of the gender category itself. New categorizations are not a solution in this case because they, too, define inclusions and exclusions, just

in a different manner. By questioning the structures and mechanisms used to create the categories in the first place, deconstruction can uncover power structures and the contingency of current relations and create new spaces for creative thinking.

Especially by deconstructing spaces and the concepts inscribed in them—gender, sexuality, housing, working, family, public, private—it is possible to develop new research perspectives. Spatial settings reflect notions of masculinity and femininity, gender arrangements, or sexual norm(alitie)s and can either stabilize them or reveal fractures (see Frank 2003; Schuster 2010, 2019). The deconstruction of gendered "instructions, invocations, and valuations" (Maihofer 2004: 38, own translation) in different spaces illustrates how these not only stabilize the two-sex binary but also heterosexuality as a social norm and normality (see Frisch 2002; Oswin 2008). Intersectional perspectives bring to the light the interdependencies of various categories with regard to social inequality such as gender, race, and class (Walgenbach 2007).

With this in mind, Ruth Becker proposed the following strategy for planning research:

> "A feminist planning theory must strive to discover how spatial structures and spatial planning [and of course also the categories and concepts used in this context; author's note] contribute to the social (re-)construction of the dual-sex system in order to derive planning concepts that help disrupt this construction process and promote deconstruction." (Becker 1998: 157, own translation)

Only then can we seriously address the question of (utopian) realms of possibilities that do not just reflect empirically observable social needs but also reveal opportunities for new forms of coexistence in which power relations are challenged and new possibilities for appropriation are offered. This means challenging concrete local needs, sociocultural frameworks for interpretation, and symbolic orders of spaces based on the respective specific contexts, in order to determine the contingency of current relations. This requires in particular research perspectives and methods from social and cultural sciences to answer questions such as: How are spaces constituted, who constitutes them (who does not), and in what manner? Who speaks with which authority and by which means about spatial and gender relations and is able to assert conceptions of normality that engender inequalities and exclusions? And finally: How can we spatialize a utopia that rejects gender roles (Becker 1997: 27)?

3 Positionality and reflexivity

In her paper *Methodische Postulate zur Frauenforschung* (English: Methodological Postulates for Women's Studies), Maria Mies (1984) demanded from researchers a deliberate partiality and their active participation in emancipatory activities: The objective of feminist research should not be to contribute better or more comprehensive data; rather, feminist research should deliberately aspire to eliminate oppression and exploitation. These postulates did not remain uncontested (see Althoff et al. 2001: 61 et seqq.; Müller 2008; Wohlrab-Sahr 1993). Nevertheless, partiality, a focus on transformative instead of simply

explanatory knowledge, inter- and transdisciplinarity, self-reflection, and the critique of power continue to be intrinsic commonalities in queer/feminist research (Hofmeister et al. 2013).

From this perspective, the relationship between researchers and their research partners needs to be redefined: on the one hand, from a normative perspective, to overcome the traditional division between those doing the research and those being researched or between research subjects and objects and to understand this relationship as partnership, which ideally is beneficial to both parties. Even if cooperation at "eye-level" does not always work out in research practice—for example, due to unequal resource availability—or inevitably remains a utopian ideal (McDowell 1992: 408), researchers are called upon to reflect on their relationship and interactions with their research partners throughout the entire research process. Insights gained from this reflexion should then be incorporated into the further research. On the other hand, this means laying bare assumptions that normally go unspoken. If identities are relational and are constantly being renegotiated, this is also the case in the research process. For example, the perception of personal similarities and differences influences the behavior of all those involved. Caroline Faria and Sharlene Mollett (2014), for instance, show how "being *white*"—together with attributions of success, modernity, and prosperity—play out as structural privilege in their research in South American and Africa. They show that "being *white*" has various connotations across class, sexuality, religion, or gender, thus having distinct impacts in different socio-spatial settings. Who is considered *white* and who is attributed which power and which social standing is constantly being renegotiated; in this specific case, this had implications for how the researchers were met and what information they obtained. Other researchers talk about the significance of gender, sexuality, age differences, or physical impairments in the field, which can play out in various ways depending on the research partner (see England 1994; Valentine 2002; Shah 2006).

Therefore, "the reflexive and critical use of qualitative methods and the struggle for non-hierarchical and non-exploitative research practices" (Wastl-Walter 2010: 60, own translation) plays a key role in queer/feminist research despite the fact that non-hierarchical research practices do not rest in the hands of the researcher alone. Societal power relations also have an impact on the research relationship, not only in the intellectual exchange but also with regard to embodied knowledge, because subjectivity and experience are not detached from the body, but rather are situated in the body itself (Vacchelli 2018a: 17).

Furthermore, reflexivity has its limits because one's own self is also relational and non-transparent (Rose 1997; Valentine 2002), thus making it impossible to entirely understand one's own positionality and its effects. Each project represents a performative intervention between researchers and research partners. Identities and relationships can be reconstructed, but ultimately, they cannot be fully controlled. Therefore, Gillian Rose suggests modesty: "What we may be able to do is something rather more modest but, perhaps, rather more radical: to inscribe into our research practices some absences and fallibilities while recognizing that the significance of this does not rest entirely in our own hands" (Rose 1997: 319) since, "in reality the research process is beyond the understanding of the researcher" (Valentine 2002: 125).

4 Research methods and reflexive research process

Despite the above-mentioned insights into the challenges of deconstruction and into the impossibility of researchers to fully comprehend their own research process, there are practical attempts to reflect on and expose the unavoidable shortcomings, independently of the chosen research methods. Many researchers agree that there are no methods designed exclusively for queer/feminist research but that qualitative methods are especially suited for addressing the subjective reality of the research partners (Althoff et al. 2001; Wastl-Walter 2010: 59). In any case, this requires a complex theoretical basis (Krause 2003: 24). *Participatory* methods, in which researchers and research partners purposely co-produce knowledge (Wastl-Walter 2010: 60; also see McDowell 1992: 405; Schurr/Segebart 2012), have received widespread attention over the last several years, adding to the traditional spectrum of qualitative methods. The same is true for *performative* methods, which incorporate the body as a bearer of experiences and thus data (Vacchelli 2013, 2018a). Elena Vacchelli proposes the methods of collage making and digital storytelling from a queer/feminist research perspective (Vacchelli 2018b; Vacchelli/Peyrefitte 2018). They can be combined with oral history (Kuhn 2008) and with storytelling as it is discussed in spatial planning (Sandercock/Attili 2010). Nina Schuster (2010) illustrates compellingly how ethnography can be fruitful for feminist research. Moreover, discourse theories with references to the work of Judith Butler and Michel Foucault have been translated into empirical practice over the last several years (Wastl-Walter 2010: 61 et seqq.), which has resulted in methods from linguistic philosophy being employed more and more frequently (see Jäger 2008; Sommer/Bembnista in this handbook).

Regardless of the selected data collection and analysis methods, many queer/feminist researchers address the question how reflexivity can be put into practice. Again, there are no universal guidelines in this regard. Research journals and field notes with records of what was experienced from a subjective perspective can be used to reveal personal assumptions, feelings, and reflexes in the analysis and can be fruitful for later research. On this basis, many authors recommend systematically created forms of collegial exchange during the research process: for example, everyday "kitchen table reflexivity" (Kohl/McCutcheon 2014), email conversations, correspondence or blogs between research teams (Browne et al. 2017), or even the reciprocal interpretation of interview material to reveal blind spots (Kohler Riessman 1991). Additionally, Liz Bondi (2009) proposes a teaching concept for giving future researchers the opportunity to experience reflexivity with their own body by means of deliberate exchange with others.

This short selection indicates that queer/feminist research requires personal commitment, social skills, and temporal resources. Ethical questions are raised that "detached explorers" did not have to address. In the end, there are always unanswered questions, and seeking answers anew in every project is what makes this both interesting and challenging—knowing that there can be no such thing as a conclusive answer or a universal truth.

References

Althoff, Martina/Bereswill, Mechthild/Riegraf, Birgit (2001): *Feministische Methodologien und Methoden. Traditionen, Konzepte, Erörterungen*. Wiesbaden: VS Verlag für Sozialwissenschaften.

Ankele, Gudrun/Mesquita, Sushila/Michalitsch, Gabriele/Hammerl, Elfriede (2010): Gespräch: Feminismus heute? In: Ankele, Gudrun (Ed.): *Feminismus* (absolute). Freiburg: Orange Press, pp. 7–19.

Bauhardt, Christine (1996): »... also ich plane ja für alle Menschen ...« Zu Universalismus und Differenz in den Planungsdisziplinen. In: *RaumPlanung*, 72, pp. 39–44.

Becker, Ruth (1997): Frauenforschung in der Raumplanung. Versuch einer Standortbestimmung. In: Bauhardt, Christine/Becker, Ruth (Eds.): *Durch die Wand! Feministische Konzepte zur Raumentwicklung*. Pfaffenweiler: Centaurus, pp. 11–32.

— (1998): Zu kurz gesprungen? Anmerkungen zum vielschichtigen Unbehagen über den Stand feministischer Planung – Überlegungen zu einer Neuorientierung. In: *Frei-Räume: Streitschrift der Feministischen Organisation von Planerinnen und Architektinnen*, 10, pp. 151–170.

Bondi, Liz (2009): Teaching Reflexivity. Undoing or Reinscribing Habits of Gender? In: *Journal of Geography in Higher Education*, 33(3), pp. 327–337.

Bondi, Liz/Domosh, Mona (1992): Other Figures in Other Places: On Feminism, Postmodernism and Geography. In: *Environment and Planning D: Society and Space*, 10(2), pp. 199–213.

Browne, Kath/Banerjea, Niharika/McGlynn, Nick/B., Sumita/Bakshi, Leela/Banerjee, Rukmini/Biswas, Ranjita (2017): Towards Transnational Feminist Queer Methodologies. In: *Gender, Place & Culture*, 24(10), pp. 1376–1397.

Engel, Antke (2007): Entschiedene Interventionen in der Unentscheidbarkeit. Von queerer Identitätskritik zur VerUneindeutigung als Methode. In: Hark, Sabine (Ed.): *Dis/Kontinuitäten: Feministische Theorie*. 2nd edn. Wiesbaden: VS Verlag für Sozialwissenschaften, pp. 285–304.

England, Kim V. L. (1994): Getting Personal: Reflexivity, Positionality, and Feminist Research. In: *The Professional Geographer*, 46(1), pp. 80–89.

Fainstein, Susan/Servon, Lisa (2005): Introduction. The Intersection of Gender and Planning. In: Fainstein, Susan/Servon, Lisa (Eds.): *Gender and Planning. A Reader*. New Brunswick, NJ/London: Rutgers University Press, pp. 1–14.

Faria, Caroline/Mollett, Sharlene (2014): Critical Feminist Reflexivity and the Politics of Whiteness in the 'Field'. In: *Gender, Place & Culture*, 23(1), pp. 79–93.

Frank, Susanne (2003): *Stadtplanung im Geschlechterkampf. Stadt und Geschlecht in der Großstadtentwicklung des 19. und 20. Jahrhunderts*. Opladen: Leske + Budrich.

Frisch, Michael (2002): Planning as a Heterosexist Project. In: *Journal of Planning Education and Research*, 21(3), pp. 254–266.

Gutiérrez Rodriguez, Encarnacion (1996): Frau ist nicht gleich Frau, nicht gleich Frau, nicht gleich Frau... Über die Notwendigkeit einer kritischen Dekonstruktion in der feministischen Forschung. In: Fischer, Ute/Kampshoff, Marita/Keil, Susanne/Schmitt, Mathilde (Eds.): *Kategorie: Geschlecht? Empirische Analysen und feministische Theorien*. Opladen: Leske + Budrich, pp. 163–190.

Haraway, Donna (1988): Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective. In: *Feminist Studies*, 14(3), pp. 575–599.

Hark, Sabine (2009): Was ist und wozu Kritik? Über Möglichkeiten und Grenzen feministischer Kritik heute. In: *Feministische Studien*, 27(1), pp. 22–35.

Hofmeister, Sabine et al. (2013): Grundlegungen im Themenfeld Geschlechterverhältnisse und Nachhaltigkeit. In: Katz, Christine/Hofmeister, Sabine/Mölders, Tanja (Eds.): *Geschlechterverhältnisse und Nachhaltigkeit*. Opladen: Barbara Budrich, pp. 33–76.

Jäger, Margarete (2008): Diskursanalyse: Ein Verfahren zur kritischen Rekonstruktion von Machtbeziehungen. In: Becker, Ruth/Kortendiek, Beate (Eds.): *Handbuch Frauen- und Geschlechterforschung. Theorie, Methoden, Empirie*. 2nd edn. Wiesbaden: VS Verlag für Sozialwissenschaften, pp. 378–383.

Kohl, Ellen/McCutcheon, Priscilla (2014): Kitchen Table Reflexivity. Negotiating Positionality through Everyday Talk. In: *Gender, Place & Culture*, 22(6), pp. 747–763.

Kohler Riessman, Catherine (1991): When Gender is Not Enough. Women Interviewing Women. In: Lorber, Judith/Farrell, Susan (Eds.): *The Social Construction of Gender*. Newbury Park/London/New Delhi: SAGE, pp. 217–236.

Krause, Ellen (2003): *Einführung in die politikwissenschaftliche Geschlechterforschung*. Opladen: Leske + Budrich.

Kuhn, Annette (2008): Oral history und Erinnerungsarbeit: Zur mündlichen Geschichtsschreibung und historischen Erinnerungskultur. In: Becker, Ruth/Kortendiek, Beate (Eds.): *Handbuch Frauen- und Geschlechterforschung. Theorie, Methoden, Empirie*. 2nd edn. Wiesbaden: VS Verlag für Sozialwissenschaften, pp. 351–353.

Maihofer, Andrea (2004): Geschlecht als soziale Konstruktion – eine Zwischenbetrachtung. In: Helduser, Urte/Marx, Daniela/Paulitz, Tanja/Pühl, Katharina (Eds.): *under construction? Konstruktivistische Perspektiven in feministischer Theorie und Forschungspraxis*. Frankfurt a. M./New York, NY: Campus, pp. 33–43.

Massey, Doreen (2013): *Doreen Massey on Space*. Interview, Social Science Bites. A New Podcast Series with Leading Social Scientists, 1 February. Online: www.socialsciencespace.com/2013/02/podcastdoreen-massey-on-space/ (accessed: 26 June 2020).

McDowell, Linda (1992): Doing Gender: Feminism, Feminists and Research Methods in Human Geography. In: *Transactions of the Institute of British Geographers*, 17(4), pp. 399–416.

Mies, Maria (1984): Methodische Postulate zur Frauenforschung – dargestellt am Beispiel der Gewalt gegen Frauen. In: *Beiträge zur feministischen Theorie und Praxis*, 7(11), pp. 7–25.

Müller, Christa (2008): Parteilichkeit und Betroffenheit: Frauenforschung als politische Praxis. In: Becker, Ruth/Kortendiek, Beate (Eds.): *Handbuch Frauen- und Geschlechterforschung. Theorie, Methoden, Empirie*. 2nd edn. Wiesbaden: VS Verlag für Sozialwissenschaften, pp. 332–335.

Oswin, Natalie (2008): Critical Geographies and the Uses of Sexuality: Deconstructing Queer Space. In: *Progress in Human Geography*, 32(1), pp. 89–103.

Rodenstein, Marianne (2005): Gruppe »Frauen, Steine, Erde«: Frauen-Räume-Architektur-Umwelt. In: Löw, Martina/Mathes, Bettina (Eds.): *Schlüsselwerke der Geschlechterforschung*. Wiesbaden: VS Verlag für Sozialwissenschaften, pp. 135–147.

Rose, Gillian (1993): *Feminism and Geography*. Cambridge/Malden: Polity Press.

— (1997): Situating Knowledges. Positionality, Reflexivities and Other Tactics. In: *Progress in Human Geography*, 21(3), pp. 305–320.

Sandercock, Leonie/Attili, Giovanni (2010): Digital Ethnography as Planning Praxis. An Experiment with Film as Social Research, Community Engagement and Policy Dialogue. In: *Planning Theory & Practice*, 11(1), pp. 23–45.

Schurr, Carolin/Segebart, Dörthe (2012): Engaging with Feminist Postcolonial Concerns through Participatory Action Research and Intersectionality. In: *Geographica Helvetica*, 67(3), pp. 147–154.

Schuster, Nina (2010): *Andere Räume. Soziale Praktiken der Raumproduktion von Drag Kings und Transgender*. Bielefeld: transcript.

— (2019): Queer Spaces. In: Orum, Anthony (Ed.): *The Wiley-Blackwell Encyclopedia of Urban and Regional Studies*. Hoboken, NJ: Wiley-Blackwell, pp. 1–6.

Shah, Sonali (2006): Sharing the World: The Researcher and the Researched. In: *Qualitative Research*, 6(2), pp. 207–220.

Vacchelli, Elena (2013): Researching the Urban Reflexively: Feminist Methodological Issues. In: *HAGAR Studies in Culture, Policy and Identities*, 11(1), pp. 41–62.

— (2018a): *Embodied Research in Migration Studies*. Bristol/Chicago, IL: Policy Press Shorts Research.

— (2018b): Embodiment in Qualitative Research: Collage Making with Migrant, Refugee and Asylum Seeking Women. In: *Qualitative Research*, 18(2), pp. 171–190.

Vacchelli, Elena/Peyrefitte, Magali (2018): Telling Digital Stories as Feminist Research and Practice: A 2-day Workshop with Migrant Women in London. In: *Methodological Innovations*, 11(1), pp. 1–11.

Valentine, Gill (2002): People Like Us. Negotiating Sameness and Difference in the Research Process. In: Moss, Pamela (Ed.): *Feminist Geography in Practice.* Oxford: Blackwell, pp. 116–126.

Walgenbach, Katharina (2007): Gender als interdependente Kategorie. In: Walgenbach, Katharina/Dietze, Gabriele/Hornscheidt, Antje/Palm, Kerstin (Eds.): *Gender als interdependente Kategorie. Neue Perspektiven auf Intersektionalität, Diversität und Heterogenität.* Opladen/Farmington Hills, MI: Barbara Budrich, pp. 23–64.

Wartenpfuhl, Birgit (1996): Destruktion – Konstruktion – Dekonstruktion. Perspektiven für die feministische Theorieentwicklung. In: Fischer, Ute/Kampshoff, Marita/Keil, Susanne/Schmitt, Mathilde (Eds.): *Kategorie: Geschlecht? Empirische Analysen und feministische Theorien*. Opladen: Leske + Budrich, pp. 191–209.

Wastl-Walter, Doris (2010): *Gender Geographien. Geschlecht und Raum als soziale Konstruktionen* (Sozialgeographie kompakt, 2). Stuttgart: Franz Steiner.

Wohlrab-Sahr, Monika (1993): Empathie als methodisches Prinzip? Entdifferenzierung und Reflexivitätsverlust als problematisches Erbe der »methodischen Postulate zur Frauenforschung«. In: *Feministische Studien*, 11(2), pp. 128–139.

The reflective methodology of artistic spatial research

Anke Haarmann

In the arts, we can observe aesthetic confrontations with social, ecological, urban, acoustic, geographic, political, and many other spaces by means of corporal, performative, graphic, interventionist, or participatory methods. But can spatial research methods be applied to the arts? The performance group LIGNA explores the architectures of economy and power at central train stations in order to reveal mechanisms of exclusion in public space.[1] The artist group Ala Plástica performs aesthetic fieldwork as ecological action at Rio de la Plata by involving the local population in identifying different insights into the ecology of the space.[2] These two examples serve to stimulate the imagination for potential aesthetic spatial research with concrete artistic projects. By using conventional scientific terms, such as those of cartography and field research, it is possible to describe spatial research methods in the field of the arts or to translate aesthetic approaches into aesthetic conceptions of space: This was the case for LIGNA, where urban space was understood performatively and illustrated choreographically, or for Ala Plástica, where ecological space was perceived rhizomatically and recognized as transformative based on indigenous knowledge and landscape art. Before I take a closer look at the aesthetic approaches to artistic spatial research specifically, it is first necessary to address the systematic challenges associated with this type of spatial research. This means exploring the epistemological realm of possibilities offered by artistic research methods.

The epistemological aspects raise the question of what qualifies certain practices related to space as aesthetic research methods? How can we summarize the methods used in artistic spatial research? How do traceability and thus negotiability manifest in the arts? Which *paths to knowledge* can be identified as aesthetic research methods? Artistic spatial research requires contemplation of its methods: a methodology. As a doctrine based on the structure, conception, or prevalence of the methods, a methodology can be understood as the fundamental tenets of concrete scientific methods or as the contemplation of the case-specific requirements for singular epistemic approaches. A regulatory methodology acts as a guide for the scientific field of work. A reflective methodology explains the specific methods used after the research endeavor as a retrospective

1 See https://ligna.blogspot.com/2009/12/radioballett.html

2 See https://alaplastica.wixsite.com

plausible path to knowledge. I aim to show that we cannot refrain from using a methodology in artistic research and that it is possible to develop a reflective methodology, especially to avoid the danger of disciplining the arts with a regulatory methodology. At the same time, I hope to entice the other sciences to join us on our path toward a reflective methodology capable of validating both the singularity and plausibility of the approach in the field of the arts. I would like to focus on a contemplative theory of routes to knowledge and learn to understand the aesthetic methods of the specific practices in the arts in order to determine what methodological research means in relation to the arts and how it can be assessed.

1 Comparative methodology

As of the beginning of the 21st century, artistic research is still at an early stage of development on its way to becoming a *normal science*. A "normal science," as denoted by philosopher of science Thomas Kuhn (1976), describes the status of an established discipline that does not have to legitimize its methodological standards because it is no longer called into question as a science. However, the debate about the arts and their methods[3] illustrates that artistic research—and thus artistic spatial research as well—is still far away from achieving the status of an uncontested normal science. Artistic research does not yet have any methodological standards—and many think this is a good thing for the sake of supposed freedom in the arts. But at the same time, it is necessary to validate the plausibility of and accept originally artistic practices and aesthetic methods as research techniques for practical applications in the arts. Therefore, it must be possible to distinguish arts-based practices from the methods used in the natural sciences, social sciences, and humanities. It only makes sense to use the term artistic research instead of arts that simply juggle with scientific practices if we can identify originally arts-based research techniques and differentiate aesthetic field research, cartography, or surveying from ethnological or geographic research. This differentiation with regard to the different methodological approaches can in fact be achieved by a methodology devoted to the manifold plausibility criteria of different methods in the various disciplines with the goal of identifying the specific characteristics and demonstrating the plurality of methods as a basis for the epistemic distinctness of artistic research methods.

Such a comparative methodology is nothing new in and of itself. It will merely have to be adapted to the arts and their unique character as artistic research. A comparative methodology is a long-standing approach used since the advent of the natural sciences and their separation from philosophy. During the transition from the 15th to the 16th century, Francis Bacon differentiated between the experimental method used in the new "empirical philosophy" on the one hand and the deductive method used in traditional, argumentative philosophy on the other, although he insisted that people "must for a while renounce their notions, and begin to form an acquaintance with things" (Bacon 1990 [orig. 1620]: Aphorismus 36). Not only does Bacon endeavor to understand and discuss

3 For an example with a wealth of other references to the debate on artistic research, its methods, and its practices, see: Badura et al. (2015).

the methods in the differentiation, he also assumes that a new perspective on research is required for this differentiation in order to truly recognize the epistemic substance of the different roads to knowledge. This call to renounce our notions and familiarize ourselves with "things" can also be applied to the methodology in artistic research. In the 19th century, Wilhelm Dilthey established the category of the social sciences, differentiating them from the natural sciences based on the concepts of *understanding* in the natural sciences and *explaining* in the social sciences (see Dilthey 1974). In the 20th century, Hans Georg Gadamer took up this differentiation and proposed defining the understanding and interpreting texts in the historically philosophical disciplines as "experience of the world" in contrast to the modern natural sciences (Gadamer 1986). Gadamer explicitly calls the type of understanding used in the natural sciences "methods" as opposed to the type of understanding inherent in the social sciences, which appears through the experience of "hermeneutic understanding" and does not produce knowledge but rather "truth" (ibid.). It is not necessary to follow Gadamer's recommendations for a differentiated terminology, but they clearly illustrate the considerable focus on an interpretative endeavor to distinguish methods from types of understanding, which has characterized the history of comparative methodology for a long time.

This attention to an epistemological differentiation must be rediscovered and used for the benefit of artistic research. It places *aesthetic philosophy* (as one could also call artistic research based on Bacon's concept of "empirical philosophy" for the emerging natural sciences) on an equal footing. Closer inspection of the existing scientific disciplines, which are no longer only divided into the two main groups of *argumentative or empirical philosophy*, opens up a multi-faceted cabinet of curiosities for the comparative methodology with diverse, coexisting approaches to searching for knowledge: approaches that operate with different media such as numbers, words, or images and that each vary within the sciences. In the historical-philosophical disciplines, another analytical tool was established with Michel Foucault's discourse analysis, different than Georg Wilhelm Friedrich Hegel's speculative dialectics, Plato's narrative dialogues, or Edmund Husserl's phenomenology. In the natural sciences, digital simulations differ from empirical laboratory work, exploratory fieldwork, or theoretical mathematics. Qualitative or quantitative interview techniques deal with the social world differently than participatory observation perspectives. Time and again, new methods have had to be established or assert themselves over the suspicion of pseudoscience.

Against the backdrop of this plurality of methods, aesthetic practices can principally also be added to the list of recognized methodological approaches. But which ones? Despite the broad variety of methodological approaches, there is wide consensus that negotiable and explicable methods are intrinsic to the concept of research, which means research must take place within the framework of comprehensible practices. The methodology underlying the methods—in their wealth of variations—is determined by this traceability. The numerous research approaches are based on this shared expectation for traceability as this serves as a negotiable instrument for each method in the research. This raises the epistemological question of what exactly this traceability means in the field of arts-based methods and how it works.

2 Retrospective traceability

A comparison of the approaches used in different sciences to ensure traceability reveals that some function differently in argumentative semantic webs than in deliberate lines of reasoning or quantifiable experiments. The respective traceability of sentences, calculations, or effects operate with distinct media or obligations. From an epistemic perspective, deliberate reasoning (from the natural sciences) first had to prove itself historically vis-à-vis speculative explanations (from philosophy) in order to be recognized as a comprehensible method for acquiring knowledge. Not only does the initial concern regarding a lack of traceability clearly apply to modern art as a field of research, it also appears to be part of the epistemological debate. The sciences are a long historical process of negotiations about what should be accepted or rejected, which involves not only the right to make assertions and speak but also the plausibility and persuasive power of the methods and how they are experienced or co-experienced. Therefore, a methodology for the arts as a knowledge producer would seem indispensable for artistic research in order to validate the plausibility of the aesthetic strategies. Nevertheless, such a methodology is often rejected out of fear for the autonomy of the arts. However, the widespread rejection of an aesthetic methodology is related to the steadfast understanding of a regulatory methodological approach that lays down a canon methods instead of aspiring for a reflective methodological approach.

After all, traceability does not mean regulation. The demand for comprehensible methods in the field of artistic research does not have to imply anything more than the *post-hoc* description of the actual path to knowledge, including the expedient system and outcome in detail. Jean-François Lyotard (1993: 33 et seqq.) uses the term "post-modo" to describe this anticipation of a not yet achieved but sensed knowledge about the path of cognition that will make sense and lead to understanding in retrospect. Doing *post-modo* research means preconceiving an evolving consistency and recognizing its implementation as consistent after the fact. We are familiar with such unanticipated work on methodological consistency in the cognition process from other disciplines. Therefore, no established sets of authoritative research methods and no canon of fixed reflexion techniques can be defined before the deliberation process. Philosophies continue to develop new, systematic-methodical answers to various questions and problems. The self-reflexive and adaptive process of practical research is decisive in this regard. Reflexive and adaptive practice means that the methods and their respective consistency develop as the exploratory and investigative process unfolds logically together with its situative genesis.

Accordingly, for artistic research, it can be advisable to define a basic requirement for a precise, reflexive, consistent, and transparent method as an after-effect or consequence of arts-based research practice, but not as a preceding set of rules. On the horizon of a reflective methodology looms the fact that research in the arts follows a methodically consolidating practice and it is possible to discuss—reflectively—the traceability of the applied methods in retrospect. This means relying on comprehensible, negotiable, falsifiable aesthetic methods that are first developed and validated within the field of artistic research; and this means integrating reflectivity and retroactivity into the epistemic theory. This means striving for a doctrine of routes to artistic knowledge that does not

prescribe but rather reconstructs. Thus, the fear of the arts being turned into a discipline, induced by the search for standard methods, appears to be methodologically unfounded. A methodology for artistic research aspires to be a justification for the retroactivity of the methodical and thus ultimately a collection of individual cases of artistic research. For this collection, it is necessary to highlight the compelling nature of the individual arts-based techniques *post-modo*, with the aim of establishing a tradition of research cases and not identifying standard methods. It would be helpful to refer to individual research practices and to recognize their effects in terms of generating insights from this perspective—not based on universal methods. It is necessary to consider individual artistic practices and determine their research potential, which brings me back to the cases of artistic spatial research I mentioned at the beginning. What are the epistemic practices underlying the artistic studies of urban space in the case of LIGNA or of ecological space in the case of Ala Plástica?

3 A study of the exclusion mechanisms in public space

The *Radio Ballet* organized by the LIGNA performance group investigates the rules and exclusion mechanisms of public space by making deviant behavior visible. It is regarded as a "practice of inappropriate loitering."[4] The *Radio Ballet* follows the assumption that public space is part of visual culture and can be understood as a *mise-en-scène* of the urban. Accordingly, the *Radio Ballet* can be found at the iconic level of the performative, methodically developing a corresponding relationship between aesthetic research practice and the conception of the study object. The *Radio Ballet* is a performance that takes place in partially public spaces, such as train stations. As a performance, it can demonstrate something in and on public space because the public is performative. In order to understand what can be illustrated in and with the performance, it is necessary to become part of it. The understanding that is unlocked with this performance about open space takes place as a "co-experience" (Badura 2015), by participating in and experiencing the performative experience. For the *Radio Ballet*, the LIGNA group invites voluntary participants to meet at a certain time at a certain location, for example at Hamburg Central Station. Everyone in the performance then has headphones on or listens to a transistor radio. The participants find themselves spread out across the space and hear over a certain frequency on their radios what is inaudible for normal passers-by: instructions, music, and reflections. "The Radio Ballet," whispers the voice on the radio into the ears of the participants attending the performance, "promotes the gray zone between permitted, twilight, and forbidden gestures. It allows the gestures that are driven out of the privatized public space to return."[5] The performance is based on a pre-produced radio program that is broadcast via an open city radio station or a mobile transmitter. In a mix of prompts, explanations, and atmospheric musical sounds, the participants in the

4 See the video documentation of the performance at: https://ligna.blogspot.com/2009/12/radioball ett.html

5 See here and listen to the following acoustic quotes: https://ligna.blogspot.com/2009/12/radioball ett.html

performance are turned into collective and scattered experimenters in using permitted and forbidden gestures in the privatized public space. Dispersed across the train station with its platforms and lounges, stores and snack stations, the performance participants follow the instructions from the radio and can be identified based on the simultaneous movements of their bodies as a scattered choreography: As if by magic, all participants of the performance bend their right arm suddenly and stretch out their hand to beg. All participants lie down on the ground at the same time scattered across the train station. "The businesses in the consumption area," announces the voice on the radio, "display vestiges of a dream world: the dream world is the commodity. The privatization of the consumption area guards wealth—other distributions of this wealth are conceivable in inappropriate loitering!" After these theories on the commoditization of the public and its narcotic effects on the individuals, another voice now prompts the listeners to become active: "Stand in front of the shop window and brush the goods against the grain!" As if the brushing of the many fingers over the store windows were not enough as a gray zone gesture to sense the forbidden first hand, the voice on the radio urges: "Contact: Knock on the store windows—knock on the window again but harder." This produces a frightening clatter against store windows in the train station. What seems like a provoking signal from outside, knocking against the principles of public order, is backed by the inner logic of the choreography as an argument: "Another distribution of wealth becomes conceivable," says the radio and then calls: "Run away!" The performance participants fly away from the store windows, where they were standing just moments before, across the space again in all directions—as if they were fleeing. The performance participants create a choreography that provokes the space in terms of its socio-economic boundaries, thus making those boundaries visible. By means of "inappropriate" loitering in public space, participants of the performance step onto the stage of the public and become representative and visible actors. The interventionist performance of the *Radio Ballet* is a demonstration of regulations and prohibitions in the literal sense of a *demonstrare*, performative, and at the same time disconcerting display: a display that becomes accessible to the participants of the performance as a co-productive experience. Furthermore, by means of a retrospective, cinematic display, this performance makes it possible to communicate and thus replicate the knowledge unfurled in it. The cinematic documentation of the *Radio Ballet* is an audiovisual montage consisting of acoustic inside views of the performance using radio recordings and visual exterior views of the performative actions in the public space of the train station. When watching the video, viewers are sucked into the atmosphere of listening to and following instructions and subjected to the fixating gazes of the passers-by when reaching out the hand to beg or sounding out the room fleetingly. The aesthetic experience, which produces knowledge in the context of the performative setting (like under controlled and structured laboratory conditions), is translated into a communicable medium by means of the cinematic documentation, into an audiovisual co-experience.

4 Aesthetic field research in ecological space

Ala Plástica takes a different approach: methodologically, spatially, and in terms of communication. The group deals with Rio de la Plata in Argentina and sees itself as an artistic-political environmental organization. Rio de la Plata, the river of silver, is an estuary the size of a sea and as such a complex socio-natural space. Several million people in the densely populated metropolises of Buenos Aires and Montevideo are supplied with water from the drainage basin. The estuary is polluted by trash and discharge. This ecological and social starting point forms the basis for the research and transformational work of Ala Plástica in the natural space. Its long-term project *Junco/Especies Emergentes*, which started in 1995, resembles a field research project as a campaign in which the local population, as well as scientific and technical experts, are invited to participate. The social, political, aesthetic, and scientific research question centers around a local type of reed, the junco, based on the traditional knowledge of the local rural population about its occurrence, texture, effects, and pliability. Junco is used to weave baskets in the daily practices of the rural community. Thanks to its extensive root system, however, junco is also able to clean water and reinforce river banks. It creates landscapes, purifies bodies of water, and clarifies facts. Its occurrence is economically and ecologically useful. Within the scope of its artistic-political project, Ala Plástica makes use of photography, performative gatherings, collections of objects and statements, and choreographies of people and expertise. The local, site-specific, and traditional knowledge has been mapped out and successfully applied to the specific environmental problems of Rio de la Plata as an ecological, epistemic, and aesthetic tool. As an alternative to scientific, biochemical knowledge types that respond to environmental pollution with laboratory analyses and artificial substances, Ala Plástica unlocks experience-based knowledge and uses it as a minimally invasive instrument to shape the landscape: The junco reed belt on the banks of Rio de la Plata was restocked as part of the *Junco/Especies Emergentes* project in order to improve the water quality in the basin.[6] This aesthetic-horticultural campaign implied a collaborative analysis, land art, and political action, while also having a socio-epistemic impact. Just as the reed spreads rhizomatically via its root system, the communication networks of the group grew and are becoming more and more refined. The junco knowledge type flows through these communication channels and settles in the ramified network, like the river bottom covering the reed rhizome on the banks of Rio de la Plata. Ala Plástica does not simply share the knowledge developed in its projects centrally via the Western European cultural system. The oral knowledge transfer of the indigenous population is activated as well, similar to scientific networks in which papers are written and presentations are held. The group restages methodologically comparable, participatory interventions in the ecological space at other locations with other plant and human collaborators and organizes exhibitions showcasing the reed as a representative exhibit. The exhibitions are regarded as a platform for reflective artistic practice since, as established by artist and theorist Julie Ault, they constitute "sites where art and artifact are made public, where social processes and contexts that art and other kinds of production come from can be described or represented to viewers" (Ault 2003: 361). Exhibitions

6 See https://alaplastica.wixsite.com/alaplastica

can be understood as arrangements that are constitutive for the orders of knowledge. Both the selection of projects as well as their spatial arrangements create meaning for observers in the scenographic collaboration (see Haarmann 2019: 67 et seqq.).

5 Imagination of the future anterior

The path to knowledge in artistic practice can be interpreted as a singular and site-specific method following the completed research and artistic process. Nothing about these spatial research practices proves to be paradigmatic and necessarily transferable. Every arts-based spatial research project unfolds and develops its originally appropriate methodological practice based on the inquisitive activity with which both questions are formulated and performances are executed in the arts. Artistic spatial research is always productive. It produces aesthetic findings and artifacts. It is a future anterior questioning in the reconstructive performance of artistic actions and objects. It is precisely within the context of this figure of positing a question in the aesthetic process that the question arises of the impulses within which a future anterior of retrospective prior knowledge, and thus an inkling of the methods of cognition, can unfold. In other words, how does the method of aesthetic research unfold at the interface between questioning and positing?

The imagination can be regarded as a key term that inspires artistic practice in the context of research as an indication of the right route to knowledge. In this case, imagination does not refer to arbitrary fantasies. From the personal experience of a Spanish performance collective, the imagination that inspires artistic research can be divided into two subtypes: The deconstructive "imagination breaks down real connections and reassembles the parts," while the projective imagination "enables us to imagine an alternate reality in the sense of a perspective. […] This type of imagination produces knowledge by attempting to transform reality" (Peréz Royo et al. 2013: 38). While the deconstructive understanding of imagination is closely related to what the founder of philosophical aesthetics, Alexander Gottlieb Baumgarten, calls the "power of imagination"—the faculty of acumen (see Baumgarten 2007 [orig. 1750/58], own translation)—protective imagination expresses an aspect of speculative artistic practice that reflects what art theorist Konrad Fiedler (1991 [orig. 1913/14], own translation) referred to as the "expressive movement." In the context of deconstructive imagination, the artistic research subject uses the power of imagination to anticipate the possibilities inherent in the objects and juggles them. The deconstructive and connecting power of acumen can be explained based on the work of chemists in a laboratory who have to possess knowledge about the ratios of molecules and their ability to be recombined in order to break down or bind substances and thus to identify them. Essentially, this imagination can be thought of as an essential component of science as a whole. Every research hypothesis arises from the anticipatory power of imagination of the researchers. This anticipatory power of imagination is not characterized by the spawning of arbitrary ideas, but rather it results from the field of the known and fans those possibilities. In general, research requires that sense of the possible, which can be called imagination, in order to anticipate the unknown on the horizon of the known, which could be fabricated and understood by reassembling the pieces. This imagination is made methodical and systematic by the

fact that the aesthetic and research activities associated with it are guided by a focus on the conjectured and thus systematized. The deconstructive imagination is targeted. It resembles a concentrated forecast that anticipates a specific something in order to follow it directly, albeit by means of searching and juggling. Moreover, the projective imagination is inventive. It is the creative faculty that enables us to imagine alternate realities and to gain insights by attempting to transform reality. This second type of exploratory imagination claims to recognize the creative process and develop knowledge by forming and formulating (art)work. It leads to an artistic movement of expression, which is accompanied by a process of creative understanding in working through and shaping the matter. This diagnosis of the projective type of aesthetic imagination and research reminds us of Konrad Fiedler's claim that it is possible to recognize the world by creating aesthetic products (see Fiedler 1991 [orig. 1913/14]). The process of creative design unearths revelations. In doing so, the speculative power of the imagination not only inspires the epistemic creation process but also structures it. As in the case of deconstructive imagination, projective imagination does not refer to phantasms but rather to emblematic premonitions of what could and will be. With this speculative anticipation of an alternate reality, artistic practice is not regulated or predetermined, although it is organized. And this organization of aesthetic activities can be replicated *post hoc* in terms of the steps required to complete the work. Aesthetic deduction—as an artistic multi-step approach—appears to be developing in the direction of inquiry, which the imagination proposes to the act of doing and based on which it is possible to scrutinize and negotiate the plausibility of the assumption and the stringency of the path to creation in retrospect.

6 Research cases

Both the LIGNA performance group and Ala Plástica make use of projective imagination with their transformative interventions in public or ecological space. The speculative imagination of the Ala Plástica group anticipates a natural space that restricts indigenous knowledge and plant growth and acknowledges another ecology with the means of its realization. Here the *Junco/Especies Emergentes* campaign installs an alternative subject of knowledge—the rural population on the banks of Rio de la Plata—and obeys exclusive structures in the production of knowledge. The will not only to portray the world repeatedly but also to change it against the backdrop of its potential, recognized differentness inspires this spatial art to question the knowledge of the world, to rethink the subjects of candid speech, and to expand the epistemic methods. The artistic group LIGNA endeavors to explore and thus change public places of consumption and their structures by means of a performance. The aesthetic work of the group is based on the assumption that there could be a better world. A world in which public space is not organized around consumption. The artists produce insights in their attempt to transform reality. LIGNA imagines a world in which the public manages without exclusion mechanisms. The group anticipates this alternate reality and scrutinizes the truth of the existing reality by means of aesthetic interventions. The speculative intervention in the case of the LIGNA group is a creative, aesthetic discovery technique that challenges reality with change in order

to reveal it and to make it possible to change what has been revealed. The group acts proactively, not with verbal challenges but with a gesticulative performance by projectively changing the choreography of public behavior.

Case by case, artistic projects can be analyzed using a reflective methodology, suspiciously resembling an epistemic practice, motivated by the theoretical imagination that practices that produce insights exist in the arts and can be applied as evidence in individual cases in parallel to the justification for an epistemological aesthetic in artistic research. Case by case, artistic (spatial) research can be reconstructed as an epistemic truth and understood as a practice for knowledge production, ultimately asserting itself as a relevant research tradition.

References

Ault, Juli (2003): Exhibition as Political Space. In: Ault, Juli/Beck, Martin/Babias, Marius/Waldvogel, Florian (Eds.): *Critical Condition: Ausgewählte Texte im Dialog*. Essen: Kokerei Zollverein Zeitgenössische Kunst und Kritik, pp. 359–366.

Bacon, Francis (1990 [orig. 1620]): *Neues Organon*, Vol. 2, Ed. by Krohn, Wolfgang. Hamburg: Felix Meiner.

Badura, Jens (2015): Erkenntnis (sinnliche). In: Badura, Jens/Dubach, Selma/Haarmann, Anke/Mersch, Dieter/Rey, Anton/Schenker, Christoph/Toro Pérez, Germán (Eds.): *Künstlerische Forschung. Ein Handbuch*. Zurich/Berlin: diaphanes, pp. 43–48.

Badura, Jens/Dubach, Selma/Haarmann, Anke/Mersch, Dieter/Rey, Anton/Schenker, Christoph/Toro Pérez, Germán (Eds.): *Künstlerische Forschung. Ein Handbuch*. Zurich/Berlin: diaphanes.

Baumgarten, Alexander Gottlieb (2007 [orig. 1750/58]): *Ästhetik*, Vol. 1, translated and Ed. by Mirbach, Dagmar. Hamburg: Felix Meiner.

Dilthey, Wilhelm (1974): *Ideen über eine beschreibende und zergliedernde Psychologie*, Gesammelte Schriften Vol. 5. Stuttgart/Göttingen: Teubner Verlagsgesellschaft/Vandenhoeck & Rupprecht.

Fiedler, Konrad (1991 [orig. 1913/14]): *Schriften zur Kunst: Text nach der Ausgabe München 1913/14*, Vol. 1 and 2, Ed. by Boehm, Gottfried. Munich: Fink.

Gadamer, Hans-Georg (1986): *Wahrheit und Methode: Grundzüge einer philosophischen Hermeneutik* (revised and extended Edn.). Tübingen: Mohr.

Haarmann, Anke (2019): *Artistic Research. Eine epistemologische Ästhetik*. Bielefeld: transcript.

Kuhn, Thomas (1976): *Die Struktur wissenschaftlicher Revolutionen*. Frankfurt a. M.: Suhrkamp.

Lyotard, Jean-François (1993): Beantwortung der Frage: Was ist postmodern? In: Engelmann, Peter (Ed.): *Postmoderne und Dekonstruktion. Texte französischer Philosophen der Gegenwart*. Stuttgart: Reclam, pp. 33–48.

Peréz Royo, Victoria / Sánchez, José A. / Blanco, Cristina (2013): In-definitions. Forschung in den performativen Künsten. In: Peters, Sybille (Ed.): *Das Forschen Aller. Artistic research als Wissensproduktion zwischen Kunst, Wissenschaft und Gesellschaft*. Bielefeld: transcript, pp. 23–46.

Case, context, and culture in spatial research

A conceptual delimitation of key terms

Gabriela Christmann and Nina Baur

In almost all spatial disciplines, terms such as *case*, *context*, and *culture* are not simply mentioned casually. Rather, these concepts are used for making and marking key methodological decisions. Methodological decisions are often already implied by the terms themselves. For example, think about *case* studies, *context*ualization, and *cultural* comparisons. Often, when conducting very basic methodical procedures, researchers take these terms for granted. For example, as part of the process of selecting cases, scholars often first define *fields* or *populations*, from which they then randomly or purposefully select cases (Baur/Christmann in this handbook). However, many times it is unclear what exactly these terms mean.

In this paper, we will explore these terms and differentiate between them. We will show that it is not possible to assign one universal definition to the terms. Instead, the research question scholars pose in each individual study ultimately determines what they mean by *case*, *context*, and *culture*. Only during the research process do researchers construct what case, context, and culture mean for their specific investigation, and in doing so, they actively construct and specify their subject area. This involves focusing the research question and setting priorities, which in turn is a prerequisite for being able to do empirical research later on.

1 What is a case?

Almost no methodological tradition can get by without using the term *case*. As part of determining what constitutes a case in a specific research project, it is necessary to reflect on the dimensions and the uniformity of the case and on what constitutes a field, case, and subcase.

1.1 Dimensions of cases

First and foremost, a *case* is an individual singularity. But the term *individual* does not necessarily refer to a person. Rather, in the social sciences, many entities can be cases

(Baur/Lamnek 2005). Cases potentially have four dimensions, and researchers have to consider which of these dimensions they want to focus their analysis on:

- The substantial dimension of cases is in the foreground, if, for example, researchers compare the economy with education, culture, or consumption.
- Situations, events, interventions, social processes, innovations, and decision-making processes stress the temporal dimension of cases.
- Neighborhoods, cities, regions, nations, and world regions bring to the fore the spatial dimension of cases.
- In addition to people, cases can also be entities at a higher action level, for example, social groups such as families or groups of friends, organizations, networks, markets, or supply chains.

Most real cases address all of these dimensions. If, for example, scholars analyze the case of "Germany," they generally refer to the citizens (social group) of the Federal Republic of Germany (spatial territory) since 1949 (temporal) in a certain cultural and institutional system (substantial).

In order to be able to make methodological decisions, especially concerning the research design, it is important both to analytically separate these dimensions and to decide which of these dimensions should be the primary focus for the specific study. This is important for at least two reasons, as illustrated by the example of "Germany":

- Depending on which of the dimensions researchers decide to focus on, their *case* is defined differently (in spatial terms). For example, the territory of the Federal Republic of Germany has changed significantly since 1949 (Baur 2014). Not all German citizens live on the territory of the Federal Republic of Germany, and people who are not German citizens live in German territory. Cultural, institutional, and territorial borders also have different spatial extensions.
- If these dimensions are mixed, it is no longer possible to analyze their interdependencies. However, it is precisely these interdependencies that are the main research interest in many spatial analyses. If, for example, scholars are investigating migration, then the relationship between the resident population and the territory is a key aspect.

1.2 The uniformity of the case

Cases have certain characteristics—in the terminology of quantitative social research, one would say that cases vary along variables and each case manifests as a specific set of categories of these variables. However, as the discussion above indicates, cases are not closed entities (Baur/Lamnek 2005). This becomes clear in particular when one takes into account the history of a case:

Almost all cases begin and end at some point. Social groups such as organizations, communities, and nations are founded, but they can also be dissolved, dismantled, etc. (Abbott 2001: 145–160).

Furthermore, cases can change with regard to key characteristics in the course of their history (Baur/Lamnek 2005), as a case's spatial demarcation exemplifies: The Federal Republic of Germany has changed its borders throughout its history. As a result, not only the size of the territory but also the cultural system and the number of people living in it have changed (Baur 2014).

Often these borders are not at all clear—they are open ("fuzzy") (Abbott 2001: 145 et seqq., 261 et seqq.). For example, if a scholar wants to analyze a "university," it is unclear whether it consists of its buildings, organizational processes, events, employees, students, or even visiting researchers. Depending on who or what is included, the "university" can also be situated at different locations. This example demonstrates that a case does not have to be defined based on territory—for instance, Technische Universität Berlin is not only distributed across different locations throughout the metropolitan area of Berlin (Germany), it also has a campus in El-Gouna (Egypt).

1.3 Field – case – subcase

Cases are often part of a *field* (also referred to as a *population*) and are themselves made up of *subcases* (also referred to as *subunits*)—therefore, they have multiple levels (Akremi 2022). For example, nations are often composed of different regions and cities, which are composed of neighborhoods, which are composed of houses, which are composed of multiple rooms. Neighborhoods consist of stakeholders, residents, networks, events, activities, media coverage, etc.

Defining what a *field*, *case*, and *subfield* are in the specific research project is therefore a priority. Researchers have to decide *how* they set these priorities in their specific investigation (for more, see Baur/Christmann in this handbook):

- Most methodological procedures for data selection and generalization are based on the principle that researchers select cases from a population. They use these cases as examples for investigating the phenomenon in question and then extrapolate the findings from these cases to the general population.
- Often it is not possible to analyze the cases of interest empirically. Instead only subcases are assessed. Or it is necessary to take a multilevel approach. Differentiating between units of data collection and units of analysis is helpful in this regard. For example, you could interview people (unit of data collection) about their family (unit of analysis).

Furthermore, in spatial research, it is important to know which cases are found where: Where are cases located in physical space and what type of social phenomena do they represent? These questions cannot be answered without referring to context.

2 What is a context?

As a rule, cases are embedded in contexts, and a context does not necessarily originate from the field or the population (which is a large group of cases, methodologically speak-

ing). In order to analyze the relationship between case and context, it is first necessary to delimit the case from its context. This is never fully possible since the case is entangled with and interacts with its context. At the same time, this calls into question the notion of the quantitative paradigm that delineated populations exist that consist of a set of clearly defined cases (Baur/Lamnek 2005).

2.1 Dimensions of contexts

Among other things, case's (e.g., the city "Frankfurt") context includes the following elements (Stake 1994: 238):

- The case's historical development (for example, Frankfurt evolved as a trade center in the Middle Ages and reproduced this role in the course of its history)
- The case's spatial references (such as its location, size, physical structure, surroundings, transport infrastructures in which it is embedded)
- The case's general economic, political, legal, and cultural conditions
- Other cases that are associated with the case (such as the national framework in which the city is embedded or other cities with which it competes, etc.)
- Any people, organizations, and institutions involved in the case (such as residents, politicians, key businesses, media, etc.)

2.2 Context and culture

The question of how the term *culture* relates to the terms *context* and *case* is relatively easy to answer. Provided a case does not comprise an entire culture (in which case, case analysis is simultaneously cultural analysis), the following holds true: A specific culture can be part of a case's context. We also refer to this as the case's *cultural context*.

Because a case's specific context usually exhibits specific features, including ones that can influence the case, it is important to understand the context and its features in order to better understand the case. This also applies to the case's *cultural* context. However, cultural aspects are not relevant aspects of the context in every study. As long as the topics of investigation and the research design of the study do not rely on *cultural* contexts, these do not have to be assessed.

It is important to emphasize that the terms *context* and *culture* do not denote the same thing. Culture must be understood as a *subset of the wider context*. The following example is intended to illustrate the differences:

Let us assume that a study sets out to understand the development of certain neighborhoods. In this case, the neighborhoods are conceived as cases. The description of the specific case's *context* could contain, for example, the cities in which the selected neighborhoods are located (large city, medium city, small city; Berlin, Frankfurt am Main, Hamburg), how large the neighborhoods are (area, population), where they are situated in the city (downtown, central, periphery), their geographic features (on the river, on the lake, on a hill), information about the social structure, economic structure, transport infrastructure, and shops in the neighborhoods, and/or the nature of the political relationships in the city district. In contrast, the description of the *cultural context* of the

neighborhoods could include the following topics: the neighborhoods' cultural diversity, their dominant cultures or minority cultures, their distant or recent history that is relevant for local stakeholders (e.g., former working-class neighborhoods, tourist hotspots, or art neighborhoods), collective identities that can be observed in the neighborhoods and that represent the pride or sorrow of the local stakeholders.

This example illustrates that statistical information and simple descriptions of relevant characteristics can be sufficient for characterizing a context. In contrast, descriptions of cultural aspects tend to be much more complicated. In this case, shared attributions and constructions of meaning have to be taken into account, along with any typical behaviors of the relevant actors.

3 What is culture?

As *culture* can be part of the context, it is often impossible to avoid dealing with cultural contexts in socio-spatial research. In a globalized world, spatial processes are closely intertwined with complex socio-cultural frameworks. Therefore, in order to better understand and explain changes in spatial thinking and action, as well as developments of spatial units in global contexts, it is essential for us to take into account the cultural aspects of these phenomena, too. But what exactly does the term *culture* mean?

3.1 Classic concepts of culture

Culture is not an easy concept as there is no universally accepted definition of culture. The various definitions are mostly characterized by respective key modes of thinking in the underlying disciplines and theories. Accordingly, as early as the 1950s, Kroeber and Kluckhohn (1952: 181) were able to identify more than 170 different concepts. Based on these concepts, they attempted to propose a general definition combing the three *key dimensions of culture*:

- A system of knowledge, meaning, symbols, and values shared by a certain social group
- The traditional behaviors and lifestyles associated with that group
- Any related material artifacts

Since then, the number of definitions has increased even further. Reckwitz (2000: 64) proposed a *typology* that divides existing "classic" concepts of culture into four categories:

- Normative concepts of culture define culture as the improvement and refinement of human education and customs since the Age of Enlightenment in Europe (Herder 1985).
- Concepts of culture based on differentiation theory—which are often found in sociology of culture—conceptualize culture exclusively as the social field of cultural production and consumption (Alexander et al. 2012).

- Meaning- and knowledge-based concepts of culture focus on ascribed meanings, symbols, values, and knowledge systems shared by social groups. Max Weber's definition should be highlighted here as an example. Weber (1973: 223) describes culture as a "finite extract of sense and meaning derived from the senseless infiniteness of world affairs" and as a collection of specific "concepts of value." Therefore, a certain culture exists only due to the specific attributions of meaning provided by subjects who are divided into social groups. However, Weber (1973: 223) points out that the subjects can "have a (positive or negative) opinion" of the specific concepts of value. This indicates that Weber in no way wishes to perceive culture as an intrinsically coherent and consistent system.
- In contrast, totality-oriented concepts of culture are characterized by the fact that they require a comprehensive definition of culture, such as that of a nation. A nation is understood as a coherent culture because it shares a certain territory (that is to say, a certain spatial unit) and is unified by a common history. In addition, it is assumed that the members of this culture share key characteristics.

Especially the last category is problematic in that it rolls *culture*, *space*, and *individual* into one based on essentialist presuppositions and considers them a totality. In order to resolve this issue, theorists have since developed alternative concepts of space and culture.

3.2 More recent concepts of the relationship between space and culture

From a theoretical and conceptual perspective, *spaces* have no longer been thought of as "absolute," objective, and uniform for some time now. Scholars recognized that viewing spaces as separate entities independent of material objects (e.g., bodies) was a conceptual dead-end. Spaces are also no longer conceived as entities that enclose objects like "containers." In contrast, modern spatial theory postulates that spaces are constructed *relationally* by means of intersections between objects. This centers around an idea that is especially well developed in Löw's relational spatial theory (2016: 141 et seqq.). According to Löw,

- Spaces are actively constructed by people in processes of *spacing*.
- Humans create spaces by placing and arranging objects, living entities, and/or goods and putting them in relation to each other.
- Humans then *synthetize* this arrangement of objects, entities, and goods and thus create a holistic idea of a specific space.
- As a result, spaces are in constant motion and can *change*.

Consequently, spaces must be understood as *social constructs* that are created, negotiated, and potentially contested in the minds *and* (inter)actions of social groups and societies (Christmann 2016). If this theoretical perspective is taken seriously, spaces must be conceived as relational frameworks of spatio-cultural elements that are constantly changing and being exchanged and whose elements can conflict with one another. Research designs for empirical studies have to take this into account.

A great deal of empirical evidence also advocates adopting this conception of spaces. Since the sixteenth century at the latest, the modern age has been characterized by a territorially based, centralist, and hierarchically structured "figuration of spaces," which has not disappeared entirely even today. However, since the 1960s, spatial and cultural frameworks are being completely rearranged in the wake of globalization, mediatization, and increasing translocation of the circulation for people and goods. Knoblauch und Löw (2020) conceptualize these social processes as a large-scale "refiguration of spaces," which overlay the modern concepts of spaces with other principles of organization, such as deterritorialized, flat, and decentralized structures.

Consequently, since the last third of the twentieth century, many new globally structured conceptions of physical, social, and cultural spaces have been identified. Rapidly expanding, globally distributed economic relationships and social relationships have been observed. An increase in migration across nations and continents is also a typical occurrence (Giddens 1990: 64). As a result of rapid developments in transport technology, there has also been an inrush of tourists around the world. Global cultural industries and a "global information culture" have emerged in the media, permeating all areas of human life (Winter 2008: 205, own translation).

Furthermore, digitialization and the internet make it possible for actors to be "present" at multiple locations and to act translocally (Löw/Knoblauch 2020). Consequently, local attributions of meaning, elements of knowledge, and cultural interpretations have become detached from their original cultural contexts, crossing territorial borders and circulating around the globe. This has resulted in the worldwide circulation of knowledge, cultural elements (Winter 2008: 219), and even cultural practices and objects. These circulations no longer create a homogeneous culture but rather engender "diversity, plurality, and hybridity" (Winter 2008: 219, own translation). Processes of "hybridization" and "deterritorialization" ensue (Pieterse 1994: 161 et seqq.) at the same time as processes of reterritorialization, in which cultures are constantly being reconstituted (Winter 2008: 219).

Therefore, cultural anthropologists have renounced traditional concepts of separate, homogeneous cultures, proposing instead a "non-essentialist understanding of culture" (Bachmann-Medick 2008: 96, own translation). The *postcolonial concept* of space developed by Bhabha (1994) in particular should be emphasized as it focuses on the *analysis of differences within and between cultures*. It inquires into which conflicting meanings are present, how symbols are contested, or which disputes over values exist. In addition, it investigates the overlapping and mixing of different cultures, or cultural hybridity: for example, in the form of syncretism or creolization.

Appadurai (1996), another proponent of postcolonial approaches toward space, proposes the creation of "ethnoscapes," especially cultural contact zones, spaces, or border zones, as the starting point for cultural analyses. From a methodological perspective, purely mono-sited, location-based ethnographies are no longer pursued but rather ethnographic designs that are conceived as "*cosmopolitan ethnographies*" or "*macro-ethnographies*" and that are able to capture phenomena related to cultural exchange, as well as separation (Appadurai 1996: 52).

4 Methodological implications of defining case, context, and culture

In order to reflect the above-mentioned changes in the relationship between territoriality and culture better in empirical research, there is an urgent need for new methodological approaches (Beck/Grande 2010: 8 et seqq.). Although the number of new methodological approaches remains limited, initial attempts have already been made to address the challenges of comparative cultural analyses. The attempts by Welz (1998), Osterhammel (1996), and Heimann (2020) described below illustrate that different solutions are required depending on which type of *culture* is being observed and what the guiding questions are.

4.1 Comparative cultural analysis of ethnicities or nations

Welz (1998: 6 et seqq.) refers to four *traps researchers must avoid* when comparing cultures based on ethnicities or nations.

1. *Fragmenting large cultural units (e.g., nation or ethnicity)*: Researchers often divide frameworks into smaller, seemingly comparable units. From the large quantity of phenomena that account for the characteristics of the culture, researcher select several elements that they believe will allow for a comparison. However, it is important to keep in mind that the selected elements of comparison cannot be observed separately because they are entangled with the other elements and often what constitutes a culture can only be perceived when analyzing this entanglement as a whole.
2. *Treating cultures as discrete and separate units*: Researchers often assume that cultural frameworks can be clearly differentiated from one another. This is the typical approach in quantitative research, where researchers define a population from which they randomly sample cases which in turn are used for the purpose of generalization (Baur/Christmann in this handbook). Note that according to the current state of research, quantitative research cannot avoid this trap as the logic of generalization in quantitative research requires researchers to demarcate populations substantially, temporally, and spatially—although this is virtually impossible empirically. It is a challenge for future research to find ways of avoiding this trap in quantitative research. Instead of creating cultures as discrete and separate units, researchers should analyze possible connecting lines and potential influences between cultures .
3. *Observing restricted timescales:* If cultures are synchronized for the sake of comparison, one loses sight of their specific historicity and the culture-specific historical transformation of their respective framework. Therefore, scholars must avoid categorizing the complex developmental processes of the cultures they are comparing into easy-to-compare periodized blocks of time. Rather, the individual character of each specific historical developmental process must be preserved during analysis.
4. *Lack of reflexivity regarding the role of the subject being studied*: Researchers are often perceived as "objective" observers standing "above" or "apart from" the cultures. However, researchers using comparative methods must reflect on how they can really analyze a culture to which they themselves belong or do not belong and how their subjectivity influences the research process with regard to their perspectives, bias, and ability to

understand (Baur 2021). It can be equally problematic if the culture is too "foreign" to the researchers (because then they cannot adopt an internal perspective and truly understand the culture) and if the researchers are too "close" to a culture (because then they are "blind" and cannot adopt an external perspective). During this process of reflection, techniques from reflexive methodology and empirical philosophy of science can be helpful (Knoblauch 2021).

4.2 Transcultural and intercultural comparisons

Given the fact that there are no clearly differentiated, distinct, and coherent cultures, Osterhammel (1996: 299), too, advises against comparing seemingly distinct cultures (e.g., in the form of nations) with one another as a whole. Instead, he proposes what are called transcultural or intercultural comparisons (Osterhammel 1997: 277):

- Transcultural comparisons focus on a specific phenomenon (such as certain political power relations, economic relations of production, or social symbols) and compare that phenomenon across (multiple) different cultural contexts. It is also possible to analyze a selected phenomenon (e.g., political power relations) in terms of its connections to other selected phenomena (e.g., social symbols).
- In intercultural comparisons by contrast, specific series of characteristics from (usually only) two profiled cultural frameworks are juxtaposed and compared with one another.

4.3 Cultures as shared constructs of knowledge

Heimann (2020) understands cultures as common constructs of knowledge shared by actors with regard to a certain phenomenon (e.g., climate change). At the same time, he assumes that actors are able to share a specific construct of knowledge (e.g., with regard to climate change) across territorial borders (Heimann 2020: 43). As such, some actors could be foreign to other actors in their *own* territory concerning climate change but relate closely to actors in a *different* territory in this regard. This gives rise to shared cultural spaces—extending beyond territorial borders—which Heimann refers to as *relational cultural spaces*. In conceptual terms, these spaces are characterized by the fact that they separate culture and territory analytically: Relational cultural spaces are not conceived as territorial but rather as social spaces because the carriers of knowledge ("Wissensträger") are social actors who are distributed translocally (Heimann 2020: 44).

In order to grasp relational cultural spaces methodologically, exploratory analytical methods like cluster analysis are used to assess the cultural relevance of the territory (Backhaus et al. 2008). Data are analyzed in order to determine empirically which actors share common knowledge and therefore can be grouped together as a cultural group beyond territorial borders (Heimann 2020: 44). More specifically, actors' characteristics are depicted as geometric points in a multidimensional variable space. Then cluster analysis is used to describe their distances (Heimann 2020: 44; Backhaus et al. 2008: 389 et seqq.).

Although this approach solves one problem, it can potentially give rise to another: It overlooks power structures and instances of social exclusion. We know from method-

ological research on techniques such as snowball sampling or discourse analysis that when scholars reconstruct social networks based on social relationships, they are essentially reconstructing the power relations in the field. That is to say, every field contains "noisier" or more dominant actors who make their voices heard and those who are excluded and thus remain "invisible."

5 Open questions

In general, we can conclude that although *case*, *context*, and *culture* are necessary concepts for spatial research, it is often not very easy to define them for specific research processes. Overall, one thing is essential for future spatial research: taking a closer look at which characteristics especially complex cases have and how they correlate to contexts and cultures.

This involves overcoming the seemingly natural connection between the subject area, the action level, and the temporal and spatial dimensions of cases and instead asking exactly which subject areas and action levels have which spatial characteristics and when—and how can this relationship be analyzed methodologically. In particular, we must ask how to generalize in complex cases, how to carry out (cross-cultural) comparisons, and how to call into question our presuppositions.

References

Abbott, Andrew (2001): *Time Matters*. Chicago, IL: University of Chicago Press.

Akremi, Leila (2022): Stichprobenziehung in der qualitativen Sozialforschung. In: Baur, Nina/Blasius, Jörg (Eds.): *Handbuch Methoden der empirischen Sozialforschung*. Wiesbaden: Springer VS, pp. 405–424. https://doi.org/10.1007/978-3-658-37985-8_26

Alexander, Jeffrey C./Jacobs, Ronald N./Smith, Philip (2012): Cultural Sociology Today. In: Alexander, Jeffrey C./Jacobs, Ronald N./Smith, Philip (Eds.): *The Oxford Handbook of Cultural Sociology*. New York, NY: Oxford University Press, pp. 3–26.

Appadurai, Arjun (1996): *Modernity at Large. Cultural Dimensions of Globalization*. Minneapolis, MN/London: University of Minnesota Press.

Bachmann-Medick, Doris (2008): Kulturanthropologie. In: Nünning, Ansgar/Nünning, Vera (Eds.): *Einführung in die Kulturwissenschaften*. Stuttgart/Weimar: Metzler, pp. 86–107.

Backhaus, Klaus/Erichson, Bernd/Plinke, Wulff/Weiber, Rolf (2008): *Multivariate Analysemethoden*. Berlin/Heidelberg: Springer.

Baur, Nina (2014): Comparing Societies and Cultures. In: *Historical Social Research*, 39(2), pp. 257–291.

Baur, Nina (2021): Decolonizing Social Science Methodology: Positionality in the German-Language Debate. *Historical Social Research*, 46(2), pp. 205–543. https://doi.org/10.12759/hsr.46.2021.2.205-243

Baur, Nina/Lamnek, Siegfried (2005): Einzelfallanalyse. In: Mikos, Lothar/Wegener, Claudia (Eds.): *Qualitative Medienforschung*. Konstanz: UVK, pp. 241–253.

Beck, Ulrich/Grande, Edgar (2010): Jenseits des methodologischen Nationalismus. Außereuropäische und europäische Variationen der Zweiten Moderne. In: *Soziale Welt*, 61(3/4), pp. 187–216.

Bhabha, Homi K. (1994): *The Location of Culture*. London/New York, NY: Routledge.

Christmann, Gabriela (2016): The Theoretical Concept of the Communicative (Re)Construction of Spaces. In: Christmann, Gabriela/Knoblauch, Hubert/Löw, Martina (Eds.): *Communicative Constructions and the Refiguration of Spaces*. London: Routledge, pp. 89–112.

Giddens, Anthony (1990): *The Consequences of Modernity*. Stanford, CA: Stanford University Press.

Heimann, Thorsten (2020): *Culture, Space and Climate Change.* London: Routledge.

Herder, Johann Gottfried von (1985): *Ideen zur Philosophie der Geschichte der Menschheit*. Wiesbaden: Fourier.

Knoblauch, Hubert (2021): Reflexive Methodology and the Empirical Theory of Science. In: *Historical Social Research*, 46(2), pp. 59–79. https://doi.org/10.12759/hsr.46.2021.2.59-79

Knoblauch, Hubert/Löw, Martina (2020): The Re-Figuration of Spaces and Refigured Modernity—Concept and Diagnosis. In: *Historical Social Research*, 45(2), pp. 263–292. https://doi.org/10.12759/hsr.45.2020.2.263-292

Kroeber, Alfred/Kluckhohn, Clyde (1952): *Culture. A Critical Review of Concepts and Definitions*. Cambridge: Peabody Museum.

Löw, Martina (2016): *The Sociology of Space*. Basingstoke: Palgrave Macmillan.

Osterhammel, Jürgen (1996): Transkulturell vergleichende Politikwissenschaft. In: Haupt, Heinz-Gerhardt/Kocka, Jürgen (Eds.): *Geschichte und Vergleich*. Frankfurt a. M./ New York, NY: Campus, pp. 271–313.

Pieterse, Jan Nederveen (1994): Globalisation as Hybridisation. In: *International Sociology*, 9(2), pp. 161–184.

Reckwitz, Andreas (2000): *Die Transformation der Kulturtheorien*. Weilerswist: Velbrück.

Stake, Robert E. (1994): Case Studies. In: Denzin, Normann/Lincoln, Yvonna (Eds.): *Handbook of Qualitatitve Research*. Thousand Oaks, CA/London/New Delhi: SAGE, pp. 236–247.

Weber, Max (1973): Die ›Objektivität‹ sozialwissenschaftlicher Erkenntnis. In: Weber, Max: *Soziologie – Universalgeschichtliche Analysen – Politik*. Stuttgart: Kröner, pp. 186–262.

Welz, Gisela (1998): The Uses of Comparison. In: Millich, Klaus J./Peck, Jeffrey M. (Eds.): *Multiculturalism in Transit*. New York, NY/Oxford: Berghahn Books, pp. 3–12.

Winter, Rainer (2008): Kultursoziologie. In: Nünning, Ansgar/Nünning, Vera (Eds.): *Einführung in die Kulturwissenschaften*. Stuttgart/Weimar: Metzler, pp. 205–224.

Case selection and generalization

Nina Baur and Gabriela Christmann

Researchers usually want to generalize their findings and be able to transfer them to as many other social settings as possible. For this purpose, it would be preferable to analyze social reality as a whole—in the terminology of qualitative research, that would require investigating the entire *field*; in the terminology of qualitative research, that would imply analyzing the whole *population*. However, analyses of the whole population are almost never possible in research practice—because it is often unclear what the population is and because the social phenomenon of interest for most research questions in the social sciences is so extensive in terms of time, space, and the number of cases that it is virtually impossible to include all cases within the scope of the phenomenon, especially since the entire research project is limited by time and resources (Thierbach et al. 2020).

As a result, researchers can practically never examine the social reality as a whole—even when working in teams—but rather only parts of it, which is why *cases* have to be *sampled*—sometimes scholars also talk about *selecting* cases. The criteria for selecting cases greatly influences whether and to what extent the findings of a study can be generalized and transferred to other contexts (Thierbach et al. 2020).

Qualitative and quantitative researchers agree that what is referred to as *convenience sampling* (also known as *opportunity* or *availability sampling*) should be avoided whenever possible, except to explore a phenomenon that is difficult to access. An example for convenience sampling from qualitative research is snowball sampling, while examples from quantitative research include street surveys and most analyses of digital, administrative, and other process-generated data. These sampling processes have in common that researchers do systematically select cases but rather choose cases that are easy to access. Consequently, it is almost never possible to generalize results when convenience sampling was applied (Thierbach et al. 2020). Against this background, social scientists have developed various sampling strategies, which differ concerning the reasoning behind the principles of selecting cases and to what extent generalizations are actually feasible.

1 Requirements for selecting cases

Before we explain the strategies and criteria for selecting cases in detail, it should be noted that the questions underlying an investigation are what primarily serve as the starting point to choose adequate cases (Akremi 2022). In this context, at the beginning of a research project, researchers need to define both the relevant premises for selecting cases—how they understand both cases and the research process as a whole.

1.1 Defining the case

The first step of and necessary requirement for case selection is always to define cases. Researchers have to clarify multiple points for their specific study:

1. *What is the population or the field?* Generally speaking, the population either describes what is being investigated (*study population*) or the group to which the findings of a study are generalized (*target population*). The two are not necessarily congruent—for example, the resident population of a country is not the same as the legally registered population or as the persons who have a phone number with the relevant country code. Researchers need to define the population substantially, temporally, and spatially. Usually, none of these dimensions are clear-cut. Think of, for example, social media, transnational migration or supply chains.
2. *What is a case?* Researchers do not only have to define the population but also cases substantially, temporally, and spatially (see Christmann/Baur in this handbook), and in doing so, they need to keep in mind that with "cases" they might not always mean "people" but e.g. events, situations, processes, organizations, cities, nations, etc. In addition, cases can change (for instance, over time) (Abbott 2001). Therefore, it is necessary to clarify how exactly a case can be delineated, what is part of the case (and what not) based on the state-of-research, whether and how the case can be empirically differentiated from other cases, and whether it is empirically entangled with other cases that might influence it (Mayring 2016: 41 et seqq.). Furthermore, researchers need to keep in mind that cases can have subcases (also known as *subunits*) that are nested inside one another (Akremi 2022; Merkens 2015: 292). For example, newspapers are made up of articles, which in turn are made up of sentences, which in turn are made up of words. Nations are often composed of different regions and cities, which are composed of neighborhoods, which are composed of homes, which are composed of multiple families. Neighborhoods consist of stakeholders, residents, networks, events, activities, media coverage, etc. Which cases researchers should ideally select during sampling depends on which of these many aspects of a case is relevant to the research question. They have to decide which type of stakeholders (artists, district politicians), residents (Germans, migrants), events (group meetings, network meetings), media coverage (local press, national reporting) etc. should be included in the study. Researchers also have to determine which specific units they have to collect data on: in other words, which specific individuals from the category of artists or residents, which group meetings, etc. should be selected. It is important to keep in mind that the units of analysis and the units of data

collection are not always the same. For example, individuals (unit of data collection) can interview properties of the group (unit of analysis).

3. *What are the relevant aspects and aspect relationships?* The topics of investigation stipulate what the objects of study should be, which aspects of those objects should be studied, and which relationships between those aspects should be considered. These then have to be translated by means of theoretical assumptions so that they can be measured in empirical studies in the first place—in quantitative research terms, this is referred to as operationalization. This translation process culminates in concrete data collection and analysis methods, as well as *variables* and *categories* intended to describe the aspects and aspect relationships relevant to the research question.
4. *How is the population related to the relevant aspects?* When defining a population and selecting a case, it is important to pay attention to whether all aspects and aspect relationships of the research questions can be studied in the potential case. If researchers do not only want to describe and understand a social phenomenon but also explain it, they have to additionally apply causal analysis methods. In the latter case, they have to keep in mind that all variables used to delineate the population can no longer be considered as causes or effects in causal analysis (Ragin 2000). Hence, if you define the population as "German citizens living in Germany," you can no longer examine whether nationality, territory, or residency status have an influence on the phenomenon of interest because the variables were set as constant when defining the population: non-Germans, Germans living in other countries, immigrants, tourists, and homeless people are automatically excluded from the population and will therefore not be part of the sample. As no data will be collected on them, it will be impossible to compare them with German citizens living in Germany. The more variables that are used to define the population, the less possible it is to translate or generalize the results to contexts other than the study population (Ragin 2000).

There is no general answer to the above questions. Rather, researchers have to answer them with regard to a specific research question and will only be able to answer them my making numerous theoretical assumptions. This is particularly true within the scope of studies in socio-spatial research because researchers do not only have to decide if their cases are individuals, organizations, events, processes, etc., but they also have to define the spatial dimension of their cases (which is often ignored in other studies), and concerning this dimension, case selection has to be just as well founded as for the other dimensions.

1.2 Ways of organizing the research process: linearity vs. iteration

In a next step, researchers have to decide how to organize their research process. In general, there are two ways to organize the research process:

1. *Linear research process:* In many research traditions—such as qualitative content analyses—the research process is organized linearly: Researchers start with developing the research question based on their prior knowledge and state-of-research in academic literature. They then embed their research question in a social theory and use

this as a basis to develop a research design, sample cases, collect the data, prepare the data, evaluate the data, and use the data to formulate generalizations. While qualitative researchers can choose, if they want to organize the research process linearly, in quantitative research, linearity is mandatory since—following the logic of the statistical inference—sampling *must* always come *before* data collection and analysis. According to the principles of inferential statistics, the sampling strategy can no longer be changed after random sampling (e.g., replacing the selected cases with other cases is not allowed). This becomes problematic if it turns out in later stages of the research process that data collection techniques need to be adapted as the initial hypotheses, measuring tools cannot or only partially can measure the relevant aspects of the social phenomenon in question or when new questions arise.

2. *Iterative research process:* Therefore, many qualitative methods are characterized by a much more open-ended approach, especially in the initial phase of the research process (Lamnek 2005: 21 et seqq.). In particular, defining the research question becomes part of the research process, and researchers start by exploring their research subject in exploratory fieldwork. Only after acquiring more in-depth knowledge of the empirical field do they define initial cases for the investigation in detail. In order to address the challenges of organizing the research process in this way, Glaser and Strauss (1967) developed grounded theory and recommended carrying out the further sampling iteratively: In the case of "theoretical sampling," researchers alternate between sampling, collecting data, and analyzing data. Based on the analysis of prior cases, in later stages of the research process, additional cases are selected because they will provide important new insights for the subsequent theoretical and empirical work. Therefore, which cases are selected and which data are collected are determined by the potential of advances in theory development. Samples can be expanded as needed and are only considered complete when the study is "theoretically saturated" (Lamnek 2005: 187 et seqq.; Flick 2017: 154 et seqq.): that is to say, when no new results and concepts emerge. This makes it possible to continuously adapt the research design to the research question, thus maximizing the theoretical output while at the same time minimizing the fieldwork required for that output.

1.3 Example: Spatial pioneers in urban areas

We will illustrate the considerations from the sections above by using Christmann's (2013, 2014) study on "spatial pioneers in urban areas" as an example:

1. Research question: The overarching question of Christmann's (2013) study was how spatial transformations take place in socially disadvantaged neighborhoods with a strong negative image. Or to be more precise: how can communicative processes of spatial (re)construction be described there from a micro perspective. Christmann centered her study around certain actors she designated as "spatial pioneers," whom she characterized by—in pursuit of their life plans—having arrived in the neighborhoods to take advantage of spatial opportunity structures. She investigated how spatial pioneers conceived their neighborhoods in a new light within the context of their spatial actions, how they developed new points of view and negotiated them in com-

municative processes with others, how they gained influence over discourses and knowledge systems, how they coordinated their actions and implemented projects, how they incorporated physical-material objects, and how they promoted transformation processes in turn.

2. Rhetoric approach: The (spatial) theoretical starting point for Christmann's considerations was the fact that spaces are reconstructed in everyday processes of action and interaction between actors, which can create new or modify existing spatial dimensions at times and further stabilize those dimensions at others. The fundamental idea behind her study was that it is worth analyzing spatial transformations within a period of decades from a micro-perspective to shed light on discursive and communicative reconstruction processes. Christmann (2016) furthered Keller's et al. (2013) theory of communicative constructivism towards the communicative spatial (re)construction approach.
3. Research design: Because such a dynamic and complex object of investigation requires a complex research design in terms of the methodology, Christmann (2014) also developed the methodological approach of "ethnographic discourse analysis" which combines focused ethnography (Knoblauch 2001) with the sociological approach towards discourse analysis (Keller 2007).
4. Cases, units of collection and analysis: On the basis of both her theoretical and methodological reflections, Christmann decided that for the study, cases were neighborhoods, and she purposefully selected the neighborhoods Moabit (Berlin, Germany) and Wilhelmsburg (Hamburg, Germany). These neighborhoods have in common that policy-makers consider them as particularly needing development, even though upward trends have been reported for them in the last several decades. In addition, both neighborhoods boast numerous local media outlets, host vibrant neighborhoods-related discourses, and are home to many different spatial pioneering initiatives with diverse activities. In Christmann's study, the units of analysis consisted of (a) spatial pioneers, including social entrepreneurs (e.g., people who find jobs for youth), the self-employed (e.g., owners of bookstores or tea shops), freelancers (e.g., artists, creatives), and representatives of social organizations (e.g., social workers); (b) group and network meetings of spatial pioneering initiatives; (c) media coverage in the local press. Additional spatial pioneering initiatives identified by the research team were added to the study throughout the research process.

2 Random sampling, statistical inference, and associated problems

Once the research questions, theoretical background, ways of organizing the research process and what the cases are have been clarified, researchers can begin with the actual case selection. Three main principles of case selection can be distinguished: random sampling, purposeful sampling of multiple cases, and single case studies.

Random sampling is used not only in quantitative research but also—even though rarely (and for a good reason)—in qualitative research. Nevertheless, it is necessary to address random sampling because many researchers either first associate, or only associate, *case selection* with *random sampling* and *generalization* with *statistical inference*. Ran-

dom sampling and statistical inference are therefore reference points for all debates on case selection and generalization not only in quantitative but also in qualitative research. Consequently, in order to differentiate between random sampling and other sampling techniques, it is necessary to first understand the logic of random sampling and any problems associated with them.

Specifically, after having clarified the points above, when applying the principle of random sampling, researchers work through the following steps (in this order):

1. They calculate the ideal number of cases in the random sample with the help of probability theory.
2. They randomly select cases from the population. *Random* means that every case in the population has a predictable chance of ending up in the sample—this chance needs to be calculable *before* drawing the sample.
3. They collect data on the selected cases, prepare that data, and then use *descriptive* statistics to analyze the data.
4. They generalize the results gained by using descriptive statistics to the population by using *inferential statistics*. Researchers express the degree of certainty of their generalization using *significance levels* (in *statistical tests*, which are also called *significance tests* or *hypothesis testing*) or *confidence levels* (in *confidence intervals*).

In order to be able to apply this very abstract model in research practice, quantitative researchers have developed concrete methods for random sampling, which provide specific recommendations depending on the spatial contexts, type of data, and data collection method. For example, content analyses, face-to-face surveys, telephone surveys, postal surveys, online surveys, etc. Because such *good-practice models* are extremely context dependent and are constantly being modified due to social changes, the recommendations for a certain type of random sampling should be consulted in a recently published handbook of methods from the relevant country of investigation.

There are several key characteristics of random sampling that are rarely discussed but often lead to problems in research practice (Thierbach et al. 2020):

1. *Linearity:* As mentioned above, random sampling requires a linear research process.
2. *Population and causality:* As pointed out earlier, all variables that are used to define the population can no longer be studied in terms of their causal effects.
3. *Probability theory vs. social theory:* For any principle of case selection, researchers have to make theoretical assumptions in order to be able to select and generalize cases. If these assumptions are incorrect, then the generalization is also invalid. This is also true for random sampling: statistical inference is by no means "objective" either in the sense that its results do not have to be interpreted. On the contrary, there are several different statistical theories on what *probability* means and how the results of inferential statistics should be interpreted. Using statistical inference merely means that researchers rely more on probability theory than on social theory in terms of justifying their case selection. Over the last few years, however, the logic underlying probability theory has been increasingly threatened by increasing *non-response errors* and the increasing difficulty in defining the study population. In the past, a *popula-*

tion was the "resident population of a nation." As a result of transnationalization and digitalization, it has become progressively unclear what *populations* are or could be.

4. *Need for a large sample size:* Random sampling requires a relatively large minimum sample size—typically ≥ 30—as otherwise the probability of a random error would be too high to draw any meaningful conclusions based on the data. This makes random sampling impractical for many lines of qualitative research (e.g., social hermeneutics or biographical research) because data collection and data analysis would exceed the resources allotted for the project. Frequently, a sample size of $n \geq 30$ would not be possible regardless of the resources scholars have because not enough cases exist in social reality: for instance, in the case of rare incidents (e.g., the Covid-19 Pandemic) or phenomena at the macro level (e.g., the EU has only 27 member states).
5. *Quantity vs. quality:* As a rule, if data are collected for a large number of cases, the downside is that less information can be collected for each case and researchers do not have the time and the data required for an in-depth analysis. Such in-depth analyses are absolutely necessary if the subject areas change very quickly or if the type of research phenomenon is not yet known (Kelle 2017).

3 Purposeful sampling of multiple cases

In order to resolve the problems inherent in random sampling, qualitative researchers have developed a wide range of techniques for *theory-based sampling* (also known as *purposeful sampling*), which use social theories (instead of probability theories) in order to select cases and generalize and which are also suited for small case numbers, allowing for a more in-depth analysis. As is the case for random sampling, in theory-based sampling, researchers use theoretical considerations to develop their sampling strategy. However, they use *social* theory instead of *probability* theory. Therefore, the generalization strategies are not based on statistical arguments but rather on sociological reasoning (Baur et al. 2018).

3.1 Methods of agreement and difference

If multiple cases are selected, two basic sampling principles exist (Sept/Baur 2020):

1. *Method of Difference* (also known as *most similar cases design, MSCD*): Researchers select cases that are as similar as possible (with regard to the research question). For example, they might select only typical or only atypical cases (Behnke et al. 2010: 204 et seqq.), in order to delve deeper into the cases' structures (Flick 2017: 170 et seq.). If researchers want to do causal analysis, a most similar cases design enables them to identify potential necessary conditions (Baur 2018: 308 et seqq.). For example, the authors of the study on the "Intrinsic Logic of Cities" (Frank et al. 2014) applied a most similar cases design to select four cities that resembled each other in terms of their size, density, heterogeneity, and structural conditions and that were all affected equally by the crisis of the 1970s.

2. *Method of Agreement* (also known as *most different cases design, MDCD)*: Researchers select cases that are as different as possible (with regard to the research question) in order to measure the full breadth of the phenomenon (Behnke et al. 2010: 204 et seqq.). If researchers want to do causal analysis, a most different cases design allows them to identify potential sufficient conditions (Baur 2018: 308 et seqq.). In the study on the "Intrinsic Logic of Cities" (Frank et al. 2014), in addition to the method of difference (see above), also the method of agreement was applied: In order to study the influence of the national context on urban development, the authors selected two German cities (Dortmund, Frankfurt) and two British cities (Birmingham, Glasgow). Based on prior knowledge, in order to analyze how urban practices and the economy are entangled over time, two cities were selected that had succeeded in overcoming the structural transformation of the 1970s (Frankfurt, Glasgow) and two were selected that had failed to overcome the same transformation (Dortmund, Birmingham).

As illustrated in this example, the methods of difference and agreement can be combined when selecting cases. Another example of combining these principles is *quota sampling*, which—contrary to popular belief—is not a random sampling technique but rather a variation of theory-based selection (Thierbach et al. 2020).

3.2 Criteria for selecting a specific case

When purposefully sampling multiple cases, it is necessary to determine to what extent the selected cases can be compared with one another in the first place, how they fit together, how similar they are, or if we are comparing "apples" and "oranges" (Akremi 2022). If we are comparing "apples" and "oranges," then we are dealing with far too many basic structural differences.

Therefore, it is advisable to assess the comparability of the cases in a separate step in the actual research process. For example, one sub-element of the study on the "Intrinsic Logic of Cities" (Frank et al. 2014) consisted of reconstructing the cities' economic development in the course of history. This process-oriented analysis revealed that several original assumptions—concerning e.g. the timing, course and results of economic restructuring—on which the case selection was based could not be upheld when empirically scrutinized (Baur/Hering 2017). In this qualitative study, the results of process-oriented analysis not only allowed for a deeper understanding of the cases and encouraged methodological reflection but also provided the bases for a differentiated empirically-grounded theory-building.

Furthermore, it is recommendable to keep as many factors as possible as constant as possible and to concentrate on as few dimensions for comparison as possible. Here it is useful to think about the research questions with their aspects and aspect relationships and to ask what is of most interest for the specific study. For example, the authors of the study on the intrinsic logic of cities were interested in whether and how certain social practices are reproduced beyond crises or whether cities have to be reoriented in the wake of a crisis—this is precisely why they selected cities that were affected by the same crisis. By concentrating on these questions, they were able to demonstrate that the

intrinsic logic of a city does in fact influence how a city reacts to and overcomes crises (Baur/Hering 2017).

4 Single case studies

In a single case study, as the name suggests, only a single, yet particularly interesting, case is selected (Lamnek/Krell 2016). Researchers aim to completely reconstruct the case with all its complexity and its whole context.

4.1 Potential categories underlying single case studies

There are several key categories which can typically be used as a basis for selecting single cases (Baur/Lamnek 2005: 241 et seqq.; Yin 2018) and that can also be applied to socio-spatial research (see Tab. 1).

Category	Example of an application in socio-spatial research with research question
Person, actor	Study on a significant architect such as Le Corbusier investigating how he influenced developments in the field of architecture
Group, setting	Study on "Urban Catalyst," a group of architects and planners in Berlin, to determine how they served as trailblazers for promoting the concept of temporary use in spatial planning
Network	Study on the "Climate Alliance" city network investigating how the network organizes its collaborative activities and works on urban environmental protection measures and reducing CO_2 emissions
Organization, association	Study on an association of cities and municipalities exploring how the association represents the interests of local communities in digitalized cities
City district, neighborhood	Study on the Leipzig-Mitte district to answer the question of how the first innovative temporary use of vacant space was made possible and legal
City (as a whole)	Study on the German city of Frankfurt looking into how to describe its intrinsic logic
Region	Study on the Rhine-Ruhr metropolitan region in Germany intended to reconstruct its economic development
Nation	Study on Great Britain and its urban planning policies
Supranational union	Study on the European Parliament examining how rural development policies are negotiated
Process, procedure	Study on deindustrialization in the Rust Belt and how this took place in the oldest and largest industrial regions of the United States

Tab. 1: Potential categories underlying single case studies. | © Author's own diagram

4.2 Criteria for selecting a specific case

If only one case is being studied, this means that the quality of the entire study depends greatly on the extent to which this case is suitable for carrying out the planned investigation. Therefore, researchers should take particular care when selecting this case. The following questions and deliberations can help during the case selection process (and should ideally be made adequately transparent in a subsequent publication):

1. *Determining whether the case is suitable for the research questions:* To what extent is the case suitable for addressing all research questions in the study together with their aspects and relationships? Does the case have any particular advantages for the research project? Does the case have any specific disadvantages or limitations? How do the advantages compare to the disadvantages?
2. *Determining whether the case is suitable for the theories underlying the study and the selected methods:* Do the theoretical assumptions of the study apply to the case? Can the selected methods be used for the case?
3. *Weighing the case against other potential cases:* Which other cases have been found that could also be suitable for the study? Are the characteristics of these cases known (or could they be studied in advance)? Which of the different potential cases is particularly compelling with regard to the specific study?
4. *Categorizing the case within the general context of the phenomenon being studied:* Based on research to date, what does the case represent within the context of the phenomenon? If the study examines an extended process (e.g., an innovation process), does the case only apply to part of the process or does it cover the entire process? How typical is the case within the context of the phenomenon? Does it represent frequent cases of this type, rare cases, or extreme cases?
5. *Categorizing the case within its specific context:* How can the context of the case (see Christmann/Baur in this handbook) be described? In other words, what are the characteristics of the case context according to existing knowledge (e.g., what are the key characteristics of the national, regional, historical, cultural, economic, political, social environment) and to what extent could they potentially influence the phenomenon being studied?

4.3 Case selection and generalization

While some cases are of interest in and of themselves (*intrinsic case studies*), *instrumental case studies* are aimed at generalization. Various strategies are available for this purpose (Baur/Lamnek 2005; Yin 2018):

1. *External case comparison:* The case is compared to other cases—for example, from specialized literature—or by using sociological theory as a synopsis of earlier empirical studies. It is also possible to iterate between single case analyses and case comparisons in mixed-methods studies. This generalization strategy depends on how the specific case was selected. It is particularly helpful to select (a) hypothesis-testing cases or critical cases that theoretically should not exist but that apparently do from

an empirical standpoint; (b) extreme or unique cases that are especially suited for analyzing firmly established routines and norms; and (c) typical cases that are suited for detailed analyses.

2. *Internal case comparisons:* Alternatively, based on the observation described in Section 2.1 that cases are often made up of subcases, it is possible to make use of systematic variation within the case to identify typical patterns that can be used for the purpose of generalization.

5 Case selection as the key determinant for generalization

In summary, case selection is a key step for the overall study results and for determining if and how the findings can be generalized. Frequently, researchers do not devote enough attention to this step in both research practice and in the literature on qualitative methods. In particular, qualitative researchers have spent far too many decades justifying why random sampling is generally not appropriate for qualitative research instead of developing more suitable alternatives. However, as demonstrated above, this is crucial because random sampling has specific weak points, which largely apply not only to qualitative but also quantitative research.

This includes the fact that random sampling requires a linear research process, while in spatial research, it is often unclear what the cases and populations are and how they can be differentiated from one another. Almost all of the definitions of populations used in quantitative research (and many of those used in qualitative research) assume that populations can be clearly delineated territorially (as communities, regions, or nations) and consist of immobile cases (permanent residents). Because this assumption often does not hold true in spatial research, the entire concept of generalization also falls short. Although critics of methodological nationalism have referenced this problem for some time now, they have not offered any viable solutions.

This is compounded by the fact that—if the sampling technique practiced in actual research is closely scrutinized—quantitative research practically never uses only random sampling but rather tends to combine random sampling with single or multiple case analyses: For example, if the "residents of the Federal Republic of Germany" are defined as the population for the analysis, from the point of view of sampling theory, this constitutes a single case. However, the reason why this case is being analyzed and not, let's say, the "residents of Samoa," is virtually never justified by quantitative researchers, although single case analyses offer a useful set of tools for this purpose.

In addition to thinking about populations, another research gap concerning case selection in qualitative spatial research is the need to develop practical guidelines for selecting specific cases based on the abstract recommendations derived from the principles of purposeful sampling. In this regard, quantitative research could serve as a role model, as quantitative researchers have developed specific sampling methods based on the abstract random sampling techniques. For Germany, for example, researchers can use random-route sampling for face-to-face surveys or the Gabler-Häder design for telephone surveys. These sampling strategies provide precise instructions regarding which decisions should be made when in the sampling process, which implications those deci-

sions have, and where there are standardized operations available for the case selection process.

References

Abbott, Andrew (2001): *Time Matters*. Chicago, IL: University of Chicago Press.

Akremi, Leila (2022): Stichprobenziehung in der qualitativen Sozialforschung. In: Baur, Nina/Blasius, Jörg (Eds.): *Handbuch Methoden der empirischen Sozialforschung*. Wiesbaden: Springer VS, pp. 405–424. https://doi.org/10.1007/978-3-658-37985-8_26

Baur, Nina (2018): Kausalität und Interpretativität. In: Akremi, Leila/Baur, Nina/Knoblauch, Hubert/Traue, Boris (Eds.): *Handbuch Interpretativ forschen*. Weinheim: Beltz Juventa. pp. 306–360.

Baur, Nina/Hering, Linda (2017): Learning from the Past: How Local Economic Conventions Influence Responses to Global Crises. In: *Human Figurations*, 6(2). Online: http://hdl.handle.net/2027/spo.11217607.0006.208 (accessed: 10 November 2020).

Baur, Nina/Lamnek, Siegfried (2005): Einzelfallanalyse. In: Mikos, Lothar/Wegener, Claudia (Eds.): *Qualitative Medienforschung*. Konstanz: UVK, pp. 241–253.

Baur, Nina/Knoblauch, Hubert/Akremi, Leila/Traue, Boris (2018): Qualitativ—quantitativ—interpretativ. In: Akremi, Leila/Baur, Nina/Knoblauch, Hubert/Traue, Boris (Eds.): *Handbuch Interpretativ forschen*. Weinheim: Beltz Juventa. pp. 246–284.

Behnke, Joachim/Baur, Nina/Behnke, Nathalie (2010): *Empirische Methoden der Politikwissenschaft*. Paderborn et al.: Schöningh.

Christmann, Gabriela (2013): Raumpioniere in Stadtquartieren und die kommunikative (Re-)Konstruktion von Räumen. In: Keller, Reiner/Knoblauch, Hubert/Reichertz, Jo (Eds.): *Kommunikativer Konstruktivismus*. Wiesbaden: Springer VS, pp. 153–184.

— (2014): Investigating Spatial Transformation Processes. In: *Historical Social Research*, 39(2), pp. 235–256.

— (2016): Das theoretische Konzept der kommunikativen Raum(re)konstruktion. In: Ead. (Eds.): *Zur kommunikativen Konstruktion von Räumen*. Wiesbaden: Springer VS, pp. 89–117.

Flick, Uwe (2017): *Qualitative Forschung*. Reinbek b. Hamburg: Rowohlt.

Frank, Sybille/Gehring, Gehring/Griem, Julika/Haus, Michael (Eds.) (2014): *Städte unterscheiden lernen*. Frankfurt a. M.: Campus.

Glaser, Barney/Strauss, Anselm (1967): *The Discovery of Grounded Theory*. Chicago, IL: Aldine.

Kelle, Udo (2017): Die Integration qualitativer und quantitativer Forschung—theoretische Grundlagen von »Mixed Methods«. In: *Kölner Zeitschrift für Soziologie und Sozialpsychologie*, 69(2), pp. 39–61.

Keller, Reiner (2007): *Diskursforschung*. Wiesbaden: VS.

Keller, Reiner/Knoblauch, Hubert/Reichertz, Jo (Eds.) (2013): *Kommunikativer Konstruktivismus*. Wiesbaden: Springer VS.

Knoblauch, Hubert (2001): Fokussierte Ethnographie. In: *sozialersinn*, 1(2), pp. 123–141.

Lamnek, Siegfried (2005): *Qualitative Sozialforschung*. Weinheim: Psychologie Verlags Union.

Lamnek, Siegfried/Krell, Claudia (2016): *Qualitative Sozialforschung*. Weinheim/Basel: Beltz.

Mayring, Philipp (2016): *Einführung in die qualitative Sozialforschung*. Weinheim: Psychologie Verlags Union.

Merkens, Hans (2015): Auswahlverfahren, Sampling, Fallkonstruktion. In: Flick, Uwe/Kardorff, Ernst von/Steinke, Ines (Eds.): *Qualitative Forschung*. Reinbek b. Hamburg: Rowohlt, pp. 286–298.

Ragin, Charles C. (2000): *Fuzzy-Set Social Science*. Chicago, IL: University of Chicago Press.

Sept, Ariane/Baur, Nina (2020): Stadt- und Metropolenvergleiche. In: Breckner, Ingrid/Göschel, Albrecht/Matthiesen, Ulf (Eds.): *Stadtsoziologie und Stadtentwicklung*. Baden-Baden: Nomos.

Thierbach, Cornelia/Hergesell, Jannis/Baur, Nina (2020): Mixed Methods. In: Atkinson, Paul Anthony/Delamont, Sara/Williams, Richard A/Cernat, Alexandru/Sakshaug, Joseph W. (Eds.): *SAGE Research Methods Foundations*. London/Thousand Oaks, CA/New Delhi: SAGE.

Yin, Robert K. (2018). *Case Study Research and Applications*. Thousand Oaks, CA/London/New Delhi: SAGE.

Integrating visual and verbal data

Anna Juliane Heinrich

Researchers in the interdisciplinary field of qualitative spatial research are concerned with understanding spaces in terms of their multifaceted nature, complexity, simultaneity, ascribed meanings, and transformation. In order to grasp the constitution of spaces, researchers make use of a nearly infinite spectrum of data: They analyze scientific, literary, and journalistic publications, interview transcripts and field notes, tweets and chat histories, plans and maps, sketches and photographs, videos and films, everyday objects and other artifacts, and much more. This plurality of data is not only characteristic for qualitative spatial research as a whole but also applies to individual research projects. As a rule, it is often necessary to use diverse data to achieve a certain research objective.

If not only diverse data but also diverse *types* of data are used within a research project, this is especially challenging as it results in methodological and practical requirements. Surely the most prominent discourse relates to the combination of qualitative and quantitative data in mixed methods designs.[1] In contrast, the combination of distinct qualitative data has rarely been discussed and there are virtually no recommendations on the topic (see Cronin et al. 2008: 576; exceptions: Moran-Ellis 2006; Cronin 2008). There are even fewer references in the literature to the specifics of integrating visual and verbal data (see Emmel/Clark 2011: n.p.; exception: *Forum: Qualitative Social Research, special issue* 2/2008). At first glance, this is astonishing for two reasons: Firstly, visual and verbal data are regularly combined in the research practice of many disciplines, a practice that is becoming more and more common. Therefore, data integration is a highly topical issue for research practice. Secondly, it would seem obvious that the various characteristics of verbal data, such as interview transcripts, and visual data, such as photographs, could at least potentially contain relevant implications for the research process: for example, with regard to the selection of analysis methods or the acquisition of analysis software.

1 Broadly speaking, the term *mixed methods research* also refers to research that uses diverse qualitative data (see Moran-Ellis et al. 2006: 46). However, because the term is primarily associated with the combination of qualitative and quantitative research methods, I will refrain from describing the integration of visual and verbal data as mixed methods research for the sake of clarity. Baur et al. (2017) put together a comprehensive overview of the state of mixed methods research in a special issue of the *Cologne Journal of Sociology and Social Psychology (KZfSS)*.

Against this backdrop, there is a dire need for a discourse that addresses the methodologies, methods, and practical issues in research that uses different types of qualitative data (see Emmel/Clark 2011: n.p.; Mey/Dietrich 2016: 2, 16). I will use this research gap as a takeoff point for my article, focusing specifically on the integration of visual and verbal data. I will start by explaining the rationale for combining visual and verbal data as this illustrates how data integration is relevant for qualitative research. Next, I will define what verbal and visual data mean for the purpose of this paper. Afterward, I will explain what is meant by data integration and outline which different strategies have been developed for this in general. Finally, I will concentrate on how to develop research designs that make it possible to integrate visual and verbal data. Of course, there is no one-size-fits-all solution for data integration that I can present here. The research topics and designs, data types, analysis methods, and interpretation techniques in qualitative spatial research are simply far too diverse for this to be possible. Nevertheless, the aim of my paper is to introduce the concept of data integration, to outline various options for data integration, and to point out relevant challenges and potential solutions. With this in mind, I will close my paper with questions that researchers can use to reflect on data integration in their research projects and to develop their own integration strategies.

1 Reasons for using diverse data in qualitative spatial research

The rationale for integrating visual and verbal data frequently refers to quality criteria for research. For example, combining different data is intended to achieve validity or contrasting different data can verify interpretations. Because concepts such as *validation* and *verification* are borrowed from the wide range of quantitative research, I would like to cite the argumentation used by Strübing et al. (2018)[2] for data plurality.

Strübing et al. (2018: 85) understand data plurality as a key contribution to *empirical saturation* in qualitative social research. In order to achieve empirical saturation, the authors maintain that both the scope and the composition of the data are relevant: "Studies can also ensure empirical saturation by focusing on a wide range and diverse composition of data" (Strübing et al. 2018: 89, own translation). Accordingly, data plurality can enhance research projects in a number of ways: Structural characteristics of the research topic can be revealed based on different types of data; the relevance of the phenomena can be demonstrated based on the findings from different types of data; the "danger of only offering superficial and cursory analyses" (Strübing et al. 2018: 89; own translation) is reduced.[3] In short: Integrating different types of data improves the quality of qualitative research.

2 Strübing et al. (2018) put up for debate five quality criteria regarding qualitative social research: adequacy, empirical saturation, theoretical pervasiveness, textual performance, and originality. These were originally developed based on qualitative research and not derived from quality criteria for quantitative research.

3 Moran-Ellis et al. (2006: 47–50) provide a detailed description of the arguments in favor of using diverse data types and evaluation methods.

Moreover, in qualitative spatial research, it is widely accepted that working with diverse data—specifically, with visual and verbal data—ensures adequacy in terms of understanding space. If spaces are understood as relational arrangements constituted in socio-material actions, then it is necessary to find research approaches that address physical-material consolidations, subjective spatial knowledge, and communicative action. A combination of visual and verbal data is well suited for this purpose: For example, using visual data makes it possible to address the materiality of spaces (e.g., material properties and arrangement of play equipment on a playground), social practices (e.g., observable behavior of children on a playground), and resulting physical-material traces (e.g., beaten paths on a playground). In turn, using verbal data, for example, opens up possibilities for reconstructing how people perceive and experience spaces, how they imagine spaces, and what meanings they ascribe to those spaces. Hence, the integration of visual and verbal data appears to be particularly adequate for understanding the constitution of spaces.

2 Verbal and visual data

In order to think systematically about the use of various data, we first need to understand what data are and which types of data can be differentiated from one another. In general, the term *data*[4] describes collections of empirical materials that researchers use to understand their research topic. First and foremost, qualitative data are characterized by the fact that they are non-numerical, in contrast to quantitative data. The spectrum of qualitative data is extremely wide: For example, qualitative data can be generated using the kinds of interviews included in this handbook, based on ethnographic and webnographic spatial exploration and by means of mapping.[5]

The most popular approach to structuring the data from this diverse range of contexts and scenarios in which they are generated and collected is to differentiate between *verbal* and *visual* data. Verbal data include all material based on the spoken and written word. Recordings are transcribed in the course of the research process so that it is possible to continue working only with text documents. Visual data refer to "any kind of visual material […] that depend in their meaning and significance on the visualised records [or visual perceptions; author's note]" (Knoblauch et al. 2008: 2). While photographs and videos are commonly used as data (see ibid.: 2), the use of graphics, objects, and artifacts is (still) more of the exception (see Mey/Dietrich 2016: 2).[6]

4 The term and concept of *data* are the subject of increasingly critical debate in qualitative research. Essentially, the widespread understanding of data as disclosed, discrete information that is independent of researchers is criticized. Especially in the context of new materialism, this purportedly positivist definition is opposed by the understanding of data as "an emergent and relational manifestation of research activity" (Torrance 2019: 1).

5 Baur/Blasius (2019) offer a comprehensive collection of articles on diverse types of data.

6 Emmison/Smith (2007; 1st Edn. 2000) published an initial paper on visual research offering instructions for using a large repertoire of visual data. In addition to a chapter on "Two-dimensional visual data: images, signs and representations," they devote one chapter each to "Three-dimensional visual data: settings, objects and traces," "Lived visual data: the built environment and its

Both visual and verbal data are routinely classified with regard to how they were generated: They can include either already existing materials that were collected by researchers (which are referred to as *process-generated* or *naturally occurring data*), or they can be generated as part of the research process (which are referred to as *research-induced data*) (see Kuckartz/Rädiker 2019: 442). The broad spectrum of process-generated visual and verbal data comprises, for example, newspaper articles, protocols, podcasts, tweets, chat histories, diaries, photos and photo albums, plans, and everyday objects. On the other hand, research-induced data can be divided into three types of data, depending on who generates them:

- Researcher-generated data, such as field notes or hand-drawn sketches created by researchers
- Participant-generated data, such as photos taken or diaries produced by research participants within the context of the research project
- Co-produced data generated in close collaboration between the researcher and the participants, such as sketches or meeting minutes that were developed together (see Bentlin/Klepp in this handbook)

3 Data integration and integration strategies

If researchers are working with visual and verbal data in a research project, then they have to develop and implement an integration strategy for the data: this is the main argument of my article. Data integration is relevant for two reasons: First, it is only possible to reach the full potential of a research project using diverse data if relationships are created between the data. In the context of mixed methods research, Kuckartz (2017: 163; own translation) refers to the fact that the struggle surrounding the "striking equation '1 + 1 = 3'" can be solved only by means of data integration: a claim that also applies to working with visual and verbal data (see Moran-Ellis et al. 2006: 50; Cronin et al. 2008: 584). If we hope to create an added value beyond the sum of two adjacent lines of research, then the integration of the data must boast an explicit benefit. Second, the varying characteristics of visual and verbal data justify the need for a strategy to integrate the data. If these respective characteristics are not taken into account, then there is a risk that the methodology will be inadequate. Integrating visual and verbal data raises the question, for example, of whether the data can and should be analyzed using the same method. By no means a trivial question seeing as the intrinsic logics of different types of data favor or preclude certain analysis techniques. While verbal data are *sequential* (exhibiting a linear succession of spoken or written words), many visual data are considered *simultaneous*—characterized by the simultaneity of the medium (e.g., paper or canvas), the object of the image (i.e., that which is depicted), and the subject of the image (i.e., that which is represented) (see Kogler 2018). Accordingly, it is necessary to call into question the use

uses", and "Living forms of visual data: bodies, identities and interaction" (Emmison/Smith 2007: v).

of sequential analysis methods—which are conventional for evaluating verbal data—for the integrated analysis of visual and verbal data.

So what does data integration mean? Integration describes the methodical and systematic process in which distinct data are related to one another and during which researchers generate additional findings. All data are considered tantamount in this regard, helping to answer the same research question(s). The data integration process serves to address the epistemological and practical implications of a research approach that uses diverse data. Therefore, the process must be designed so as to take into consideration the methodological characteristics of the different data types (see Moran-Ellis et al. 2006: 51 et seq., 56; Cronin et al. 2008: 584; see Marguin et al. in this handbook).

Two basic integration strategies can be differentiated from one another: the analytic and the interpretive (see Moran-Ellis et al. 2006). They differ in terms of where integration takes place in the research process. If the researchers opt for *analytic integration* (also known as *data-based integration*), then the data are integrated during the analysis stage. This can take place in different ways: Either the data are analyzed using different methods, but addressing consistent analytical research questions or pursuing consistent topics, or the diverse data are analyzed using the same method, while ensuring that the specific qualities of the data are not lost (see Moran-Ellis et al. 2006: 54 et seq.; Kuckartz 2017: 172). In the case of *interpretive integration* (also known as *result-based integration*), the data are evaluated using customized methods in line with their specific paradigms. The data are merged afterward when interpreting the findings (see Moran-Ellis et al. 2006: 55; Kuckartz 2017: 169 et seq.).

If the researchers opt for a data integration strategy that envisions different analysis methods for different data, any combination of data (types) is conceivable in principle. In contrast, analytic integration using one method for all data has limitations and cannot be applied practically to answer any research question: If, for example, analyzing photographs or works of art is advisable to answer a research question and there are also text documents available whose sequential analysis appears useful, then using a standardized analysis method is neither possible nor effective.

4 Integrating visual and verbal data

How can data be integrated in the research process? The next section discusses how to create research designs that allow for the methodologically adequate integration of visual and verbal data.

The definitions for verbal and visual data provided above establish that data are either verbal or visual. However, a closer look reveals that it is not always possible to assign data to such a binary categorical schema. Different data types do not always exist separately and independently from one another. In fact, visual and verbal data can be intertwined with one another to different extents. This influences which integration strategy is selected. Therefore, I have decided not to structure the data integration options according to the two basic strategies—analytic and interpretive integration—but rather to use the data types and how they are interconnected as a guide (see Fig. 1).

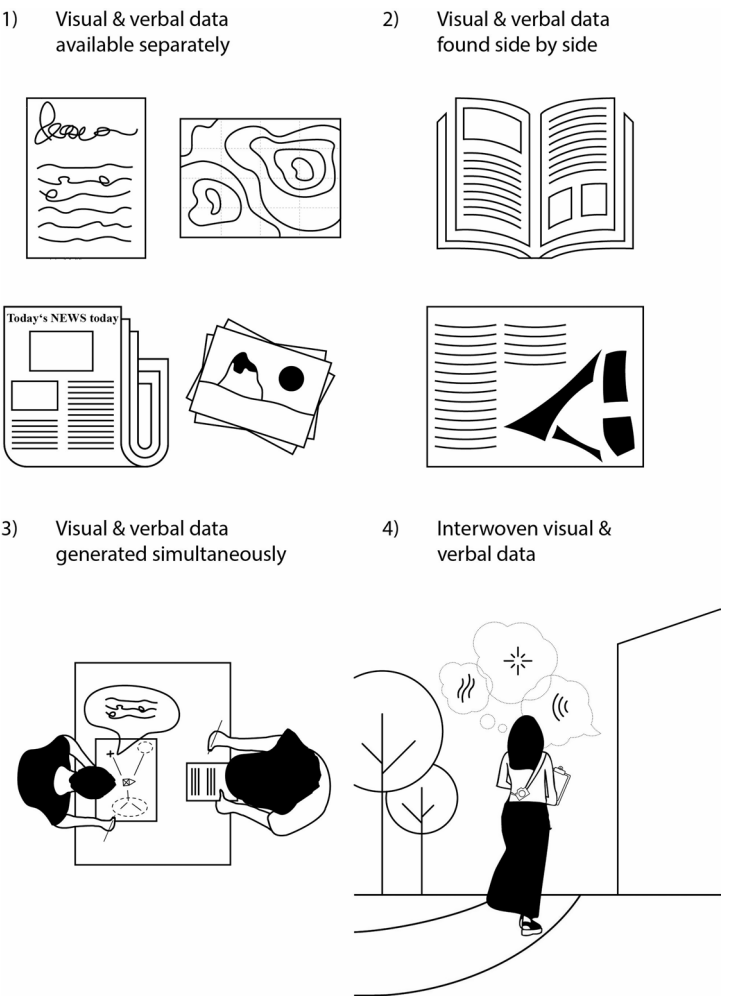


Fig. 1: The interconnectedness of visual and verbal data—the connection between data(sets) has implications for the selection of an integration strategy. | © Anna Juliane Heinrich and Julian Kaiser

4.1 Integrating separate visual and verbal data

Visual and verbal data can be generated separately or collected independently of one another. For example, they could include interview protocols, newspaper articles, aerial images, and photographs for a specific research topic (see Fig. 1). In this case, the researchers could decide to use both interpretive and analytic data integration. The most common practice is to use the interpretive data integration method as it makes it possible to employ established analysis methods and support software. However, on a critical note, interpretive integration is frequently rather unsystematic and does not follow strict rules.

Castillo Ulloa and Schwerer provide detailed guidelines for *one* possible interpretive integration option (in this handbook). Based on their description of the *qualitative meta-analysis*, the authors explain the steps and goals of the synthesis process: First, it is necessary to abstract the key messages little by little from the individual analyses taking into account the underlying theoretical concepts and to document this process systematically. Based on different comparison strategies, the findings are related to one another to identify similarities, differences, and correlations. The research questions serve as a guide in this regard. Although the authors do not work with different *types* of data in their example, their approach can also be applied to the integration of visual and verbal data as they explicitly refer to the possibility of multimedia synthesis. Finally Castillo Ulloa and Schwerer address a further aspect that is relevant to the integration of separate data: the necessity to reflect on the contexts in which naturally occurring data are generated. Specifically, they work with profiles that describe the publications used with regard to the type and time of publication, as well as the disciplinary backgrounds of the authors. This information is incorporated into the interpretation.

Sommer and Bembnista propose an innovative approach for analytic integration with the *multimodal discourse analysis* (in this handbook). The authors have developed a complex research approach with which to analyze multimodal discourses: that is to say, discursive practices for which, apart from (written) language, images or artifacts are also relevant. Essentially, the approach is based on various coding methods. In order to take into account the methodological characteristics of the visual data, the authors combine the coding methods with the socio-semiotic image analysis. They develop guiding questions that can be used to describe the images. This image analysis serves as the basis for coding the visual material. As a result, verbal and visual data can be analyzed in accordance with their respective paradigms and integrated into codes (for a concrete example of integrated coding, see Sommer/Bembnista in this handbook). This deliberated intersection between *grounded theory*, *sociological discourse analysis*, and *socio-semiotic discourse analysis* can be used as a template for developing your own methods.

4.2 Integrating interrelated visual and verbal data

Data can contain both visual and verbal components that relate to one another "in parallel" so to speak. Examples of this include different types of publications that contain graphic and textual elements, such as scientific publications with diagrams or photos in addition to text or plans with textual explanations in addition to the graphics (see Fig. 1). Because the individual authors related the visual and verbal information deliberately, analytic integration is generally used in this case.

A popular means of integrating such data analytically is to use a text-based analysis method (e.g., qualitative content analysis) and to apply this method to all of the data. In this case, the graphic elements are either analyzed directly (e.g., coded) or "transformed" first—in other words, "translated" into text—to then analyze that text.

Of course, researchers ask themselves the fundamental question of whether using a text-based analysis method is worth considering for their visual data or whether only an image analysis method seems adequate for analyzing the graphic material. It is neces-

sary to determine which qualities of the visual data are lost by transforming them into text on a case-by-case basis (for a critical perspective, see Cronin et al. 2008: 574).

Another widespread analytic integration technique for such interrelated data is to use a visual analysis method to evaluate all of the data, including verbal data. This method is primarily selected if the share of visual data is significantly more and/or if the textual information should be referenced geographically when analyzing data in maps. Marguin et al. introduce an approach for this (in this handbook): They further develop the concept of *joint displays*, which are used for the purpose of data integration in mixed methods research, to create *joint spatial displays*, which they use to integrate heterogeneous data within a spatial reference system. Specifically, the authors use maps as an *interface* to integrate spatial and space-related data. Accordingly, the key step is to localize all of the data on a map. In doing so, it is possible to compare the data in a visual, space-related display format, thus revealing correlations (e.g., overlays, dependencies) that were not apparent beforehand.

4.3 Integrating visual and verbal data from a shared initial context

Visual and verbal data can be generated simultaneously and interrelated with one another. Examples of this include interview situations in which not only an audio file of the conversation but also hand-drawn sketches of the interviewees are produced (see Bentlin/Klepp in this handbook; see Fig. 1) or ethnographic observations that are documented in different forms—for example, in videos, field notes, and photographs (see Wetzels in this handbook).

As a rule, both the analytic and interpretive data integration strategies are possible in this case (for example, weighing the respective advantages and disadvantages: see Million in this handbook). If the data are analyzed separately using different methods, contrasting the individual results is particularly important. Differences and similarities between the findings have to be made productive while keeping in mind that the data originated from the same context (see Kogler 2018). Findings are condensed by combining the data, but misinterpretations also come to light.

Cronin et al. (2008) developed an analytic integration approach that explicitly focuses on the connections between different data, thus making it ideal for integrating data originating from the same context. The method, which they refer to as "following a thread," consists of choosing phenomena that seem relevant from the separate data analyses and using them to refine the subsequent analysis of all the data. In iterative analysis loops, a data repertoire is created for each of these topics, comprising references to the individual topic from all datasets. These data repertoires are then evaluated in detail (see Cronin et al. 2008: 576). This makes it possible to determine the interplay between different data and incorporate this aspect into the interpretation.

4.4 Integrating intertwined visual and verbal data

Visual and verbal data can be so closely intertwined that it is almost impossible to examine them separately. This is the case in urban analyses, for example, in which researchers or participants transpose visual, acoustic, olfactory, and tactile stimuli into integrated

datasets that work with graphic and textual elements (see chapter on *Drawing and visualizing* in this handbook; see Fig. 1). In these instances, the transition between data collection/generation, analysis, interpretation, and illustration for publications is fluid and can hardly be differentiated, which is why a type of analytic integration is always used here.

This interconnectedness poses a challenge for researchers and should always be taken into consideration: Firstly, similar to the points mentioned above, it is necessary to verify whether the data type and analysis method(s) are compatible. Contemplating the mediality of the data is not enough in this regard; instead, it is necessary to take into account further characteristics of the data. For example, the previously mentioned question on whether the data are sequential or simultaneous is important. But the question of where the data came from, meaning who generated them and for what purpose, is extremely relevant as well. For example, the representation techniques (e.g., camera perspective, detail) are generally important dimensions when analyzing naturally occurring or participant-generated images. Here, statements regarding staging practices should be collected, for instance (see Sommer/Bembnista in this handbook). By contrast, these analysis dimensions appear questionable in the case of researcher-generated images since the researchers decided on the representation techniques and media themselves (see Pauwels 2011: 10).

Secondly, and this is especially relevant due to the interconnectedness of the steps, researchers must ensure plausible intersubjectivity in their work. This is relevant both during the research process among a team of researchers and when publishing the findings. Various approaches are feasible in this respect:

Million (in this handbook) suggests producing what she refers to as a *scientific source text*, in reference to Behnken/Zinnecker (2010). The source text contains precisely the sections of the data material that should be used to answer the research question, as well as their analysis and synthesis. The data are interpreted in a separate text. This detailed documentation can certainly be very helpful for managing data and analysis methods with deliberation, but it is extremely time-consuming.

Pelger et al. (in this handbook) offer an alternative for integrating interconnected data in a structured manner based on *multi-scale mapping* by defining process steps and documenting intermediate results. The process is broken down into different synthesis stages, and the results are presented in the form of integrated maps with "reading aids" that help understand the different analysis steps. Although the simultaneous, non-linear representation on the map is used to synthesize findings, it is dissected to clearly illustrate the process steps and intermediate results.

5 Conclusion: Developing a strategy to integrate different types of data

Combining visual and verbal data is not only common practice in spatial research, it is also an adequate approach given the relational understanding of space. However, a research project with diverse data can only be beneficial if a strategy for integrating different data types is developed and implemented. It is essential for researchers to reflect on the characteristics of the data to be integrated in a research project and the consequences

this can and should have for the research process. The characteristics of the data must be captured and harnessed by the analysis method(s) in order to exploit the full potential of the data and find an adequate means of dealing with the methodological particularities.

Against this backdrop, I have outlined and discussed different data integration approaches in my article. In closing, I would like to summarize the questions that are especially relevant when developing an integration strategy. These questions are intended to serve as a guide for defining your own research designs:

- For (interdisciplinary) teams: What does the term data mean for us, and can we agree on a common understanding of data?
- Which data do I need to answer my research question(s)?
- Are different types of data required to achieve the objective of the research project, and if so, which types and why?
- Which characteristics do the data to be collected or generated have? In particular: How interconnected are visual and verbal data?
- Which methodological particularities of the data types should be taken into account in the research process?
- Which data integration strategy is adequate and practical for working with the data given the methodology and content: analytic or interpretive integration?
- How can the data integration process be designed and communicated so as to ensure intersubjectivity?

These questions are intended to encourage self-reflection and support a methodologically founded approach. This means continuously striking a balance between methodological requirements and practical considerations during the research process. The individual approach and decisions should be communicated and justified transparently in the presentation of the results.

In the future, it will be necessary to address two major challenges that make it difficult to work with visual and verbal data beyond the methodological research questions: First of all, data integration currently (still) represents a technical difficulty. There is software that can be used to merge different data types. For example, aside from texts, images and video files can be imported into software programs for qualitative analyses. However, to date, these programs only offer a few differentiated options for specifically analyzing visual elements. Conversely, software solutions intended to analyze visual data are not adequate tools for analyzing text. Second—and this point also applies to the mediality of the data and analysis results—there is a lack of publication channels that are suited for publishing visual research findings.

Given the paucity of methodological recommendations and software solutions for data integration, as well as the inadequate publication channels, creativity is required! Integrating visual and verbal data calls for more scientific discourse and means enhancing our repertoire of methods and technical tools, as well as developing new formats for proper discourse.

Acknowledgments

This text was created as part of the research project *Integrated Analysis of Visual and Verbal Data in Qualitative Research*. The project was made possible thanks to a grant from the DAAD postdoc research program. I would like to thank DAAD for this support. I would especially like to thank my hosts at HOGENT University of Applied Sciences and Arts—Dr. Griet Verschelden and Dr. Sven De Visscher—as well as the many colleagues at HOGENT and TU Berlin who provided me with insight into their work during this research project.

References

Baur, Nina/Blasius, Jörg (Eds.) (2019): *Handbuch Methoden der empirischen Sozialforschung*. 2nd fully revised and extended Edn. Wiesbaden: Springer VS.

Baur, Nina/Kelle, Udo/Kuckartz, Udo (2017): Mixed Methods – Stand der Debatte und aktuelle Problemlagen. In: *Cologne Journal of Sociology and Social Psychology (KZfSS)*, 69(2), pp. 1–37.

Behnken, Imbke/Zinnecker, Jürgen (2010): Narrative Landkarten. Ein Verfahren zur Rekonstruktion aktueller und biografisch erinnerter Lebensräume. In: *Enzyklopädie Erziehungswissenschaft Online*, pp. 1–25.

Cronin, Ann/Alexander, Victoria D./Fielding, Jane/Moran-Ellis, Jo/Thomas, Hilary (2008): The Analytic Integration of Qualitative Data Sources. In: Alasuutari, Pertti/Bickman, Leonard/Brannen, Julia (Eds.): *The SAGE Handbook of Social Research Methods*. London: SAGE, pp. 572–84.

Emmel, Nick/Clark, Andrew (2011): Learning to Use Visual Methodologies in Our Research: A Dialogue Between Two Researchers. In: *Forum: Qualitative Social Research*, 12(1), Art. 36.

Emmison, Michael/Smith, Philip (2007): *Researching the Visual: Images, Objects, Contexts and Interactions in Social and Cultural Inquiry*. London: SAGE.

Knoblauch, Hubert/Baer, Alejandro/Laurier, Eric/Petschke, Sabine/Schnettler, Bernt (2008): Visual Analysis. New Developments in the Interpretative Analysis of Video and Photography. In: *Forum: Qualitative Social Research*, 9(3), Art. 14.

Kogler, Raphaela (2018): Bilder und Narrationen zu Räumen. Die Zeichnung als visueller Zugang zur Erforschung sozialräumlicher Wirklichkeiten. In: Wintzer, Jeannine (Ed.): *Sozialraum erforschen: qualitative Methoden in der Geographie.* Berlin: Springer Spektrum, pp. 261–277.

Kuckartz, Udo (2017): Datenanalyse in der Mixed-Methods-Forschung. Strategien der Integration von qualitativen und quantitativen Daten und Ergebnissen. In: *Cologne Journal of Sociology and Social Psychology (KZfSS)*, 69(2), pp. 157–183.

Kuckartz, Udo/Rädiker, Stefan (2019): Datenaufbereitung und Datenbereinigung in der qualitativen Sozialforschung. In: Baur, Nina/Blasius, Jörg (Eds.): *Handbuch Methoden der empirischen Sozialforschung*. Wiesbaden: Springer VS, pp. 441–456.

Mey, Günter/Dietrich, Marc (2016): From Text to Image–Shaping a Visual Grounded Theory Methodology. In: *Forum: Qualitative Social Research*, 17(2), Art. 2.

Moran-Ellis, Jo/Alexander, Victoria D./Cronin, Ann/Dickinson, Mary/Fielding, Jane/Sleney, Judith/Thomas, Hilary (2006): Triangulation and Integration: Processes, Claims and Implications. In: *Qualitative Research*, 6(1), pp. 45–59.

Pauwels, Luc (2011): An Integrated Conceptual Framework for Visual Social Research. In: Margolis, Eric/Pauwels, Luc (Eds.): *The SAGE Handbook of Visual Research Methods*. London: SAGE, pp. 3–23.

Strübing, Jörg/Hirschauer, Stefan/Ayaß, Ruth/Krähnke, Uwe/Scheffer, Thomas (2018): Gütekriterien qualitativer Sozialforschung. Ein Diskussionsanstoß. In: *Zeitschrift für Soziologie*, 47(2), pp. 83–100.

Torrance, Harry (2019): Data as Entanglement: New Definitions and Uses of Data in Qualitative Research, Policy, and Neoliberal Governance. In: *Qualitative Inquiry*, 25(8), pp. 734–42.

II. Conversing and storytelling

Biographical-narrative interviews

Gunter Weidenhaus and Maria Norkus

Just like matters related to our way of life, a glimpse at our lives as a whole is closely connected to spaces. It is not possible to live, plan, or recount our lives without answering the question of "where?" Despite the fact that space is omnipresent across biographies, studies that focus on space analytically and theoretically are still rare, although space (generally as urban space) and spatial references (e.g., as a source of identity for Polish immigrants) certainly played a key role in the early days of biographical research: namely, in studies by Thomas and Znaniecki (1958 [orig. 1918–1920]) and later within the *Chicago School of Urban Sociology*.

However, as it was the case in a large share of the social sciences, space disappeared again from the biographical research agenda. On the one hand, this was related to the prevailing concept of seeing space solely as a container for the social without giving it explanatory power (see Löw 2001). On the other hand, especially in Germany, one can assume that the spatial rhetoric during the period of National Socialism made it difficult to address this issue explicitly.

Space reappeared as a prominent item on the agenda of the social sciences thanks to the reflections of Henri Lefebvre (1991 [orig. 1974]) and later on in the wake of the "*spatial turn*" (Bachmann-Medick 2006). It was only quite recently (Becker 2017; Weidenhaus 2015) that approaches emerged again in the field of biographical research that use space and its reconstruction as a central research topic and introduce space as a dimension of biographical research, and quite successfully at that as we will demonstrate below.

Within sociology, biographical research constitutes a research perspective that allows many different topics to be addressed using various methodological techniques. Within this research school, biographical-narrative interviews are a basic form of data collection, which also imply certain methods of data analysis. The methodological concepts of the sociology of space and biographical research are outlined below with a focus on biographical-narrative interviews, followed by two possible approaches to combining biographical-narrative interviews with spatial analyses.

1 The basics: Narrative interviews, biographical research, and spatial conception

In this section, we present the key concepts of the sociology of space and biographical research with a focus on the biographical-narrative approach in order to prepare the considerations on reconstructing space by means of this method.

1.1 Spatial theory

When investigating space itself in social sciences, it is first necessary to unfold the concept of space in this context. If space is not to be regarded simply like an independent variable within biographical research (as some earthly section in which biographies play out), then we need a conception that understands space itself as a social construct. This is decisive because space can certainly be conceptualized differently in the context of physical research.

The notion of *space* has three different connotations in everyday life and in science. It either defines the distance between several points in the outside world (e.g., the table is one meter wide), addresses social spatial constructs such as nations, or it is related to prelinguistic, subjective perceptions of distance (e.g., a fear of heights). These definitions can be used to differentiate between the terms physical and social space and between an immediate perception of distance and an inner psychological space.

Physical space is understood as the product of an outside universe. A wide array of measures serve to define distances in this space, whose incredibly complex characteristics are described in physics. Based on their reference to the outside world, the acceptance or rejection of such assertions depend on these definitions as well. The sentence "This apartment is 95 sqm big" is not refuted by the sentence "It seems smaller to me though."

Social constructions of space are fundamentally different. Their origin can be understood, in reference to Martina Löw's "The Sociology of Space" (2001), as the comparison of different elements (*synthesis*) and as the positioning of those elements (*spacing*). The constitution of a large number of social spaces—such as living rooms, homes, or nations—is institutionalized, directly linked to meaning, and historically mutable. It is not possible to reduce social definitions of space to physical definitions of space. For example, a place is not necessarily part of my home, even if it is located in my home town.

Ultimately, the immediate and subjective perception of distance is studied primarily in the field of perceptual psychology. This field also includes spatial definitions such as the sensation of a frighteningly great height when stepping onto a three-meter diving board at the swimming pool for the first time. As a rule, people overestimate vertical distances in comparison to horizontal distances (Künnapas 1955). Our consciousness generates immediate impressions of distances and the position of our own body, which cannot be reduced to metric measurements.

Objectified definitions of distance impact social spaces: We move away from home (social definition of space) because our new job is located 300 kilometers away (physical definition of space). Therefore, the fact that spatial definitions with different references

to the world[1] are mutually irreducible in no way means that they cannot influence one another. However, it is important to note that such influences are anything but clear since they depend on the social contexts: A passionate driver does not have to relocate at all if they have a fast car and the infrastructure is developed enough. Exploring when and which physical definitions of space can be empirically translated into socio-spatial constructs merits a separate research project in and of itself, which would have to take into account the differentiation between the references to the world and thus the different spatial terms at the conceptual level.

Within the context of spatial research using biographical-narrative interviews, the concept of social space is obviously helpful since it is required to determine which socio-spatial constructs are relevant for biographical processes and which spaces are produced through people's actions (e.g., setting up a home and thus creating it in the first place).[2] Several basic considerations of a relational concept of socio-spatial construction are described briefly below, based on the work of Martina Löw and Edward Casey:

According to this notion, spaces can be understood as relational arrangements of objects and people in places (Löw 2001: 159 et seq.). As such, a space is not a passive container filled with something, but rather it is produced by the goods and living beings that belong to the space and by the spatial relationships in which these elements are arranged. What matters is what subjects perceive as spatially constitutive and which meaningful relationships are established between these elements.

The constitution of social spaces is a phenomenon that must be comprehended as a structure formed by human action on the one hand and as human action formed by structure on the other. This means spaces form a structure that exists objectively in the outside world, and we adapt our actions to these given spaces. In general, acts of spatial constitution are carried out in the practical consciousness (Löw 2001: 161). The fact that they are usually not available in consciously articulable form primarily means one thing for the social sciences: namely that scientists frequently rely on interpretative reconstruction work in order to reveal spatial constructs for the research process.

There is a conceptional difference between the terms *space* and *place*. Places are points at which the living beings and goods relevant for a spatial construct are located, while a space represents the complex formation produced from these goods and living beings at locations, as well as their relational references (see Löw 2001: 198 et seqq.). Hence, it is possible to imagine multiple spaces at one location because a positioned social good or living being can be part of multiple spatial constructs. For example, the gas station as a place can become a key location for youth culture, or it can be regarded as part of a product chain or as a functionally specific place in a road network.

From a phenomenological point of view, constructs of place also feature several special characteristics, which can be useful for connecting the sociology of space to biographical research. Edward Casey (1996) argues that people gather experiences concretely, meaning physically at places. From this perspective, places hold space and time

1 For a differentiation between communicative references to the world, see Habermas (1981).

2 A physical spatial reference would ask only where someone was in the course of their life and when without making the space an object of interest. Thus, it is only possible to study *in* the space instead of studying the space itself.

together and have a symbolic meaning. At the same time, places are produced by subjects referencing them with the help of locations. Therefore, the reconstruction of such localization processes represents (as demonstrated by Johannes Becker; see Section 3.1) a possible connection between biographical research and the sociology of space.

These explanations are intended to illustrate that we are dealing with an almost infinite number of social spaces in the social world. In this sense, "space" exists solely as a formally analytical term, but not in the form of an empirical entity that encompasses everything. The spatial concept presented here is thought of relationally with regard to the constitution of spaces. Such a formal-analytical concept can help reconstruct spatial constitutions relevant to subjects, thus making it easier to understand their actions. This is especially relevant because it can be assumed that different people and groups constitute different spaces.

1.2 Basis for biographical research and biographical-narrative interviews

Biographical research is a long-standing discipline, not only within the social sciences but also in many other academic fields, such as psychology, education sciences, and literary studies. Within sociology, this research method was first used in the US as part of the *Chicago School*, after which it was quickly brought to Europe through diverse research contacts, where it was refined considerably (Kohli 2013; Apitzsch/Inowlocki 2000). In terms of its exact methodological design and purpose, biographical research has remained quite diverse. Biographical analyses are carried out within ethnographies and other qualitative research methods. Various data formats can be used, and the analysis often focuses on subjective experiences. Biographies can also serve as starting points for quantitative studies that explore patterns and structures in the life histories of large groups. Over the last several decades, an intense debate has taken place regarding the methodological design of biographical research in the social sciences, which led to its establishment as a method (see Bentlin/Klepp in this handbook).

Below we focus on a specific type of data collection, the biographical-narrative interview, and the associated approach of data analysis. Biographical-narrative interviews, which take the narrative flow of the biography as the starting point of the analysis, have been used in Germany for a long time and were expanded on methodologically by Fritz Schütze (Schütze 1977, 1981). The interview process often has three steps: First, a generative starting question aimed at the personal experiences of the interviewee to stimulate a narrative, which should not be interrupted. Then, follow-up questions can be asked in reference to what was said in order to prompt new narratives. Finally, what are called exmanent follow-up questions can be asked with regard to aspects that were not addressed in the interview but that are pivotal for the research question (Rosenthal 1995; Küsters 2006). The data can be analyzed using various techniques. One of the most common is Fritz Schütze's narrative analysis (1983), which first involves performing a textual analysis of the individual cases and then consolidating all of the cases to create a theoretically founded concept. In addition to this analytical technique, which is primarily aimed at the subjective, methods have been developed that aspire to link objective structures with subjective meanings (Fischer 1978; Fischer-Rosenthal/Rosenthal 1997). Rosenthal, for example, connects the textual analysis of the narrated, subjective self-representation (*narrated*

life) to the reconstruction of the life history (*experienced life*) in order to carry out a typification (Rosenthal 1995). Furthermore, biographical-narrative interviews can be analyzed by means of grounded theory (Dausien 1996) documentary methods (Franz/Griese 2010), sequential analyses (Soeffner/Hitzler 1994), or objective hermeneutics (Silkenbeumer/Wernert 2010).

Against this backdrop, we will now present two possibilities for combining biographical research in the social sciences with the sociology of space in the context of concrete research projects and based on biographical-narrative interviews. Both approaches endeavor to make spatial constitutions the explicit object and not to simply understand institutionalized spaces as distinct but pre-existing social contexts. Such a perspective can certainly be worthwhile, for example, if it can be used to focus on the invalidation of educational qualifications when crossing the border in the case of refugee biographies. However, this generally does not imply a spatial-sociological perspective since the social processes of constituting spaces are not addressed.

2 Spatial analyses

Spaces are a central figure in biographical narratives. Biographies occur in places, and biographers localize themselves constantly in those places. Ultimately, space was the key focus at the onset of biographical research in the context of the *Chicago School*, where the city represented the thematic core and focus was placed on the study of the local and the associated lines of conflict and upheavals (Fuchs-Heinritz 2005). Two more recent studies also explicitly concentrate on the spatial in biographical-narrative analyses (Becker 2017; Weidenhaus 2015). We present both studies below in order to illustrate how the biographical-narrative method is used in spatial analyses.

Johannes Becker (2017) reconstructs biographical locations, thus performing an analysis of special spaces (in this case, the Old City of Jerusalem) and their socio-historical meanings. Gunter Weidenhaus (2015) reconstructs biographically relevant spatial constitutions, that is to say "*lebensraum*,"[3] thus obtaining a typology of the spatial "existing in the world" in modern German society. Thus, the *localization of biographies* (Becker) and *reconstruction of lebensraum* (Weidenhaus) represent two proven methods that combine biographical-narrative interviews and the sociology of space systematically with a well-reflected methodology.

2.1 Biographical locations

Johannes Becker (2017) explores locations, especially at the level of experienced life histories. The biographical-narrative interview forms the empirical basis for the analysis of

3 The term *lebensraum* is problematic due to its use and instrumentalization during the period of National Socialism. We reject any naturalized conception of lebensraum as used in the Nazi worldview. In this context, the term refers to spaces that are relevant to an individual from a biographical perspective. The study can demonstrate that it is not possible to assume that these spaces have a certain natural structure, but rather lebensraum can only be understood appropriately as a cultural product.

such socially/processually conceived locations since it allows them to be assessed effectively. Becker uses specific biographical locations within the Old City of Jerusalem as an example for the significance of social spaces in the life history of its residents. In this case, he distinguishes between places and locations in order to reconstruct the localization process methodically from the biographical stories, which can both occur in places and co-construct places. This socio-constructivist analysis conceives individuals as powerful actors within socio-spatial structures on the one hand and as subjects localized by discourses and politics on the other. From this perspective, locations are understood as potentially changing and thus must be differentiated from the static concept of place.

In accordance with Edward Casey, places are understood as complex, multifaceted, and mutable structures that, in addition to the purpose dictated by their materiality, are constructed by the interpretations and actions of the actors (Becker 2019: 8–10). These actors are incorporated into a figuration and thus into specific power constellations that allow for and restrict actions. Therefore, places are negotiated under the auspices of power and conflict, which also means that different discursive uses of places are available as a result and thus can be found in parallel (ibid.: 11–20).

How the actors perceive spaces changes as a matter of course, especially as a result of alterations in the material world itself but also due to the constantly changing perceptions of the actors. This is particularly important for reconstructing places and locations based on biographical-narrative interviews as this aspect must be reflected in the analysis. To understand how people describe spaces, it is necessary to take into consideration both past experiences and current discursive spatial constructs.

The study by Becker combines participant observation with biographical-narrative interviews. A two-step procedure is used to combine results from ethnography and biographical research, leading to a focus on specific, empirically derived, heuristic research spaces, which can then be explored further to achieve theoretical saturation. The first, relatively open collection phase is followed by a second focused phase, where the new findings are transformed into a second *spatial sample*, which in turn is analyzed by means of ethnography and narrative-biographical interviews. The first phase starts with a relatively open research question and broad-based data collection. In the second phase, this culminates in focused research spaces, in which biographies and their socio-spatial locations are explored further. This made it possible to demonstrate that locations change in the course of life and that people localize themselves at different places within the same research space. Thanks to biographical research, it is then possible to draw conclusions about the individual biographical self-presentation with regard to places. Thus, it is possible to create typologies of "localization places" on the one hand and of "localization processes" on the other. Types of localization places provide information about the location itself and its creation, while localization processes say something about the stability of locations and produce results, for example, with regard to an experienced expansion or contraction.

2.2 Constructing *lebensraum*

Based on biographical-narrative interviews, Gunter Weidenhaus (2015) reconstructs various spatial modes of "existing in the world." The guiding categories with regard to con-

structing spaces are (a) the levels at which biographically relevant spaces exist, (b) the relationship of these spaces within a biographical narrative, (c) the constituting practices of the individual spaces.

In terms of the methodology, it is first important to note that an immense range of spaces are mentioned in a biographical narrative. We can virtually never tell a story without addressing the "where" of our experiences. However, not all of these spaces are biographically relevant, which means that not every space mentioned in an interview has to be reconstructed.

When reconstructing individual spaces, two questions are particularly expedient: first the question of which goods and living beings are included in the spatial constitution (*synthesis*), and then the question of what concrete biographical meaning this space has specifically. Is, for example, a certain city important for the biography because a longstanding group of friends lives there or because potential employers are located there? The answers to these questions reveal information about the appropriation (or to be more precise, about the *assimilation strategy*) of these spaces. Based on the reconstruction of the synthesis work or the assimilation strategy, it is now possible to determine the biographical significance.

If all biographically relevant spaces of a certain case are regarded at once, this results in the *lebensraum*: a unique pattern of spaces that can exist at the same or at different levels. In the case of spatial constructs at the same level, it is necessary to ask whether the functions of these spaces are similar or different for the biography. If they are similar (e.g., Hamburg and Berlin as potential places for personal artistic projects), it can be assumed that these places are compared and hierarchized by the narrators themselves. In the case of different functions (e.g., Hamburg as home and Berlin as a springboard for the career), the spatial constructs tend to be complementary. If the spaces exist at different levels, it can be assumed that biographically relevant spaces form such a complementary structure (since home and nation will have different meanings in the biography even if both constitutions are highly relevant).

This method is appropriate for the construction of ideal types, which Weidenhaus (2015, 2023) did as an example for modern German society in an exploratory research project to generate hypotheses (for empirical examples from Kenia see Weidenhaus/Mock 2022; Weidenhaus/Korte 2022). He developed three ideal types of *lebensraum* constitutions that differ from one another fundamentally. The classic-modern mode can be regarded as a *concentric* lebensraum constitution. Positioned around the home as the center of life, further spaces are made biographically relevant, such as the neighborhood, the city, the home region, and the nation. In the case of concentric types, all of these spaces exist at different levels and therefore have different meanings for an individual's life. A relocation always necessitates establishing a new home and is therefore deliberated at great length. This indicates a correlation that is easy to prove empirically: People with a concentric *lebensraum* constitution consistently constitute the historicity of their lives linearly, meaning they plan their future. Therefore, we can call this a concentric-linear space-time type.

The second form of biographical spatial construction can be referred to as *network-like*. The most striking characteristic is that a home is not mentioned in these cases. The place where the individual's bed is located remains largely irrelevant from a biographi-

cal standpoint. Relevant living spaces can be found exclusively at the level of cities and neighborhoods, which are assimilated primarily based on their atmospheres and the associated scenes represented there. These urban spaces are constituted by means of unspecific options that are offered there. In these cases, it is possible to observe a heightened relevance of post-traditional forms of community building in scenes (Hitzler et al. 2001). Over time, a network of interconnected, relevant living spaces is created at the level of cities and neighborhoods, which are compared with one another and hierarchized (does London or Berlin offer better options?). The network-like spatial structure of this rather post-modern type correlates to an episodic temporal structure that leaves the past, present, and future of an individual's life largely unconnected and allows for a biographical change of course depending on the options available.

A third form of *lebensraum* constitution can be referred to as *insular*. It is more common among people with a lower socio-economic status and is frequently observed in connection with long-term unemployment or precarious employment. In these cases, the *lebensraum* generally consists of only the individual's home, which is separated by clear border constructs from what is perceived as a hostile outside world. This type of *lebensraum* constitution is always related to a type of biography that essentially postulates an eternal present, which is why this can be called an insular, eternally present biographical space-time.

3 Conclusion: Complementary approaches

We have demonstrated how space can be explored as a key category of the social using biographical-narrative interviews. Biographical-narrative methods offer possibilities for analyzing spaces, but also has limits. This applies with regard to the focus of the analysis as not every space can be studied by means of biographical-narrative interviews. The studies selected as examples illustrated how space can be analyzed based on biographical-narrative interviews. The biographical reconstruction serves as the key point underlying the spatial analysis and to which the selected spatial concepts are connected. Weidenhaus (2015) used this biographical approach to determine how people exist spatially in the world, which spaces are relevant within an individual's life, and how those spaces are constituted. However, biographical-narrative interviews can also be used to analyze biographical localization processes and thus to identify different references to places. As Becker demonstrated, they can be used—in connection with ethnographic method—for spatial analyses and for emphasizing the subjective reference to spaces.

In contrast to the method proposed by Gunter Weidenhaus, the approach developed by Johannes Becker (2017) allows for a methodical preselection of research spaces (in this case, the Old City of Jerusalem) in which one can search empirically for locations and then determine their biographical significance for different cases. In doing so, it is possible to make assertions about the various typical meanings these locations have for specific groups of the population in order to better understand space in terms of its social relevance and, for example, to estimate the potential for conflict resulting from certain urban transformations (e.g., tearing down a symbolically relevant building).

By contrast, Weidenhaus inquires into the manner in which people position themselves in the world spatially in the context of their subjectivity. The biographical spatial constructs are interpreted as answers to the challenges of life and have the potential to diagnose the present by applying a historical perspective. If the classic concentric-linear lifestyle model of the modern remains hegemonic with its normative implications—such as long-term, rational life planning and centering (family) life around a home—it can be assumed that the subjects are put under pressure internally. Network-like, episodic models are rewarded with a more flexible working world, while a retreat to an insular, eternally present lifestyle is suggested as a result of exclusion.

Both approaches appear suitable for effectively combining spatial and biographical research and for producing relevant findings depending on the topic of interest. Moreover, the questions of experienced locations according to Becker and ways of constituting *lebensraum* according to Weidenhaus can be seen as complementary and can certainly be addressed in unison.

References

Apitzsch, Ursula/Inowlocki, Lena (2000): Biographical Analysis. A ›German‹ School? In: Chamberlayne, Prue/Bornat, Joanna/Wengraf, Tom (Eds.): *The Turn to Biographical Methods in Social Science.* London: Routledge, pp. 53–70.

Bachmann-Medick, Doris (2006): *Cultural Turns. Neuorientierungen in den Kulturwissenschaften*. Reinbek: Rowohlts Enzyklopädie.

Becker, Johannes (2017): *Verortungen in der Jerusalemer Altstadt: Lebensgeschichten und Alltag in einem engen urbanen Raum*. Bielefeld: transcript.

— (2019): Orte und Verortung als raumsoziologische Perspektive zur Analyse von Lebensgeschichten. In: *Forum Qualitative Sozialforschung*, 20(1), Art. 12.

Casey, Edward S. (1996): How to Get from Space to Place in a Fairly Short Stretch of Time: Phenomenological Prolegomena. In: Feld, Steven/Basso, Keith (Eds.): *Senses of Place.* Santa Fe, NM: School of American Research Press, pp. 13–52.

Dausien, Bettina (1996): *Biographie und Geschlecht: Zur biographischen Konstruktion sozialer Wirklichkeit in Frauenlebensgeschichten*. Bremen: Donat.

Fischer, Wolfram (1978): Struktur und Funktion erzählter Lebensgeschichten. In: Kohli, Martin (Ed.): *Soziologie des Lebenslaufs.* Darmstadt/Neuwied: Luchterhand, pp. 311–336.

Fischer-Rosenthal, Wolfram/Rosenthal, Gabriele (1997): Narrationsanalyse biographischer Selbstpräsentation. In: Hitzler, Ronald/Honer, Anne (Eds.): *Sozialwissenschaftliche Hermeneutik. Eine Einführung*. Wiesbaden: VS Springer, pp. 133–164.

Franz, Julia/Griese, Birgit (2010): Dokumentarische Methode und Narrationsstrukturanalyse – ein Vergleich. In: Griese, Birgit (Ed.): *Subjekt – Identität – Person? Reflexionen zur Biographieforschung*. Wiesbaden: VS Verlag für Sozialwissenschaften, pp. 271–316.

Fuchs-Heinritz, Werner (2005): *Biographische Forschung. Eine Einführung in Praxis und Methoden*. Wiesbaden: VS Verlag für Sozialwissenschaften.

Habermas, Jürgen (1985): *The Theory of Communicative Action, Volume 2: Lifeworld and System: A Critique of Functionalist Reason*. Boston, MA: Beacon Press.

Hitzler, Roland/Bucher, Thomas/Niederbacher, Arne (2001): *Leben in Szenen. Formen jugendlicher Vergemeinschaftung heute.* Opladen: VS Verlag für Sozialwissenschaften.

Kohli, Martin (2013): Wie es zur »biographischen Methode« kam und was daraus geworden ist: ein Kapitel aus der Geschichte der Sozialforschung. In: *BIOS – Zeitschrift für Biographieforschung, Oral History und Lebensverlaufsanalysen,* 26(2), pp. 270–298.

Künnapas, Teodor M. (1955): An Analysis of the »Vertical-Horizontal« Illusion. In: *Journal of Experimental Psychology,* 49(2), pp. 134–140.

Küsters, Ivonne (2006): *Narrative Interviews. Grundlagen und Anwendungen.* Wiesbaden: VS Verlag für Sozialwissenschaften.

Lefebvre, Henri (1991 [orig. 1974]): *The Production of Space*. Oxford: John Wiley & Sons.

Löw, Martina (2001): *Raumsoziologie*. Frankfurt a. M.: Suhrkamp.

Rosenthal, Gabriele (1995): *Erlebte und erzählte Lebensgeschichte: Gestalt und Struktur biographischer Selbstbeschreibungen*. Frankfurt a. M.: Campus.

Schütze, Fritz (1977): *Die Technik des narrativen Interviews in Interaktionsfeldstudien – dargestellt an einem Projekt zur Erforschung von kommunalen Machtstrukturen*. Arbeitsberichte und Forschungsmaterialien, No. 1. Bielefeld: Faculty of Sociology/University of Bielefeld.

— (1981): *Prozeßstrukturen des Lebenslaufs. Biographie in handlungswissenschaftlicher Perspektive*. Nürnberg: Nürnberger Forschungsvereinigung, pp. 76–156.

— (1983): Biographieforschung und narratives Interview. In: *Neue Praxis,* 13(3), pp. 283–293.

Silkenbeumer, Mirja/Wernert, Andreas (2010): Biographische Identität und Objektive Hermeneutik: methodologische Überlegungen zum narrativen Interview. In: Griese, Birgit (Ed.): *Subjekt – Identität – Person? Reflexionen zur Biographieforschung,* Wiesbaden: VS Verlag für Sozialwissenschaften, pp. 171–196.

Soeffner, Hans-Georg/Hitzler, Ronald (1994): Hermeneutik als Haltung und Handlung: Über methodisch kontrolliertes Verstehen. In: Schröer, Norbert (Ed.): *Interpretative Sozialforschung: Auf dem Wege zu einer hermeneutischen Wissenssoziologie.* Opladen: Westdeutscher Verlag, pp. 28–54.

Thomas, William Isaac/Znaniecki, Florian (1958 [orig. 1918–1920]): *The Polish Peasant in Europe and America*, New Edn. of the 2nd Edn. from 1928. New York, NY: Dover Publications.

Weidenhaus, Gunter (2015): *Soziale Raumzeit*. Berlin: Suhrkamp.

Weidenhaus, Gunter/Mock, Claudia (2022): „I want my child to become a world citizen". Raum, Zeit und (Re)Produktion in kenianischen Mittelschichtsbiographien. In: Becker, Johannes/Weidenhaus, Gunter/Witte, Nicole (Eds.): *Göttinger Beiträge zur soziologischen Biographieforschung: Biographie und Raum*. Universitätsverlag Göttingen.

Weidenhaus, Gunter/Korte, Eva (2022): Is There a Global Middle Class? Searching for Clues in Nairobi and Berlin. In: Grimson, Alejandro/Guizardi, Menara/Merenson, Silvina (Eds.): *Middle Class Identities and Social Crisis: Cultural and Political Perspectives on the 'Global Rebellion'*. London: Routledge.

Weidenhaus, Gunter (2023): Social Space-Time. On the concept of social space-time and its empirical relevance to biography. In: *Civic Sociology,* 4(1). Berkeley: University of California Press.

Using visual-biographical interviews to analyze learning and spatial experiences

Felix Bentlin and Sarah Klepp

As part of life-long learning and experience processes, humans come into contact with built space and their socio-spatial environment. In educational research, however, the planning, building, and designing of spaces is a surprisingly neglected and comparatively undeveloped area, especially from the perspective of the learners. Nevertheless, it is possible to employ research questions, methods, and findings from the field of built environment education using an inter- and transdisciplinary approach, thus offering reciprocal points of reference between spatial sciences and educational research. Starting from an integrated understanding of space (Löw 2001), forms of (spatial) appropriation (Deinet/Reutlinger 2004) and self-efficacy (Bandura 1997) are also inherent components of the spatial design disciplines: acting autonomously and being creative in one's own environment. Understanding how built environment skills and knowledge are acquired is not just necessary for training architects, planners, and urban designers. The influence of different lifeworlds on the learning and educational process is highly relevant for all educational biographies, especially given the interdependency between educational success and social background: How does the creation of spatial contexts impact learning? What role does learning play in and about the space? How are learning processes initiated or restricted in terms of shaping the environment? Therefore, we regard biographical learning processes as an interplay between various educational settings, as well as educational and learning environments, in one's life history. As such, we focus our research on spatial references and the significance of different informal and formal educational settings. Based on the everyday lifeworlds of young people, we illustrate how numerous educational opportunities and biographical learning experiences in *Baukultur* can be described and analyzed in different learning spaces.

Our everyday experiences are interconnected to such an extent that a special method is required to identify spatial references in biographically relevant moments and processes of a learning path. The method presented here is used to provide an overview of individual learning biographies from a disciplinary perspective: In addition to the institutional acquisition of knowledge and skills, informal appropriation and learning processes are also taken into account with regard to multidimensional empirical aspects.

Below we describe how visual survey techniques can help us to stimulate and classify narratives from different spatial settings and to better understand learning processes. To introduce the approach, we first outline a conceptual framework and then explain the methodological principles. Afterward, we present the method as a combined qualitative and visual technique and describe how to use it based on a case study. In accordance with visual elicitation techniques, such as *graphic elicitation techniques* (Bagnoli 2009; Crilly et al. 2006), we refer to the method we have developed here as the life events approach. Beyond the context of *Baukultur*, this approach facilitates access to educational-biographical narratives and shows how people acquire and potentially expand personal skills and exploit spheres of activity by engaging actively with their environment. This, in turn, shows how learning about and in the space unfolds. Visualizing and describing individual learning spaces and learning worlds provides insight into complex learning biographies, documents multidimensional lines of development in the learning and experimenting process, and evaluates these in relation to space. By reconstructing the subject, it is possible to retrace the learning experiences and individual educational requirements in terms of their biographical relevance and to depict various dimensions of participation in the built space. This results in a themed and space-based learning matrix representing the embedded processes and frameworks for action of the subjective spatial constitution at the interface between *lebensraum*[1] and learning biography.

1 Reconstructing biographical narratives along the graphical timeline

We obtained significant insights into inter- and transdisciplinary research on built environment education in a long-term collaborative project between education and urban scholars.[2] As part of this partnership, we used biographical narratives as a methodological tool to generate findings about built environment learning.[3] We define built environment learning as the creative engagement of the subject with their socio-spatial environment and the built space. Accordingly, we analyze biography—in the sense of a reconstruction of lived experiences (see Ecarius 2008)—based on narrated experiences in the described lifeworld. The biographical perspective of learning and educational processes allows for an analytical approach that "understands these [processes] not as separate entities but within the temporally structured context and in relation to other life history experiences and processes, as well as their arrangement, which can be reconstructed in the

1 For a more detailed explanation see footnote 3 in Weidenhaus and Norkus in this handbook.

2 The starting point for this article was a three-year study on built environment learning in Germany and Austria carried out by Technische Universität Berlin, the University of Siegen, and the Wüstenrot Stiftung foundation under the leadership of Prof. Dr.-Ing. Angela Million (TU Berlin, Department of Urbanism and Habitat) and Prof. Dr. Thomas Coelen (University of Siegen, specialized in socialization, youth education, and life course research).

3 The study involved 44 interviews with young people between the ages of 8 and 18 years old. A comprehensive documentation of this study can be found in the monography published by Angela Million, Thomas Coelen, Felix Bentlin, Sarah Klepp, and Christine Zinke titled *Educational Institutions and Learning Environments in Baukultur. Moments and Processes in Built Environment Education for Children and Young People* (Million et al. 2019).

biographical material" (Ruokonen-Engler 2018: 441, own translation). Combining visual and narrative methods results in an approach to biographical research that represents an alternative to narrative-focused research methods. The central object of investigation is significant for this interdisciplinary approach: The biographical narrative and biographical space are united and visualized by using the life course as a graphical communication element (Lackner-Pilch/Pusterhofer 2005: 182 et seqq.).

Together with the learners, we concentrate on life experiences and life events that can at the same time serve to shape their identities (Ecarius 2008). They are recounted in the course of qualitative interviews, combined with visual survey techniques, and arrange chronologically according to the *biographical narrative*. Here, the representation aims to differentiate between the different biographical characteristics in terms of their spatial educational settings and subjective learning processes based on socialization spaces in what we refer to as a life course: In the empirical material we collected, we find the family as an educational environment, daycare and school as learning spaces, leisure time, peers, and media as learning worlds, and social space (Million et al. 2019: 26 et seqq.). We use the biographical *timeline* within structured interviews as a graphical guide and stimulus in order to encourage the respondents to fill in any gaps in their memories. At the same time, the timeline serves as a structural element for the dialogue, which can be used to categorize and arrange life events both visually and narratively in order to address the space-related aspects of subjectively relevant experiences in the biography. Within this *biographical space*, we illustrate the experiences young people have with architecture and space. This approach facilitates low-threshold access to biographical experiences by not only focusing on the verbal exchange and the individual being interviewed but also by adding visual aspects to the dialogue that can provide new impetus. As a result, it is possible to elicit aspects that are difficult to verbalize, such as everyday experiences, emotions, or implicit knowledge.

1.1 Educational-biographical spatial research: Theoretical and methodological basis

Assessing the relationships between *lebensraum* and educational biography requires an inter- and transdisciplinary exploration, as well as a biographical perspective of learning and appropriation processes. In the field of educational-biographical spatial research (see, among others, Bertels/Herlyn 1990; Meusburger 1998), we adopt a socio-spatial perspective that takes into account both the pedagogical level of biographical learning and—as in our example—the architectural and space-related experiential level (Kogler 2017: 2 et seqq.). In general, we make use of research methods from the spatial sciences in order to uncover references and interfaces to other areas of education (Million et al. 2019: 16 et seqq.). Biographical-analytical approaches, as well as theoretical approaches to education and learning, can be found in a wide range of different disciplines; nevertheless, there have been attempts to determine the nature of the relationship between educational and learning processes (Ruokonen-Engler 2018: 441; also see Marotzki 1990; Ecarius 2006).

1.2 Biography and space as social constructs

At first glance, biography and learning are traditionally central fields of research in educational studies (Ecarius 2006: 92 et seq.). We intend to use both concepts here as the starting point for examining biographical dimensions of built environment learning and for expanding the socio-spatial analytical category of space as defined by Martina Löw (Löw 2001). Thus, our thematic focus on built environment education and learning implies a dual approximation to definitions. One attempt at defining the term understands built environment education as "self-constructed built environment knowledge, skills, and aptitudes […] aimed at raising awareness for an architecture surrounding and appropriated by people and at examining built space" (Reiterer 2017: 137, own translation).

Similar to how this applies to sociological approaches, biographical research in educational studies understands the concept of biography as a social construct that can both be constituted by the dialectical relationship between experience, memory, and narrative and reconstructed by the dialectical relationship between the individual and society (Rosenthal 1995; Völter et al. 2005: 10). Against this backdrop, the biographical-analytical approach strives to reconstruct "patterns of individual structuring and processing of experiences in social contexts" (ibid.: 7 et seq., own translation), which always refer to underlying societal and social conditions. Even though the biographical-theoretical premises resemble one another, the perspectives in educational studies focus more on the learning experiences and educational and socialization processes of the subject (Ecarius 2018: l66) compared to sociological biographical research (see Rosenthal 1995). Biographical-analytical educational research, for example, uses biographical methods to reconstruct "individual and collective learning and educational processes" in both formal and non-formal (educational) settings (Ruokonen-Engler 2018: 440, own translation).

First and foremost, *biography* describes "[t]he arrangement of times, experiences, and social circumstances in one's own life" and can therefore be considered a process of appropriation (Böhnisch/Schröer 2010, own translation). This thinking is discussed and propagated in research using the socio-spatial concept of *biographical space*. The "aspect of a learning and educational space" structures and outlines experiences, while at the same time making them compatible (Lackner-Pilch/Pusterhofer 2005: 282 et seqq., own translation). In contrast to the subject-oriented educational theory of Winfried Marotzki (1990), Jutta Ecarius (2006, 2008) differentiates between learning and educational processes. She deems "narrated experiences" as learning (Ecarius 2008, 2018: l69, own translation). Learning, according to Ecarius, "is then no longer just reflexive or conscious but rather gradual or delayed" (ibid., own translation). Thus, the analysis of biographically relevant learning processes requires to a much greater extent the reconstruction of social interactions and contexts (Ecarius 2006: 98 et seqq.). In this context, the "manner in which the social world, spatial arrangements, and key attachment figures are perceived and the experiences that result from them, which are likewise emotionally biased, […] is of fundamental importance" (Ecarius 2008: 104, own translation). In connection with biography and built environment learning, we are interested in learning experiences that are biographically significant in retrospect; that is to say, we use the memory-based narrative style of young people to gain access to subjective learning experiences. As part of their actions and experiences in connection with the built environment in di-

verse learning and educational spaces, children and young people appropriate individual knowledge and skills, expand their own competences and spheres of action, and train biographical orientations that can be evaluated empirically with the concept of (spatial) appropriation as developed by Ulrich Deinet and Christian Reutlinger (2004, 2014: 11 et seqq; see also Kogler 2017, 2018). Consequently, people collect (built environment) learning experiences in varying formal and non-formal settings, with space representing a fundamental commonality as a multifaceted learning and educational space.

2 Combined qualitative-visual techniques

In empirical biographical research, interviews represent a standard data collection tool, used to generate contexts of experiences in particular by means of verbal communication based on the biographical-narrative approach (Schütze 1983; see Weidenhaus/Norkus in this handbook). In terms of our research topic, as well as the narrative elements of our data collection, we use the principle of the (partially structured) guided interview (see Thierbach in this handbook) as a guide, contrary to standard practice in biographical research. This allows for a thematic focus on built environment learning experiences. At the same time, this approach offers possibilities for an open narration of biographically relevant experiences. We believe that the advantage of using guided interviews is that the researcher deliberately asks as few open questions as possible with a reference to the subject and the biography (see Fig. 2). In addition, we were faced with the methodological challenge of finding an appropriate method for assessing different levels of experience: This includes the practice-oriented dimension of building, as well as the young people's perceptions of architecture and space.

2.1 Combining visual and verbal survey methods: Participatory guided interviews and graphic elicitation techniques

It is not just difficult for young people to verbalize everyday experiences or implicit knowledge. Our daily experience is made of a multiplicity of dimensions, "which include the visual and the sensory, and which are worthy of investigation but cannot always be easily expressed in words, since not all knowledge is reducible to language" (Bagnoli 2009: 547). When choosing their survey method, researchers who work qualitatively with children and young people are therefore presented with the challenge of selecting an approach that conceives young people as subjects and competent actors in their lifeworld and, ideally, includes them as participants in the research process (see Million in this handbook). Classic data collection methods quickly reach their limits here, such as narrative interviews in biographical research. Guided interviews are also usually based entirely on narrative elements. Verbal survey methods require certain powers of recollection on the one hand and good storytelling skills on the other. Furthermore, visual means of expression allow for not only low-threshold access but also the development of various levels of experience (Bagnoli 2009: 547 et seqq.).

2.2 Graphic elicitation techniques

Visual survey methods can serve as a methodological tool for stimulating stories about biographical experiences, implicit knowledge and skills, and personal competences or emotional experiences (Lobinger/Mengis 2018: 3). Various visual elicitation techniques exist that make use of different kinds of visual elements: including, for example, maps, drawings, or photographs (Crilly et al. 2006: 341; see Dobrusskin et al. in this handbook). Visual elicitation techniques can vary in terms of the origin or production of the visual material (Lobinger/Mengis 2018: 3 et seq.; Pauwels 2012): The researchers or participants can incorporate this material into the conversation, or graphical elements can be developed in the course of the conversation (Crilly et al. 2006: 342).

In the field of *graphic elicitation techniques*, diagrams and drawings are also integrated into the research process as visual stimuli in the context of qualitative interviews (ibid.). In English-language research, *timelines* are used in interviews as graphic elicitation techniques in order to encourage young people to reflect on biographically significant events in their past, present, and future (Bagnoli 2009: 560). While "already *existing visual artifacts*" are used more frequently in *photo elicitation* (Lobinger/Mengis 2018: 3, own translation, emphasis in original), visual material produced by the respondents themselves has been used to date to create a stimulus for the timeline (Crilly et al. 2006: 342). These *participant-produced visuals* are also conceivable "in the form of co-production with the involvement of researchers and participants," which in turn entail "different degrees of involvement" of the interviewees (Lobinger/Mengis 2018: 3 et seq., own translation). Similar to children's drawings, timelines can serve to stimulate conversation, thus helping to encourage narrations about biographical experiences. The participant-produced timeline can act as a memory-aid to help remember certain biographical details or verbalize subjective experiences (Bagnoli 2009: 549 et seqq.).

3 Triangulating methods, collecting data, and performing analysis: From the biographical timeline to the space-based life-events approach

We discuss the application of the biographical timeline as an example below: a variant of the timeline developed by Bagnoli (2009) adapted to our research that we used as part of the study "Learning in Built Environment Education" as a complementary method and refined to create the *life-events approach*. In this case, further biographical observations and links with emotional events play a role that must not be underestimated: After all, the life-events approach not only reconstructs direct and indirect learning and experience processes but also makes it possible to understand ascriptions of meaning and emotional connections.

3.1 Applying this approach

A timeline printout, colored pencils, and Post-its are prepared for the interview. The interview is recorded using a voice recorder. During the interview process, the respondents create a life-events line themselves or in collaboration with the researchers. The time-

line is a horizontal arrow; at the start of the interview, the current age of the interviewee is entered at the end of the arrow (see Fig. 2). During the interview, the interviewer or respondent elicits experiences on Post-its; that is to say, they collect memories, teasing out diverse moments and events from the respondent. Milestones represent especially prominent events here, which the respondent marks as particularly important built environment memories in the interview. In order to gain a comprehensive understanding of the educational background, both individual and institutionalized learning processes are collected together.

3.1.1 Terms and approaches

The interview is conducted based on general terms from the discipline being studied, such as building, planning, and designing from architecture. The topics are developed continuously by means of the verbal questions and corresponding specifications about the subject and adapted situationally to the individual stories of the respondent (see Fig. 2). In order to help the participants find the answers, references to the subject are used: an appropriate interview setting characteristic of the location together with descriptive questions and associations. Indirect experiences of built environment teaching formats and retrospective built environment learning experiences are explored by means of follow-up questions as to whether the contents can be processed biographically somehow or show connections to other lifeworlds.

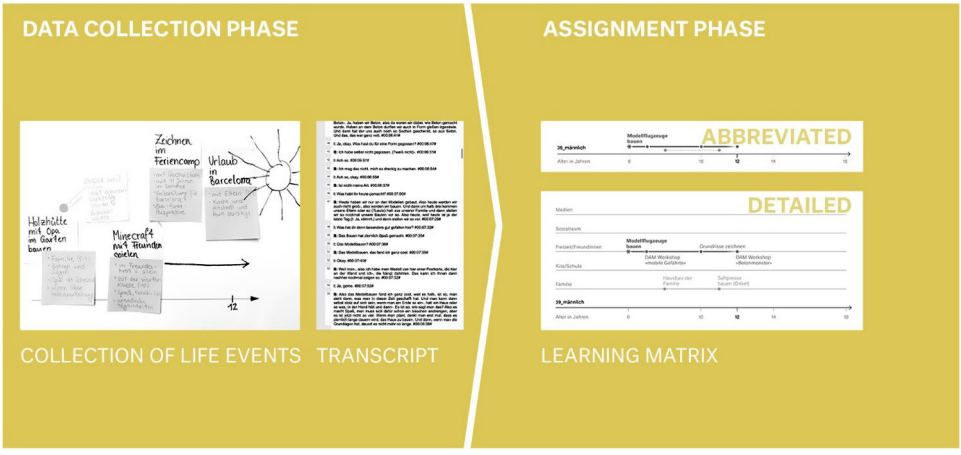
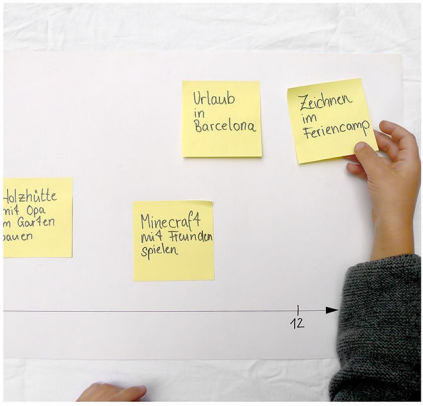


Fig. 1: The phases and products of the method can be divided into the data collection phase (life-events collection, transcript) and the assignment phase (learning matrix. | ©Felix Bentlin and Sarah Klepp)

1. CREATE TIMELINE AND COLLECT EVENTS

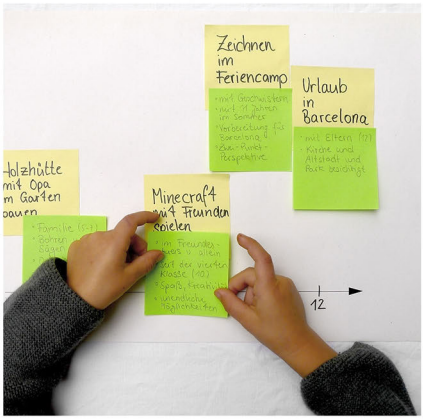
COULD YOU PLEASE DESCRIBE WHAT YOU UNDERSTAND OR HAVE EXPERIENCED IN CONNECTION WITH BUILDING, PLANNING, AND DESIGNING?WHAT DO YOU INCLUDE HERE AND WHEN WAS IT?



2. SORT AND SPECIFY EVENTS

DIRECT: *PLEASE THINK ABOUT EVERYTHING THAT YOU HAVE EXPERIENCED IN THE [WORKSHOP]. HAVE YOU EVER HAD THE OPPORTUNITY TO EXPERIENCE THINGS RELATED TO BUILDING OR DESIGN? HAVE YOU EVER BUILT ANYTHING? IF SO, COULD YOU DESCRIBE WHAT IT LOOKED LIKE?*

INDIRECT: *COULD YOU PLEASE DESCRIBE IN MORE DETAIL WHAT YOU DID IN [THIS EXPERIENCE]? WHAT WERE YOUR TASKS? WHAT DID YOU LIKE/DISKLIKE IN PARTICULAR ABOUT [THIS EXPERIENCE]?*



3. MARK AND EVALUATE MILESTONE

WHAT DID [THIS EXPERIENCE] MEAN FOR YOUR EVERYDAY LIFE? DID YOU DO SOMETHING COMPLETELY NEW? HOW CAN YOU USE YOUR EXPERIENCE IN YOUR EVERYDAY LIFE?

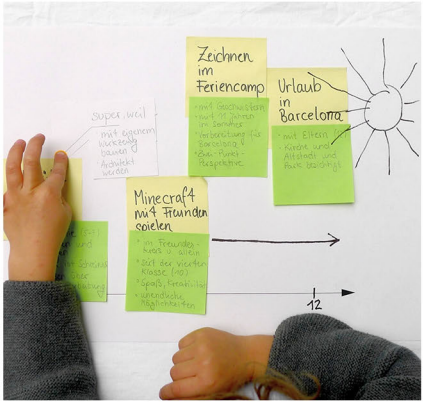


Fig. 2: The reconstructed mock-ups for conducting the interviews show the individual steps of co-producing the visual material. | ©Felix Bentlin and Sarah Klepp

With the help of these two steps in the interview, new stimuli for conversation are constantly being introduced to acquire information about the young people's understanding of architecture and space.

3.1.2 Data collection on the timeline and assignment in the matrix

The survey takes place in two phases: the data collection phase and the assignment phase (see Fig. 1). In order to create the timeline, the following steps are carried out in the data collection phase (see Fig. 2), which should not be understood as a sequence of analytical steps but rather as partially parallel, interlocking, and iterative strands of data collection. In the interview, events are first collected and sorted together on Post-it notes. These events are then described in detail and characterized. Using targeted follow-up questions, the events are analyzed to determine their significance for the individual's everyday life. As soon as the life-events collection is considered complete, particularly important events are marked with a sticker. Afterward, the life events are fixed on the timeline.

In the second phase, the final collection of life events is transferred digitally to a matrix of five socialization areas developed by us (see Section 1). A standard hierarchy, color-coded styles, and formal coding make it possible to compare the different surveys. Figures 3 and 4 illustrate how the selected graphic language is coded using both colors and symbols. The different color categories are assigned to the physical educational institutions and learning or educational environments that were found. In this case, educational settings—such as childcare centers and schools, along with leisure time and friends—are grouped together in one color category. The symbols designate moments and processes of built environment experiences, as well as biographical milestones. The latter represent events that denote particularly important built environment memories for the children and young people in the interviews.

At the same time, the chronological visualization is presented as a schematic diagram of life events. Because this order is based on memories, it comprises only rough estimates of the periods of time in some instances. It is important to assign the events and processes as best possible. The temporal units are only collected schematically for each year, which means the events need not be entered for precise months. Periods of time ranging from early childhood to adolescence are indicated, frequently including memories as early as the age of six. The matrix is created with a detailed account of all events, while a second abbreviated matrix is created in parallel for the purpose of a comparative overview. The block graphics (see Fig. 4) represent the diverse range of experiences related to the built environment.

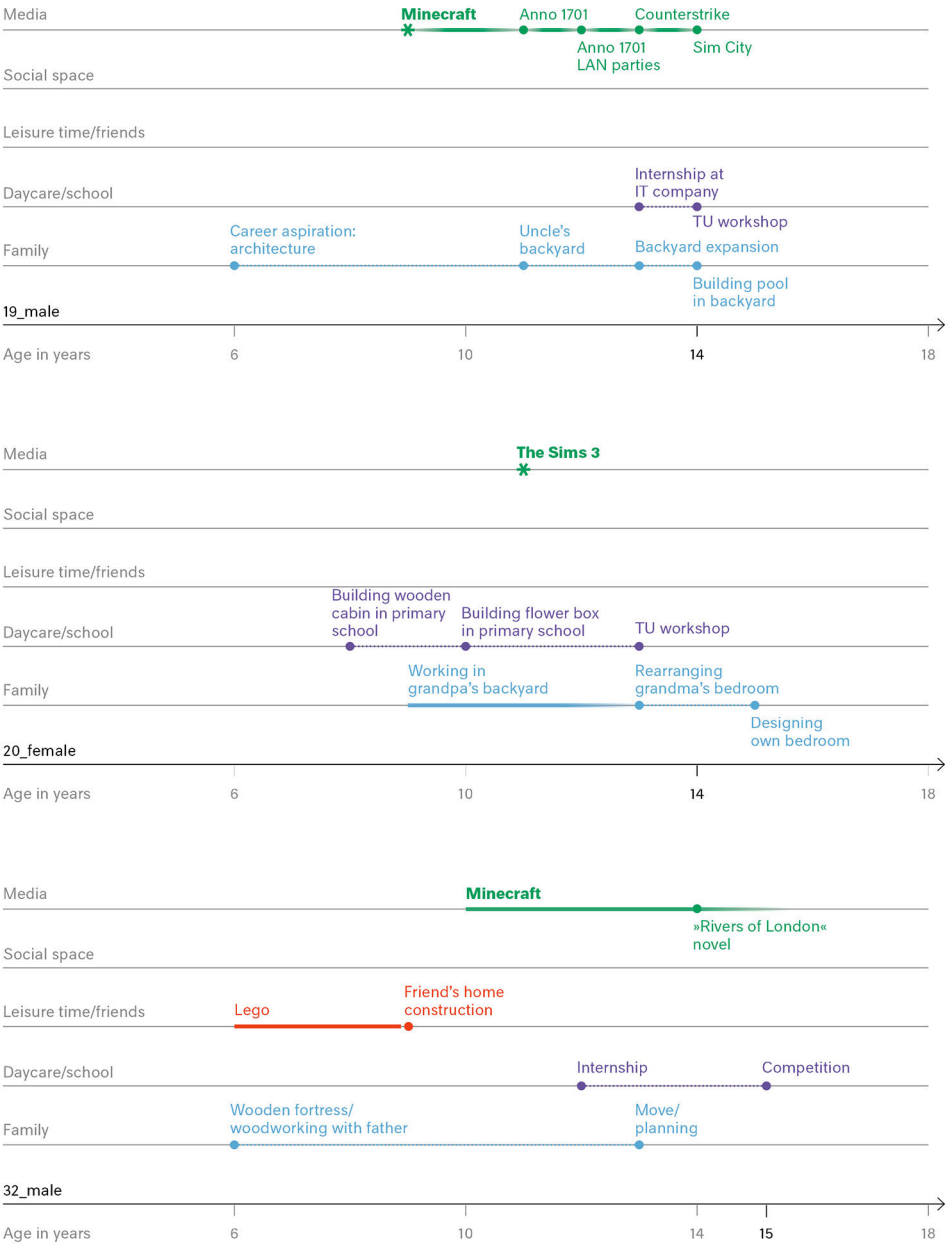


Fig. 3: Detailed learning matrix: The three examples show the subjective learning path within the five socialization and learning spaces (Million et al. 2019: 166).

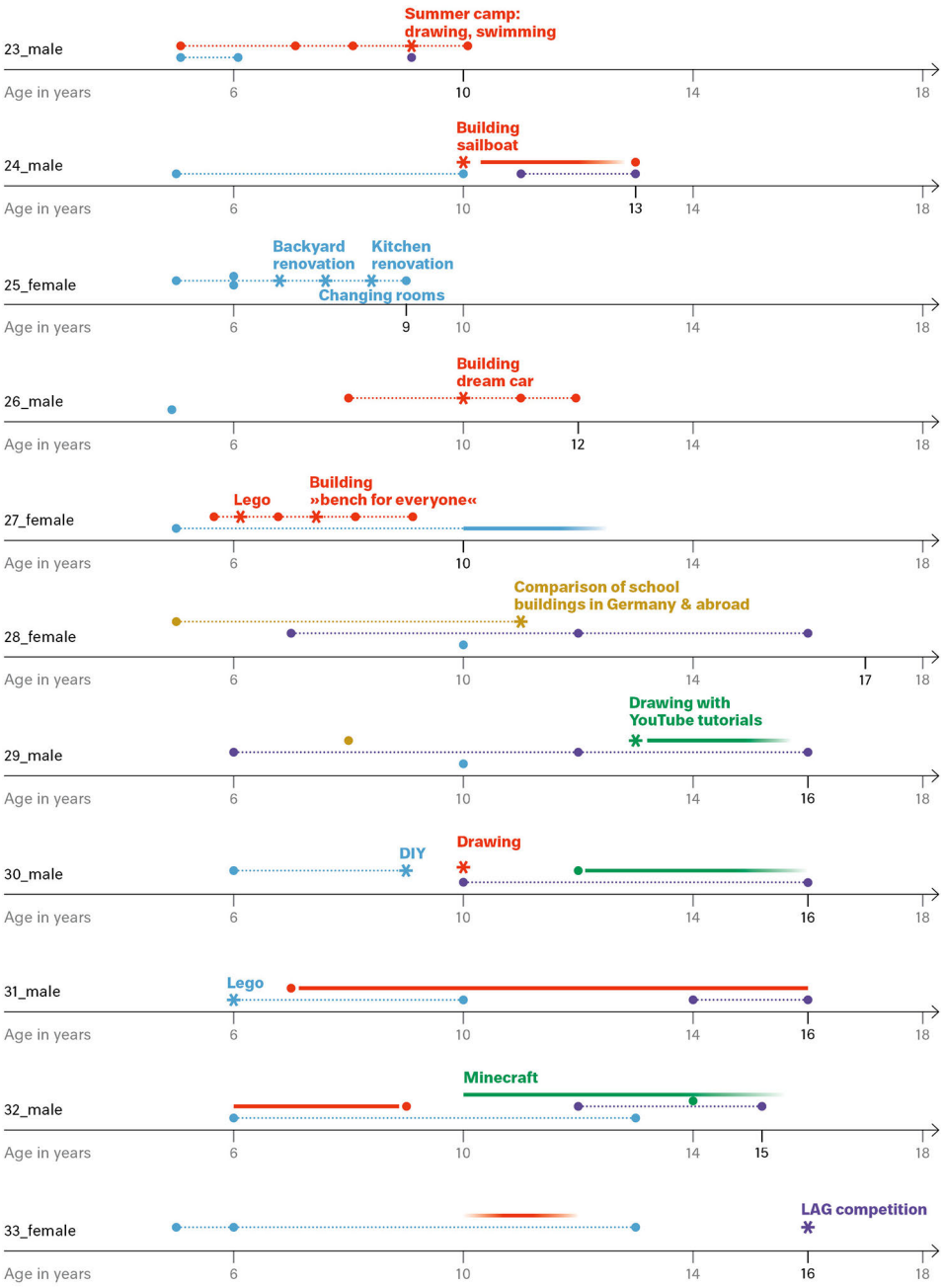


Fig. 4: Abbreviated learning matrix: The summary makes it possible to compare and obtain an overview of the learning paths of a certain group (Million et al. 2019: 86).

In this step of the digital styling, the life events are transferred to the timeline as moments (point) or processes (line). Multiple moments and events are related to one another across extended periods of time although this link is not expressed or arranged as such by the interviewees (point-line-point). The association to the areas of socialization are identified by the details and descriptions in the collection of life events. In addition, only the descriptions of the actions are filtered out as activities. All life events are then organized horizontally and listed vertically, thus linking together various life events and processes, which are related to one another.

The (co-)production of visual material serves both as a thought-structuring element and as a memory-aid for the verbal narration of the respondents. The respondents and interviewers can refer to the experiences collected on the timeline at any time, which makes it possible to visualize or ask about details in the narration. This procedure demonstrates how both visual and text-based materials resulting from the interviews are interrelated and therefore analyzed as one unit (Lobinger/Mengis 2018: 11 et seq.; Bagnoli 2009: 567).

3.2 Analysis and interpretation

This approach *first* entails the manual collection of life events, *second* the creation of the digital learning matrix, and *third* the recording and transcription of the interview. To integrate the narrative and visual data, it is practical to use a comparative triangulation method when analyzing the empirical material (see both Heinrich and Million in this handbook). With the help of the MAXQDA software, the transcribed interviews were analyzed and coded inductively, ensuring the greatest possible openness based on a qualitative content analysis to structure the content (Kuckartz 2014). The interpretation focuses on the biographical experiences with planning, building, architecture, and space mentioned during the interview in the broadest sense. Here the respondents describe spatial experiences, important attachment figures, and details about the narrated (built environment) activities. Key criteria for the reconstructive analysis of the interview include:

- Form and perspective of the experiences (reference to social and lifeworld-related dimensions of experiences, such as mentioned attachment figures)
- Form of the activities and level of detail of the descriptions (reference to level of involvement)
- Description of a personal or observed action (reference to active or passive participation, as well as level of self-efficacy)

Key starting points for analyzing the collection of life events include:

- Positioning and temporal arrangement of the life events (as reference to the distinction between a long-term process and a momentary event)
- Striking or additional representation methods, such as symbols, drawings, explanations of events, or objects (as reference to biographically relevant experiences)

Both the visual material and the transcribed text are analyzed with regard to the narrated experiences on the basis of the criteria listed above. The life events placed on the visual material are first identified and evaluated manually in terms of their processuality. In order to link the text to visual citations, the transcribed interviews are analyzed using *MAXQDA* and then the code tree is complemented with visual material. In this way, the coding in MAXQDA can be condensed with the results from the visual material and the findings acquired from both sources can be merged (Bagnoli 2009: 567 et seq.). The cross-references between the analysis of the visual material and the interview transcript enable us to understand and categorize the narratives better; both data materials complement and enrich one another. Moreover, the triangulation of the different data material helps with the graphic preparation and translation of the timeline into a schematic diagram, as well as with the digital stylization of life events, which also allows for cross-case comparisons (see Fig. 3 and 4).

An analysis of all life courses reveals both processual experiences and intermittent recollections (Million et al. 2019: 83 et seqq.). Learning environments and educational institutions can be analyzed in terms of their biographical relevance and quality. For learning environments and educational institutions as a whole, but especially for the family as an educational environment, the respondents describe the self-determined appropriation, development, and use of these lifeworlds for both long-term experiences and intermittent recollections.

4 A reflection on methods: Between support and influence

By adding a visual and participatory survey environment, it is especially important to question critically the influence of the researcher. When producing and interpreting the visual material, researchers can influence the outcomes by providing indications or presorting material and can even prescribe mindsets. For example, "[t]ime may be subjectively experienced in ways that are not linear and that do not easily rest within the parameters of a mathematical progression" (Bagnoli 2009: 566 et seq.). An undesired result would be a distraction or limitation due to a targeted stimulation in the interview setting. But also a lack of confidence on the part of the respondents to formulate certain points must be reflected. For example, the horizontal arrow can also be drawn by the respondents, and the labels should at least be added collaboratively. Any individual ideas of the respondents, such as marking multiple milestones or unusual stories, should be integrated as best possible. This demonstrates the ambivalence of the combined narrative-visual approach: On the one hand, the method supports the subject, while on the other hand, it poses a higher risk of being influenced.

At the same time, the translation of the biographical timeline and the transcript into a schematic diagram and interpretation require a great deal of critical reflection. Biographical milestones, moments, and learning processes reflect the diverse range of memories that are mapped out by the co-productive reconstructive work between researchers and respondents: experiences in the family environment, role models and occupational profiles in the intimate social sphere, travel experiences, observations of architecture and space, interest-specific fantasy worlds, and even digital worlds, such

as blogs or gaming platforms. Especially outside of institutional education, there is a variety of educational and learning environments in which children and young people experience the built environment. Further correlations between learning and spatial experiences are still to be discovered and explored.

References

Bagnoli, Anna (2009): Beyond the Standard Interview: The Use of Graphic Elicitation and Arts-Based Methods. In: *Qualitative Research*, 9(5), pp. 547–570.

Bandura, Albert (1997): *Self-Efficacy: The Exercise of Control*. New York, NY: W. H. Freeman.

Bertels, Lothar/Herlyn, Ulfert (Eds.) (1990): *Lebenslauf und Raumerfahrung*. Opladen: Leske + Budrich.

Böhnisch, Lothar/Schröer, Wolfgang (2010): Soziale Räume im Lebenslauf – Aneignung und Bewältigung. In: *sozialraum.de*, 2nd edn. 1/2010. Online: http://www.sozialraum.de/soziale-raeume-im-lebenslauf.php (accessed: 1 November 2019).

Crilly, Nathan/Blackwell, Alan F./Clarkson, P. John (2006): Graphic Elicitation: Using Research Diagrams as Interview Stimuli. In: *Qualitative Research*, 6(3), pp. 341–366.

Deinet, Ulrich/Reutlinger, Christian (Eds.) (2004): *»Aneignung« als Bildungskonzept der Sozialpädagogik. Beiträge zur Pädagogik des Kindes- und Jugendalters in Zeiten entgrenzter Lernorte*. Wiesbaden: VS Verlag für Sozialwissenschaften.

— (2014): Tätigkeit – Aneignung – Bildung. Einleitende Rahmungen. In: Id. (Eds.): *Tätigkeit – Aneignung – Bildung. Positionierungen zwischen Virtualität und Gegenständlichkeit.* Wiesbaden: Springer VS, pp. 11–30.

Ecarius, Jutta (2006): Biographieforschung und Lernen. In: Krüger, Heinz-Hermann/Marotzki, Winfried (Eds.): *Handbuch erziehungswissenschaftliche Biographieforschung*, 2nd revised edn. Wiesbaden: VS Verlag für Sozialwissenschaften, pp. 91–108.

— (2008): Elementares Lernen und Erfahrungslernen. Handlungsproblematiken und Lernprozesse in biographischen Erzählungen. In: Mitgutsch, Konstantin/Sattler, Eli- sabeth, Westphal, Kristin/Breinbauer, Maria Ines (Eds.): *Dem Lernen auf der Spur. Die pädagogische Perspektive*. Stuttgart: Klett-Cotta, pp. 97–110.

— (2018): Erziehungswissenschaftliche Biographieforschung. In: Lutz, Helma/Schiebel, Martina/Tuider, Elisabeth (Eds.): *Handbuch Biographieforschung*. Wiesbaden: Springer Fachmedien, pp. 163–173.

Kogler, Raphaela (2017): Kinder als Expertlnnen ihrer Lebensräume. Forschungen mit Kindern in der Stadt- und Raumplanung. In: Lessenich, Stephan (Ed.): *Geschlossene Gesellschaften. Verhandlungen des 38. Kongresses der Deutschen Gesellschaft für Soziologie in Bamberg 2016*, Vol. 38. Online: http://publikationen.soziologie.de/index.php/ (accessed: 01 March 2020).

— (2018): Kinderräume erkunden. Partizipative Stadtforschung und -planung mit Kindern. In: *Informationen zur Raumentwicklung*, 2/2018, pp. 40–51.

Kuckartz, Udo (2014): *Qualitative Inhaltsanalyse. Methoden, Praxis, Computerunterstützung*. Weinheim: Beltz Juventa.

Lackner-Pilch, Angela/Pusterhofer, Martina (2005): Gestaltung. In: Kessl, Fabian/Reut- linger, Christian/Maurer, Susanne/Frey, Oliver (Eds.): *Handbuch Sozialraum*. Wiesbaden: VS, pp. 279–293.

Lobinger, Katharina/Mengis Jeanne (2018): Visuelle Methoden. In: Lobinger, Katharina (Ed.): *Handbuch Visuelle Kommunikationsforschung. Springer Reference Sozialwissenschaften*. Wiesbaden: Springer VS, pp. 1–24.

Löw, Martina (2001): *Raumsoziologie*. Frankfurt a. M.: Suhrkamp.

Marotzki, Winfried (1990): *Entwurf einer strukturalen Bildungstheorie.* Weinheim: Deutscher Studien Verlag.

Meusburger, Peter (1998): *Bildungsgeographie. Wissen und Ausbildung in der räumlichen Dimension*. Heidelberg: Spektrum.

Million, Angela/Coelen, Thomas/Bentlin, Felix/Klepp, Sarah/Zinke, Christine (2019): *Bildungsorte und Lernwelten der Baukultur. Momente und Prozesse baukultureller Bildung von Kindern und Jugendlichen*. Ed. by Wüstenrot Stiftung. Ludwigsburg: Wüstenrot Stiftung.

Pauwels, Luc (2012): An Integrated Conceptual Framework for Visual Social Research. In: Margolis, Eric M./Pauwels, Luc (Eds.): *The SAGE Handbook of Visual Research Methods*. London: SAGE, pp. 3–23.

Reiterer, Stephanie C. (2017): Baukulturelle Bildung – Impulse für ein Bildungskonzept. In: Weiß, Gabriele (Ed.): *Kulturelle Bildung – Bildende Kultur. Schnittmengen von Bildung, Architektur und Kunst.* Bielefeld: transcript, pp. 131–139.

Rosenthal, Gabriele (1995): *Erzählte und erlebte Lebensgeschichte. Gestalt und Struktur biographischer Selbstbeschreibungen*. Frankfurt a. M.: Campus.

Ruokonen-Engler, Minna-Kristiina (2018): Biografie und Bildung. In: Lutz, Helma/Schiebel, Martina/Tuider, Elisabeth (Eds.): *Handbuch Biographieforschung*. Wiesbaden: Springer Fachmedien, pp. 439–448.

Schütze, Fritz (1983): Biographieforschung und narratives Interview. In: *Neue Praxis. Kritische Zeitschrift für Sozialarbeit und Sozialpädagogik*, 13(3), pp. 283–293.

Völter, Bettina/Dausien, Bettina/Lutz, Helma/Rosenthal, Gabriele (2005): Biographieforschung im Diskurs. Einleitung. In: Id. (Eds.): *Biographieforschung im Diskurs*. Wiesbaden: VS Verlag für Sozialwissenschaften, pp. 7–20.

How to use guided interviews in spatial research

Cornelia Thierbach

Guided interviews are a frequently used and established survey method for collecting verbal data in the social sciences (Flick 2004: 117; Kleemann et al. 2013: 208). They aim to reconstruct subjective experiences, lifeworlds, motives for action, common theories, situational interpretations, attitudes, or social processes. However, interviewees can only recount knowledge they can retrieve from their discursive consciousness. In this context, Löw and Marguin (2022: 113) write about their experience with qualitative interviews regarding space:

> "People are virtually incapable of giving information about spaces when asked to do so. […] Whether we are managers or travelers, cultural entrepreneurs or hairdressers, spaces appear to inhabit an area of experience we know a great deal about in practical terms, but this knowledge is hardly accessible to the discursive consciousness of the layperson. This does not apply in the same measure to places that can be specifically named."

The same applies to routines and practices for the same reason. Even impressions, atmospheres, and feelings are sometimes difficult to put into words (Kaspar 2012: 104). Therefore, guided interviews are only suited for studying spaces to a limited extent or have to be given special consideration in the operationalization stage. Ultimately, only respondents themselves can provide information on how they perceive, constitute, produce, or appropriate spaces or their intentions when using spaces and the manner in which they do so. Thus, guided interviews are also used in spatial research. For example, in the DFG project *Neighborhoods in the tourist trap?*, stakeholders and residents were interviewed to explore whether and how the perceived quality of living has changed as a result of touristic use, especially given the supply of *Airbnb* apartments (Müller et al. 2019). In contrast, Kaspar (2012) used guided interviews to study the perception and use of city parks and reconstructed how park visitors produce space. Chiu (2009), in turn, was able to identify skateboarding as a means of appropriating and experiencing space based on interview data.

1 Classification and detailed description of the method

There is a wide range of different survey methods, which are classified according to various characteristics in the literature on methods in the social sciences. Gläser and Laudel (2010: 39 et seqq.), for example, distinguish between the methods based on their degree of *standardization* as (fully) standardized (or structured) interviews, semi-standardized (or semi-structured) interviews, and non-standardized (or unstructured) interviews. However, certain guidelines have to be taken into account for non-standardized interviews, which is why this type of interview is further differentiated according to its structuration:

- *Narrative interviews* are introduced by a complex question to which the interviewee is supposed to respond with a long narration (e.g., her or his life story) (see Weidenhaus/Norkus in this handbook). The interviewer is allowed to ask follow-up questions only toward the end of the interview for clarification purposes. The narrator is therefore given the opportunity to develop the story as much as possible and to explain the relevance.
- *Open interviews* are characterized by a set of predefined topics that are to be discussed.
- *Guided interviews*, by contrast, are more structured and are based on a guide. The guide contains topics and questions to be discussed in every interview. However, the sequence and wording of the questions are not mandatory. The respondent is allowed to answer freely.

It should be noted that special types of guided interviews have been developed. They include focused interviews (Merton/Kendall 1946), problem-centered interviews (Witzel 2000), in-depth interviews (Bock 1992), and expert interviews (e.g., Gläser/Laudel 2010). These types vary with regard to multiple aspects (such as their theoretical foundation), they are each better suited for certain research questions, allow for different types of questions and stimuli, target specific social groups (e.g., experts, elites, children), or permit a certain number of narrators (individual interviews, couple and group interviews, or focus groups). Helfferich (2005: 24 et seqq.), for example, provides a descriptive overview of the different types and what distinguishes them from one another. All forms of guided interviews take into account the principles of qualitative social research, especially openness, communication, processuality, and reflexivity (for more details, see Helfferich 2005: 22; Misoch 2015: 66 et seqq.; Gläser/Laudel 2010: 29 et seqq., 115 et seq.). This gives rise to the following requirements for guided interviews (Hopf 1978: 99 et seqq.):

- *Scope*: The narrator must be given the opportunity to react in an unanticipated manner. This means the interview should not be based only on the theoretical or empirical insights and hypotheses that were developed beforehand, but rather it should encourage those found outside of this framework, for example, by allowing for different perspectives, relevancies, etc. and stimulating storytelling.

- *Specificity*: Any issues and questions raised should be addressed specifically. As a result, general findings or assessments have to be fleshed out in order to understand their meaning and their underlying experiences.
- *Depth*: The interview should be conducted so as to support the narrator in recounting the affective, cognitive, and valuable meanings that certain situations have for them and in describing their involvement.
- *Personal context*: The personal and social context of the narrator, which includes their interpretations and reactions, must be captured to the extent necessary. This personal context is required for the interpretation.

The data can be collected—that is to say, the guided interview can be conducted—face-to-face, over the phone, or online (see Salmons 2015). As a rule, guided interviews are conducted orally, although written variations (e.g., group chats) are also used.

2 Defining the field and carrying out the sampling

It is imperative for the study to focus on the research question throughout the entire research process. In the case of spatial research, this also entails defining which understanding of space is represented and whether the guided interview is suited for this in spite of the difficulties described. Therefore, it is necessary to define the field of research (what is to be studied?) within the context of this reflection and to select a sampling strategy (who is to be surveyed?). Underlying this is the objective to produce results that can be generalized despite low case numbers. This is only possible if these definitions and selection procedures do not take place at random (see Baur/Christmann in this handbook).

For example, the research field can be defined as a territory and then selected individuals can be surveyed, as was the case in the Kiez (neighborhood) project (Müller et al. 2019). The researchers based their neighborhood selection on the lowest level of the *lifeworld-based spaces* (lebensweltlich orientierte Räume, Senate Department for Urban Development and Housing in Berlin, n.d.), the so-called Planungsräume (planning areas). The criteria for selecting the neighborhoods included the share of traditional tourist accommodation establishments and the share of *Airbnb* apartments within these spaces. The selected neighborhoods featured contrasting forms of these criteria (minimum and maximum case comparison): One neighborhood featured a high share of hotels and hostels, while another had a high share of Airbnb apartments, one neighborhood was selected because all three types of accommodation were represented equally, and finally one neighborhood with a poor tourist infrastructure was chosen. Next, the researchers chose residents and stakeholders for the interviews. Kaspar (2012) used a similar method to define the field in her park study. However, her research objective related to a relational understanding of space (Löw 2016), according to which places can be localized but not everyone constitutes the same spaces at a given place. Therefore, she ensured a balanced gender ratio and aimed for a range of perspectives that was as diverse as possible. The interview partners were mostly recruited on site and *ad hoc* in the field. The sampling was guided by Kaspar's prior knowledge, hypotheses, categories, and their characteris-

tics, which she developed based on previously collected data. Thus, Kaspar sought out contrasting cases to facilitate the analysis (*grounded theory*).

To define the field and carry out the sampling, it is necessary to obtain information about the research field, be it by means of a literature review, informants, or your own investigations on site. Once the research field has been determined or at least roughly defined, a strategy is required for conducting interviews with the deliberately chosen individuals or the individuals to be selected.

3 Creating a guide

Using a guide serves several purposes, which include guidance of contents, ensuring comparability between the data, and providing security and relief for the interviewer (Misoch 2015: 66; Helfferich 2005: 159; Meyen et al. 2019: 85; Gläser/Laudel 2010: 142 et seqq.). The guide represents the results of the operationalized research question, as well as interesting thematic and theoretical aspects. It can be understood as a translation into the everyday understanding and everyday language of the people being surveyed, thus acting as a mediator between theory and empiricism (Meyen et al. 2019: 85). In general, it contains a list of questions and instructions for the interviewer. The guide can be regarded as a previously arranged and systematically applied template for organizing the interview process (Helfferich 2019: 670). Guides can vary considerably in terms of how they are designed, depending on the requirements for the selected interview method and the needs of the researchers: for instance, with regard to the formulation and layout.

According to Helfferich (2005: 160), guides should fulfill the following requirements: They must comply with the principles of qualitative research; they should not be overloaded with questions (pay attention to time management); they should be concise and easy to manage. In terms of the composition, they should allow for a "natural" flow in the storytelling and argumentation while avoiding bureaucratization (Hopf 1978: 101 et seqq.). Questions can be differentiated according to category (from open-ended, narrative-generating to inquiring), the variability of their wording in the interview situation (variable to exact wording), whether or not they are optional or mandatory, and the level of guidance (content-related guiding question/follow-up question) (Helfferich 2005: 160 et seq.).

There are only a few instruction manuals for creating guides. Meyen et al. (2019: 85 et seqq.) recommend three steps: *first*, define the topics based on the epistemic interest; *second*, operationalize the concepts, meaning formulate the main questions and subquestions and prepare any fun or creative elements; *third*, determine the arrangement, which includes defining the sequence. Additionally, they suggest formulating the introduction as well (introduction of the project, informed consent, etc.). A collection of example guides can be found here, too. Helfferich proposes the CCSS principle (the German acronym is SPSS, i.e., a software for statistics) with the following steps: *C*ollect (first formulate all possible questions regarding the subject of interest, putting aside any doubts), *C*heck (aspects of prior knowledge, openness in terms of stimulating sto-

rytelling and providing room to develop the story freely, and wording of the questions)[1], *S*orting (chronologically, contentwise), and *S*ubsume (questions from individual thematic blocks are sorted according to their structuration from open-ended to highly structured, after which the researcher decides which question is best suited to solicit a response for each thematic block) (Helfferich 2005: 161 et seqq.). Beforehand, it is important to determine the prior theoretical knowledge and implicit expectations. Afterward, it may be necessary to formulate transition texts and transfer the questions to the layout of the guide.

But how can you ask about space when people are hardly able to provide information about spaces on demand, as described by Löw and Marguin (2022)? Spatial researchers have developed very different strategies for this purpose. The list below is not exhaustive, but it is intended to illustrate various possibilities for dealing with this issue.

- *Ask about specific places that can be named and with which the respondents are familiar*: In her park study, Kaspar (2012) only surveyed people who spent time in the parks being studied and conducted the interviews on site. Specifically, she asked them questions such as "How was it the first/last time you were here?", "If you were to describe this place to a friend who had never seen it, which words would you use to describe this place?", or "If this park were to close temporarily, what would that change for you?" (own translation, for the published guide, see Kaspar 2012: 295 et seq.). Only in the analysis did the researcher address the different spatial constitutions.
- *Wait for times or situations in which spaces are present in the minds of the respondents:* These include, for example, changes in arrangements or rules of conduct in certain spaces, such as the prohibition of skateboards in public spaces (Chiu 2009) and construction processes in which new spaces are created (Fuller 2017), or when spaces are particularly relevant to the respondents themselves, such as when their personal safety is at risk in certain spaces (Gotham/Brumley 2002), or when the respondents are actively involved in certain spaces, such as the spatial pioneers described by Christmann (2013). Therefore, the concrete wording of the questions is less of a priority for this strategy. You can also access prior experiences and stocks of knowledge reflected in the questions.
- *Elicit spaces*: Introducing stimuli (e.g., prompts, newspaper articles, photos, videos, drawings, etc.; see Dobrusskin et al. in this handbook) can relax the situation, while at the same time enhancing the depth of information as they represent detailed or specific incentives to respond. Sometimes, creative and cognitive processes can be initiated, such as indications as to how respondents perceive or constitute a concrete space. Marguin et al. (2019) prompted their interview partners to draw their workplaces. The result was a variety of different illustrations that could be reduced to two types (topological and multi-scalar). These two types simultaneously represent different forms of relationality, thus providing information about spatial constitutions that would not be possible to articulate in words. Jones et al. (2008) went on a walk with the respondents and interviewed them in parallel. This allowed them to evoke *in situ* spatial perceptions or memories that were triggered by these places and spaces.

1 For more information, see an overview of question rules by Helfferich (2005: 95).

- *Do not talk about the space:* Every interview contains information about spatial structures, even if they relate to a different object of investigation. For this reason, it can be helpful not to talk specifically about the space and instead to examine the resulting texts afterward in search of the space (Löw and Marguin 2022: 115 et seqq.). Löw and Marguin (2022) present a section from a DFG project on prostitution as an example to show how this is constituted as "an 'other' space" (Löw and Marguin 2022: 116) by different rules of conduct.

Finally, keep in mind the requirements for guided interviews (scope, specificity, depth, personal context): The point *specificity* seems particularly significant. For instance, you can ask about specific experiences, processes, examples, descriptions, comparisons, contradictory situations, or places (contrasts).

Once the guide has been created, it should be tested. This can be done by specialist colleagues. They can verify whether the guide can be used to collect "the right" data and whether it corresponds to the research question. Alternatively, the guide can be tested in trial interviews with people from the target group. Focus is placed primarily on the clarity of the questions, potential ambiguities, missing aspects, sequence effects, and time management. After these pretests, the guide is revised and then it is ready for use in the field.

4 Collecting data by means of guided interviews

Guided interviews should be conducted based on a natural conversational situation. In reality, however, only a few elements and rules can be adopted from everyday communication, but this does not include the norm of reciprocity or the taboo of interrogation (Hopf 1978: 107). As such, the interview situation is characterized by a strong asymmetry between the roles of the interviewer and the narrator. Furthermore, prior shared experiences and contextual information can be used in everyday communication, which is not generally the case in the interview situation. Both the interviewer and the respondent act strategically in line with the topic of interest (Helfferich 2005: 35 et seq.). The interview must be understood as a collective process and a collaborative construction. The participants interact with one another, and, depending on how the course of the interview is organized, this interaction influences the data that are generated. The first impression can be decisive in this regard. Thus, the space and the atmosphere in which the interview takes place also play a role in producing the data. The interviewer faces one special challenge:

> "From the interviewer's point of view, the qualitative interview process can be described as a process of continuous, spontaneous operationalization. […] Situational, more general research questions must be translated into relevant interview questions, while, conversely, the information obtained from the interviewee must be constantly assessed and analyzed based on the theoretical significance—analyzed in the sense that the interviewer is under constant pressure to decide whether, where, and how he should use links to ask further questions." (Hopf 1978: 111, own translation)

Accordingly, interviewees should be familiar with the objectives of the research project and its (spatial) theoretical assumptions in order to overcome this challenge. The requirements for guided interviews are particularly important at this stage as the unique interview situation cannot be repeated.

The guide should be applied flexibly in the interview situation when it comes to prioritizing sets of questions and rephrasing, omitting, or adding questions. Decisions as to whether, how, and at what time a question is asked can often only be made during the interview itself: for example, when the interviewee mentions a thematic block or answers a question without it being asked. The term *bureaucratization* refers to a rigid adherence to the interview guide. In this context, it is important to bear in mind the problem posed by guides that are too long, which foster questions to be ticked off bureaucratically due to the limited time and large number of questions (Hopf 1978: 101 et seqq.). The following mistakes are common when conducting an interview: tending to dominate the conversation (accumulation of suggestive questions, judgmental statements, or explanatory remarks, even if they are meant to help), difficulties listening, lack of patience, missing out on the opportunity to ask follow-up questions, always referring back to the guide ("we finished that section"), using the guide as a disciplinary tool ("we have to be more concise so that we can get through all the questions"), or ignoring unexpected but interesting aspects (Hopf 1978, 2019: 357 et seqq., own translation). An interviewer training session can be organized beforehand. The book by Helfferich (2005) provides exercises for different requirements and skills, which can be done in teams and then discussed.

5 Data preparation

An interview protocol should be created after every interview, containing a record of the interview situation (date, duration, place, atmosphere, particularities) and what was said after the dictation machine was turned off. This facilitates both the documentation and the interpretation process.

Typically, guided interviews are recorded. The recording is transcribed as soon as possible after the interview, meaning it is converted into writing to prepare the collected data for analysis. The selection of the transcription system (Dittmar 2009) depends on the research question and the analysis method. In the case of a content analysis, a simple transcription system is usually enough, such as the one described by Dresing and Pehl (2015: 27 et seqq.). According to this approach, the interview is transcribed verbatim, while maintaining the capitalization and punctuation. Dialects are translated into standard language, but slang is left unchanged. Stuttering and repeated words are ignored. This makes it possible to focus entirely on the content. Other analysis methods, on the other hand, require a more complex presentation of the conversation. For example, the *discourse and conversation-analytic transcription system* (GAT in German-speaking countries) is used to record an exact account of the conversation, including prosody, overlaps, pauses, etc. However, this can impact the legibility.

6 Analyzing guided interviews

Now that the data are available in written form, they can be analyzed using appropriate text-based analysis methods. When selecting the method, it is important to decide which is best suited. This decision essentially depends on the research question. Using analysis methods ensures a systematic and scientific approach. For example, guided interviews can be evaluated using a content analysis (Kuckartz/Rädiker 2023), hermeneutic methods (Kurt/Herbrik 2019), or grounded theory (Strübing 2019).

Chiu opted for a content analysis in his skateboard study (2009). First, he identified key topics based on the interview questions. Field notes, transcripts, and even secondary data were coded. A taxonomy was developed based on the coded data to compare the different types of skating (street skating and park skating). Three main dimensions were developed: social production of public space, social control imposed on skateboarders, and discursive construction of skateboarding. Kaspar (2012) followed the grounded theory approach throughout all stages of the research process, applying appropriate coding methods to the analysis (open, axial, and selective coding). In parallel, she wrote memos (Kaspar 2012: 113 et seqq.). The key elements of the analysis include asking questions and the constant comparison method. By means of a contrast analysis (hypothetical or empirical), it is possible to concentrate on specific details.

Especially for large sets of data, using QDA software such as *MAXQDA* (Kuckartz/Rädiker 2019) is recommended. When using elicitation techniques that generate visual data instead of text-based data, other analysis methods are required. QDA programs such as *MAXQDA* now also support the analysis of visual data.

7 The possibilities and potential of using guided interviews in spatial research

Guided interviews are used in spatial research to obtain information on how people perceive, appropriate, produce, constitute, and use spaces. The greatest methodological challenge is enabling the narrators to retrieve their knowledge about spaces, which is mostly practical, from their discursive consciousness. Spatial researchers employ specific strategies in different research stages for this purpose. For example, they may use contrasts to define their research fields and when sampling, but also when analyzing their data material. This is not evident to the respondents and thus does not impede them. Such strategies are also used when creating the guide and conducting the interview. For example, individuals are asked to talk about either specific places or the spaces that are relevant for them, or spaces are not mentioned at all. Finally, spaces can be elicited.

It is worth noting that guided interviews are frequently combined with other methods in spatial research. Interdisciplinary collaborative work on spatial research holds great potential for producing, using, and analyzing more visual data within the framework of interview studies: for example, by using elicitation techniques (Löw/Marguin 2022).

References

Bock, Marlene (1992): Das halbstrukturierte-leitfadenorientierte Tiefeninterview. Theorie und Praxis der Methode am Beispiel von Paarinterviews. In: Hoffmeyer-Zlotnik, Jürgen H. P. (Ed.): *Analyse verbaler Daten: Über den Umgang mit qualitativen Daten*. Opladen: Westdeutscher Verlag, pp. 90–109.

Chiu, Chihsin (2009): Contestation and Conformity. In: *Space and Culture,* 12(1), pp. 25–42.

Christmann, Gabriela B. (2013): Raumpioniere in Stadtquartieren und die kommunikative (Re-)Konstruktion von Räumen. In: Keller, Reiner/Reichertz, Jo/Knoblauch, Hubert (Eds.): *Kommunikativer Konstruktivismus. Theoretische und empirische Arbeiten zu einem neuen wissenssoziologischen Ansatz.* Wiesbaden: Springer, pp. 153–184.

Dittmar, Norbert (2009): *Transkription. Ein Leitfaden mit Aufgaben für Studenten, Forscher und Laien*. Wiesbaden: VS.

Dresing, Thorsten/Pehl, Thorsten (2015): *Manual (on) Transcription. Transcription Conventions, Software Guides and Practical Hints for Qualitative Researchers.* Marburg: self-published.

Flick, Uwe (2004): *Qualitative Sozialforschung. Eine Einführung*. Reinbek b. Hamburg: Rowohlt.

Fuller, Martin G. (2017): Great Spatial Expectations: On Three Objects, Two Communities and One House. In: *Current Sociology,* 65(4), pp. 603–622.

Gläser, Jochen/Laudel, Grit (2010): *Experteninterviews und qualitative Inhaltsanalyse*. Wiesbaden: VS.

Gotham, Kevin Fox/Brumley, Krista (2002): Using Space: Agency and Identity in a Public-Housing Development. In: *City & Community,* 1(3), pp. 267–289.

Helfferich, Cornelia (2005): *Die Qualität qualitativer Daten. Manual für die Durchführung qualitativer Interviews*. Wiesbaden: VS.

— (2019): Leitfaden- und Experteninterviews. In: Baur, Nina/Blasius, Jörg (Eds.): *Handbuch Methoden der empirischen Sozialforschung*. Wiesbaden: VS, pp. 669–686.

Hopf, Christel (1978): Die Pseudo-Exploration – Überlegungen zur Technik qualitativer Interviews in der Sozialforschung. In: *Zeitschrift für Soziologie,* 7(2), pp. 97–115

— (2019): Qualitative Interviews – Ein Überblick. In: Flick, Uwe/Kardorff, Ernst von/Steinke, Ines (Eds.): *Qualitative Forschung. Ein Handbuch*. 13th Edn. Reinbek b. Hamburg: Rowohlt, pp. 349–360.

Jones, Phil/Bunce, Griff/Evans, James/Gibbs, Hannah/Ricketts Hein, Jane (2008): Exploring Space and Place with Walking Interviews. In: *Journal of Research Practice,* 4(2), D2.

Kaspar, Heidi (2012): *Erlebnis Stadtpark*. Wiesbaden: VS.

Kleemann, Frank/Krähnke, Uwe/Matuschek, Ingo (2013): Anwendung interpretativer Methoden auf Leitfadeninterviews. In: Kleemann, Frank/Krähnke, Uwe/Matuschek, Ingo (Eds.): *Interpretative Sozialforschung*. Wiesbaden: Springer, pp. 207–231.

Kuckartz, Udo (2023): *Qualitative Content Analysis. Methods, Practice and Software*. London/Thousand Oaks, CA/New Delhi/Singapore: SAGE.

Kuckartz, Udo/Rädiker, Stefan (2019): *Analyzing Qualitative Data with MAXQDA*. Cham: Springer.

Kurt, Ronald/Herbrik, Regine (2019): Sozialwissenschaftliche Hermeneutik und hermeneutische Wissenssoziologie. In: Baur, Nina/Blasius, Jörg (Eds.): *Handbuch Methoden der empirischen Sozialforschung*. Wiesbaden: VS, pp. 545–564.

Löw, Martina (2016): *The Sociology of Space. Materiality, Social Structure, and Action*. New York, NY: Palgrave Macmillan.

Löw, Martina/Marguin, Séverine (2022): Eliciting Space: Methodological Considerations in Analysing Communicatively Constructed Spaces. In: Christmann, Gabriela/Knoblauch, Hubert/Löw, Martina (Eds.): *Communicative Constructions and the Refiguration of Spaces. Theoretical Approaches and Empirical Studies.* London: Routledge, pp. 113–135.

Marguin, Séverine/Rabe, Henrike/Schmidgall, Friedrich (2019): *The Experimental Zone. An Interdisciplinary Investigation on the Spaces and Practices of Collaborative Research*. Zurich: Park Books.

Merton, Robert K./Kendall, Patrica L. (1946): The Focused Interview. In: *American Journal of Sociology,* 51(6), pp. 541–557.

Meyen, Michael/Löblich, Maria/Pfaff-Rüdiger, Senta/Riesmeyer, Claudia (2019): Befragung. In: Id. (Eds.): *Qualitative Forschung in der Kommunikationswissenschaft.* Wiesbaden: Springer, pp. 77–111.

Misoch, Sabina (2015): *Qualitative Interviews*. Berlin/Munich/Boston, MA: De Gruyter Oldenbourg.

Müller, Claus/Raschke, Anna Laura/Brandt, Stefan/Frank, Sybille/Wellner, Kristin (2019): Städtische Quartiere in der Toursimusfalle? Zur Wahrnehmung von Tourismus und Airbnb in Berlin – Ein Werkstattbericht. In: Freytag, Tim/Kagermeier, Andreas (Eds.): *Touristifizierung urbaner Räume.* Mannheim: Verlag MetaGIS-Systems, pp. 49–58.

Salmons, Janet (2015): *Qualitative Online Interviews. Strategies, Design, and Skills*. Los Angeles, CA: SAGE.

Senate Department for Urban Development and Housing in Berlin (n.d.): *Lebensweltlich orientierte Räume (LOR) in Berlin*. Online: https://www.stadtentwicklung.berlin.de/planen/basisdaten_stadtentwicklung/lor/index.shtml (accessed: 29 January 2021).

Strübing, Jörg (2019): Grounded Theory und Theoretical Sampling. In: Baur, Nina/Blasius Jörg (Eds.): *Handbuch Methoden der empirischen Sozialforschung.* Wiesbaden: Springer, pp. 525–544.

Witzel, Andreas (2000): The Problem-Centered Interview. In: *Forum: Qualitative Social Research*. 1(1), Art. 22.

Image-based qualitative interviews: on the example of photo elicitation

Janina Dobrusskin, Ilse Helbrecht, Anthony Miro Born, and Carolin Genz

We experience spaces with all our available senses: We see the vastness of the horizon, hear the noise of traffic, smell the street market, taste the salty sea air, and feel the wooden boards beneath our feet. When we imagine these spaces, images appear in front of our mind's eye: images of the crowds rushing through the streets, the colorful market stalls, the white-capped waves, and the room in the old apartment building. The immanent presence of the visual when imagining spaces encourages the use of images in spatial research. Accordingly, visualizations are used to collect data, as a means of analysis, and to illustrate results. They have established themselves in spatial research, where their use goes emphatically beyond mere illustrations.

Since the *visual turn* at the beginning of the 1990s, academics have shown a strong tendency toward images. With regard to geography, Gillian Rose (2003: 212) noted that there had been little reflection on a corresponding theoretical-methodological framework. Several authors have since taken up this critique as food for thought in spatial research (Dirksmeier 2007; Schlottmann/Miggelbrink 2009, 2015). In particular, Rose emphasizes the "need for careful, empirical research that explores the dynamics of image, audience and space in ways that remain alert to the power relations that inhere in all of these" (Rose 2003: 219). This article considers this and illustrates the—empirically founded—possibilities, methodological challenges, and limitations of using visualizations in qualitative, interview-based data collection for space-related research questions. For this purpose, we use the example of the photo-elicitation method for studying spatial imaginaries.

After a theoretical review of the relationship between image and space, we present various potential applications of image-based qualitative interviews, while describing and reflecting on the use of images based on empirical experiences with the method of photo-elicitation. Finally, we consider the potential offered by image-based interviews for the spatial sciences.

1 Image and space

As photographer Nilüfer Demir took a photo of the drowned three-year-old boy Alan Kurdi on the beach of Bodrum (Turkey) in the early morning hours of 2 September 2015, she changed the world. The photograph transformed the media representation and the social and political discourse on what became known as the summer of migration. It became a powerful discursive turning point in the debate on refugees and asylum. This single image had a greater impact than all the previous video, television, radio and social media coverage. Abstract notions of the dramatic situation at the far-away gates of Europe became palpable with this single photograph, bringing the horrific reality of this humanitarian disaster close to home.

Why can images have such a profound affect? How are they used as a means of communication? Moreover, in terms of their role in research: How can images be employed purposefully as tools for empirical social research in the spatial sciences?

Images—including their many variations (photographs, drawings, maps, graphics)—have been widely used in spatial research, especially geography, for a long time (Rose 2003: 212 et seq.). Traditionally, images have proved useful in two respects: first as a means of increasing clarity for didactic reasons. For example, public relations work and knowledge sharing rely heavily on visualizations (Tolia-Kelly 2012: 136). Second, images are used analytically to explore space-related research questions, such as the analysis of aerial and satellite images in cartography and geographic information processing. Although images are an integral part of spatial research, an in-depth theoretical debate about their status only emerged in the 1990s (Rose 2010; Dirksmeier 2015; Schlottmann/Miggelbrink 2015).

For our interest in the significance and use of images in qualitative spatial research, the recently developed *hauntological approach* proposed by Elisabeth Roberts (2012) is particularly relevant. The human geographer argues that the often contradictory positions regarding the status of images in the literature do not do justice to their complexity. In many cases, images are understood unilaterally, either as representational systems of signs or as material artifacts, as depictions of reality or as virtual portrayals. However, Roberts sees no need to choose just one of these theoretical perspectives. She observes that doing so results in false opposites, emphasizing the potential of this intermediate status of an image (ibid.: 386). According to her, photographs cannot be reduced to mere symbols and must therefore be read as visual text in line with Ernst Cassirer or interpreted iconographically as a sign system in line with Erwin Panofsky (Dirksmeier 2015: 198 et seqq.). Beyond their semiotic nature, images boast a surplus of importance, acting both emotionally and affectively, depending on the intentions of the author (e.g., the photographer Nilüfer Demir). Images are performative (Butler 2007): Each time they are observed, they reveal a new facet, and they become part of an assemblage of sign systems, material objects, emotions, and much more (Roberts 2012: 397).

While a great amount of skepticism remains beyond the spatial sciences regarding the sensory and the visual inherent to images—because truth allegedly cannot be found in words or text (see Bredekamp 2010)—using images has become everyday practice in geography, urban planning, and architecture. Especially in the spatial sciences, the objects of investigation (such as places, landscapes, cities) are complex entities that are

constructed both materially and socially, thus acting as semiotic sign systems, aesthetic apparitions, and material infrastructures (Helbrecht/Dirksmeier 2012; Pohl/Helbrecht 2022). Therefore, it is not only logical but also productive to consider the diversity and simultaneity of images in empirical spatial research. As such, it is no coincidence that the photo-elicitation method—on which we focus on below—was developed in the course of a spatial science study (Harper 2002). The anthropologist John Collier proposed this approach in the 1950s as part of a study on the living conditions of different social groups as his research team faced the challenge of agreeing on how to categorize quality of life (ibid.).

2 Image-based interviews in spatial research

There is a wide methodological range of image-based interviews, which can be used in spatial research to address multiple research questions (Schlottmann/Miggelbrink 2015). This includes methods that emphasize non-verbal elements, such as auto-photography, which is often seen as the epistemological counterpart to the narrative interview (Adair/Worth 1972). Our contribution, by contrast, illustrates the use of image-based methods *in combination* with interviews. In essence, it is possible to differentiate between two relevant methodological approaches for spatial research: reflexive photography and photo-elicitation (Dirksmeier 2009: 166).

Reflexive photography is particularly useful for studying subjective conceptions of everyday spaces, as well as for exploring sensitive spaces and those that are difficult to access (e.g., private premises such as the home or semi-public spaces such as clubs). This method involves the respondents themselves acting as photographers, sent into the field with a camera and given a task that is as open-ended as possible. Auyero and Swistun (2009), for example, use this approach to study the perspectives of children on their environment in a highly polluted informal settlement in Argentina. In reflexive photography, the captured photographs serve as a basis for discussion in the subsequent interview. The interviewees are experts on their own photographs by explaining to the researchers what can be seen on the images and why they decided on what is depicted and the specific perspective (Hurworth 2012). This approach requires a high degree of commitment on the part of the interviewees, who must be willing to take photos independently and make them available for the subsequent interview.

Another approach that combines images and language is the *photo-elicitation* method. In this case, researchers use selected images to tease out aspects from the interviewees that often remain latent when using purely cognitive-linguistic impulses. In what follows, we focus on outlining this method by illustrating and reflecting on its empirical application based on a research project on "geographic imaginations"[1].

---

1 As part of the Collaborative Research Centre 1265 *Re-Figuration of Spaces* funded by the German Research Foundation (DFG), the project *Geographic Imaginations: People's Sense of Security and Insecurity in a Cross-Generational Comparison* explores which subjective conceptions of space are relevant in terms of how different age groups perceive space. We would like to thank Yannick Ecker, Henning Füller, and Ylva Kürten for collaborating on this project in the early stages.

3 The photo-elicitation method: Preparation, implementation, analysis

In photo-elicitation, the images used for the interview are chosen or created by the researchers in advance. The images serve as a visual guide for the interview, operationalizing space-related research questions. Therefore, careful reflection on the selected images and the positionality of the researcher, which influence the research endeavor, is of utmost importance (Rose 2003). Creating an analysis matrix for the images helps the researcher by divulging a description of the motif, the image composition, the image genre, and the assumptions with regard to the intended markers, or planned impulses. For the research project on geographic imaginations, photos were selected that represent the various scales and types of space and at the same time connected the markers of security and insecurity. In addition, the study focused on using images that allowed as much room for interpretation as possible in order to avoid the reproduction of conventional discourses and everyday dichotomies (such as secure/insecure, positive/negative, close/far). When selecting images, aspects related to the content, as well as ethical and practical implications, should be taken into account. For example, researchers must consider the right of publicity of the depicted individuals. This applies both to photos taken themselves and to those provided by third-parties. For the latter, the copyright of the image is relevant, especially when publishing a study.

The interview structure takes different forms and is determined by the specific research objective: For example, images can take up only a small part of the interview, or they can be used to introduce various thematic blocks during the conversation. The images can be combined with general questions ("What do you see in this photograph?", "What feelings do you associate with the image?", "How does the image relate to your everyday life?") or with specific thematic questions. In the interviews for the project on geographic imaginations, images were shown one after the other to set the tone and thus elicit new associations. In parallel, a thematic interview guide was used. We referred back to this when the corresponding topic was made relevant in the statement of the interviewed person or when it was difficult to create a reference to the image. This approach helped to keep the interviews as open as possible and to give the participants room for free associations. Often photos are used in an effort to reduce the intrinsic power asymmetries between the researchers and the respondents in the interview situation. The use of images can be empowering or even liberating for the interviewees since they support a significantly open dialogue and structure during the interview (Richard/Lahman 2015).

At the beginning of the data collection phase, a pretest is carried out to trial the selection and order of the images used, as well as the inherent content of the topics. In our interviews, for example, the participants reacted to the photos—which we printed out in DIN A4 format and laminated for the interview—as follows:

Fig. 1: Photo: Bedroom. | ©Fabrizio Bruno, 2018 (http://fabriziobruno.org)

"Well, that is—I'd say the first thing that comes to mind is my time as a student. […] And something where I certainly would no longer feel comfortable today. So, if we are talking about feeling comfortable and such, that's how it was in those days. And then it was alright if you—it just looks a little scruffy. Right? And a little bit like after, how should I say it, after a hard night. That's basically what it reminds me of. And then—but it's also a little too cold because of the floor here. Right?" (Interview B31, 19, own translation)

Fig. 2: Photo: Children's Day in Altlandsberg | ©B-Musik, 2014

> "That could be somewhere in Brandenburg. But it could also, man, I've seen so many of these churches, I have no idea. But it's horrible, it's not for me. I wouldn't go inside. Definitely not, I'd walk past it, as quickly as possible." (Interview B3, 13, own translation)

Fig. 3: Photo: Installation by artist JR. | ©Guillermo Arias/AFP/Getty Images, 2017

> "I feel very close to the child. […] Basically, my father came to Germany in 89 and applied for asylum […] And I still remember the airport. Yeah, it was the Hannover Airport. The passport control, where we were really scared, where we had to wait. Those are the memories, the border, crossing the border." (Interview B40, 75 et seqq., own translation)

When analyzing the interview material, it is possible to follow different approaches: The transcript of an audio recording can be analyzed entirely in text format as a basis for the data. In this case, the preliminary considerations of the researchers regarding the image selection for space-related research questions are relevant as they are taken into account and verbalized when analyzing the interview material: for example, by means of coding. We chose this approach for the research project on geographic imaginations where we were especially interested in the emotional and affective dimensions of spatial imaginations, which were triggered by the image. The text-based analysis can be enhanced by incorporating the images themselves into the interpretation of the interviews. For this approach, the statements of the interviewees and the preconceptions of the researchers are correlated with the images. The differences in the perception of the images and in the associations they elicit make it possible to illustrate their surplus of importance, in addition to their semiotic nature. Empirical spatial research in particular can benefit from

this possibility as the space—as well as the image—is underpinned by a performativity and diversity that can be approximated in terms of their multidimensionality.

In our research project on geographic imaginations, for example, we used the photo of a bedroom (Fig. 1) to show a room that could represent a feeling of comfort and security, while at the same time evoking associations with a precarious and potentially insecure living situation. This ambivalence in reference to the image becomes clear in the interview passage: The evoked memory of the time as a student is characterized by positive feelings of freedom and adventure, whereas from the current positioning of the interviewee it elicits a feeling of unease. In many interviews, the photo serves as a starting point to talk about what is required for a home to achieve subjective well-being. Analyzing these conceptions makes it possible, for example, to assess psycho-spatial arrangements of home when establishing subjective security or insecurity (Pohl et al. 2020; Genz/Helbrecht 2023).

4 Methodological reflections on photo-elicitation

Which methodological possibilities, challenges, and limitations result from the use of image-based interviews in spatial research? A special quality shown by the use of photo-elicitation in our empirical research project on geographic imaginations is the possibility to study affective dimensions of spatial knowledge. We understand affects as a type of emotionality in reference to other people and things and to anything related to those people or things (Woodward/Lea 2010; Dirksmeier/Helbrecht 2013). Photos are also intended to archive affects, offering the possibility to save and recall affects (Latham/McCormack 2009; Waterton/Watson 2014). In photo-elicitation, the interviewee is not the photographer. Instead, they encounter a selection of images during the interview without knowing their intention.

The previously mentioned interview passages demonstrate that the interviewees place themselves in the images and relate them to their own experiences and socio-spatial conceptions. The emotional reference to the image and the depicted space is formative. The visual imagery, which stimulates the conversation, has a "more immediate, more physical, more directly sensory" (Bosch/Mautz 2012: 1, own translation) effect than a purely verbal address. Affective aspects of the frequently implicit spatial knowledge can be uncovered by means of photo-elicitation and made a topic of conversation. Additionally, recognizing the subjective character of the perception (Bachleitner/Weichbold 2015) and the focus on *embodied knowledge* encourages a critical research approach that opposes a universal claim to knowledge and is therefore harbored in a feminist production of knowledge (Longhurst 2009).

In contrast, a practice-based and theoretical perspective requires the direct and immediate examination of the performativity of daily practices, meaning spatial practices and performances, in order to discover *embodied knowledge* (Bondi 2005: 445). However, it is clear that any type of interview technique—be it with or without photos—has distinct limitations. Critics often note, that although affective dimensions of spatial knowledge are investigated by means of image-based methods in spatial research, the photo-based interview with visuals of spatial arrangements cannot replace the experience of

being affected by the space itself. Nevertheless, in practice, it is not always possible to conduct interviews on site. In particular, large-scale research questions in the context of globalization, nation-building, etc. can often be addressed empirically only in interview situations with images of (remote) spaces. In this case, the surplus of importance of the images contributes considerably to making the multidimensionality of spaces physically tangible and perceptible by means of image-based stimuli. Visual research also refers to the *agency* of the image in this context (Rose 2016: 21). In combination with subjective perception, memory, personal classification, and feelings, images resonate greatly with the performativity of spaces (Helbrecht/Dirksmeier 2013).

When using image-based interviews in different social or geographical contexts, the preverbal content of an image represents a particular challenge and opportunity. Subjective stocks of knowledge, diverse dependencies, and sentiments are always incorporated into the selection of images (Bachleitner/Weichbold 2015; Berger 1972: 8). A relationship is always established between what is depicted and oneself. This applies both to the individual who selects or creates the image and to those who behold the image: "[A]lthough every image embodies a way of seeing, our perception or appreciation of an image depends also upon our own way of seeing" (Berger 1972: 10). Because the visual can never entirely be covered by the verbal, attempting to translate perceptions, imaginations, and memories into language always produces a *murmur* (ibid.; Dirksmeier 2015: 206). Especially in the case of spatial research questions, comparative studies are often carried out at different locations. In the project on geographic imaginations, the preverbal level was translated for various spatial contexts—in our case, for Berlin, Vancouver, and Singapore—by replacing some of the images with specific local references. Previously explained conceptions of the images and consultation with people from the respective local contexts were indispensable for producing an appropriate translation. Aside from the narrowness of the communication, the visuality of photography in the interview can also serve as a linguistic bridge (Collier 1957: 858) when it reveals unconscious ascriptions of meaning.

The use of image-based interviews ultimately facilitates a low power imbalance by inviting the interview participants to reflect on their own (spatial) experiences in an open conversational situation (Clark-Ibáñez 2004; Pyyry 2015). The method therefore affords the interviewees significant scope in the process (Bignante 2010: 13). Moreover, inquiries into hegemonic discourses fade into the background due to the focus on subjective ascriptions of meaning (Clark-Ibáñez 2004). However, this participatory and emancipatory effect does not fully eliminate hierarchies between the people participating in the interview. Because the images are selected by the researchers in the case of photo-elicitation—in contrast to reflexive photography—there is considerable power and decision-making on side of the researchers (Bachleitner/Weichbold 2015). In the spatio-temporal analysis of the geographical imaginations in our project, for example, we surmised that historical photographs would have elicited more stories from further into the past than our interviews would have. After all, visualizations represent a powerful tool for world production (Schlottmann/Miggelbrink 2015), and applying them to spatial research offers great potential, while also requiring careful reflection.

5 Potential of image-based interviews for spatial research

Images shape our thinking and influence our feelings as well as spatial actions. Seeing and understanding are subjective. Image-based interviews for studying spatial knowledge help to understand the complexity of these profoundly spatio-performative perception processes and experiences and to invoke them in open conversation. This article has illustrated methodological approaches and analytical methods based on empirical experiences, as well as the potential and challenges of photo-elicitation for space-related research questions.

Due to the hauntological characteristics, the use of images in the tradition of visual geography offers multidimensional approaches to uncover the performative, sensory, affective, and highly complex surpluses of importance of spatial images (Helbrecht/Dirksmeier 2013). The elicitation of spatial knowledge as *embodied knowledge* and the potential access to subjective spatial imaginations and experiences as a result—the specification of which remains latent due to cognitive impulses—represents a strength of the photo-elicitation method presented here.

An open, dialogical principle in image-based interviews offers the opportunity for active involvement and emancipatory participation in order to counteract inherent power relations in the interview. Allowing the interviewees to create the image material themselves can further minimize power imbalances. In contrast, a critically reflexive image selection by the researchers focused on the object of investigation—as we were able to demonstrate based on our example of a research project on geographic imaginations of security and insecurity—can effectively reveal performative and emotional-affective dimensions of implicit spatial knowledge. Both approaches require researchers to reflect carefully.

This contribution ties into interdisciplinary, methodological research questions in spatial research. Image-based interview techniques provide a solution for measuring the diversity and simultaneity of systematically subjective spatial knowledge. The applications for and reflections on a visual-participatory approach to exploring space presented here offer a compatible method for other disciplines: The surplus of meaning in the image constitutes methodological potential. It can be used purposefully to illustrate ambivalences, dichotomies, and intricacies—that is to say, the complex multi-dimensionality of spaces—as well as the intrinsic, established spatial knowledge and thus the overlying contours of a global refiguration of spaces.

References

Adair, John/Worth, Sol (1972): *Through Navajo Eyes. An Exploration in Film Communication and Anthropology*. Bloomington, In: University of Indiana Press.

Auyero, Javier/Swistun, Débora Alejandra (2009): *Flammable. Environmental Suffering in an Argentine Shantytown*. Oxford: Oxford University Press.

Bachleitner, Reinhard/Weichbold, Martin (2015): Zu den Grundlagen der visuellen Soziologie: Wahrnehmen und Sehen, Beobachten und Betrachten. In: *Forum Qualitative Sozialforschung*, 16(2), Art. 10.

Berger, John (1972): *Ways of Seeing*. London: Penguin.

Bignante, Elisa (2010): *The Use of Photo-Elicitation in Field Research*. In: EchoGéo, 11, Online: https://doi.org/10.4000/echogeo.11622 (accessed: 14 September 2023).

Bondi, Liz (2005): Making Connections and Thinking through Emotions: Between Geography and Psychotherapy. In: *Transactions of the Institute of British Geographers*, 30(4), pp. 433–448.

Bosch, Aida/Mautz, Christoph (2012): *Für eine ästhesiologische Bildhermeneutik, oder: Die Eigenart des Visuellen. Zum Verhältnis von Text und Bild*. In: Soeffner, Hans-Georg (Ed.): Transnationale Vergesellschaftungen, 2, Wiesbaden: Springer VS.

Bredekamp, Horst (2010): *Theorie des Bildakts. Frankfurter Adorno-Vorlesungen 2007*. Berlin: Suhrkamp.

Butler, Judith (2007): Torture and the Ethics of Photography. In: *Environment and Planning D: Society and Space*, 25(6), pp. 951–966.

Clark-Ibáñez, Marisol (2004): Framing the Social World with Photo-Elicitation Interviews. In: *American Behavioral Scientist*, 47(12), pp. 1507–1527.

Collier, John (1957): Photography in Anthropology: A Report on Two Experiments. In: *American Anthropologist*, 59(5), pp. 843–859.

Dirksmeier, Peter (2007): Der husserlsche Bildbegriff als theoretische Grundlage der reflexiven Fotografie: Ein Beitrag zur visuellen Methodologie in der Humangeografie. In: *Social Geography*, 2(1), pp. 1–10.

— (2009): *Urbanität als Habitus. Zur Sozialgeographie städtischen Lebens auf dem Land*. Bielefeld: transcript.

— (2015): *Bildbegriffe und ihre Reichweite zur Analyse von Gesellschaft-Raum-Verhältnissen*. In: Schlottmann, Antje/Miggelbrink, Judith (Eds.): Visuelle Geographien. Zur Produktion, Aneignung und Vermittlung von RaumBildern. Sozial- und Kulturgeographie, 2, Bielefeld: transcript, pp. 195–208.

Dirksmeier, Peter/Helbrecht, Ilse (2013): Die Beobachtung der Situation: Zur Rolle von Affekten in Begegnungen zwischen Fremden. In: *Geographische Zeitschrift*, 101(2), pp. 65–81.

Genz, Carolin/Helbrecht, Ilse (2023): *Negotiations of Urban Ontological Security. The Impact of Housing Insecurity on Being-in-the-City*. In: Housing, Theory and Society, 40(1), pp. 22–41.

Harper, Douglas (2002): Talking about Pictures: A Case for Photo Elicitation. In: *Visual Studies*, 17(1), pp. 13–26.

Helbrecht, Ilse/Dirksmeier, Peter (2012): Auf dem Weg zu einer Neuen Geographie der Architektur. Die Stadt als Bühne performativer Urbanität. In: *Geographische Revue*, 14(1), pp. 11–26.

— (2013): Stadt und Performanz. In: Mieg, Harald A./Heyl, Christoph (Eds.): *Stadt. Ein interdisziplinäres Handbuch*. Stuttgart: J. B. Metzler, pp. 283–298.

Hurworth, Rosalind (2012): Techniques to Assist with Interviewing. In: Arthur, James/Waring, Michael/Coe, Robert/Hedges, Larry V. (Eds.): *Research Methods and Methodologies in Education*. London: SAGE, pp. 177–185.

Latham, Alan/McCormack, Derek P. (2009): Thinking with Images in Non-representational Cities: Vignettes from Berlin. In: *Area*, 41(3), pp. 252–262.

Longhurst, Robyn (2009): Embodied Knowing. In: Kitchin, Rob/Thrift, Nigel (Eds.): *International Encyclopedia of Human Geography*. Amsterdam: Elsevier, pp. 429–433.

Pohl, Lucas/Genz, Carolin/Helbrecht, Ilse/Dobrusskin, Janina (2020): Need for Shelter, Demand for Housing, Desire for Home: A Psychoanalytic Reading of Home-making in Vancouver. In: *Housing Studies*, 37(9), pp 1650–1668.

Pohl, Lucas/Helbrecht, Ilse (2022): Decentering the Subject, Psychoanalytically: Researching Imaginary Spacings through Image-Based Interviews. In: *The Professional*, 74(3), pp. 540–648

Pyyry, Noora (2015): ›Sensing with‹ Photography and ›Thinking with‹ Photographs in Research into Teenage Girls' Hanging Out. In: *Children's Geographies*, 13(2), pp. 149– 163.

Richard, Veronica M./Lahman, Maria K. E. (2015): Photo-Elicitation: Reflexivity on Method, Analysis, and Graphic Portraits. In: *International Journal of Research & Method in Education*, 38(1), pp. 3–22.

Roberts, Elisabeth (2012): Geography and the Visual Image. A Hauntological Approach. In: *Progress in Human Geography*, 37(3), pp. 386–402.

Rose, Gillian (2003): On the Need to Ask How, Exactly, Is Geography »Visual«? In: *Antipode*, 35(2), pp. 212–221.

— (2010): *Visual Methodologies. An Introduction to the Interpretation of Visual Materials*. London: SAGE.

— (2016): *Visual Methodologies. An Introduction to Researching with Visual Materials*. London: SAGE.

Schlottmann, Antje/Miggelbrink, Judith (2009): Visuelle Geographien – ein Editorial. In: *Social Geography*, 4(1), pp. 13–24.

— (Eds.) (2015): *Visuelle Geographien. Zur Produktion, Aneignung und Vermittlung von Raum-Bildern. Sozial- und Kulturgeographie*, Vol. 2. Bielefeld: transcript.

Tolia-Kelly, Divya P. (2012): The Geographies of Cultural Geography II. Visual Culture. In: *Progress in Human Geography*, 36(1), pp. 135–142.

Waterton, Emma/Watson, Steve (2014): *The Semiotics of Heritage Tourism. Tourism and cultural change*, Vol. 35. Bristol: Channel view.

Woodward, Keith/Lea, Jennifer (2010): Geographies of Affect. In: Smith, Susan/Pain, Rachel/Marston, Sallie A./Jones, John Paul (Eds.): *The SAGE Handbook of Social Geographies*. London: SAGE, pp. 154–175.

III. Observing and experiencing

Ethnography as a methodology

The exploration of spaces and spatial practices

Carolin Genz and Aylin Yildirim Tschoepe

> "Ethnography isn't a prescribed set of methods—it's a methodology that acknowledges the complexity of human experience and the need to research it by close and sustained observation of human behaviour." (Karen O'Reilly 2005: i)

Ethnography is considered a key method in anthropological spatial research, focusing on the analytical observation and comprehension of spatial practices, which are constituted by means of spaces and reinterpret, appropriate, or recreate those spaces. An ethnographic research perspective can serve as a useful starting point for spatial research as it is particularly appropriate, in terms of both its epistemology and the methodology, for "reconstructing places and spaces beyond their alleged 'reality' as a principally contingent social and genuine political practice" (Siebeck 2011: 1, own translation). The objective of this article is to describe the reciprocal relationship between spatial practices and both material and immaterial spaces. In ethnography, these spaces are understood as interrelated references whose constitution is the object of research. Many different subject areas are faced with the methodological challenge of understanding the complexity of intricate everyday experiences in socio-spatial frameworks, interactions, and infrastructures and translating this onto a larger scale at an abstract level. In this case, ethnography can be combined with interdisciplinary, aesthetic, and creative approaches to capture and experience socio-spatial change, everyday practices, and implicit spatial knowledge.

As the central and systematic research method in anthropology, ethnography is considered a methodology, meaning a comprehensive *route to understanding* (O'Reilly 2005). Therefore, ethnographic methods cannot be limited to individual methodological tools, but rather they combine a wide range of qualitative methods and can thus be regarded as a *multimodal methodological approach* for analyzing socio-spatial practices. Ethnography also offers an interdisciplinary benefit for qualitative spatial research. Research in

the social sciences involves diverse interdisciplinary ethnographic approaches (e.g., the *focused ethnography*, see Wetzels in this handbook). After all, the systematic and thus focused observation of socio-spatial practices extends beyond what is tangible and visible, encompassing the full sensory levels of spatial experience.

In this article, we would like to begin by addressing the concept of spatial practices as an epistemological starting point for anthropological spatial research to then provide methodological insights into the ethnographic exploration of spaces and spatial practices for other approaches and debates in this handbook. Following the question of how spatial practices can be studied methodologically, we introduce *participant/participating observation* of spatial practices as a key ethnographic method. At the same time, we explain and discuss methodological challenges, the relevance of the ethnographic study of space (and spatial practice), and the socio-spatial positionality and involvement of researchers in the field. Against this backdrop, our text provides insight into a practical methodology for analyzing socio-spatial transformation processes that establish a relationship with the actions and everyday lives of the actors, allow those actors to participate in employing the methods, and open up opportunities for methodological reflection.

1 The ethnographic observation of spatial practice

> "An urban neighborhood […] may be laid out physically according to a street plan. But it is not a space until it is practiced by people's active occupation, their movements through and around it. In this perspective, there is nothing given about a 'field.' It must be worked, turned into a discrete social space, by embodied practices of interactive travel." (Clifford 1997: 54, in reference to de Certeau 1984)

Ethnography and its holistic research approach focus on the logics and semantic structures of practices and daily routines in their social, spatial, and cultural contexts. In the wake of urbanization, *urban anthropology* was established as a sub-discipline of anthropological spatial research starting in the 1960s, with influences from *urban sociology*, *feminist geography*, and *critical urban theory* (Simmel 1903; Lefebvre/Kofman 1996; Low 1999; Massey 2005; Katz 2004; Harvey 2001; Brenner 2009). Therefore, ethnography is relevant for sociology, architecture, urban planning, and geography, especially because it deals with socio-spatial practices and embodied spatial experience, which has made it popular in these disciplines over the last few years (Müller 2012).

Taking into account everyday interactions and how space is treated as a constitutive element of social transformation processes within those interactions provides for a practice-oriented perspective on space (see Schatzki 2002; Miettinen et al. 2009). In this respect, an ethnographic approach to observing spatial practices first considers concrete physical material spaces in which people move, live, work, speak, and act in order to obtain information about the spatial dimensions of practices and the constant interactions between them, which involves increasingly incorporating dematerialized links of spaces into the approach. Due to a focus on socio-spatial practices and thus explicitly physical forms of behavior, attention is additionally paid to implicit, embodied knowledge concerning everyday actions, through which spaces are continuously being

(re)constructed. As a result, praxeological vocabulary keeps "mentalistic sociological action theory" in particular (Schmidt 2017: 339, own translation) at a critical distance and sometimes enhances the consolidation of non-verbal dimensions. An ethnographic approach can be used to clarify implicit knowledge, the performance and representation of practices, resulting questions, and implications. Consequently, as an "epistemological objective," ethnography makes it possible to observe the social production of space (Streule 2014, para. 16) and thus to observe the praxeological production of space (and spatial knowledge).

In this context, "praxiography" (Mol 2003) serves as an ethnographic methodology for the specific and analytical investigation of physical and material practices and is closely related to practice theory (Schatzki 2002; Reckwitz 2008). As a central topic of research, practices refer to perspectives and methodological approaches in action theory that originated from the *practice turn* in various social science disciplines (Garfinkel 2003 [orig. 1967]; Bourdieu 1977; de Certeau 1984; Giddens 1984). *Social practices* can be understood as manifolds of interrelated actions consisting of "doings and sayings" (Schatzki 2002: 71). These considerations based on practice theory can be expanded by also relating them to bodies, which are in turn seen as products of culturally specific practices and exist only by exercising these practices (Reckwitz 2008: 125). Bodies become visible only in the context of socio-spatial interactions, and the same holds true for spaces, which are first configured by means of concrete actions (de Certeau 1984).

Based on these epistemological approaches, *field research* is a key method in ethnography. The term *field research* is a long-standing concept in anthropology and sociology, and it has been common in related interdisciplinary fields since the 1990s, such as geography and architecture. In this context, ethnographic research breaks away "[…] from the assumption that society is always already familiar to, understood by, and available to social scientists as a research topic" (Breidenstein et al. 2015: 7, own translation). The direct understanding gained from "fleeting" observations in relevant daily routines does not result in the immediate understanding of complex social worlds (Bourdieu/Wacquant 1996). Therefore, ethnographic research is closely connected to the notion of *empiricism* and focuses on "thick" and thus long-term *field research* in order to explore socio-spatial practices, artifacts and relationships within and between social lifeworlds.

To study spatial practice, *participant/participating observation* generally play a key role as a method in the context of ethnographic field research. In this regard, researchers engage over an extended period of time with the relevant actors to share their everyday lives and experiences and to obtain access to epistemological processes. The findings from the observed practices are the result of the interactions between researchers and further actors and depend on the experienced situations, temporal contexts, and visited spaces. In particular, *participant/participating observation* involves actively and consistently participating in group life and everyday life—and not simply observing situations as an outsider—since only then is it possible to experience "key cultural scenes such as typical everyday situations" (Kaschuba 2006: 206 et seq., own translation). The involvement of the researchers in everyday routines, which are documented and interpreted in various ways, plays a decisive role. For ethnographic spatial research, actively *participating* in what is happening is fundamental and essential for developing an incorporated understanding of the physical, spatial, and material conditions of the logic of action.

The term "thick description" was coined to describe such an interpretive and participatory approach to the constitution and formation of social contexts (Geertz 1973: 3). This term serves to convey a feeling of *being there (in the field)* by means of the ethnographic medium, which comprises symbolic and interpretative dimensions (of the space), as well as sensory impressions. This produces a constant stream of ethnographic media in the form of texts, soundscapes, mapping, images, or multimodal combinations of these and other sorts of media. These types of immersive moments provide the reader, listener, or observer with a deeper basic understanding for a more elaborate analysis. As a result, it is possible to examine existing symbol systems in particular, according to which socio-spatial frameworks and daily routines are organized and which specific logics of socio-spatial action follow. Empirical data are understood as "a multiplicity of complex conceptual structures, many of them superimposed upon or knotted into one another," similar to the understanding of culture as "webs of significance," humans themselves have spun, and which they are both connected to and woven into (Geertz 1973: 5). Much is hidden at first, becoming revealed in the course of the analysis. The objective is to pay special attention to what is supposedly self-evident in order to pursue socio-spatial phenomena and upheavals.

Thus, the socio-spatial significance of local milieus, the ways of life of actors, and changing formations of space come to the fore in ethnographic observations (Schwanhäußer 2010). This also involves a critical analysis of the symbolic orders that structure and/or refigure spaces (Löw/Knoblauch 2019). In this respect, it can be stated that ethnography as a methodology can provide a praxeological and actor-centric perspective of socio-spatial transformation processes, which are generated and thus become visible by observing socio-spatial practices (Genz 2020: 51 et seqq.). Ethnography can therefore be conceived as an epistemic perspective capable of operationalizing action-oriented constructions of spaces and social reality through the process of participant/participating observation, thus incorporating not just a spatial but also a spatio-temporal component.

2 Fields of application

Ethnography offers a wide array of applications and a broad set of different qualitative methods. Aside from participant/participating observation, these include field notes, open interviews, sensory and digital methods (Pink 2008; Pink et al. 2016), go-alongs (Kusenbach 2003), actor-network analyses (Farías/Paulos in this handbook), and critical and reflexive mapping (Roberts 2016). Urban ethnographic studies in particular allow for the fluid interplay between different human and non-human actors, such as the city itself, artifacts, infrastructures, and technology. These approaches are employed following Bruno Latour's (2005) *actor-network theory* in dealing with *urban assemblages* (Farías/Bender 2010) for qualitative spatial and urban research (see Wietschorke 2013). Further intersections with urban ethnographic and spatial research can be found in *science and technology studies* (Latour/Woolgar 1979; Haraway 1991), in studies on "urban scenes" (Schwanhäußer 2010a), and in works on mobility, especially in connection with urban spaces and migration (Glick Schiller/Çağlar 2011)—to name just a few. In this

context, and due to the growing interest in *engaged anthropology*, ethnographic methods are being used increasingly to investigate *urban activism* and spatially oriented social movements (Juris/Kasnabish 2013; Genz 2020; Portelli/Tschoepe 2020).

The go-along and ethnographic mapping can be considered two adequate methodological approaches for understanding the reciprocal relationship between space and spatial practices. While the "ordinary practitioners of the city"—everyone walking the streets—have the ability to be wanderers (de Certeau 1984: 93), the practices of wayfinding and mapping require the ability to reproduce spatial surroundings within the social and cultural contexts (Ingold 2000). Mapping is a way of producing visual-graphical or multimodal ethnographic artifacts, helping to represent and interpret spatial structures and blind spots in research (see chapter on *Drawing and visualizing* in this handbook). Therefore, mapping can be considered a modern and interdisciplinary research method that can be used to reveal and document the cognitive, performative, or divergent associations, attributions, and constructs of meaning and to represent ethnographic information.

In the wake of digitalization, physical spaces, objects, bodies, and socio-spatial practices are increasingly being integrated into digital infrastructures. By reflecting on the growing mundaneness of the digital and thus the resulting changes in cultural processes, it is possible to study spaces beyond their material boundaries (see Pink et al. 2016; Koch 2017; Lettkemann in this handbook). Moreover, the critical digital transformation in spatial research has allowed for the "thicker" documentation of ethnographic information (such as texts, audio, photos, video, tracking, geolocalization) and multimodal, collaborative representation options for creating non-hegemonic, emancipatory archives of the past and future (Yildirim Tschoepe 2016). In turn, this gives rise to new approaches to exploring socio-spatial practices and the praxeological constitution of space. The intuitive use of everyday localization, observation, and documentation technology also calls for us to take a reflexive and critical stance toward sensory and localized information, which can contribute to a better understanding of spatial networks, mobility, accessibility, belonging, intersectionality, dependencies, and power structures. From an ethnographic, social, and cultural perspective, spatial research is tasked with countering any "objectification tendencies" in spatial configurations—and tracing the inherent power relations and hegemonic structures by which places and spaces are governed as a social practice.

3 The possibilities of spatial ethnographic research (in practice)

In summary, using ethnography as a methodology provides for a differentiated and praxeological perspective in spatial research. An ethnographic approach can reveal material traces that can be captured empirically in order to pursue elusive political logics and power relations, for example (Adam/Vonderau 2014: 9). Consequently, the translocal interactions of actors at multiple levels and political processes steeped in power come to the fore in critical knowledge production. Adopting a concrete ethnographic perspective allows for the critical analysis of actors and practices, as well as specific structures and power relations in spaces and in specific places (Rose 1997; Roy 2014; Streule 2018).

3.1 A question of positionality

In a participatory and active research process, an *in situ* ethnographic approach focuses on complex socio-spatial phenomena. This approach is highly exploratory and is often susceptible to a "loss of control over the conditions governing cognitive processes" (Hirschauer/Amann 1997: 17, own translation). The constant involvement of the researchers in specific spaces and places, as well as their associated interventions, pose challenges as well—while at the same time offering opportunities as researchers are continuously required to (self-)reflect and incorporate this into the analysis. It is necessary to realize that researchers assume a position and role in every field of spatial research (Bourdieu 1993). Since the so-called *Writing Culture debate* in the field of anthropology (Clifford/Marcus 1992), which tied in with postcolonial critique within the spatial sciences in the 1980s (see Said 1978; Spivak 1988), the question of the positionality of researchers has continuously been put up for debate. Ever since, the *reflexive turn* in the wake of the *Writing Culture debate* has promoted constant self-reflection when adopting an ethnographic methodology, encouraging researchers to assess critically their own position, which has since become the *status quo* in ethnographic research. With regard to interdisciplinary spatial research, this means researchers must dwell on their own involvement, as well as social power relations and political struggles, from an actor-centric and praxeological point of view. This potential for reflection in ethnographic research practice is essential for perceiving and describing places and spaces as *social realities* and for tracing both implicit and explicit negotiation processes, which elicit a shift in present "realities" and new realms of possibility.

Spatial transformation processes are continuous and omnipresent, underlying a recurring process of rethinking in various disciplines, especially since the *spatial turn*. Last but not least, the concepts and significance of everyday socio-spatial practices, as well as the methodological questions of how to study and comprehend them empirically, are becoming increasingly relevant due to technological changes. Reflecting on the realms of possibility, as well as uncovering and exposing contradictions, should be important for every subject area and methodological approach. In this regard, it is necessary to further cultivate the above-mentioned debate in order to develop an engaged, critically reflective approach to ethnographic research devoted specifically to social problems and aspiring to intervene "in political fields of conflict" (Binder et al. 2013: 9, own translation). One of the key opportunities in this regard is advancing a feminist approach in ethnographic research practice that emphasizes an intervening, collaborative position for researchers (Binder et al. 2013) without neglecting the importance of self-criticism and the challenges of working as a team (Clerke/Hopwood 2014). In addition, developing an *engaged ethnography* framework means highlighting collaborative approaches to spatial knowledge production in order to, for example, gain insights into and methods for characterizing and making visible gender-specific power relations in public spaces. In the context of *engaged ethnography*, emancipatory practices are intended to uncover (and deconstruct) power structures that are part of spatial, social, and political regimes and manifest themselves as dominant norms.

3.2 Interdisciplinary connections

Ethnography represents a particularly interesting methodology for other disciplines due to its profound engagement with social practices and embodied spatial experience. An ethnographic perspective of (spatial) practices allows for an in-depth understanding of socio-spatial structures and mechanisms. Only the "frequently […] condensed form" of ethnography as it is often applied in interdisciplinary fields poses a challenge: the findings obtained in the process are based on less "thick" research practices (Schwanhäußer 2015: 2, own translation). Ethnographic research, however, entails fully exploring all dimensions of spatial configurations and practices. Places and spaces are constituted by actions, negotiations, human and more-than-human-actors, which structure socio-spatio formations in a ways that can make them seem self-evident. Engaged ethnographic spatial research aims to avoid this supposed "self-evidence" at all times and instead to describe and thus reconstruct places and spaces in the course of field research as a processual, powerful, and socio-spatial practice within and beyond any material boundaries.

It is precisely this "interest in 'doing' and 'making' geographies, in performativity, power tactics, established practice, and embodied subjectivities" (Müller 2012: 179, own translation) that makes ethnography meaningful for various disciplines for the purpose of interdisciplinary qualitative spatial research; therefore, the axiom "*all knowledge is interdisciplinary*" (Clifford 1997: 59) also applies to socio-spatial knowledge production. A wide array of fields deal with the production and refiguration of spaces, sociocultural and geopolitical transformation processes, questions concerning the performance and constitution of space, and everyday practices of appropriation, which is why these topics cannot be assigned *per se* to one subject area. Therefore, the scientific, epistemological, and methodological ways of thinking behind the ethnographic exploration of (spatial) practices can be regarded as unconditionally interdisciplinary.

References

Adam, Jens/Vonderau, Asta (Eds.) (2014): *Formationen des Politischen. Anthropologie politischer Felder*. Bielefeld: transcript.

Binder, Beate/von Bose, Friedrich/Ebell, Katrin/Hess, Sabine/Keinz, Anika (Eds.) (2013): *Eingreifen, Kritisieren, Verändern!? Interventionen ethnographisch und gendertheoretisch*. 1st edn. Münster: Westfälisches Dampfboot.

Bourdieu, Pierre (1977): *Outline of a Theory of Practice*. Cambridge: Cambridge University Press.

— (1993): Narzißtische Reflexivität und wissenschaftliche Reflexivität. In: Berg, Eberhard/Fuchs, Martin (Eds.): *Kultur, soziale Praxis, Text. Die Krise der ethnografischen Repräsentation*. Frankfurt a. M.: Suhrkamp, pp. 365–374.

Bourdieu, Pierre/Wacquant, Loïc (1996): *Reflexive Anthropologie*. Frankfurt a. M.: Suhrkamp.

Breidenstein, Georg/Hirschauer, Stefan/Kalthoff, Herbert/Nieswand, Boris (2015): *Ethnografie. Die Praxis der Feldforschung*. Konstanz/Munich: UVK.

Brenner, Neil (2009): What is Critical Urban Theory? In: *CITY*, 13(2), pp. 198–207.

Certeau, Michel de (1984): Part III: Spatial Practices – Chapter VII Walking the City. In: *The Practice of Everyday Life*. Berkeley, CA: University of California Press, pp. 91–130.

Clerke, Teena/Hopwood, Nick (2014): *Doing Ethnography in Teams: A Case Study of Asymmetries in Collaborative Research*. Heidelberg: Springer International Publishing.

Clifford, James (1997): *Routes. Travel and Translation in the Late Twentieth Century*. Cambridge, MA.: Harvard University Press.

Clifford, James/Marcus, George E. (Eds.) (1992): *Writing Culture. The Poetics and Politics of Ethnography*. Berkeley, CA/Los Angeles, CA/London: University of California Press.

Farías, Ignacio/Bender, Thomas (Eds.) (2010): *Urban Assemblages. How Actor-Network Theory Changes Urban Studies*. London: Routledge.

Garfinkel, Howard (2003 [orig. 1967]): *Studies in Ethnomethodology*. Cambridge: Polity Press.

Geertz, Clifford (1973): Thick Description. Towards an Interpretive Theory of Culture. In: *The Interpretation of Cultures*. New York, NY: Basic Books.

Genz, Carolin (2020): *Wohnen, Alter und Protest. Eine Ethnographie städtischer Protest- und Netzwerkpraktiken von Senior_innen*. Wiesbaden: Springer.

Giddens, Anthony (1984): *Die Konstitution der Gesellschaft: Grundzüge einer Theorie der Strukturierung*. Frankfurt a. M./New York, NY: Campus.

Glick Schiller, Nina/Çağlar, Ayse (2011): *Locating Migration. Rescaling Cities and Migrants*. Ithaca, NY: Cornell University Press.

Haraway, Donna (1991): A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century. In: *Simians, Cyborgs and Women: The Reinvention of Nature*. New York, NY: Routledge, pp. 149–181.

Harvey, David (2001): *Spaces of Capital*. London/New York, NY: Routledge.

Hirschauer, Stefan/Amann, Klaus (Eds.) (1997): *Die Befremdung der eigenen Kultur. Zur ethnographischen Herausforderung soziologischer Empirie*. Frankfurt a. M.: Suhrkamp.

Ingold, Tim (2000): *The Perception of the Environment: Essays on Livelihood, Dwelling, and Skill*. London/New York, NY: Routledge.

Juris, Jeffrey S./Khasnabish, Alex (2013): *Insurgent Encounters: Transnational Activism, Ethnography, and the Political*. Durham, NC/London: Duke University Press.

Kaschuba, Wolfgang (2006): *Einführung in die Europäische Ethnologie*. 3d Edn. Munich: Beck.

Katz, Cindi (2004): *Growing Up Global. Economic Restructuring and Children's Everyday Lives*. Minneapolis, MN: University of Minnesota Press.

Koch, Gertraud (Ed.) (2017): Ethnography of Digital Infrastructures. In: Ed.: *Digitisation. Theories and Concepts for Empirical Cultural Research*. London: Routledge.

Kusenbach, Margarethe (2003): Street Phenomenology. In: *Ethnography*, 4(3), pp. 455–485.

Latour, Bruno (2005): *Reassembling the Social: An Introduction to Actor-Network-Theory*. Oxford: Oxford University Press.

Latour, Bruno/Woolgar, Steve (1979): *Laboratory Life: The Construction of Scientific Facts*. Princeton, NJ: Princeton University Press.

Lefebvre, Henri/Kofman, Eleonore (1996): *Writings on Cities*. Oxford: Blackwell.

Low, Setha M. (1999): *Theorizing the City: The New Urban Anthropology Reader*. New Brunswick: Rutgers University Press.

Löw, Martina/Knoblauch, Hubert (2019): *The Re-Figuration of Spaces. Introducing the Research Programme of the Collaborative Research Centre »Re-Figuration of Spaces«.* SFB 1265 Working Paper, No. 2, Berlin.

Massey, Doreen (2005): *For Space*. Los Angeles, CA/London: SAGE.

Miettinen, Reijo/Samra-Fredericks, Dalvir/Yanow, Dvora (2009): Re-Turn to Practice: An Introductory Essay. In: *Organization Studies,* 30(12), pp. 1309–1327.

Mol, Annemarie (2003): *The Body Multiple. Ontology in Medical Practice*. Durham, NC: Duke University Press.

Müller, Martin (2012): Mittendrin statt nur dabei: Ethnographie als Methodologie in der Humangeographie. In: *Geographica Helvetica,* 67(4), pp. 179–184.

O'Reilly, Kareen (2005): *Ethnographic Methods*. London: Routledge.

Pink, Sarah (2008): An Urban Tour: The Sensory Sociality of Ethnographic Place Making. In: *Ethnography*, 9(2), pp. 175–196.

Pink, Sarah/Horst, Heather/Postill, John/Hjorth, Larissa/Lewis, Tania/Tacchi, Jo (2016): *Digital Ethnography. Principles and Practice.* Los Angeles/London: SAGE.

Portelli, Stefano/Tschoepe, Aylin Y. (2020): Activist*Scholar Collaborations in Times of Crisis, and Beyond: Reflections on ›Urban Activism: Staking Claims in the 21st Century City.‹ In: *Radical Housing Journal*, 2(2), pp. 193–209.

Reckwitz, Andreas (2008): *Unscharfe Grenzen. Perspektiven der Kultursoziologie*. Bielefeld: transcript.

Roberts, Les (2016): Deep Mapping and Spatial Anthropology. In: *Humanities,* 5(1), pp. 5.

Rose, Gillian (1997): Situating Knowledges: Positionality, Reflexivities and Other Tactics. In: *Progress in Human Geography*, 21(3), pp. 305–320.

Roy, Ananya (2014): Worlding the South. Towards a Post-Colonial Urban Theory. In: Parnell, Susan/Oldfield, Sophie (Eds.): *The Routledge Handbook on Cities of the Global South*. New York, NY: Routledge, pp. 9–20.

Said, Edward (1978): *Orientalism*. New York, NY: Patheon Books.

Schatzki, Theodore (2002): *The Site of the Social. A Philosophical Account of the Constitution of Social Life and Change*. University Park, PA: Penn State Press.

Schmidt, Robert (2017): Praxistheorie. In: Gugutzer, Robert/Klein, Gabriele/Meuser, Michael (Eds.): *Handbuch Körpersoziologie*, Vol. 1. Wiesbaden: Springer Fachmedien, pp. 335–344.

Schwanhäußer, Anja (2010): Stadtethnologie – Einblicke in aktuelle Forschungen. In: *dérive. Zeitschrift für Stadtforschung*, No. 40/41, pp. 106–113.

— (2010a): *Kosmonauten des Underground. Ethnografie einer Berliner Szene*. Frankfurt a. M.: Campus.

— (2015): Ethnographie des Urbanen. In: *dérive. Zeitschrift für Stadtforschung*, No. 61, pp. 58–60.

Siebeck, Cornelia (2011): Zur Relevanz des ethnografischen Blicks bei der sozial- und kulturwissenschaftlichen Erforschung von Orten und Räumen. Review of Weszkalnys, Gisa (2010): Berlin, Alexanderplatz. Transforming Place in a Unified Germany. New York, NY/Oxford: Berghahn Books. In: *Forum Qualitative Sozialforschung*, 12(3), art. 20.

Simmel, Georg (1903): Die Großstädte und das Geistesleben. In: *Die Großstadt. Jahrbuch der Gehe-Stiftung Dresden,* Vol. 9, pp. 185–206.

Spivak, Gayatri C. (1988): Can the Subaltern Speak? In: Nelson, Cary/Grossberg, Lawrence (Eds.): *Marxism and the interpretation of Culture*. Chicago, IL: University of Illinois Press, pp. 271–313.

Streule, Monika (2014): Trend zur Transdisziplinarität – Kritische Einordnung einer ambivalenten Praxis qualitativer Stadtforschung. In: *Forum Qualitative Sozialforschung*, 15(1), art. 17.

— (2018): *Ethnografie urbaner Territorien. Metropolitane Urbanisierungsprozesse von Mexiko-Stadt*. Münster: Westfälisches Dampfboot.

Wietschorke, Jens (2013): Anthropologie der Stadt: Konzepte und Perspektiven. In: Mieg, Harald A./Heyl, Christoph (Eds.): *Stadt. Ein interdisziplinäres Handbuch*. Stuttgart/Weimar: J.B: Metzler, pp. 202–221.

Yildirim Tschoepe, Aylin (2016): TimeLayers: Urbane Erinnerung und Zukunft. (The City as Immersive Exhibition of Past and Future). In: *museums.ch*, No. 11/2016, pp. 108–111.

Videography and space

Hubert Knoblauch and René Tuma

Among the qualitative methods in empirical social research, videography describes an approach in which social science data are collected by means of videos and then analyzed using a specific methodology that combines observation, participation, and other ethnographic techniques. Videography is a method that is used in a wide range of social science disciplines to analyze social interactions and social situations in particular. Their subject matter extends to communicative actions of individuals (such as working on the computer) at the workplace or of large collectives, such as the audience in a soccer stadium. When developing the videographic methodology, to which we have contributed at great length (Knoblauch 2006; Tuma et al. 2013), we have concentrated primarily on the timelines of the actions and interactions so far. Temporality is also considered a key resource in other analytical approaches, yet little attention has been paid to spatiality until now. Although there are studies on individual spatial aspects of activities recorded by means of videography, a systematic review of the role of space in videography and in video-based interaction analysis is lacking to date. We aim to make an initial contribution in this regard. After a brief overview of the development and key characteristics of the videographic method (Section 1), we will illustrate the methodological significance of spatial aspects (Section 2). Afterward, we will address the role of spatial knowledge (Section 3), before discussing several social dimensions of space from a videographic perspective (Section 4) in order to broach open questions and perspectives raised by this method (Section 5).

1 Development and key characteristics of videography

The use of films and videos as data for the qualitative analysis of social life stretches back to the beginnings of the social sciences. However, a dedicated methodology was first developed in the last several decades, which has since established itself internationally. For example, Goodwin (1980) studied everyday interactions by means of video recordings, Erickson and Shulz (1982) used video to analyze school counseling sessions, and Heath (1986) carried out video analyses of medical treatments. Reflection on the methodology began in the 1980s and is still documented to this day in various anthologies (Knoblauch

et al. 2006; Kissmann 2009; Corsten et al. 2010). It is described in general terms in introductory methods books (Heath et al. 2009; Tuma et al. 2013; vom Lehn 2018), as well as in reference to fields such as the learning sciences (Goldman et al. 2007) and religious studies (Knoblauch 2011), albeit not yet in connection with spatial research.

In contrast to the wide range of standardized quantitative studies with audiovisual data in the social sciences, videography is markedly interpretative.[1] The basic assumption is that actions and interactions are guided by meanings, which are explained by the researchers and analyzed using scientific categories (Schütz 1962). Furthermore, all of these studies have a basic ethnographic foundation: Video data refer to what is happening situationally in the social world and are interpreted and analyzed by researchers. We call this method videography as it combines video analysis with focused ethnography (Knoblauch 2006). This must be distinguished from approaches that study *video products* created by the actors themselves: that is to say, *authentic* recordings produced in the field or videos that have been edited, produced, and designed (*YouTube* clips or other video documents that exist in the field). Even though some aspects of video analysis can certainly be applied to such data, in videographic studies, the researchers themselves create the recordings in the field before analyzing them. They are therefore not a form of visual analysis but rather video based ethnographies. In another study, we address in detail the diverse questions regarding access, the role in the field, the role of the camera, and its reactivity (Tuma et al. 2013). In this article, we wish to concentrate on the spatial aspects.

Essentially, we do not agree with the assumption that the recording simply "depicts" or "represents" the observed processes; rather, reflected research is aware of the fact that the data and analyses also always result from actions and interactions along with all of the associated perspectives and selectivities. Nevertheless, researchers can interpret data adequately by examining the situation in-depth and acquiring the necessary knowledge about it. Thanks to their involvement in and knowledge of the situation, they gain access to the viewpoints of the participants.

Initial observations of the researchers usually start long before the first recordings in order to determine their own role and the potential role of the camera in the field (as well as their *influence* on the field). Among other things, it is necessary for researchers to define a suitable focus for the recordings and to acquaint themselves with the field. The ethnographic knowledge acquired in the field should enable researchers to understand the actions recorded in the video. Essentially, the videography method consists of (a) collecting video data by means of on-site ethnography, (b) a preliminary indexing and coding of the data in accordance with the research question, and (c) the fine-grained analysis of the selected audiovisual data. The detailed analysis is performed in connection with the research question in the form of a sequential analysis of the recorded action and interaction (i.e., *video analysis*), as well as an interpretation of their visual and audible content. This makes it possible to identify specific forms, patterns, and structures of actions, categories, or institutions that are typical aspects of the respective field and that are addressed by the research question. By linking the institutional structures, the

1 Standardized forms of video analysis apply linguistic or numeric codes to relatively large segments of videos. It was even possible to automate this process in the last several years thanks to audiovisual software.

situational actions, and the knowledge of the actors, videography helps to analyze the communicative construction of these field aspects (Knoblauch 2020).

2 Basic methods and methodologies in spatial videography

Aside from (participant) observation, discussions and interviews are carried out with the stakeholders and documents and artifacts are collected as part of the field research; furthermore, photo and video elicitation methods are frequently used retrospectively. The reconstructed knowledge of the participants also contains spatial elements, which are necessary to understand the arrangement of different objects, devices, or tools, for example. In addition to spatial knowledge (including imaginations in some cases), ethnography itself is spatial in a unique sense, which is underscored by the metaphor of the "field." Fields can include delimited spaces, which are called *scenes* or *settings*. We often take into account the spatial character using *cartographies*, in which we sketch and record, for instance, the arrangement of furniture, appliances, or people in a certain room. However, by no means does the spatial character of these fields have to be closed-ended. On the one hand, videos can be recorded in motion, such as when studying accessibility in cities or when studying a wide range of mobile events. On the other hand, videographic studies can also examine the connection between multiple sites (*multi-sited*), such as the cooperation between different areas of operation in an airport (Goodwin/Goodwin 1996). When we take into account the references and potential influences of the digital communication technologies used in the field, even global spaces can be relevant from a videographic perspective, for example, for digital interactions in financial markets (Knorr-Cetina/Bruegger 2002). Virtual spaces often come into focus in the process, such as the visually represented worlds of computer games *in* which the players interact.

2.1 Spatial aspects of data collection

The spatiality of the data collection process plays an essential role in videographic recording: Namely, the exact position of the camera is decisive for the perspective of the recording and thus for the object. The focus of the camera has a spatial dimension as well; it determines the spatial *section* that is recorded. The use of multiple cameras introduces multiple perspectives. If they all have the same focus, then they result in the creation of a scene. This also applies to the use of 360-degree (and to some extent 3D) cameras, which produce an equally expanded spatial focus. They illustrate that the focus of the camera has a spatial dimension itself. This dimension, in turn, can vary based on the distance from the recorded object, which can present a certain scale: Focus can be placed on individual body parts and their movement (such as gestures, hands interacting with each other during medical operations and using instruments simultaneously); it can relate to the interactive space of different actors, but it can also encompass certain buildings or public spaces. Indeed, public spaces represent one of the few topics addressed in geographic videographies, as seen in the study *Social Life of Small Urban Spaces* by William H. Whyte (1980). An even more spatially extensive video study involved an international audience comprised of millions who had gathered on World Youth Day in Krakow for

the mass with the pope, which was transmitted worldwide and thus achieved global dimensions (Knoblauch et al. 2019). *Location tracking* technology (e.g., GPS) can help to determine the relation of the recordings to one another and to record movements within space.

For the videographic analysis of space, we can distinguish three kinds of focus.

First, a contextual focus on the field: that is to say, the institutional or organizational context of the social situations, interactions, and communicative actions that are the object of the recording.

Second, a focus on social situations: Videography typically concentrates on certain actions, interactions, and practices of one or more human actors in a spatial setting. As Erickson (2005: 1198) notes, it is denoted by a "focus" on the "characteristics of the situated performance as it occurs naturally in everyday social interactions."

Third, a focus on what the camera records: This can range from a 360-degree camera recording a large crowd in a stadium to a fixed camera that concentrates on physical interactions or a mobile camera that concentrates on moving hands or the head and is mounted on the moving actors. The focus of the recording can vary from the movement of individual body parts and interactions in dyads or groups to huge gatherings and spread-out spaces, which means it can take place on different scales. This applies to the situational and contextual focus accordingly.

2.2 Analyzing video recordings

Video data have a very special relationship with what is recorded since videos are considered a mimetic medium. They record visual and acoustic objectifications. Videos make it possible for observers to recognize aspects such as sound and voice, as well as bodies, objects, and visualized space in the recording. As a result, video data offer an extremely rich and tremendously dense body of data that is objectified so as to be suitable for interpretation and analysis by other researchers, too. As a visual medium, videos allow for a special form of intersubjectivity: namely, analysis by others who first saw the situation in retrospect upon closer observation. Video analysis shares this characteristic with photography but stands out from this method due to one unique feature. In contrast to photography, videos are a temporal medium that enables researchers to analyze the sequence of actions, interactions, and other social processes covered by the video recordings. Historically, the transition has been fluid, as we see with the famous studies of motion by Muybridge with series of photographs that answered question such as whether horses continue to touch the ground at all times when galloping. However, this particular temporal feature of video analysis makes it possible to observe physical actions as they take place chronologically.

This temporality is taken into account in video analysis by means of sequential analyses. *Sequential analysis* refers to the temporal course of communicative actions in what are called (action) *turns*, such as physical positions, movements, vocalizations, or other technical objectifications. Sequential analysis examines how the relevance of communicative action is constituted in time: that is to say, how actions are shaped *reflectively* in the course of their performance so that they are understood by others and thus result in subsequent actions. These turns can be interpreted because they always relate to what

preceded them and to what follows them. In the analysis, the series of actions are retraced and divided into turns in order to understand how these sequences are shaped by the actors themselves. The interpretation of the actions concentrates on the meaningful interplay of turns in relation to one another. The underlying principle of the analysis is that we not only can describe the order unfolding from turn to turn in these series of actions but can also systematically understand it.

Sequentiality also represents a unique resource in terms of securing the research findings because it makes it possible to validate the interpretations. Interpretations of the first verbal and physical turns are used in order to predict subsequent turns; the empirical form of the next rounds or turns makes it possible to decide which interpretation of the first rounds was chosen by the actors and is therefore valid (for the term sequentiality, see Knoblauch 2020: 193 et seqq.). Sequential analysis uses the technical possibilities of the video devices, which are both an audiovisual recording and playback device; this includes the virtually limitless playbacks, as well as time loops and zooming. All of these techniques are not just related to scientific methods of comparison, they also exhibit spatial aspects: The monitor on which we watch the video itself represents a visual surface. This makes it possible enlarge something small, to select specific sections, or to repeat certain sequences of pictures and thus make them present at the site of analysis. Moreover, the temporal sequences themselves feature spatial references. They focus on the movements of the human body itself (such as gestures, i.e., the *motility*) as well as the movements of bodies in space (i.e., their *mobility*).

While motility and mobility are spatio-temporal phenomena, the second step in videography, the analysis, essentially entails another spatial phenomenon. In addition to the temporal sequence of the images, the individual images themselves represent an object of analysis. In contrast to the sequential analysis, this is an analysis of the elements that are present simultaneously. Here we refer to the juxtaposition of the bodies that characterize the space, which Löw (2016) refers to as an "arrangement." In both ethnography and image theory, it has long since been discussed that (visual as well as audiovisual) representations can by no means be considered illustrations but rather follow their own conventions of representation. In response to this, quite elaborate hermeneutic approaches have been developed that are devoted to image analysis, both with regard to photographs (Müller/Soeffner 2018) and with regard to individual images (Raab 2008) and partial sequences or moves (Reichertz/Englert 2010). Therefore, the hermeneutic analysis of visual elements offers a useful approach to analyzing space by using the spatial knowledge of the researchers. Apart from the hermeneutic perspective, the semiotic perspective focuses more on the materialized forms, attempting to interpret them as cultural signs and explaining them within the structural context of their signs. Goodwin (1994), for example, chose such a semiotic approach.

While these methods are aimed at the image, at the image's relationship with the reality studied and, consequently, the relation between reality and image as a highly controversial problem of representation, we propose treating video recordings like ethnographic data. Because they were collected as part of the ethnography, they are field documents whose status is related to both the researchers' and the field subjects' experiences in and with the field. The video recordings are not merely observed epistemically like field protocols; they are used in the (especially early) data sessions to elicit and ex-

plicate ethnographic knowledge of the field on the basis of audiovisual objectivations. As noted previously, their spatial dimension is often complemented by cartographies, which record the spatial distribution and allocation of the people and of the material or technical elements. Camera positions are then sought following an initial ethnographic survey.

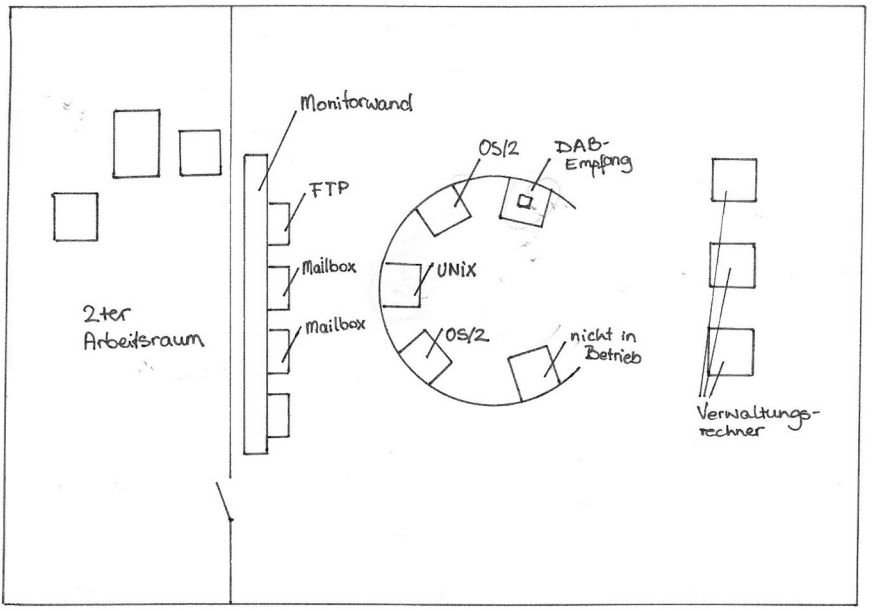


Fig. 1: Spatial sketch from a project on working in control centers with distribution of individual technical workplaces related to specific tasks and an adjacent second room (Knoblauch 1998: 313).

3 Spatial knowledge

In the ethnographic study of the spatial aspects of interactions, the specific knowledge of both the participants and the researchers about the spaces plays a crucial role, especially when interpreting the videos. Because this spatial knowledge is subjective and embodied, it cannot be observed by means of video recordings, but it is still relevant for the interpretation and analysis of the data. Even the "translation" of the two-dimensional recording into a three-dimensional understanding is based on the *underlying spatial knowledge of the lifeworld*. Similarly, the understanding of an individual's orientation based on visual glances in the room, for example, is based on *habitualized spatial knowledge*, which we use to "read" material objects when walking (Knoblauch 2017). Spatial knowledge also includes practical knowledge, which is acquired as specialized knowledge and routinized over time, as is the case in a soccer game. Bourdieu and Wacquant (1992: 21) illustrate, in reference to Merleau-Ponty, how the relationship between players

and the field gives rise to a "cohesion without concept." "The player incorporates it [the playing field] into his body and feels, for example, the direction of the 'goal' just as directly as the vertical and horizontal planes of his own body." (Merleau-Ponty 1980: 193, own translation)

This specialized routinized spatial knowledge can be acquired by means of participant observation of the activities in the respective fields. Participation not only includes the structures of the space from a practical-pragmatic perspective but also introduces a view of the imaginations and affective dimensions of the space and its social impacts. This dimension of space is also evident in classic ethnographies, as illustrated compellingly by Anderson (2015) in his study *Black in White Spaces*, which shows how spaces are structured by powerful regimes of action and how those spaces are reflected in subjective experiences of exclusion. To this day, capturing these dimensions systematically in videographies is essential for further research.

Like all knowledge, the various forms of spatial knowledge are unequally distributed across levels of society. This applies in particular to *explicit spatial knowledge*, which is objectified in different ways, often linguistically and graphically, for instance, as topographic maps, *Google Maps*, or architectural plans. Its distribution follows the patterns of social inequality, while at the same time being connected to specialized knowledge, institutions, and professions with special approaches. By means of categories, coding, and classifications, such objectifications exert power over spatial relationships; however, they are also the subject of disputes.

4 Social dimensions of videographic space

By no means does videography refer solely to the recording of videos. As a social science method, it has a special object, which we broadly describe as communicative action. Communicative action includes interactions between people but also refers to isolated embodied actions, such as walking or typing a text. Action is always guided by knowledge, although embodied actions also include objects (writing) or technology (typing on a keyboard or a screen, controlling devices remotely), which can have both a symbolic and an operative character (Knoblauch 2020). Communicative action can be described temporally based on sequences, but it also has a spatial character, which comes to the fore in the simultaneous observation of recordings in particular. In line with spatial theory as described by Löw (2016), the analytical perspective of videography conceives spatiality as the relationship between the actors and to the things in the space (but from the ethnographically reconstructed, "asymmetrical" perspective of the actors).

For all intents and purposes, Hall's classic studies on *proxemics* (1962) can already be regarded as an example of audiovisually analyzed spatial relations in interactions between people. Most notably, he investigated the interactive and subjective meaning of spatial distance between people, where what is perceived as "normal" can vary considerably in different cultures. Scheflen (1973) used psychiatric discussions as an example to illustrate the role played by changes in posture in interactions between people sitting. In doing so, he founded context analysis, which also emphasizes the spatial dimension of human interactions. A more recent example is what is known as the "*face formation*," as

introduced by Kendon (1976). This refers to the spatial arrangement of people facing one another, which in turn indicates their type of participation, attention, etc. To be more precise, the term *body formation* (Knoblauch 2013) should be used as the circular positioning of the bodies is what differentiates between interior, ancillary, and outside spaces, which call for individual rituals, if they are to be accessed by other people.

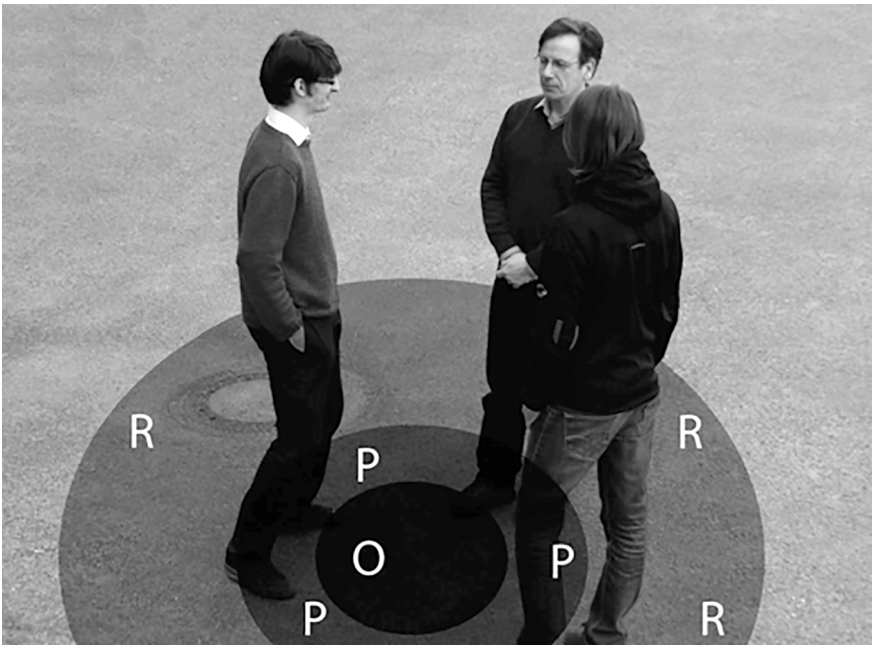


Fig. 2: The face formation with the internal o-space, the p-space formed by the bodies, and the r-space in which new rites of spatial passage to and from the formation can be expected (Knoblauch 2013: 119).

While body formations assume permanently recognizable forms, interaction ensembles constitute complex figurations of bodies that situationally change in the course of interaction and communication processes. For example, Schmitt (2012) shows how different requirements for cooperation between different participants (directors, actors) and their devices (movie camera, microphone) result in equally different spatial *interaction ensembles*. Von Wedelstaedt and Meyer (2016) use the term *interkinesthesia* to denote coordinated spatial choreographies of movement in a well-rehearsed team, such as a handball team on the offensive.

If we look closer at how material space is relevant in the interactions between people, then we are talking about an *architecture-for-interaction* (Hausendorf et al. 2016). In contrast, Linke (2018) uses the term *configuration* to refer to the ways in which material and cultural objects themselves serve to arrange interactions or even individual actions spatially. In her historic studies, she demonstrates how dinner tables with their arrange-

ment and type of seating, cutlery, dishes, and other decoration characterize not only how people eat but also how well they behave. Similarly, Böhme (2015) uses camera recordings from a bird's-eye view to show how the spatial arrangement of boxes, computers, and supervisory personnel create a "laboratope," which allows economists to conduct experiments. Such configurations can by all means take on larger spatial dimensions, as illustrated by the numerous studies on urban spaces, such as in geographic videographies (Garrett 2011).

In no case should the objects be reduced to "*affordances*" in an ontological manner (Wineman/Peponis 2010); instead, the efficacy of the spatial objectifications can be determined in connection with the forms of communication that the human actions assume. This can be recognized based on "*activity shapes*," which have often been illustrated for the spatial orientation and walkways in shopping centers or supermarkets (Gomez et al. 2012). The *spatial syntax* approach offers an appropriate, somewhat formal answer to the question of how materializations guide spatial communicative action. For example, the relations between different rooms are mapped with regard to their borders. In this case, special focus is placed on who can be accessed first and last from where—but without studying the actual behavior since space is understood as inherently social here (Bafna 2003).

While the first approaches mentioned above look at space from the perspective of interaction and the last approaches look at interaction from the perspective of space, one approach appears to integrate both perspectives and allows to address the interplay between material and human spatial aspects under the term *social ecology*. Even if this alludes to the (rather deterministic) spatio-sociological tradition of the *Chicago School*, these studies nevertheless attempt to relate the spatiality of interactions between people and the configurations of objects, technologies, and built spaces to one another. This applies, for instance, to the analysis of interactions and communicative action with regard to images and artistic artifacts in museums (Heath/vom Lehn 2008).

5 Conclusion: Synthetic spaces

Without a doubt, there is still a lot to be done in order to integrate issues from the social research of space into the methods of videography. Spatiality poses even more of a challenge since both the social spaces to be studied and the method itself are subject to the mass digitalization of communication. For example, the fact that digital sign systems can be coupled directly and at the same time translocally with material technology brings a new cause-and-effect relationship into play. Now typing on a keyboard, pushing a button, and touching a screen can have immediate consequences for the indirect or direct environment: A signal is transmitted to a train, a floodgate opens, or a rocket is launched. We refer to these cause-and-effect relationships that are governed by signs as mediatization. They are relevant for video analysis because they link the visual technologies that can be observed by audiovisual means (such as the monitors at which people work) with other spaces that have to be taken into account as part of the observed situation. These cause-and-effect relationships become more complex to the extent that the technology becomes intra-active: that is to say, they interact with each other on their

own, thus producing their own perceptions and processing algorithmic functions as *artificial intelligence*. Such relationships extend beyond the assumption of the parallelization of "real" and "virtual" spaces and emphasize the mediatized connection between *synthetic spaces*, as they can be called in line with Knorr-Cetina (2009): spaces that are created from the simultaneous merging of actions at places of interaction (e.g., in a control room) with their communicative and translocal interplay (with sales representatives), and potentially the involvement of digital infrastructures in the coordination of activities (Janz/Tuma 2022). The question of how such synthetic spaces can be studied represents a challenge at present, not just because these technologies are constantly evolving. Studying these synthetic spaces may contribute to not only an understanding of the contemporary refiguration of space (Knoblauch/Löw 2020) but also the adjustment of the methodology to these changes and to the requirements brought about by the digitalization of video data with regard to data archives, 3D simulations, big data, and artificial intelligence.

References

Anderson, Elijah (2015): The White Space. In: *Sociology of Race and Ethnicity*, 1(1), pp. 10–21.

Bafna, Sonit (2003): Space Syntax: A Brief Introduction to its Logic and Analytical Techniques. In: *Environment and Behavior*, 35(1), pp. 17–29.

Böhme [Haus], Juliane (2015): »Doing« Laborexperimente – Eine ethnomethodologische Betrachtung der Praxis experimenteller Wirtschaftsforschung im Labor. In: *Berliner Journal für Soziologie*, 25(1–2), pp. 33–59.

Bourdieu, Pierre/ Wacquant, Loïc J. D. (1992): *An Innovation to Reflexive Sociology*. Chicago, IL: University of Chicago Press.

Corsten, Michael/Krug, Melanie/Moritz, Christine (Eds.) (2010): *Videographie praktizieren. Herangehensweisen, Möglichkeiten und Grenzen*. Wiesbaden: VS.

Erickson, Frederick (1982): Audiovisual Records as a Primary Data Source. In: *Sociological Methods & Research*, 11(2), pp. 213–232.

— (2005): Ethnographic Description. In: Ammon, Ulrich/Dittmar, Norbert/Mattheier, Klaus J./Trudgill, Peter (Eds.): *Sociolinguistics. An International Handbook of the Science of Language and Society.* 2nd edn. Berlin/New York, NY: De Gruyter, pp. 1197–1212.

Erickson, Frederick/Shultz, Jeffrey (1982): *The Counsellor as Gatekeeper. Social Interaction in Interviews*. New York, NY: Academic Press.

Garrett, Bradley L. (2011): Videographic Geographies: Using Digital Video for Geographic Research. In: *Progress in Human Geography*, 35(4), pp. 521–541.

Goldman, Ricky/Pea, Roy/Barron, Brigid/Derry, Sharon J. (2007): *Video Research in the Learning Sciences*. Mahwah, NJ: Routledge.

Gomez Zamora, Paula/Romero, Mario/Ellen, Yi-Luen Do (2012): *Activity Shapes: Analysis Methods of Video-Recorded Human Activity in a Co-Visible Space*. In: Eighth International Space Syntax Symposium, Santiago de Chile. Online: solve?urn=urn:nbn:se:kth:diva-166021.

Goodwin, Charles (1980): Restarts, Pauses, and the Achievement of a State of Mutual Gaze at Turn-Beginning. In: *Sociological Inquiry*, 50(3–4), pp. 272–30.

— (1994): Professional Vision. In: *American anthropologist*, 96(3), pp. 606–633.

Goodwin, Charles/Goodwin, Marjorie Harness (1996): Seeing as Situated Activity: Formulating Planes. In: Engestrom, Yrio/Middleton, David (Eds.): *Cognition and Communication at Work,* Cambridge: Cambridge University Press, pp. 61–95.

Hall, Edward T. (1962): *The Hidden Dimension*. New York, NY: Anchor Books.

Hausendorf, Heiko/Schmitt Reinhold (2022): Architecture-for-interaction: Built, designed and furnished space for communicative purposes. In: Jucker, Andreas H./ Hausendorf, Heiko (Eds.): *Pragmatics of Space. Handbooks of Pragmatics.* (HOPS 14), Berlin: De Gruyter Mouton, pp. 431–472.

Heath, Christian (1986): *Body Movement and Speech in Medical Interaction*. Cambridge: Cambridge University Press.

Heath, Christian/Lehn, Dirk vom (2008): Configuring »Interactivity«: Enhancing Engagement in Science Centres and Museums. In: *Social Studies of Science*, 38(1), pp. 63–91.

Heath, Christian/Hindmarsh, Jon/Luff, Paul (2009): *Video in Qualitative Research: Analysing Social Interaction in Everyday Life.* London: SAGE.

Janz, Arne/Tuma, René (2022): Centers of Coordination Refigured? Polycontextural Control of Space. In: Christmann, Gabriela (Ed.*): Communicative Constructions and the Refiguration of Spaces.* London: Routledge, pp. 154–173.

Kendon, Adam (1976): The F-Formation System: The Spatial Organization of Social Encounters. In: *Man-Environment Systems*, 6, pp. 291–296.

Kissmann, Ulrike T. (ed.) (2009): *Video Interaction Analysis. Methods and Methodology.* Frankfurt a. M. et. al.: Lang.

Knoblauch, Hubert (1998): Pragmatische Ästhetik. Inszenierung, Performance und die Kunstfertigkeit alltäglicher Interaktion. In: Willems, Herbert/Jurga, Martin (Eds.): *Inszenierungsgesellschaft. Ein einführendes Handbuch*. Opladen: Westdeutscher Verlag, pp. 305–324.

— (2006): Videography. Focused Ethnography and Video Analysis. In: Knoblauch, Hubert/Schnettler, Bernt/Raab, Jürgen/Soeffner, Hans-Georg (Eds.): *Video Analysis – Methodology and Methods. Qualitative Audiovisual Data Analysis in Sociology*. Frankfurt a. M. et. al.: Lang, pp. 69–83.

— (2011): Videography. In: Stausberg, Michael/Engler, Steven (Eds.): *Routledge Handbook of Research Methods in the Study of Religion.* London/New York, NY: Routledge, pp. 433–444.

— (2013): *Powerpoint, Communication, and the Knowledge Society.* New York, NY: Cambridge University Press.

— (2020): *The Communicative Construction of Reality*. London: Routledge.

— (2017): Sehen als kommunikatives Handeln und die Fotografie. In: Eberle, Thomas S. (Eds.): *Fotografie und Gesellschaft. Phänomenologische und wissenssoziologische Perspektiven*. Bielefeld: transcript, pp. 367–380.

Knoblauch, Hubert/Schnettler, Bernt/Raab, Jürgen/Soeffner, Hans-Georg (2006): *Video Analysis: Methodology and Methods: Qualitative Audiovisual Data Analysis in Sociology*. 1. Edn. Frankfurt a. M. et. al.: Lang.

Knoblauch, Hubert/Löw, Martina (2020): The Re-Figuration of Spaces and Refigured Modernity – Concept and Diagnosis. In: *Historical Social Research*, 45(2), pp. 263– 292.

Knoblauch, Hubert/Wetzels, Michael/Haken, Meike (2019): Videography of Emotions and Affectivity in Social Situations. In: Kahl, Antje (Ed.): *Analyzing Affective Societies*. London: Routledge, pp. 162–180.

Knorr-Cetina, Karin (2009): The Synthetic Situation: Interactionism for a Global World. In: *Symbolic Interaction*, 32(1), pp. 61–87.

Knorr-Cetina, Karin/Bruegger, Urs (2002): Global Microstructures: The Virtual Societies of Financial Markets. In: *American Journal of Sociology*, 107(4), pp. 905–950.

Lehn, Dirk vom (2018): *Ethnomethodologische Interaktionsanalyse: Videodaten analysieren und die Organisation von Handlungen darstellen*. Weinheim/Basel: Beltz Juventa.

Linke, Angelika (2018): Der Esstisch: Eine historische Skizze zur raumsemiotischen Nutzung eines Möbelstückes. In: *Historische Anthropologie*, 26(3), pp. 350–378.

Löw, Martina (2016): *The sociology of space, materiality, social structures and action*. New York, NY: Palgrave Macmillan.

Merleau-Ponty, Maurice (1980). *Phénoménologie de la perception*. Paris: Presses Universitaires de France.

Müller, Michael R./Soeffner, Hans-Georg (2018): *Das Bild als soziologisches Problem: Herausforderungen einer Theorie visueller Sozialkommunikation*. Weinheim/Basel: Beltz Juventa.

Raab, Jürgen (2008): *Visuelle Wissenssoziologie*. Konstanz: UVK.

Reichertz, Jo/Englert, Carina (2010): *Einführung in die qualitative Videoanalyse: Eine hermeneutisch-wissenssoziologische Fallanalyse*. Wiesbaden: VS.

Scheflen, Albert E. (1973): *Communicational Structure; Analysis of a Psychotherapy Transaction*. Bloomington, IN: Indiana University Press.

Schmitt, Reinhold (2012): Körperlich-räumliche Grundlagen interaktiver Beteiligung am Filmset: Das Konzept »Interaktionsensemble«. In: Hausendorf, Heiko/Mondada, Lorenza/Schmitt Reinhold (Eds.): *Raum als interaktive Ressource*. Tübingen: Narr, pp. 37–87.

Schutz, Alfred (1962): On the Methodology of the Social Sciences. In: Schutz, A. (Ed.), *Collected Papers I – The Problem of Social Reality*. The Hague: Nijhoff., pp. 1–47.

Tuma, René/Knoblauch, Hubert/Schnettler, Bernt (2013): *Videographie. Einführung in die interpretative Videoanalyse sozialer Situationen*. Wiesbaden: Springer VS.

Wedelstaedt, Ulrich von/Meyer, Christian (2016): Intercorporeality, Interkinaesthesia and Enaction. In: Wedelstaedt, Ulrich von/Meyer, Christian (Eds.): *Moving Bodies in Interaction – Interacting Bodies in Motion. Intercorporeal and Interkinesthetic Enaction in Sports*. Amsterdam: John Benjamins, pp. 1–23.

Whyte, William H. (1980): *Social Life of Small Urban Spaces*. New York, NY: Project for Public Spaces Inc.

Wineman, Jean D./Peponis, John (2010): Constructing Spatial Meaning: Spatial Affordances in Museum Design. In: *Environment and Behavior*, 42(1), pp. 86–109.

(Spatially) focused ethnography

Michael Wetzels

The study of spaces has now attained the status of a key social category (Löw 2016), even in the field of ethnographic research (e.g., as *urban ethnography*, see Johnston 2013; Pardo/Prato 2018). However, when talking about *ethnography as a method* in general, it is important to point out the differences. Not all types of ethnography are alike, rather they contain different application strategies (Eisewicht 2016), which determine the method that is best suited for a certain field and a certain research question, also in terms of the data (e.g., [historical] texts, audiovisual material, ethnographic notes). This article sheds light on the ethnographic concept of *focused ethnography* (Knoblauch 2002, 2005; Rebstein/Schnettler 2018) and its adequacy for the study of spaces.

Professional football[1] is used as an example here, where the use of focused ethnography has brought to light new insights into the significance of space beyond the mainstream research literature on football (Horak 2006; Sülzle 2005; Thalheim 2019). In this sense, this article focuses on three areas: First, the method is classified within the context of the discourse on ethnography in order to underscore its suitability for the study of space (Section 1). Football is then used as an example to illustrate how to apply the method to ethnographic research with a focus on the category of *space* (Section 2). Finally, a brief overview of the prospects for potential interdisciplinary research strategies is provided (Section 3).

1 What is focused ethnography?

First of all, it is necessary to define what distinguishes focused ethnography from conventional ethnographies and what characterizes it as a method for qualitative social research.

1 In order to avoid misunderstandings between British English and American English, it should be noted that "football" in this article refers to the American term "soccer."

1.1 Conventional ethnography versus focused ethnography: Establishing the status quo

Focused ethnography stands on the shoulders of basic ethnographic research methods but differs from conventional strategies in terms of its field-specific research questions and temporally limited participation in the field. Focused ethnography is not interested in observing cultures in their entirety, but rather it concentrates on "regularities […] in an […] ongoing interactive process of social order taking shape" (Tuma et al. 2013: 56, own translation) in order to "determine the *temporal and spatial arrangement* of the operational structures behind the processes transpiring in the field" (Rebstein/Schnettler 2018: 619, own translation, emphasis added). Firstly, this means that focused ethnographers concentrate their fieldwork on *certain stages* of social processes. The word "focused" should be taken literally here. That is to say, the researchers make an informed decision as to what type of object should be made the subject of discussion and analyzed in a specific field and which processes should be brought into focus. For example, in the field of football, conventional ethnographers would be interested in the culture as a whole (e.g., fans, history, stadiums, emotions, etc.). By contrast, focused ethnographers would be interested in *one* (or several) aspect(s) of the field, such as how *space* is produced in a specific case (e.g., the club *Hertha Berlin*). Secondly, the informed decision of this focus is based on the research question and the possibility to participate in the social fields. The fields challenge researchers to act according to their own dynamics, to focus, and to raise certain questions about the field. Several examples of this include: The dynamics of a marketplace or a football game can be distinguished based on both their temporality (duration of the event, taking place daily/weekly/monthly, etc.) and their spatiality (market stalls, stadiums, etc.). Therefore, as opposed to conventional strategies, it is necessary to know exactly what is to be the object of *focus* in a certain case. If the *mise-en-scène* of "collective emotions" in a football stadium is being observed (Wetzels 2022), then the research should be tied to a specific period of time: namely, the 90 minutes of a football match. Only during this period can this phenomenon be observed and the locality, the stadium, accessed. Conventional strategies that require field participation for several months or years on end (Breidenstein et al. 2013: 33) are not as effective here if specific focal points have been defined in the research questions (Rebstein/Schnettler 2018: 622). However, this does not mean that focused ethnography is considered a "better" form of ethnography. Rather, it is intended for the outlined interface (specific research question, temporally limited participation) to enable researchers to carry out data-intensive research projects systematically. Focused ethnography is a variation of conventional ethnography and is not meant to replace it.

1.2 Research design in focused ethnography

Focused ethnography is an interpretative research method in the social sciences. It is used to collect *natural data*[2] in order to obtain data-intensive information in a relatively short period of time (Knoblauch 2005: 2). For this purpose, the use of video technology is preferred for preserving communicative processes and ensuring a constant observation process. The ethnographic descriptions are thus detached from the researchers and can be analyzed by others, which significantly improves the reflexive content and the quality of the data analysis (Lindemann et al. 2018: 213).[3] However, videos are not the only means of collecting data in focused ethnography. "Classic" ethnographic notes, interviews, and the inclusion of discursive material (e.g., newspaper columns, online articles, websites, podcasts, or historical books) are key components in focused ethnographies since, in addition to situational sequences (*sequentiality*), they also focus on the creation of the context (*simultaneity*) (Knoblauch et al. 2019: 164).

Situations do not *simply* occur, but rather they are profoundly characterized by different social dynamics whose relevance can only be determined by focusing on and collecting context-based data (e.g., newspaper reports, blogs, flyers). Collecting diverse data is crucial for achieving sufficient empirical saturation for the object of investigation (Wetzels 2022). Thus, focused ethnography is a method that is "available to basically any observer in the same way" (Rebstein/Schnettler 2018: 624, own translation). But what makes this method challenging is the fact that it requires extensive knowledge of the research field. Focused ethnographies are intended for "experts" (Knoblauch 2002: 130) since it is only possible to collect data and conduct in-depth analyses within a short period of time with a certain degree of confidence in the field (Rebstein/Schnettler 2018: 620). Three things are needed to become an expert based on personal experiences and reflections in the field of football (Wetzels 2022): First, researchers should be sufficiently engaged in the field before actually collecting the data. Inquiries, collecting materials, and sporadic stays in the field can help familiarize researchers with the relevant structures and processes. This also requires a certain affinity for immersing oneself in the field and confronting one's own self. The time-consuming and data-intensive work can result in mechanisms of rejection but also belonging, which can require sustained reflection (Lindemann et al. 2018: 208). Confrontation is inevitable in the process as the search for entry points into the field and contacts without any data collection strategies runs the risk of encountering closed doors. Second, in the event of resistance, this can lead to an appropriate adjustment of the data collection strategies. For example, in my research endeavors, I discovered restrictions that made it difficult to collect audiovisual data. Therefore, this called for a workaround using other data (ethnographic observations, discourse

2 In this context, the term *natural data* refers to the fact that, firstly, the research question is not brought into the field of study but rather arises "naturally" through the actors, and, secondly, the researchers do not actively influence the local communicative processes and actions (Rebstein/Schnettler 2018: 624–625).

3 However, videos must not be considered a "depiction" of reality. Focused ethnographies do not represent a positivist notion of science (Rebstein/Schnettler 2018: 629), but rather they are linked to the competences and decisions of the researchers.

data, etc.) to develop new strategies for the field and thus collect the audiovisual data that were relevant for my research question (see Section 2.1). Third, it is important to keep a research journal (Rebstein/Schnettler 2018: 625) in order to obtain a detailed overview (data, precoding, strategies, etc.) of the field. This narrows down the research question being studied in order to create a guide for the observations, a system for collecting data, and exemplary abstractions.

For example: In my case with football, I asked how *collective emotions* in a stadium can be identified and analyzed. Based on the focused ethnography method, I developed the concept of "affective-dramaturgical constellations of knowledge" (Wetzels 2022, own translation). This concept makes it possible to investigate the phenomenon of "collective emotions" in three analytical dimensions—discursive, structural, and situational constellations—and to demonstrate that collective emotions are performative productions in football that are *interpreted* socially as emotions. This was possible only because the constant confrontation with the field produced new insights, both analytical and methodological, which led to theoretical abstractions and new collections of data. This, in turn, allowed me to narrow down both the research question and the conceptualization. Therefore, focused ethnographies can always be considered a *work-in-progress*, allowing for an object-related, focused observation thanks to their flexibility.[4] This will now be explained based on the restrictions (Section 2.1) and the spatial formations, interpretations, and gestalts (Section 2.2) in the field of football as an example of the study of space.

2 (Spatially) focused ethnography based on the field of professional football

First of all, I would like to clarify several fundamental points about the general body of data I collected during the research process. A total of 25 observations were made during a period of two and a half years at various events (e.g., Bundesliga, European Championship, etc.). These observations generated:

- 25 hours of video footage
- 25 ethnographic notes
- 6 interviews
- More than 700 pieces of discursive data (newspaper and online articles, Internet statements, podcasts, audio notes, images, club and association statutes, etc.)

But this was only possible by adjusting the method to suit the field of research. During the game, these adjustments allowed me to obtain audiovisual footage from up to

4 This can certainly be challenging since focused ethnography is infinite in theory. The stopping point depends heavily on the research question. In this sense, focused ethnography connects to the "theoretical sampling" of grounded theory (Strauss/Corbin 1997), which means "the end of the research process […] is evident in processes of *theoretical saturation* when including new data does not yield any further findings or when the research question being addressed appears to have been answered within the framework of the available resources" (Keller/Bosančić 2018: 904, own translation, emphasis in original).

three perspectives (e.g., playing field, spectators) and within a certain time interval (up to five minutes) without having a strong influence on the "naturalness" of the field. The videos, photographs, and ethnographic notes were taken using a smartphone. In addition, material was collected on site (flyers, reports, etc.) to record the relevant context. The data were coded spatiotemporally in the analysis (e.g., "23022020_303p.m._Olympicstadium_Ostkurve") and then systematically related to one another (photographs supported notes, flyers reproduced spatial and temporal contextualizations, etc.). This led to further stays in the field and to the comparison of multiple matches based on a single case (*Hertha Berlin*), thus augmenting the body of data through the principle of the snowball method (*identification*) and refining the observations of the object (*focus*). Below I show how applying this method had a direct influence on the collection processes in the field *in combination* with a theoretical abstraction regarding the category of space.

2.1 Field restrictions as spatial order

Field restrictions refer to both the field research itself and the abstraction, meaning how the place being accessed is *configured* spatially. By no means is every space accessible to the public. This can be illustrated by the difference between a marketplace and a football stadium. Marketplaces are usually accessible to all. Researchers can visit them, make observations without any major limitations, and even record sales conversations (Tuma et al. 2013: 89). In the case of professional football, however, specific rules apply since this space is not public but rather *semi*-public. Tickets, checks, restrictions—all this required, and this is at the same time a major advantage of focused ethnography, a flexible approach to dealing with the field. The research strategies had to be adjusted to identify new data collection techniques and generate the desired data.

One specific example from the field: It was not possible to take professional equipment (e.g., video cameras with tripods) into the stadiums because at the entrance they checked which types of equipment was allowed inside and which was not. These were not arbitrary rules either. Signs at the stadium entrances containing the *General Terms and Conditions for Tickets* (GTCT) referred to the *structural* stipulation of these rules (see Fig. 1).

Simply buying a stadium ticket in no way granted me open access to the stadium with all of my video equipment. Instead, paying for the ticket meant concluding a *contract*: By entering the stadium, the spectators agree to the terms and conditions for all intents and purposes. This had far-reaching implications for the research process with video data, as illustrated by Point 10.8 in Section e) of the GTCT. According to this point:

> "Media reporting on the event (television, radio, Internet, print, photography) and/or the collection of data about the match are only permitted with the prior consent of the club and in the special areas designated for these purposes. Without the prior consent of the club, recording or collecting audio data, photographs and/or images, descriptions or results, and data about the event is prohibited, unless this is done exclusively for private, non-commercial use." (Hertha Berlin 2019)

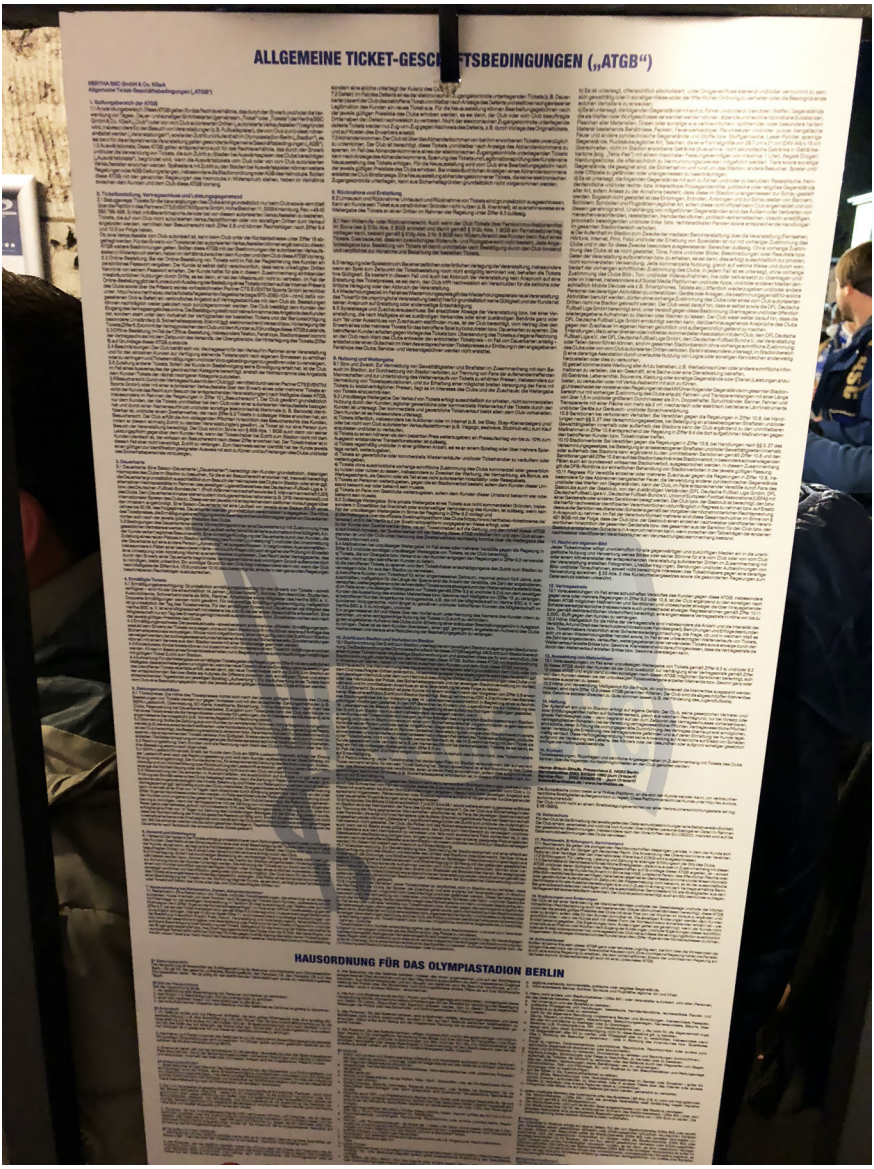


Fig. 1: General Terms and Conditions for Tickets of Hertha Berlin football club. | ©Michael Wetzels

Thus, only the event organizers are allowed to take videos and any violations can result in criminal prosecution. Being flexible required me to approach the field differently, but not to start from scratch. I asked the question: How can I take videos in this specific space *despite* the prevailing restrictions? This called for me to incorporate discursive data into this early stage of the research process, which also led me to integrate the sociology of knowledge approach to discourse ethnography (Keller 2019).[5] The confrontation with the GTCT and the local observations required me to make changes to the research process in order to record videos in the stadiums. This is explained in two points:

- Although Point 10.8, e) of the GTCT stipulates that filming is permitted only with the consent of the club, if the videos are generated for non-commercial purposes, which includes science, then this is possible without prior consent.
- By means of local observations, I realized that people did in fact record videos in the stadium—namely, with their smartphones—which led to my decision to record videos with this medium as well.

It was thus possible to circumvent the field restrictions in a creative and flexible manner, encouraging abstractly interesting insights about *space* in the process: specifically, that different interpretations of space may exist and that the fields are characterized by *spatial orders and arrangements* (Löw 2016: 135). Whether participants and researchers are on the football field or at a marketplace makes a major difference as different spaces call for distinct practices. The space for football with its specific setting (stadium, stands, football field, etc.) is framed quite differently than a marketplace (stalls, passageways etc.), thus distinguishing it from other spaces not only verbally but also due to its structural setting. Hence, field restrictions are not a handicap, but rather they serve as a source of both methodological and theoretical knowledge about the space being studied.

2.2 The formation, interpretation, and gestalt of spaces

Now that the first hurdle has been overcome, the field research can be continued under the modified conditions. But I should warn you that even though you may have a fundamental overview of the structural "logic" of the space, this does not automatically mean that you can move about freely and conduct your research by the book. An example of this is a stadium ticket (Fig. 2).

5 The sociology of knowledge approach to discourse ethnography is related to the focused ethnography method (see Keller 2019: 53) in that it also favors the generation of textual material or audiovisual data since "social actors, and their communication (inter-)acts within pre-existing social fields of practice and institutional structures" (Keller 2011: 64).

Fig. 2: Ticket for Hertha Berlin home matches. | ©Michael Wetzels

Purchasing a ticket not only represents the conclusion of a contract but also an assignment to a specific *sector* in the stadium. This means that a decision was made when buying the ticket: in which spatial formation within the stadium the research will be conducted. It is not possible to simply change sectors during a match, but rather the purchase of a ticket determines the location of the ethnographic work in the stadium.[6] Deciding in favor of a certain location at the same time means deciding against another potential perspective, which is why researchers are encouraged to reflect on and justify their decisions—be it in the field of football or in another social space. The flexibility offered by the focused ethnography method poses an advantage here, too. When attention and focus are placed on various materials of the field (see Section 2.1), this results not only in various insights into the spatial structure but also in the possibility to move through that structure. In this regard, the defined research question plays a decisive role in the local research pragmatics: Where is the best place in the space to move about in order to achieve the highest possible yield in terms of generating data for my specific topic of interest? In my research, this constituted the sectors of the local collective formations of *Hertha Berlin*. Furthermore, the focus on *collective emotions* showed that these appeared to be related to the *competitive spatial formations* in the stadium. While a relatively clear spatial arrangement can be observed at a marketplace, perhaps the stalls with the operators on one side and the potential buyers on the other (Tuma et al. 2013: 88), the formations in a football stadium are arranged and positioned *competitively* to one another in spatial terms (Knoblauch et al. 2019: 173). These spatial formations are reproduced and legitimized by the spectators, thus highlighting specific gestalts in the space of the stadium (ibid.: 168).[7] This once again illustrates the importance of differentiating between fields when talking about space. While interactions between individuals selling and buying products can be observed at a marketplace, a match between two teams is observed in football (see Fig. 3).

Focused ethnography makes it possible to precode space by combining different materials from the field—for example, audiovisual recordings, discursive material, or observations—in turn allowing researchers to carry out a more in-depth analysis both in theoretical and methodological terms. Studying the local settings showed that the spatial formations are also connected to the spatial *interpretations* of the participants *and* those of the researchers. At marketplaces, these interpretations might seem straightforward: At least two individuals meet at a stand and proceed to bargain over the price of the merchandise. In football this is different since participation is guided by multiple motives and can determine your own location in the stadium. Therefore, the spatial formations in football have different homogeneous and heterogeneous spatial gestalts than at marketplaces. Observing the arrangements of formations in a stadium provides information

6 What is more, a ticket also represents a material piece of data, which not only documents the perspective in the field during the research process but also contains further information about space. For example, in addition to showing the identities of the teams in the *stadium*, the ticket also allows the holder to move through Berlin as an *urban space* using public transport in a certain period of time.

7 The perspective of the researchers is crucial here with regard to the spatial gestalt that is revealed. Consequently, this gestalt might appear differently depending on whether it is located and data material generated *outside*, *next to*, or *in* the relevant spatial formation.

about the spatial interpretations. Namely, a collective emotion can only be perceived and interpreted as a spatial gestalt within a certain spatial formation under certain spatial interpretations (e.g., cheering for a goal for *Hertha Berlin*). Only the focused ethnography approach made it possible to abstract this theoretical knowledge of and about space.

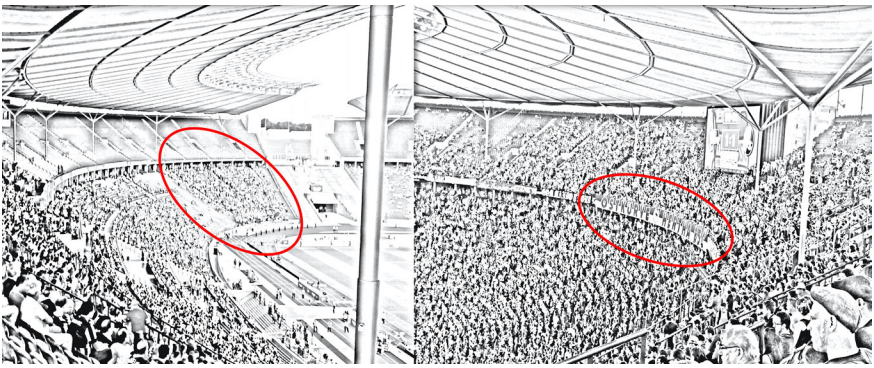


Fig. 3: Competitive spatial formations at Marathon Gate (left) and Ostkurve terrace (right) in Berlin's Olympic Stadium. | ©Michael Wetzels

3 Focused ethnography as a concept for interdisciplinary spatial research

The focused ethnography method proves to be extremely effective for the purpose of empirical research on space. It provides researchers with the flexibility to focus on a specific spatiotemporal setting based on their confrontation with the field, while allowing them to make adjustments to and develop strategic decisions for the research process. Furthermore, thanks its focused character, it can bring other data and methods to the fore in order to achieve greater empirical saturation and obtain new vantage points of the field. The case discussed here led not only to theoretical abstractions but also to methodological combinations (*sociology of knowledge approach to discourse ethnography*). The flexibility of this ethnographic method and the possibility to combine it with other methods makes it interesting not only for research in social sciences but also for interdisciplinary research. Focused ethnography can be considered a link in this regard. Thanks to its openness for different methodological combinations, it is possible to bring different academic disciplines closer together both methodologically and theoretically. Methodological discussions, theoretical abstractions, and the development of diverse research designs—focused ethnography can, due to its effective methods (methodologies) and integrative power, achieve what interdisciplinary work requires fundamentally: a common understanding regarding the significance of space for social realities.

References

Breidenstein, Georg/Hirschauer, Stefan/Kalthoff, Herbert/Nieswand, Boris (2013): *Ethnografie. Die Praxis der Feldforschung*. Konstanz: UVK.

Eisewicht, Paul (2016): Zur Kartographierung ethnographischer Forschungsprogramme. In: Hitzler, Ronald/Kreher, Simone/Poferl, Angelika/Schröer, Norbert (Eds.): *Old School – New School? Zur Frage der Optimierung ethnographischer Datengenerierung*. Essen: Oldib, pp. 29–40.

Hertha Berlin (2019): *Allgemeine Ticket-Geschäftsbedingungen (»ATGB«)*. Published at: Hertha Berlin Homepage, 04 July 2019. Online: https://www.herthabsc.de/fileadmin/downloads/tickets/atgb-herthabsc-mai19_01.pdf (accessed: 17 August 2019).

Horak, Roman (2006): Germany versus Austria: Football, Urbanism and National Identity. In: Tomlinson, Alan/Young, Christopher (Eds.): *German Football. History, Culture, Society*. London: Routledge, pp. 23–35.

Johnston, Katrina Leigh (2013): *Public Space and Urban Life: A Spatial Ethnography of a Portland Plaza*. MA Thesis, Portland State University. Online: https://pdxscholar.library.pdx.edu/cgi/viewcontent.cgi?article=1623&context=open_access_etds (accessed: 6 July 2020).

Keller, Reiner (2011): The Sociology of Knowledge Approach to Discourse (SKAD). In: *Human Studies*, 34, pp. 43–65.

— (2019): Die Untersuchung von Dispositiven. Zur fokussierten Diskurs- und Dispositivethnografie in der Wissenssoziologischen Diskursanalyse. In: Bosančić, Sasa/Keller, Reiner (Eds.): *Diskursive Konstruktionen. Kritik, Materialität und Subjektivierung in der wissenssoziologischen Diskursforschung*. Wiesbaden: Springer VS, pp. 51–74.

Keller, Reiner/Bosančić, Sasa (2018): Wissenssoziologische Diskursanalyse. In: Akremi, Leila/Baur, Nina/Knoblauch, Hubert/Traue, Boris (Eds.): *Handbuch Interpretativ forschen*. Weinheim/Basel: Beltz Juventa, pp. 886–916.

Knoblauch, Hubert (2005): Focused Ethnography. In: *Forum Qualitative Sozialforschung Forum: Qualitative Social Research*, *6*(3). https://doi.org/10.17169/fqs-6.3.20, pp. 1–14.

— (2002): Fokussierte Ethnographie als Teil einer soziologischen Ethnographie. Zur Klärung einiger Missverständnisse. In: *Sozialer Sinn*, 3(1), pp. 129–135.

Knoblauch, Hubert/Wetzels, Michael/Haken, Meike (2019): Videography of Emotions and Affectivity in Social Situations. In: Kahl, Antje (Ed.): *Analyzing Affective Societies: Methods and Methodologies*. London/New York, NY: Routledge, pp. 162–179.

Lindemann, Gesa/Barth, Jonas/Tübel, Susanne (2018): Methodologisch kontrolliertes Verstehen der qualitativen Forschung. Vermittelte Unmittelbarkeit als Gütekriterium. In: Akremi, Leila/Baur, Nina/Knoblauch, Hubert/Traue, Boris (Eds.): *Handbuch Interpretativ forschen*. Weinheim/Basel: Beltz Juventa, pp. 203–225.

Löw, Martina (2016): *The Sociology of Spaces. Materiality, Social Structures, and Action*. New York, NY: Palgrave Macmillan.

Pardo, Italo/Prato, Giuliana B. (2018): *The Palgrave Handbook of Urban Ethnography*. Cham: Palgrave Macmillan.

Rebstein, Bernd/Schnettler, Bernt (2018): Fokussierte Ethnographie. Von der Analyse kommunikativer Strukturen zur Exploration sozialer Welten. In: Akremi, Leila/Baur,

Nina/Knoblauch, Hubert/Traue, Boris (Eds.): *Handbuch Interpretativ forschen*. Weinheim: Beltz Juventa, pp. 612–635.

Strauss, Anselm/Corbin, Juliet (1997): *Grounded theory in practice*. Thousand Oaks, CA/London/New Delhi: SAGE.

Sülzle, Almut (2005): Fußball als Schutzraum für Männlichkeit? Ethnographische Anmerkungen zum Spiel für Geschlechter im Stadion. In: Hagel, Antje/Selmer, Nicole/ Sülzle, Almut (Eds.): *gender kicks. Texte zu Fußball und Geschlecht.* KOS Schriften 10. Frankfurt a. M.: Koordinationsstelle Fanprojekte, pp. 37–52.

Thalheim, Vinzenz (2019): *Heroische Gemeinschaften. Ich-bin-Räume von Ultras im Fußball*. Weinheim/Basel: Beltz Juventa.

Tuma, René/Schnettler, Bernt/Knoblauch, Hubert (2013): *Videographie. Einführung In die interpretative Videoanalyse sozialer Situationen*. Wiesbaden: Springer VS.

Wetzels, Michael (2022): *Affektdramaturgien im Fußballsport. Die Entzauberung kollektiver Emotionen aus wissenssoziologischer Perspektive*. Bielefeld: transcript.

Webnography 2.0

Eric Lettkemann

Nowadays, if I launch a quick web search for my whereabouts, my smartphone provides me with a wealth of digital information. On Instagram I can browse through photos that are linked to my current GPS coordinates by means of a geotag; the Wikipedia app offers me a digital map with entries about my surroundings; numerous Twitter hashtags refer to my location, etc. The fact that the Internet is a rich source of information is nothing new. What is new is that smartphone users can use location-based information from the Internet to appropriate their everyday spaces in novel ways, thus giving rise to new ways of perceiving and using space. For example, many people use their smartphone as a social radar in order to keep an eye out for friends or potential dates nearby. Digital maps guide them in real time through unknown streets, and mobile games introduce virtual creatures into their perceived space. In a nutshell: Hybrid spaces are being established whose perception and use are based on mobile digital information, while at the same time being anchored in physical space.

This article discusses which methods of qualitative research can be used to gain access to the growing hybridization of spaces. I will start by outlining the basic spatial and social theory underlying the concept of hybrid spaces. Afterward, I will use several exemplary studies to demonstrate how the use of mobile apps has changed the appropriation of space in everyday life and which methodological problems have arisen for qualitative spatial research as a result. I will argue that the investigation of hybrid spaces requires a combination of qualitative approaches because hybrid spaces cannot be observed from a purely ethnographic perspective. The hybrid constitution of space is based on digital information, which is accessible only to the users of specific apps. The last section will address how different methods can be combined in order to study the use and perception of hybrid spaces in qualitative terms. Building on Strübing's (2006) combination of methods in "webnography," I refer to the approach presented here as webnography 2.0.[1]

1 The webnography approach is known mainly in German-speaking social media research. It differs from the more prominent "netnography" approach (Kozinets 2010) in that webnography does not focus solely on online activities, taking place *on* the screen, but also systematically investigates the associated offline activities, taking place *behind* the screen.

1 Theoretical basics: Physical, virtual, and hybrid spaces

In parallel to the "real" space of physical face-to-face interactions, the Internet has created a "virtual" space for digital communication. In the early stage of digitalization, this virtual space was mostly separated from the physically palpable reality of day-to-day life and could be accessed only sporadically and temporarily—via the computer workstation. The much vaunted term cyberspace expressed the need to draw a linguistic line between "real life" in physical co-presence and the allegedly illusory worlds of virtual space. Early ethnographic studies on Internet usage postulated that virtual parallel spaces took root in chat rooms, online game worlds, and social media. In other words: During the beginnings of digitalization, people experienced virtual space as a reality of its own, as a separate domain of discourse, and as an experimental field for new (digital) lifestyles (see Turkle 1995).

The impression that there is a clearly perceptible gap between virtual and physical reality has been drastically relativized within the last decade. With the rise of Internet-enabled mobile devices, especially smartphones, access to virtual space has become possible at (almost) any time from (almost) anywhere. Mobile Internet is a key element in the current stage of digitalization. Within just a few years, countless software applications for mobile devices (abbreviated as apps) have infiltrated our daily routines, supporting us with all sorts of tasks relevant to our lifestyles, ranging from performing bank transactions to monitoring menstrual cycles. The observable consequences of mobile Internet include the fact that the strict distinction between online and offline communication in the everyday lives of many smartphone users has lost its practical relevance. These days, young people in particular integrate social media communication into numerous everyday physical activities with the help of Internet-enabled mobile devices (see Parisi 2015; Tomita 2016).

In the course of this development, there has been a growing "convergence between real-world and virtual spaces" (Löw et al. 2008: 81, own translation) in which the borders between face-to-face interaction and mediatized interaction are becoming blurred. The screen of the mobile device gives rise to a "hybrid space" (de Souza e Silva 2006) that superimposes information from the Internet onto physical space. Hybrid spaces arise where apps localize the physical location of the mobile device and display digital information adapted to the current location. Such location-specific information is generated when users either post digital content about their whereabouts themselves or allow the app to track location-related information in the background. For example, the *Waze* navigation app provides up-to-date information about traffic jams and alternative routes by tracking the movements of all mobile devices on which *Waze* is installed, aggregating these data, and displaying the data as flows of traffic in real time on a digital map. At the same time, the users can actively generate information by notifying other users on the app map where they have seen roadwork, accidents, or traffic hazards. Based on this information, *Waze* users navigate through a hybrid space that is constructed equally from physical, social, and virtual elements.

In social science research, the apps described here, which provide location-related information using the current GPS coordinates of a mobile device, are referred to collectively as *locative media* (de Souza e Silva/Frith 2012; Frith 2015). Locative media are the re-

sult of combining social media with mobile telephony, geopositioning techniques (e.g., GPS and WiFi triangulation), georeferencing, and digital cartography to create a new infrastructure context (Buschauer/Willis 2013). Qualitative studies based both on new forms of using space and altered forms of perceiving space illustrate the consequences locative media entail for society in day-to-day processes of spatial appropriation.

2 Exemplary findings on the appropriation of hybrid spaces

A multidisciplinary research field whose methodology is based primarily on (auto)ethnographic observations addresses how users of locative media appropriate hybrid spaces and what the repercussions of this are. The following sketch of key findings and methodological approaches can serve as an initial tool for designing your own qualitative research design. Researchers should be aware of two aspects in this regard.

2.1 Keeping up with progress: Studying types of use, not apps

Early studies on the use of mobile apps were often confronted with the methodological problem that their findings were related to app versions that had become obsolete by the time the studies were published—that is to say, the apps had been modified or replaced by competing apps. Therefore, many researchers no longer focus on specific apps but rather search for recurring use types and describe their social impacts. They highlight the motives and practices of app use instead of losing themselves in describing the details of the software. This consideration of use and consequences captures sufficiently abstract phenomena that can be observed regardless of which specific apps are being used in everyday life. As a result, qualitative analyses can be compared and generalized to a greater extent, beyond the immediate present (Frith 2015: 9 et seq., 66).

Three use types (at least) can be derived from case studies on locative media to date. The difference between these types of use is of an analytical nature since a wide range of mobile apps offer features that include all three uses. The purpose of this typology is to ensure that the empirical phenomenon of locative media is manageable despite the rapid developments and multitude of existing apps:

1. In the context of locative media, *annotation* refers to linking GPS coordinates with virtual references in the form of comments, photos, or reviews (de Souza e Silva/Frith 2012: 94 et seqq.; Frith 2015: 81 et seqq.). As a rule, users annotate personal experiences, photos, and opinions on a location, orienting themselves on everyday communication formats of "authentic self-representation" from the field of social contact between friends and acquaintances, which also dominate social media (Schmidt 2013: 23 et seqq.). Expanding these communication formats to potential strangers has given rise to a new form of "personal public spheres" (ibid.) in virtual space. With the spread of annotation services such as *Foursquare City Guide* and *Yelp*, this type of public sphere is now gaining traction in physical urban space (Frith 2015: 75 et seqq.).
2. Numerous apps in the field of locative media assist their users in navigating through unknown and unfamiliar spaces. Apps such as *Hollaback!* or *Waze* help their users

move through space based on defined criteria, for example, in the interest of avoiding areas with high crime rates or high traffic (see Frith 2015: 45 et seqq.). Users display different route options on a digital map and decide on their itineraries based on these recommendations, often while still en route. In terms of the motives for using the apps, aside from saving time, many people mention the possibility to skim off the annotated "insider knowledge" from the locals without finding themselves in situations where they have to expose themselves as outsiders, for example, by asking for directions (Sutko/de Souza e Silva 2010: 813 et seq.).

3. Opportunities can be managed via and with locative media, for instance, when apps refer their users to friends or potential dates nearby. Such apps visualize socio-spatial opportunity structures on a map of the surroundings and help their users seize the opportunity to meet like-minded people (Frith 2015: 68 et seqq., 74 et seqq.; Sutko/de Souza e Silva 2010: 809, 815). For example, *Swarm* or *Zenly* users can share their current GPS location within their personal network of friends. Mobile dating apps such as *Tinder* and *Grindr* behave similarly, aiming to establish contact between strangers. Akin to visiting a club, bar, or other urban meeting place, the use of such algorithms signals a willingness to talk between users whose interests and preferences show a "match." However, in contrast to a bar, the socially approved, physical meeting place for this type of use is becoming less important since simply crossing paths in physical space—for example, in the subway—is enough to initiate contact (Licoppe 2020).

2.2 Exploring spatial perceptions: Using combinations of methods

In addition to investigating new ways of using space, qualitative research is an appropriate tool for gaining access to perceptual patterns that constitute space. With regard to app users, for example, qualitative studies discuss which consequences the increased use of locative media have for everyday spatial perception. Two different trends can be identified, in which the hybridity of the space is clearly reflected. For example, users of locative media interact more and more with new types of actors who can only be encountered as such in hybrid spaces. These include, for instance, "pseudonymous strangers" (Licoppe/Morel 2017). This type of actor appears when users display the digital profile of people located nearby. For users of locative games, such as *Ingress*, or mobile dating apps, such as *Tinder*, this situation is an everyday occurrence. Even before the first exchange of words, users find a short description in the profile of their fellow players or potential dates that contains information ranging from the—usually pseudonymous—name to all kinds of personal preferences and often serves as a conversation starter. Another group of apps that is often referred to as "location-based social networks," such as *Zenly* or *Swarm*, offers users digital maps in order to keep their "virtual acquaintances" (Licoppe/Morel 2017) in the loop about their location. This actor type includes acquaintances who are not in view but who share their GPS coordinates and/or location information via an app. This results in spaces of mutual observation in which users can find out about the daily commutes of their friends or the current location of their partner, for example. As a consequence, new modes of spatially coordinating meetings and of space-related *impression management* are being established. Moreover, looking at the map of locations creates a feeling

of spatial connection with the circle of friends, which is appreciated within "hyperconnected" adolescent cliques in particular (Parisi 2015: 11 et seqq.).

It follows from the aforementioned examples that hybrid spaces expand our perception, make us aware of our environment, and create increased opportunities for social interaction. Be that as it may, empirical studies also show that hybrid spaces can act as a catalyst for increasingly fragmented spatial perception. Although physical space can be perceived quite differently by different groups, hybrid spaces radicalize this experience in that they do not even appear the same "on the surface" for all those who are present. A great deal of location-related information is visible only to the users of specific apps, and personalized filters and search algorithms exacerbate this still further, with even users of the same app receiving different information about the same location. Mechanisms of communicative closure and social homogenization of groups that are prominent in virtual space, referred to as "filter bubbles" (Pariser 2011), can now gain a footing in physical space by means of locative media, leading to the fragmentation of everyday reality into personalized filter bubbles (Frith 2015: 140–41).

The fact that hybrid spaces are the result of both media-expanded and algorithmically filtered spatial perception represents a methodological problem for conventional qualitative approaches. As a rule, qualitative researchers follow the dictum from sociology of knowledge that a widespread "reciprocity of perspectives" prevails between co-present actors in everyday reality, which, among other things, is based on the idealized assumption of the "interchangeability of standpoints" (Schütz/Luckmann 1989: 109): "we take it for granted that objects in my reach (with few exceptions) are also objects in his reach and that his experience of these objects (with few exceptions) is like my experience of the same objects" (ibid.: 109–10). During ethnographic site visits, this reciprocity of perspectives enables participating observers to understand the actions of their fellow human beings (broadly speaking). The assumption of interchangeable standpoints, however, does not apply when actions take place in hybrid spaces, which are sometimes specifically tailored to the profile of the respective users and remain invisible to outside observers. In the following section, I will argue that researchers must combine different qualitative methods in order to make valid statements about the reality and impact of hybrid spaces. Only by combining methods, which represents an enhancement to the webnography approach, will it be possible to overcome the blind spots in past studies and to develop an appropriate theory of hybrid space for the future.

3 The qualitative study of hybrid spaces: Webnography 2.0

Understanding and explaining the possibilities and consequences posed by the hybrid acquisition of space with and via locative media requires a combination of methods that encompasses both physical interactions and digital communication. The (ethnographic) site visit remains the starting point for many space-related research methods, but only the starting point. In addition, the qualitative exploration of hybrid spaces is based on a combination of the walkthrough method, guided interviews, and diary studies. This approach was inspired by Jörg Strübing, who proposed the concept "webnography" (2006) early on as a method for studying dispersed interactions that take place simultaneously

in virtual and physical space. Of course, Strübing's proposal to combine multilocal and focused observation techniques with artifact analyses of digital infrastructure systems must be adapted to the context of locative media. At this juncture, I will refrain from speaking about the original webnography technique in detail, and instead I will integrate Strübling's arguments into the description of the key methods used to collect and analyze data related to hybrid spaces. I will start with two techniques in which the researcher adopts the role of an observer and finish with two techniques in which the users are given a greater opportunity to express themselves.

3.1 Observation techniques

To start with, there are two complementary methods that address hybrid space from different perspectives: first the site visit and second the walkthrough analysis of mobile apps. Both methods are limited. If the topic of interest for a certain research project is focused on how mediatized spatial acquisition takes place within a specific youth culture, for example, it is advisable to visualize the locations at which the youth prefer to hang out and the apps they use to coordinate their activities in order to concentrate the observations on this hybrid context. I will start my description of the combined method with the site visit before discussing the walkthrough method in more detail—however, in principle, the order in which these two methods are used is not important.

3.1.1 Ethnographic site visits

Conventionally, ethnographic site visits start where the action is: in other words, at specific sections of physical space to which social groups ascribe concrete meanings and at which they gather in order to perform location-specific activities. Because such sites are increasingly interconnected on a translocal scale in the age of digital media and mass mobility and they often owe their specific meaning to the fact that they serve as intersections of (global) flows of people and things, today site visits are usually carried out along the lines of a mobile or multi-sited ethnography (O'Reilly 2009: 144 et seqq.). For example, if you intend to study spatial acquisition based on the mobile game *Pokémon Go*, you should visit the various sites across which the game is distributed—starting with points of interest where trainers meet, the PokéStops and Gyms, all the way to the far-away server farms that provide the virtual content for the game (see Liboriussen 2019). In order to increase awareness for the observation of the physical aspects of space, it can be advantageous to first explore select locations without the aid of locative media and then to consider the same locations again through the lens of different apps. A comparison of the observation notes from before and after the use of mobile apps can provide important indications regarding which additional layers of meaning locative media add to a location and how they modify the purely physical perception of space.

3.1.2 Technical walkthroughs

Complementary to the observation of physical space, the "walkthrough method" (Light et al. 2016) focuses on mobile apps that add virtual layers of information to the hybrid space. The term *walkthrough* comes from the fact that the features of an app are tested step by step in order to decipher the use guidelines (e.g., affordances, scripts) and cultural con-

cepts of users objectified in the digital user interface and algorithms. The basic idea behind the walkthrough method is exploring and narrowing down the impacts of apps that structure our actions and the latitude of actions for potential users. The topic of interest is focused on gender-specific coding or algorithmic pre-screening, for example, aimed at guiding use behavior in a specific direction. For the purpose of spatial research—as explained above—a detailed analysis of the concrete user interfaces of the apps is less important than questions regarding fundamental possibilities and restrictions of spatial appropriation. It might be interesting to determine whether the range of features in an app offer users the option of sharing their location information only selectively or whether the app is configured to track all movements in the background in order to keep the current location of the users up to date and visible at all times (see Frith 2015: 65 et seqq.).

3.2 User surveys

Both ethnographic site visits and the walkthrough method offer important indications of how hybrid spaces *could* be appropriated. The ways in which spatial acquisition *actually* takes place and asserts itself can only be understood and explained if the perspectives of the users who regularly visit the site are integrated into the study. In doing so, researchers take into account the fact that hybrid spaces are always embedded in social interpretative schemes and contexts of action, with which physical and virtual spatial elements are connected. Interview techniques and diary studies from the social sciences have proven to be effective tools for assessing user perspectives. They are indispensable for documenting user perspectives and interpretations that are as rich in contrast and as comprehensive as possible. These tools can be used to gain a methodological understanding of the extreme fragmentation and transience of hybrid spatial perceptions. Instead of relying on the personal autoethnographic perspective, as is the case for both the site visits and walkthrough method, the numerous observations and interpretations of the users are expressed in interview recordings and diary entries.

3.2.1 Expert interviews

Whether the perspectives of the users are collected by means of "expert interviews" (see Bogner et al. 2009), "diary methods" (see Bolger et al. 2003), or a combination of the two depends first and foremost on the amount of time and personnel resources available for the research, how much information is acquired, etc. Second, how experienced the informants are in dealing with locative media and to what extent they make use of the features of mobile apps also plays a role. One particularity of hybrid spaces is that app users can create digital content, such as photos, comments, or reviews, and link it to their location in a matter of seconds. Many mobile apps feature a typical use pattern in this regard: namely, the majority of users only share content occasionally, but there is a small number of very active users. The group of active users often operates their own websites and social media channels, which makes it easier for researchers to initiate contact. Active users are valuable key informants because they are generally willing to talk about their experiences in detail and can frequently supply additional information about the rela-

tionships between the technical features of the apps and social use types. Guided expert interviews are the method of choice for collecting this information systematically.

3.2.2 Diary methods

In order to collect the spatial knowledge and perception of occasional users who do not actively produce digital content but who regularly access the range of information from mobile apps on a daily basis, diary methods have proven to be an effective tool. For this purpose, it is recommended that researchers use their own websites and social media channels to acquire a sample of study participants that is as diverse as possible. The participants then document their experiences at regular intervals over a certain period of time (Boellstorff et al. 2012: 57 et seqq.). A more naturalistic design relies on the participants visiting the locations that they would access anyway with the help of the apps. For a quasi-experimental design, in contrast, it can be useful to send the participants to locations they do not know in order to collect an inner perspective from outsiders. Working on smaller tasks by creating what are referred to as "cultural probes" (Gaver et al. 1999) can help elicit impressions from the study participants regarding their spatial perception and usage. Both quasi-experimental and naturalistic designs involve collecting data that reflect everyday interpretative schemes and use practices. Because the appropriation of hybrid spaces by means of mobile apps is the focus of the webnographic approach, it makes sense for the participants to use a mobile messenger service for the documentation instead of paper notebooks. The everyday character of app usage described above encourages users to collect their experiences first based on the situation at hand in the form of digital "snippets" (Brandt et al. 2007), such as photos, screenshots, and chat histories. This ensures that not too much time passes between the use situation and the collection. They can also forward these snippets directly to the researchers, who respond promptly and can request the study participants to comment briefly on their use behavior or to answer follow-up questions (Kaufmann/Peil 2020). Afterward, the collected data can be used as a memory aid for more detailed diary entries and to stimulate conversation for "problem-centered interviews" (Witzel/Reiter 2012), which provide further information about the use behavior (Boellstorff et al. 2012: 113 et seqq.).

By using interviews and diary entries, it is possible to reconstruct how users link perceived physical space and digital information to a hybrid action context. These data serve as the basis for correlating the ethnographic observations and walkthrough analysis. All data are transcribed and incorporated into the body of data. The field notes, interview transcripts, screenshots, chat logs, and other documents produced in the course of the data collection process can then be coded using various text analysis programs (QDA software) and analyzed using different analytical techniques, from grounded theory to qualitative content analysis.

4 Webnography 2.0 is teamwork

This chapter has illustrated that the use of the Internet can no longer be described as a retreat to a virtual parallel space; rather, the rise of mobile Internet and the advent of locative media have resulted in new forms of appropriation of physical space. On the ba-

sis of younger smartphone users in particular, these appropriations result in new ways of perceiving and using space, which various authors have summarized in the concept of hybrid space. This hybrid space eludes the simple dictum from qualitative spatial research of visiting the study site and observing the events as they unfold since hybrid space is manifested in extremely personalized forms, shaped by personal interests and coordinated search and matching algorithms. In order to gain a methodological understanding of the new forms of appropriating hybrid spaces, I proposed a combination of methods, which does not dispense with ethnographic site visits but rather complements pure observation with walkthrough analysis, expert interviews, and diary studies. This approach, which I call webnography 2.0, sheds light on the blind spots of ethnographic site visits and takes into account the steps involved in constituting hybrid space that take place in virtual space yet cannot be observed from the outside. The combination of different techniques demands of qualitative researchers a certain degree of flexibility and diverse skills, which can be developed best within the context of a team. Teamwork makes it possible to unite the skills of individual researchers effectively, such as observation or conducting interviews.

References

Boellstorff, Tom/Nardi, Bonnie/Pearce, Celia/Taylor, T. L. (2012): Ethnography and Virtual Worlds. A Handbook of Method. Princeton, NJ: Princeton University Press.

Bogner, Alexander/Littig, Beate/Menz, Wolfgang (Eds.) (2009): Interviewing Experts. London: Palgrave Macmillan.

Bolger, Niall/Davis, Angelina/Rafaeli, Eshkol (2003): Diary Methods: Capturing Life as it is Lived. In: Annual Review of Psychology, 54, pp. 579–616.

Brandt, Joel/Weiss, Nathan/Klemmer, Scott (2007): txt 4 l8r: Lowering the Burden for Diary Studies Under Mobile Conditions. In: CHI '07 Extended Abstracts on Human Factors in Computing Systems. ACM: New York, NY, pp. 2303–2308.

Buschauer, Regine/Willis, Katherine S. (Eds.) (2013): Locative Media: Multidisciplinary Perspectives on Media and Locality. Bielefeld: transcript.

Frith, Jordan (2015): Smartphones as Locative Media. Cambridge: Polity Press.

Gaver, William G./Dunne, Anthony/Pacenti, Elena (1999): Cultural Probes. In: Interactions, 6(1), pp. 21–29.

Kaufmann, Katja/Peil, Corinna (2020): The Mobile Instant Messaging Interview (MIMI): Using WhatsApp to Enhance Self-Reporting and Explore Media Usage In Situ. In: Mobile Media & Communication, 8(2), pp. 229–246.

Kozinets, Robert V. (2015): Netnography: Doing Ethnographic Research Online, 2nd Edition. London: SAGE.

Liboriussen, Bjarke (2019): The Game and ›The Stack‹: The Infrastructural Pleasures of Pokémon Go. In Aarseth, Espen/Günzel, Stephan (Eds.): Ludotopia: Spaces, Places and Territories in Computer Games. Bielefeld: transcript, pp. 185–200.

Licoppe, Christian (2020): Liquidity and Attachment in the Mobile Hookup Culture: A Comparative Study of Contrasted Interactional Patterns in the Main Uses of Grindr and Tinder. In: Journal of Cultural Economy, 13(1), pp. 73–90.

Licoppe, Christian/Morel, Julien (2017): Locative Mobile Media and the Development of Unplanned, Fleeting Encounters with Pseudonymous Strangers and Virtual Acquaintances in Urban Public Places. In: Hjorth, Larissa/Horst, Heather/Galloway, Anne/Bell, Gennevieve (Eds.): The Routledge Companion to Digital Ethnography. New York, NY: Routledge, pp. 200–210.

Light, Ben/Burgess, Jean/Duguay, Stefanie (2016): The Walkthrough Method: An Approach to the Study of Apps. In: New Media & Society, 20(3), pp. 881–900.

Löw, Martina/Steets, Silke/Stoetzer, Sergeij (2008): Einführung in die Stadt- und Raumsoziologie. 2nd Edition. Opladen/Farmington Hills, MI: Budrich.

O'Reilly, Karen (2009): Key Concepts in Ethnography. London: SAGE.

Pariser, Eli (2011): The Filter Bubble: What the Internet Is Hiding from You. London: Penguin.

Parisi, Lorenza (2015): »Where 2.0.« Exploring the Place Experience of »Hyperconnected« Digital Media Users. In: Sociologica, 3(1), pp. 1–23.

Schmidt, Jan-Hinrik (2013): Social Media. Wiesbaden: Springer VS.

Schütz, Alfred/Luckmann, Thomas (1989): The Structures of the Life-World, Vol. II. Evanston, IL.: Northwestern University Press.

Souza e Silva, Adriana de (2006): From Cyber to Hybrid: Mobile Technologies as Interfaces of Hybrid Spaces. In: Space and Culture, 9(3), pp. 261–278.

Souza e Silva, Adriana de/Frith, Jordan (2012): Mobile Interfaces in Public Spaces: Locational Privacy, Control, and Urban Sociability. New York, NY: Routledge.

Strübing, Jörg (2006): Webnografie? Zu den Voraussetzungen einer ethnografischen Erforschung des Internets. In: Rammert, Werner/Schubert, Cornelius (Eds.): Technografie. Zur Mikrosoziologie der Technik. Frankfurt a. M.: Campus, pp. 249–274.

Sutko, Daniel M./Souza e Silva, Adriana de (2010): Location-Aware Mobile Media and Urban Sociability. In: New Media & Society, 13(5), pp. 807–823.

Tomita, Hidenori (2016): What is Second Offline? In: Tomita, Hidenori (Ed.): The Post-Mobile Society: From the Smart/Mobile to Second Offline. London: Routledge, pp. 1–10.

Turkle, Sherry (1995): Life on the Screen: Identity in the Age of the Internet. New York, NY: Simon & Schuster.

Witzel, Andreas/Reiter, Herwig (2012): The Problem-Centred Interview. London: SAGE.

Site visits

Zuzana Tabačková

In essence, site visits are conscious observations of the built environment. This method is used to gain insight into a place by means of *direct physical analysis*. This article primarily concentrates on an approach used in spatial planning disciplines—however, the site visit method is relevant for anyone who would like to obtain a better understanding of the built environment. The *built environment* constitutes the focus of the observation, although interactions between humans and non-humans (plants, animals, or weather) are also taken into account. In order to comprehend all these facets of space, it is advisable to incorporate perspectives, methods, and tools from other disciplines—such as ethnography, biology, or botanics—into the site visits. However, since the built environment directly influences most human and non-human interactions—as their context and product—the planning perspective offers just as much inspiration for other disciplines. Importantly, site visits can serve to gather important information about "more than just" buildings: For example, a brief glance at doorbells can tell you a lot about the migrant background of the residents.

To start with, it is important to describe the difference and the correlation between site *visits* and site *analysis*. In urban design and urban planning, site *visits* are part of the larger site *analysis*, which in turn is usually an integral component of the design process. There is a diverse range of site *analysis* methods: map and document analysis (statistic data, planning documents, satellite images, and much more), interviews, media analysis, etc.—many of which are described in detail in this handbook. Site *visits* are methods used within the site *analysis* that are based on experiencing the site directly with your *own* body. This can be used as a data collection method for missing or obsolete data about a site. But what is even more important in this regard is that the direct confrontation with the site by means of seeing, hearing, smelling, touching, and experiencing it—accompanied by the constant, deliberate questioning of the observations—represents a source of unique knowledge and learning about the built environment: knowledge that would otherwise be difficult if not impossible to obtain.

"[T]he context and site determine the methods and tools, and on the whole, how and when the study should be conducted" (Gehl/Svarre 2013: 11). Accordingly, the approaches for site visits are quite diverse. Therefore, this article does not offer a systematic overview of the concrete techniques or instructions for an individual method. Instead, it is in-

tended to serve as a guide for the different points of view that can be applied when designing site visits with regard to the envisioned research and design objectives. Furthermore, the text contains many references to concrete techniques that are meant as inspiration for designing a detailed site visit.

1 Problem-oriented site visit and analysis

Every site, even the smallest, consists of virtually limitless parts. However, our time and resources are limited. Therefore, it is necessary to narrow down the scope of the investigation by clearly defining the objective of the site visit. Thus, the scope is "reduced from the start to the key aspects for resolving the problem in question, aspiring for a problem-oriented inventory survey" (Curdes 1995: 47, own translation).

Simply put, if the objective is to build a dense housing complex, the planners will be less interested in the flora on site as it will usually be removed in any case. However, the existing flora could play an important role for planning a playground in order to integrate it into the design. Nevertheless, many trees are cut down for new playgrounds, and some housing complexes are built carefully around existing trees. This illustrates that the definition of the *problem* and thus the scope and focus of the site visit are part of the design.

Recognizing that these design decisions are not preordained or set in stone is imperative:

> In the case of complex relationships, the chosen methodology—for selecting and analyzing the contents—depends on the educational background, experience, and personal views of the researchers. In addition, advances in expert discussions lead to changes in the study objectives and methods. Although the results are partly determined by reality in the sense that key problem areas can rarely be ignored, the view of the problem strongly influences how individual studies are conducted, how they are differentiated from one another, and to what end. (Curdes 1995: 44, own translation)

This logic also defines the spatial scope of site visits. The central area of the design or research space should be studied thoroughly, but exploring neighboring areas (albeit in less detail) can also provide relevant knowledge. It is not unusual for the design to take these areas into account and consequently to expand the actual site of the intervention.

By the same token, the knowledge acquired during the site visit should be allowed to influence the changing view of the problem. A fruitful site visit is dialectical: The defined problem determines the direction, but it is also changed based on the newly acquired findings from the site visit, which in turn impacts the design of the site visit. Therefore, if you hope to reap the rewards of the site visit method in full, the site must be taken seriously instead of only being recognized selectively and instrumentalized for predefined objectives.

This serious consideration of the context, instead of simply changing it radically, plays an increasingly important role in the current socio-ecological crisis. Many projects in the publication *Critical Care: Architecture for a Broken Planet* (Krasny/Fitz 2019) illustrate

the key role played by places in sustainable spatial transformations. Another project, *Never-never School: Mapping the In-between* (Grešáková et al. 2020), also demonstrates that site visits can serve as important catalysts for ideas about cautious urban development that would otherwise be inconceivable. Thus, the challenge with site visits is keeping the discussion with the site alive: keeping an eye on the research and design problem, while at the same time being open to changes.

2 Site elements and the site as a whole

By being present at a site, we experience it intuitively as a coherent *whole* that consists of countless different *elements* and *aspects*. The latter clearly shape the former. At the same time, the whole also influences our perception, our interpretation, and thus our understanding of the parts. After all, the *overall image/atmosphere/genius loci* of the site possesses a unique quality that is more than the sum of its parts. Hence, every site visit must fluctuate between these two poles—the whole and the parts—understanding one by means of the other (for more details, see Pelger et al. in this handbook).

2.1 Individual elements and references to them

"One could extend this list of observable physical indicators almost indefinitely" (Jacobs 1985: 79). Such a list is therefore more an important source of inspiration than an exhaustive overview. A comprehensive list can be found in Gerhard Curdes's book *Stadtstrukturelles Entwerfen* (1995, English: *Structural Urban Design*) (see Fig. 1) or in Allan Jacobs's book *Looking at Cities* (1985). But also less extensive lists, such as those in *The Image of the City* by Kevin Lynch (1960: Paths, Edges, Districts, Nodes, Landmarks, can be used as an analytical prism for exploring the built environment. When studying individual buildings, other more detailed lists can be consulted, such as *Elements of Architecture* (Koolhaas 2018). It is important to keep in mind that the elements in these lists can and should be observed visually, as well as smelled, heard, and experienced tactilely.

Aspects of the urban space and urban structure analysis

- Ground
- Topographic elements
- Climate
- Landscape
- Land use: Large-scale/use in buildings/in public space/in open space
- Environmental impact
- Morphology: Positive structure (built spaces) / negative structure (unbuilt spaces) / connecting elements
- Urban and settlement setting: Macro-quality (visual orientation) / micro-quality (features of public spaces)
- Infrastructure
- People: Quantitative and qualitative aspects/social spatial usage

Fig. 1: Aspects of the urban space and urban structure analysis. List by Curdes (1995: 48, own translation) as possible checklist for site visits (see ibid. for more details).

Each of these aspects can be analyzed *quantitatively* by means of *counting/measuring* (e.g., the number of bikes riding by or the width of the bike path) or *qualitatively* by means of *valuation* (e.g., the type of bikes or the condition of the bike path). According to Jacobs (1985), the meaning of some aspects, or the *clue* that they offer about a site, is obvious. The architectonic style of a district, for example, tells us when it was built. But other aspects can only provide reliable information if they are analyzed in relation to other aspects, *clues*, and *patterns* that they constitute. In this case, both the multisensory perception of the site and the general knowledge of the built environment and of the relevant site come into play. A construction site, for example, can be a clue for the prosperity of the area, but it can also be an indication of economic decline: Does it smell like fresh concrete or damp mold? Do we hear workers chattering, or do we see the vegetation taking over?

Knowledge about the built environment, in turn, enables us to recognize patterns and potential fractures. For example, it is possible to recognize imminent gentrification at a site if the pattern of a cheap shopping street is broken by a few new, expensive cafés. Such knowledge is acquired from practice, but it can also be gained by means of other site analysis methods. If, for example, we know from other sources that a certain area is full of nightlife and bars stay open until late into the night, we will not be as quick to mistake the many closed shutters in the afternoon for vacancy. This knowledge is especially important if we set foot in other cultural contexts. Closed shutters in Italy generally do not imply a lack of inhabitants but rather protection from the heat. However, prior research is helpful even for apparently familiar places. Not least because this research can show what information is already available about the site (e.g., extensive mapping of the trees) and thus does not have to be collected in detail on site. This can save valuable time for what matters.

2.2 The whole as an atmosphere

All places possess a special coherent quality that is unique to them: the atmosphere. Therefore, some places are peaceful—or better yet, they feel peaceful—while others feel shabby and still others vibrant. The presence of large trees, trash, or people certainly contributes to the creation of a certain atmosphere or another. However, our own experiences, memories, and associations with what we observe also account for the atmosphere. For example, a park with graffiti and empty bottles can feel run-down for some and lively for others. Thus, atmosphere is also an interaction and interplay between observer and place: an "intermediate phenomenon" (according to Schmitz in Hasse 2012) that can be found in our interaction with the place. Consequently, the atmosphere can *only* be felt directly on site.

Atmosphere can best be characterized as an "envelope" or "medium" through which we experience the elements (Hasse 2012). Just as light makes it possible to perceive objects, we can only perceive the quality of these objects by means of observation:

> Atmospheres [are] in no way objects of perception. Instead, they define underlying conditions for the perception. In other words, we do not perceive an atmosphere, but rather we perceive *in accordance with* the atmosphere. (Thibaud 2003: 288, own translation, emphasis in original)

This makes it difficult to understand atmospheres or that which we perceive in cognitive terms.

In order to facilitate reflection on which parts of the environment constitute the atmosphere (and how), Hasse's non-exhaustive list of "agents of feeling" in *Atmosphären der Stadt* (English: *Atmospheres in the Urban World*) can serve as a starting point (Hasse 2012: 20 et seq.). Here, he defines the following segments of the whole: *Baukultur*, smells, light and shadow, sounds, air, rhythms and movement, looks and sights, the clothing and appearance of people, the presence of animals, and the presence of object families (ibid.). Although it is difficult to analyze atmospheres with precise methods, we perceive them—deliberately or not—merely by virtue of our presence in the space. It is then a question of practice to direct our attention and reflect on what we perceive in order to explicate the implicit knowledge we acquire in doing so. The act of communicating atmospheres also escapes simple rationalization; instead, artistic tools are a much more effective approach, as discussed later in this article.

2.3 Places change

The streets that are empty during the summer break can be extremely full and loud on afternoons when school is in session. During the warm months, parks are noisy and vibrant, but they become dark and gloomy when it is raining. And a shopping street can appear deserted during the hour of prayer. These invisible temporal aspects, which are often connected to certain cultural conditions, have a strong influence on the presence of elements and atmospheres that can be observed, and especially on the conclusions drawn from the observations. Furthermore, some aspects of the place appear and disappear as

a result of changing environmental conditions, such as light, precipitation, or wind. On wet days, smells are more distinct, but the wind can blow them away or bring others from far away. Therefore, it is important to be aware of the different possible conditions at the study site and to visit the site multiple times. The observation conditions should be noted in detail in order to allow for better reflection later on.

3 Methodological approaches and tools

The explications above indicate *what* and in part *how* to observe. Therefore, the following section will build on the preceding methodological considerations and concentrate on how to interact with the site by using the most important research tool available: your own body.

3.1 Systematic or exploratory

Instead of following a systematic approach—for example, creating and working through checklists—we can simply venture out and allow ourselves to be guided by encounters and curiosity. This approach can be traced back to the flâneurs of the 19th century. The term was coined by Walter Benjamin, who described himself as a flâneur: "[The flâneur] searches for asylum in the crowd. […] The crowd is the veil through which the familiar city waves to the flâneur like a phantasmagoria." (Benjamin in Tiedemann 1991: 52, own translation). On their strolls through the metropolises of Berlin, Paris, or London, flâneurs did not rely on a strict methodology but rather on the curiosity from which their explorations originated. Such an exploratory approach was also praised by Allan Jacobs as a method for site visits:

> In urban diagnosis the observer looks for patterns, breaks in the patterns, and deviations from the norms. Perceiving new or foreign elements in a field, one asks why and how and what are the meanings? The similarity to detective work may lie in openness to seeing relationships and in a questioning way of thinking. (Jacobs 1985: 83)

The guiding detective questions play a similarly structuring role in exploratory site visits, just as the problem definition discussed above. The flâneur methodology was developed further by *Situationist International* in the middle of the 20th century in response to the modernistic capitalist development of the city. Using methods such as *détournement* or *dérive*, which are based on play, chance, and alternative perspectives, the situationists hoped to break away from the traditional patterns of perception and action. In the case of *shadowing*, for example, which involved following someone, it was the route of the person being followed and not that of the observer that determined how the city was explored. These methods have been developed further and appropriated since then, becoming accepted research and participation methods. For instance, *shadowing* appears in sociology as the *go-along* method. Even the science of strolling or promenadology, developed by Lucius Burckhardt, was inspired by the traditions described above, proposing a theoretical approach for a playfully reflective means of exploring the city by walking through it con-

sciously (Burckhardt 2011). Walks have since been used as a research method in different forms and are used today primarily in participatory processes, where they are refined based on the defined topics and research questions.

Hence, exploratory approaches are structured according to the rules of the study, the personal interest of the researchers, or the topics outlined in the problem definitions, while structured checklists are revised when we discover something unexpected during our encounters with the site. Exploratory approaches are generally more fun, but observers require a certain degree of expertise and pronounced sensitivity in order to understand what they perceive. In contrast, although strictly structured site visits might seem boring, they make it possible to understand what is observed more easily. All site visits can be classified along a spectrum ranging from structured to exploratory, although the extreme ends are rarely, if ever, reached.

3.2 Observing or interacting

In most of the approaches discussed above, the role of the observers is not participatory. They should act like a "fly on the wall" (Gehl/Svarre 2013: 5) and fade into the crowd in order to avoid disturbing the site with their own presence. However, if we acquire knowledge about a site chiefly by means of active engagement with it, then participatory observations and even targeted interventions can be considered relevant approaches.

Fig. 2: Site visit as a collective walk to discuss new planning (top left); intervention at the schoolyard: can it serve as a public place? (bottom left); performative mapping to become one with the site (right). | © Photos: Dávid Hanko, 2018 (top left), Lukáš Katriňák, 2016 (bottom left), Diana Lucas Drogan, 2019 (right)

This can involve somewhat ephemeral performances with your own body (e.g., the events organized by *Situationist International* mentioned above) or even permanent physical interventions. This technique is often used as part of tactical urbanism, where interventions are utilized to study spatial changes (Lydon et al. 2015). Installing a parklet (a piece of street furniture that replaces a parking lot) or closing off an entire street for neighborhood activities are two of the most common examples. If these interventions are accompanied by systematic data collection, they can generate valuable knowledge about the site.

3.3 Using the body as a research tool

The main tool used by observers during the site visit is their own body. They perceive the environment with their physical senses, while experiencing it consciously and unconsciously at the same time. Therefore, subjectivity emerges not only in their interpretations but also in their perceptions. In order to better understand and minimize potential distortions resulting from this "tool" and thus the site visit method, it is essential to be aware of the different ways in which the body communicates. Therefore, it is crucial for us to pay attention to the diverse range of perceptions and at the same time to follow them back to their origin. Because we are shaped by a visual culture, we tend to pay a great deal of attention to what we see, while the other aspects fade into the background. However, sites are multisensory. As such, conscious observation entails reflection on not only our interpretation of the perceived but also on what we perceive and what we omit. Consequently, we should strive to diversify our perceptions completely by directing our attention to what we hear, smell, taste, and touch as well.

The physicality of the body both facilitates and restricts the experience of the observer. Maybe I am nearsighted or my hearing is temporarily impaired due to a cold, maybe I am too cold or too tired to really perceive the environment. Some of the faculties can be improved by technology: for example, with the help of glasses or a tally counter, which can help count large numbers of bicycles riding by. But serious restrictions must be accepted, and the site visit must be designed accordingly. An honest answer to the question "how long/far can I actually walk" cannot be omitted when planning a site visit. Furthermore, our mood influences our observations. When we are happy, we draw an optimistic picture of an area, while irritating factors tend to come to the fore when we are stressed. Therefore, as with the conditions of the site, which change over time, the changing conditions of the body should be taken into account in order to better categorize the observations.

However, the feelings are only *our personal* point of view. This subjectivity of the experience can impair our understanding of the perspectives of other spatial users. As a result, many spatial aspects, along with the users themselves, are not taken into consideration in planning and research projects. Nevertheless, we can and should look beyond the limits of our unique experience. The methods mentioned above, such as *shadowing*, collective strolling, or *dérive*, are one possibility. We can also directly alter our own physical experience of space and put ourselves in "someone else's shoes," at least in part, by blindfolding ourselves or simulating the spatial experience of different populations with a wheelchair or stroller.

Whether it is our body or the body of others, site visits usually focus on human experiences. But our world is more than just human. Therefore, the perspectives of non-human actors should also be taken into account. As illustrated by the current global crisis, it is dangerous for everyone if we neglect these actors. Incorporating non-human perspectives would be the first step toward transcending the anthropocentric viewpoint of our built environment, our cities, and the world in general. The field of spatial research that studies more-than-human actors is relatively young and is still in an experimental stage. But initial approaches, such as those presented in the anthology *Participatory Research in More-than-Human Worlds* (Bastian et al. 2016), could serve as a useful starting point for exploring new methods, techniques, and sensibilities—including for site visits.

4 Documenting the site

Scientific observations and experiences of the site must be accompanied by documentation, regardless of how incomplete. Places are multisensory and multidimensional. The manner in which the observed experiences and data are recorded and presented should reflect this in order to better understand the unique characteristics of the site.

4.1 Recordings

A camera, audio recorder (both of which are integrated into smartphones these days), and a notepad are good basic equipment for a site visit. However, the field of available media is enormous. Each medium measures in its abstraction a different facet of the site, which is why a wide range of media is beneficial. This does *not* mean that every aspect has to be documented in the "format" in which it was experienced: Sound can be recorded using an audio recorder, drawn as a map, or captured in gestures. The considerations mentioned above regarding conscious observations apply here, too: Do I draw an individual element (which characteristics of it?), a pattern, or the entire atmosphere? Thus, the recording process is also a moment of analysis and interpretation. The media used will change accordingly. Do I try to record the entire soundscape, or should I concentrate on a certain sound or a group of sounds and categorize them already during the recording? In addition, skills and experience in the use of different media are important. Each medium has its own technical requirements, which must be taken into account in order to capture the aspects of the site as precisely as possible.

Regardless of the medium, the documentation should take place directly on site in order to record the perception created by the direct experiences better. Obviously it is not possible to record the sounds of a place if you are not on site. However, it is just as difficult to find the right words if we search for them only in our thoughts. Moreover, documentation directly on site makes it easier to mark the exact spatial position of different elements, which is important for documenting the three-dimensionality of the place. Nevertheless, observations and experiences should be separated from the documentation and should ideally not take place in parallel. There should be enough room to experience the site and then subsequently to record it.

In urban design and urban planning, the methods for recording a place are typically visually based and concentrate on three-dimensionality, which is inevitably reduced to the two-dimensional level of a piece of paper or computer screen in the documentation process. A wide array of approaches have been developed in the spatial disciplines to carry out this abstraction process. Handbooks such as the one written by Ching (2003) offer good advice.

Artistic techniques also play an important role in terms of recording places and their qualities. For example, Hasse writes in *Atmosphären der Stadt* (English: *Atmospheres in the Urban World*):

> Communication about atmospheres (using language, as well as gestures, facial expressions, painting, sculpture, music, and architecture) takes place in a special way by means of synesthetic qualities that connect the feeling "produced" by an atmosphere with complementary symbolic meanings. […] Poets and writers "preserve" their impressions, ideas, and fantasies for posterity with metaphoric or synesthetic "precision." In contrast, the language of public authorities, administrative experts, and civil engineers who build the modern city is vastly neutralized in terms of the emotional qualities related to space. (Hasse 2012: 12, 56 et seq., own translation)

Across time and cultures, there are countless portraits of cities, villages, and landscapes that can serve as infinite inspiration for documentation and communication. But we do not have to be Perec (see, for example, his *An Attempt at Exhausting a Place in Paris*, 2010) to apply artistic methods, as demonstrated by the project carried about by B.A. students of urban and regional planning (Fig. 3, Million et al. 2019).

Backstein hinter Rost und Ruß,
wild wuchernde Ufer,
altes, ruhiges Köpenick,
Dornröschenschlaf am Wasser.

Oskar Schmieg

Fig. 3: Atmosphere of a place represented by a haiku and accompanying photo (Million et al. 2019: 6 et seq.). | ©Photo: Oskar Schmieg, 2018

4.2 Synthesis

The recorded raw information, data, and experiences are often analyzed in synthesis with other information from the site *analysis* and combined to create a model of a site. This model can be created in any manner of shape (see Fig. 4). In planning practice, however, the model is generally created using maps and plans, accompanied by text, photos, and images. Representation by means of maps allows for easy orientation in the geometric space and practical comparability with other available data. Various analytical methods can be used to help create these maps: for example, the urban layer analysis (see Bentlin in this handbook) or the deficit-opportunity plan (Curdes 1995), where the strengths/weaknesses and opportunities/risks are mapped spatially, similar to a SWOT analysis (see Fig. 5).

Whether using a recognized methodology or intuitively, the process of constructing spatial representations as maps, plans, texts, collages, performances, or sculptures brings about a further abstraction of the site. As a result, the subjectivity of the defined problems discussed above comes to the fore yet again. In the end, such models are always simplified representations of reality. This also applies to digital formats, which make it possible to represent large volumes of data and their correlations, thus seemingly depicting reality perfectly. No abstraction can evade the decision-making process. Namely, the "model makers" are the ones who decide (consciously or unconsciously) what will be part of this model and thus counts as reality and what remains unseen.

Fig. 4: Multidimensional representation of a place. Excerpt from the findings of a summer school course on the topic of site visits (full version in Grešáková et al. 2020). | ©Photo: Poppy Illsley, 2019

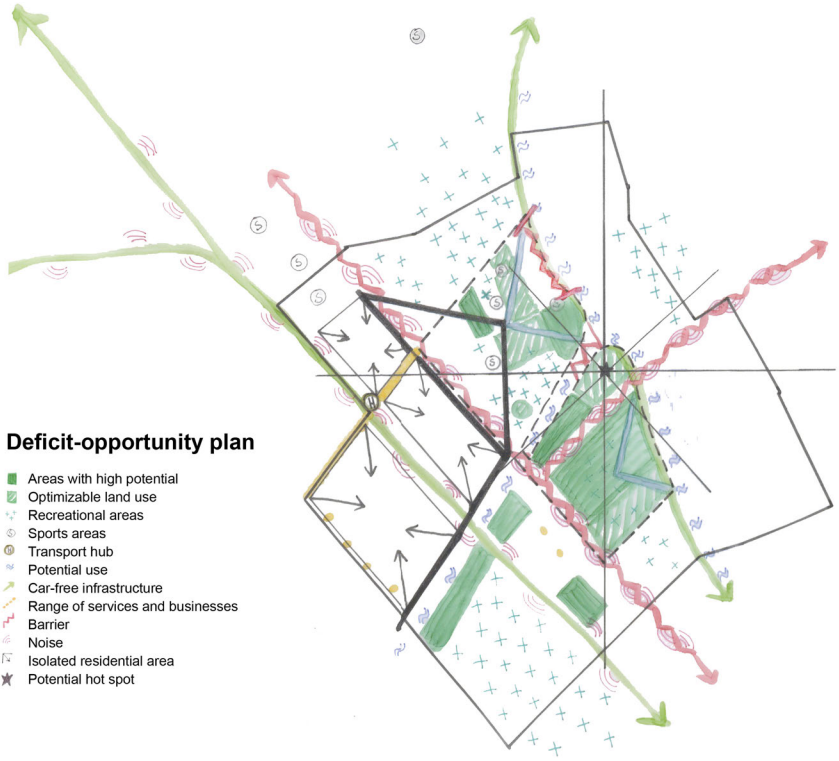


Fig. 5: Deficit-opportunity plan | ©Lukas Athmer, Svende Nitsch, and Elena Rhode, 2018/2019, own translation

Reflections from critical cartography on the power of maps (applicable to other formats as well) are useful in this regard (see Kollektiv Orangotango 2019). After all, the models then serve as the basis and above all the justification for future steps in terms of research, transformation processes, and political action.

Fig. 6: Critical map Eigentum und Alltag in der Oranienstraße (English: Property and Everyday Life on Oranienstraße) shows the consequences of privatization for the businesses in the neighborhood (nGbK 2019: 16f.). | ©Stefan Endewardt, Dagmar Pelger, Franziska Bittner, and Nija-Maria Linke

5 Using site visits to establish a relationship with a place

Although site visits are anchored in reality, they are subjective interactions with a place. This subjectivity must be recognized and treated accordingly. "Ensuring completeness, accepted data and methods, and consensus among researchers and participants can mitigate this dilemma, but ultimately cannot solve it objectively" (Curdes 1995: 44, own translation). The demand for objectivity can also be met by means of the plurality of approaches mentioned above, although the specific positionality of the observes must always be recognized and reflected. This approach can be found in Donna Haraway's concept of "situated knowledge" (Haraway 1988).

Site visits enable us to learn a great deal about the built world and to acquire and explain unique implicit knowledge. Furthermore, we can develop a certain sensibility for a place and its many elements and aspects thanks to the time we spend with the place and the attention we devote to it. As Allan Jacobs puts it:

> In the end, the whole process of looking, questioning, trying to gain understanding makes a person a more intimate, respectful part of any environment and therefore more likely to be caring of it. That is the basis for good planning and beneficial action. (Jacobs 1985: 141)

References

Bastian, Michelle/Jones, Owain/Moore, Niamh/Roe, Emma (Eds.) (2016): *Participatory Research in More-than-Human Worlds*. London: Routledge.

Burckhardt, Lucius (2011): *Warum ist Landschaft schön? Die Spaziergangswissenschaft*, 3rd Edn. Berlin: Schmitz MSV.

Ching, Francis D. K. (2003): *Architectural Graphics*. 3rd Edn. New York, NY: Wiley.

Curdes, Gerhard (1995): *Stadtstrukturelles Entwerfen*. Stuttgart et al.: Kohlhammer.

Gehl, Jan/Svarre, Birgitte (2013): *How to Study Public Life*. Washington, DC et al.: Island Press.

Grešáková, Lýdia/Tabačková, Zuzana/Spolka (Eds.) (2020): *Mapping the In-Between: Interdisciplinary Methods for Envisioning Other Futures*. Košice: Spolka.

Haraway, Donna (1988): Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective. In: *Feminist Studies*, 14(3), pp. 575–599.

Hasse, Jürgen (2012): *Atmosphären der Stadt: Aufgespürte Räume*. Berlin: Jovis.

Jacobs, Allan B. (1985): *Looking at Cities*. Cambridge, MA/London: Harvard University Press.

Kollektiv Orangotango (2019): *This Is Not an Atlas: A Global Collection of Counter-Cartographies*. Bielefeld: transcript.

Koolhaas, Rem (2018): *Elements of Architecture*. Cologne: Taschen.

Krasny, Elke/Angelika Fitz/Architekturzentrum Wien (2019): *Critical Care: Architecture and Urbanism for a Broken Planet*. Architekturzentrum Wien/MIT Press.

Lydon, Mike/Anthony Garcia/Andrés Duany (2015): *Tactical Urbanism: Short-Term Action for Long-Term Change*. Washington, D. C.: Island Press.

Lynch, Kevin (1960): *The Image of the City*. Cambridge, MA/London: The MIT Press.

Million, Angela/Steglich, Anja/Bentlin, Felix/Tabačková, Zuzana (Eds.) (2019): *Auf zu neuen Ufern in Treptow-Köpenick. Lyrisch-Photographische Aufzeichnungen in der Stadtplanung*. Berlin: TU Berlin/Institut für Stadt- und Regionalplanung.

nGbK (Eds.) (2019): *Eigentum & Alltag: Oranienstraße/AG Im Dissens? Zeitung zu Nachbar- schaft, Gewerbe und Kunst.* Berlin: nGbK neue Gesellschaft für bildende Kunst.

Perec, Georges (2010): *An Attempt at Exhausting a Place in Paris*. Cambridge, MA: Wakefield Press.

Tiedemann, Rolf (Ed.) (1991): *Walter Benjamin: Gesammelte Schriften. 5,1, Das Passagen-Werk*. 1st Edn. Frankfurt a. M.: Suhrkamp.

Thibaud, Jean-Paul (2003): Die sinnliche Umwelt von Städten. Zum Verständnis urbaner Atmosphären. In: Hauskeller, Michael (Ed.): *Die Kunst der Wahrnehmung. Beiträge zu einer Philosophie der sinnlichen Erkenntnis*. Kusterdingen: Die Graue Edition, pp. 280–297.

IV. Drawing and visualizing

Mental maps and narrative maps

Angela Million

A commonly used tool for collecting data on the spatial perception of respondents are self-drawn maps. In the following text, I refer to these as *mental maps*. As a technique in visual social research, mental maps are used in many disciplines (especially visual ethnography, sociology, psychology). At the same time, they are highly relevant in the spatial and planning sciences, meaning geography, architecture, and urban planning. Nevertheless, research projects with mental maps can pose a major challenge, which is why numerous variants have been developed and they are often combined with other data collection methods. For our purposes, we are particularly interested in approaches that reconstruct both the individual mental representations of spatial knowledge and the subjective relevance of that knowledge. Therefore, in addition to referencing the approaches developed by Lynch (1960), who used mental maps to study the orientation of people in space, I will present the narrative mapping method, which was developed by educational scientists Behnken und Zinneker (2010) in various research projects related to both contemporary and historical-biographical children's studies (e.g., Behnken/Zinnecker 1991). They combined the cartographic collection method with narrative interview techniques: "The narration establishes a connection between the drawn mental map and the biographical method. The choice of name—narrative map—is intended to reflect this duality." (Behnken/Zinnecker 2010: 3). This paper will illustrate that the technique is appropriate for reconstructing individual spatial experiences beyond the immediate vicinity by recounting and drawing on memories, both from a biographical perspective and as a snapshot. The latter represents the focus of this paper; with regard to the biographical perspective, please refer to authors Weidenhaus and Norkus, as well as Bentlin and Klepp, in this handbook. Because mental maps and narrative maps are traditionally, and currently still, used in research on children and youth (see Muchow/Muchow 2012 [orig. 1935]; Lynch 1977; more recent examples: Chawla 2002; Seggern et al. 2009; Curtis et al. 2014), their application will be illustrated based on this type of research. However, it should be noted that the use of the methods is not limited to a certain age group.

1 The basics of mental mapping and a methodological approach to narrative maps

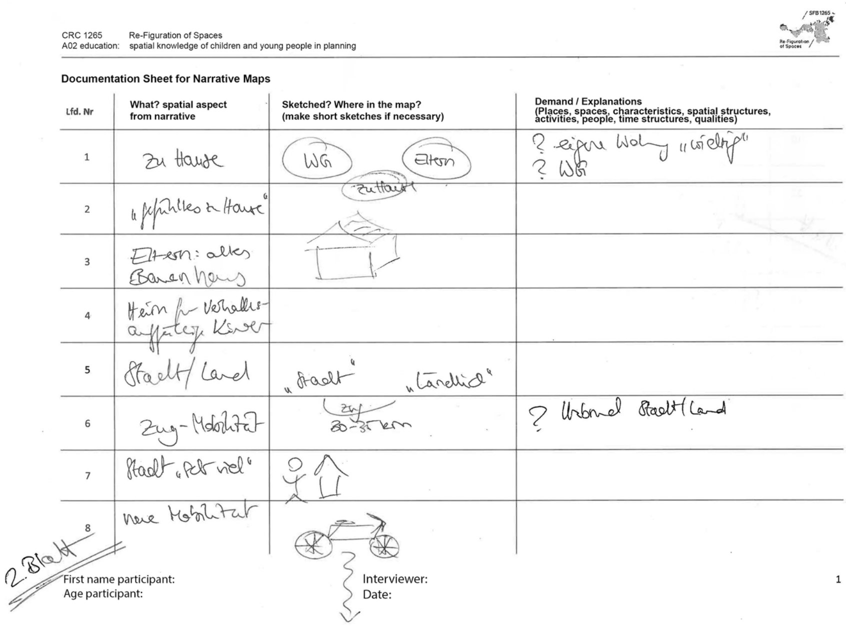
Early and frequently cited basics of *mental mapping* can be found in the disciplines of cognitive psychology, geography, and urban planning. Examples include the urban planner Lynch (1960), human geographers such as Gould and White (1992 [orig. 1974]), Golledge (1992), Downs/Stea (2005 [orig. 1973]), and Kitchin (1994), and psychologists Kaplan and Kaplan (1989), to name a few, who used cognitive maps to study how people perceive the built and natural environment. Furthermore, numerous research projects are dedicated to exploring how this perception is influenced by variables such as age and gender (in reference to children, see Matthews 1987, 1992), class (an early example, Goodchild 1974), and physical-spatial surroundings (an early example, Lynch 1960; Evans 1980).

These different disciplines use diverse designations for cognitive maps (see Kitchin 1994: 5). Lynch (1960) uses the name *"environmental images"* and sporadically the term *"mental map,"* while Behnken and Zinnecker (2010) refer to "*subjective maps*" and associated haphazard drawings depicting subjective geographic realities. The term *cognitive maps* often serves as a generic term for a series of designations in other disciplines. It is important to note that the term *map* is subject to a wide range of definitions and interpretations in its application and in the different disciplines, where maps (a) explicitly denote a cartographic product, (b) describe an analogy, meaning a drawing similar to a cartographic map, (c) are used as a metaphor for any illustrative spatial concept, or (d) do not have any real connections with a cartographic map at all (for details, see Kitchin 1994). Thus, every research project potentially has to start by defining the term.

A glance at the research design—for example, the studies on children mentioned at the beginning—illustrates that mental maps are often combined with other methods. For the narrative mapping method presented below, the creation of a mental map is combined with a guided storytelling or narrative interview, which are carried out one after the other (Behnken/ Zinnecker 2010).

1.1 Step 1: Creating the mental map

First, the researchers explain the full procedure to the respondents. They then ask them to draw their spatial daily routine, their route to school or work, or their neighborhood in the form of a sketch and to chronicle what they are drawing at the same time. The formulation of this initial stimulus is important and must be adapted linguistically to the respondents. In addition, the respondents are encouraged to tell a story while they draw. The story is documented using a voice recorder. The researchers refrain from asking questions during this stage of the drawing process. Key words are noted for follow-up questions. The researchers record the order in which the elements are drawn, in a data entry form, for example (Fig. 1). (Behnken/Zinnecker 2010: 6–7)


CRC 1265 Re-Figuration of Spaces
A02 education: spatial knowledge of children and young people in planning

SFB 1265 Re-Figuration of Spaces

Documentation Sheet for Narrative Maps

Lfd. Nr	What? spatial aspect from narrative	Sketched? Where in the map? (make short sketches if necessary)	Demand / Explanations (Places, spaces, characteristics, spatial structures, activities, people, time structures, qualities)
1	Zu Hause	WG Eltern Zuhause	? eigene Wohnung „wichtig" ? WG
2	„gefühlloses Zuhause"		
3	Eltern: altes Bauernhaus		
4	Heim für Verhaltensauffällige Kinder		
5	Stadt/Land	„Stadt" „ländlich"	
6	Zug-Mobilität	Zug 20–35 km	? Urbanität Stadt/Land
7	Stadt „[illegible] viel"		
8	neue Mobilität		

2. Blatt

First name participant:
Age participant:

Interviewer:
Date:

1

Fig. 1: Example of a data entry form documenting the order in which the elements are drawn by a student and notes for follow-up questions. | ©SFB 1265 Subproject Education

1.2 Step 2: Two-stage interview

After creating the mental map, a two-stage interview is carried out according to Schütze (1987), combining a narrative interview with a guided interview:

> "This first involves clarifications and specifications, adding drawings to the sketch (if, for example, an establishment was only mentioned but not included in the drawing) and the caption. The final guided interview is intended to encourage supplementary information in areas that are significant for the defined research questions." (Behnken/Zinneker 2010: 7, own translation)

Subsequent drawing steps inspired by the interview are placed over the drawing and created on transparent paper or plastic wrap. The sequence of questions or the structure of the guide can then be treated flexibly when topics related to different points have already been mentioned by the respondents.

Both Lynch and Behnken and Zinnecker estimate that each step requires at least 90 minutes. In addition, Lynch (1977) recommends an interdisciplinary team made up of humanities scholars and urban scholars (sociologists, anthropologists, and psychologists, as well as urban planners, architects, and geographers) in order to pool their specific disciplinary skills in terms of qualitative methods for spatial research.

2 Studying the translocal and mediatized spatial knowledge of children and youth

In our research project, we investigate the spatial knowledge of children and youth in a comparative cultural study by using the narrative mapping method. In doing so, we[1] assume that spatial knowledge is also expressed beyond the immediate vicinity. In other words, translocal spatial knowledge, as well as effects of mediatization (television, Internet, and use of related tools) on spatial knowledge, can be found in the verbal narrations and drawings of the research subjects. This means that they mention people and events in remote places, as well as virtual experiential worlds, in the drawings and stories describing their present everyday routine and its spatial references.

2.1 Example of a stimulus: Drawing your daily routine as a map

The direct physical and perceptible social space of children and youth serves as the starting point for our stimulus:

With our research, we attempt to understand the spaces in which children and young people live today and how they think about and experience space. Therefore, I would like to ask you to depict your daily routine as a map. Think about what you do every day, and then please draw a map with the places that are important to you in your life.

It does not matter to us if the map is drawn correctly or if it is pretty; simply draw your own personal places and spaces. These could be in your neighborhood and in your city, but they could also include places that are farther away and that you do not visit very often. You know best which places are important to you in your everyday life.

While you are drawing, please explain to me what you are drawing and tell me what the places you are drawing remind you of: for example, what you do at those places, what the places look like, and why you like or do not like the places. Draw and tell me everything that occurs to you—there are no wrong answers.

Do you have any questions about the assignment, or would you like to get started?

We used the following stimuli as suggestions to help in the case of uncertainties:

- Maybe you can start with your home and then draw other places where you do anything else that is also important in your life.

1 The method is used in the subproject *Education: The Spatial Knowledge of Children and Young Adults and its Application in Planning Contexts* in Collaborative Research Centre 1265 *Re-Figuration of Spaces*, research team: Angela Million (principal investigator), Ignacio Castillo Ulloa, Anna Juliane Heinrich, Jona Schwerer, Julian Kaiser.

- Think about what your life would look like as a map: Which places do you visit regularly because they are important to you and in your life? For example, because you do something there on a regular basis, your friends or relatives live there, etc.
- These could be both places in your neighborhood and places that are farther away, which you may not visit often but which are important to you personally.
- Think about what you like to do and what you usually do and in what places.
- We are interested in activities during the week (Monday to Friday) and on the weekend or during school breaks—just draw what is most important to you!

2.2 Example of structuring the interview into thematic blocks

After the sketching stage, follow-up questions were asked about the individual places (and geographical references) and connections between the places. In terms of geographical references, we were interested in attributions of meaning, but we also inquired about places we had expected to see in the drawings. Additionally, we asked about the description of virtual places (Internet, chats, online games). Furthermore, we wanted to know how children and youth moved between places.

The guided interview then continued with the following thematic blocks:

- Places in the sphere of action of the young people (significance, characteristics of the places)
- Movement and orientation (How do they navigate places they are not very familiar with? What tools do they use?)
- Social network and its spatial distribution (location of friends and relatives, meeting points)
- Virtual spaces, mediatization, and physical-material space (role of media, types and place of use)
- Concepts of scale (home, neighborhood, Germany/Peru/Colombia, Europe/ Latin America, world, virtual space)[2]
- Future (question about additions or changes to the map in ten years)

The last two thematic blocks were intended explicitly to collect translocal perceptions of space as well: In what way do the children and youth make interregional, national, or global references? We asked about the spatial scales as a game, adapted to the cultural context:

Now I would like to play a game with you: I am going to say several words and I would like you to tell me the first thing that comes to mind when you hear them and how they are important for your life personally.

2 The survey was carried out at schools and at a neighborhood center in Hanover/Germany, Lima/Peru, and Bogotá/Colombia.

- Home
- Neighborhood
- Germany/Peru/Colombia
- Europe/Latin America
- World
- Virtual space

3 Challenges when using this method

In practice, researchers must always respond flexibly to the local and temporal conditions of the survey and to the needs of the respondents. Therefore, the preparation of both the stimuli and the type of base maps must be well thought out.

3.1 Collecting data in diverse setting

The narrative mapping approach described by Behnken and Zinnecker (2010) is based on a two-person conversation in a quiet environment. However, depending on the access to the field, this ideal setting may not be possible. For example, we interviewed some of the children at schools and at a neighborhood center. In some of the schools, we were only able to work with the entire class. We arranged tables with groups of up to four children, who were then supervised and interviewed by one person. For logistical reasons, the sequence in which the motifs were drawn was not documented by our research team in this case. After creating the mental maps, group interviews were conducted in addition to individual interviews, depending on the situation, all of which were recorded. One additional challenge we faced during the survey at the neighborhood center was the unexpectedly wide range of ages among the participating children, from five to twelve years, as well as the walk-in/walk-out atmosphere of the setting.

Settings for inventory surveys (including sitting together with friends or siblings) can be recorded in photos, drawings, or writing. The fact that the children influence each other's responses (and drawings) should be taken into account when interpreting the data. In comparative cultural studies, it is important to involve scholars or experts who are familiar with the local context in the collection and analysis of the data and to integrate them into the survey process once they have been briefed (Lynch 1977: 82).

In many settings, there is generally much less than 90 minutes available for drawing and interviewing. Therefore, the questions should be understood as a set of dimensions to be asked about rather than a strict sequence to be followed. The interest and attention span of younger children in particular, as well as the time budget of many adults, call for a significantly more concise survey. In general, we recommend carrying out a pretest and adjusting the questionnaire and procedure accordingly, although it is only possible to simulate the settings describe above beforehand to a limited extent.

3.2 Selecting the base maps and formulating the stimulus

Based on studies by Pocock (1976), Evans (1980), and Blades (1990), we know that both the materials and base maps used for the drawing stage, the instructions given by the researchers, and the characteristics of the respondents (age, gender, etc.) can influence the maps. However, there are no studies to date on how the design of the base maps influences where and how the respondents draw their perceptions on the map (Curtis et al. 2014: 266). Both the selection of the stimulus and the decision to carry out the survey with or without a base map depend on the object of investigation and on the capabilities of the respondents. Matthews (1992) provides guidance regarding the *mapping abilities* of children and presents a number of potential stimuli.

In our case, the selected stimulus worked well in the age range from five to 17 years and in the different cultural contexts. Furthermore, using a blank white sheet of paper (DIN A3) in the drawing stage proved effective as this allowed the respondents to draw translocal spatial references as well right from the start. Individual respondents used several DIN A3 pages for their mental map (Fig. 2).

3.3 Quality of the sketches

Anxiety about their ability to draw the sketches and very different conceptions of maps and haphazard drawings among the respondents can be challenging for both the data collection and the analysis stage:

> "Adherence to conventional geographic mapping conventions varies widely. […] The narrative mapping method can tolerate such variations as long as additional verbal explanations can clarify what is meant." (Behnken/Zinnecker 2010: 9, own translation)

In addition to map-like drawings, our surveys also produced pictures of an ideal park or playground (Fig. 3), as well as drawings with a list of places that more closely resembled mind maps (Fig. 4). The accompanying conversation and interview, along with the abundant information on the mental maps, were what made it possible to categorize these drawings and interpret them in relation to mediatized and translocal spatial knowledge.

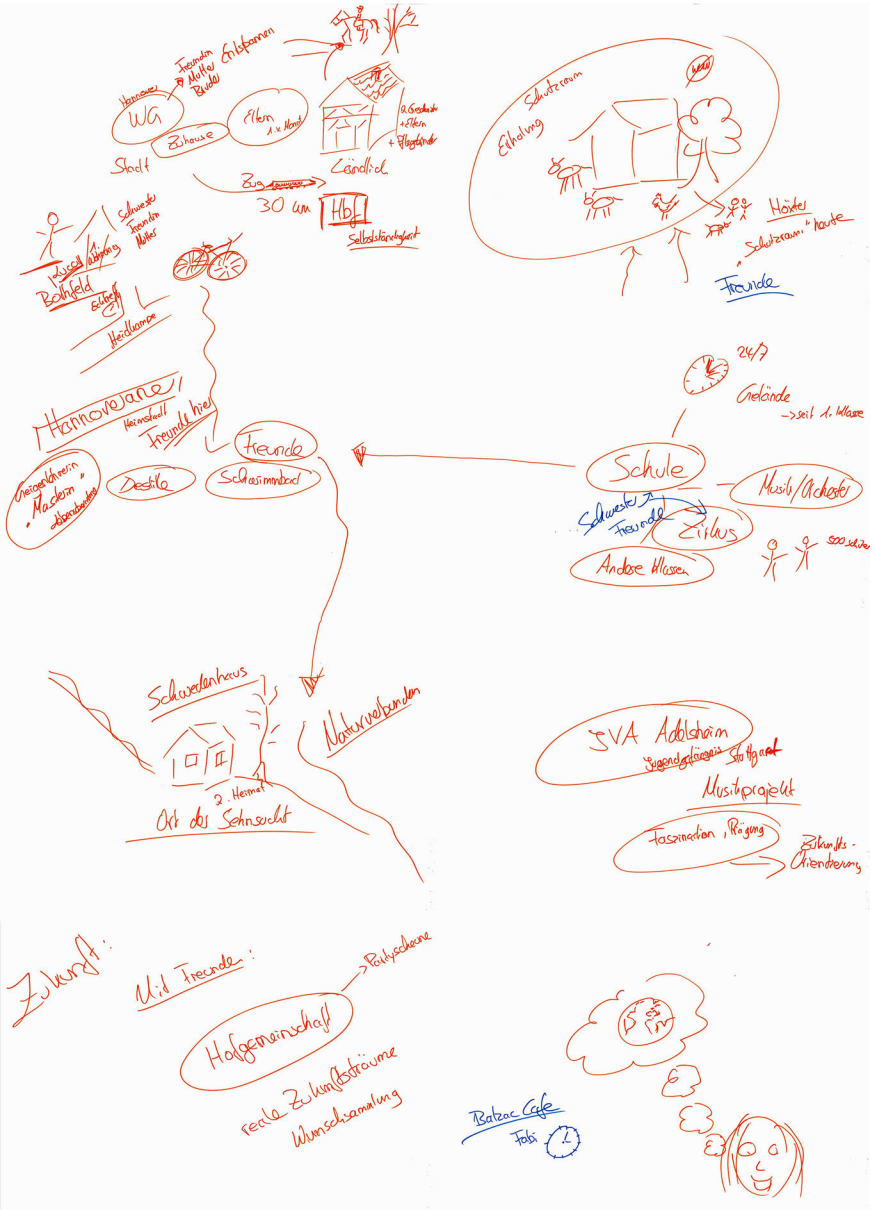


Fig. 2: Mental map drawn by a twelfth-grade student on a total of eight pages (merged here into one overall image) describing various temporal dimensions and scales of space in a structured manner. | ©SFB 1265 Learning Spaces subproject

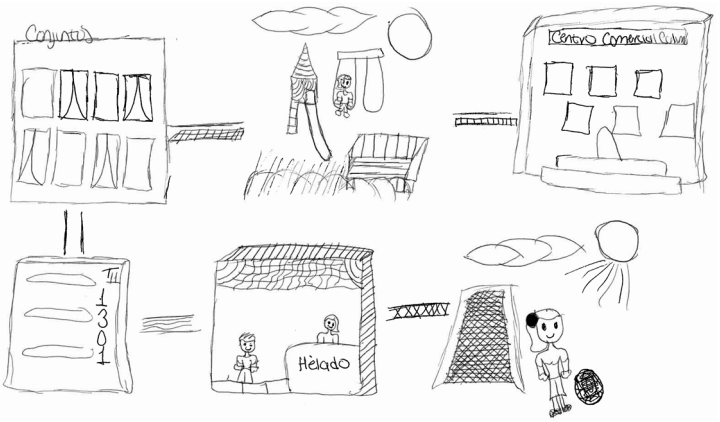


Fig. 3: Mental map with idealized intersections and depiction of paths between places and their materiality (girl, 8 years old). | ©SFB 1265 Learning Spaces subproject

Fig. 4: Mental map as a list of drawings and without virtually any intersections (boy, 7 years old). | ©SFB 1265 Learning Spaces subproject

4 Analysis with an optional focus on the spatial and procedural aspects of the study

Behnken and Zinnecker (2010: 16–23) refer to four analysis options. According to them, mental maps can be analyzed alone as such or with a focus on the creation process. For the latter, good documentation of the creation process (Fig. 1) is essential. In a single case study and/or comparative analysis, it is possible to analyze and/or systematically compare individual cases (e.g., by creating comparison groups). Synthesizing analysis methods are particularly interesting (triangulation according to Flick 2014), in which the spatial and procedural levels of the study are merged. The selection of the analysis method—in addition to the research question—also depends on the last available empirical material and the abilities of the research team with regard to making and analyzing maps.

4.1 Analyzing mental maps by means of comparison, transposition, translation, and superimposition

Challenging survey settings—such as those described in Section 3—can make it advisable to focus the analysis on the mental map and to ignore the process of creating the drawing. Focus is placed on the spatial visual information "while disregarding all temporal references to personal living spaces" (Behnken/Zinnecker 2010: 16, own translation). This analysis is fitting even if the study has a strong focus on action along the lines of a classic inventory approach, which is intended to draw conclusions about the physical transformation or restructuring of neighborhoods within the context of planning and building processes. For this purpose, it is possible to evaluate characteristic elements of the space (places, objects, borders, barriers, people, everyday actions, biographical experiences, etc.) and their frequency of occurrence. Furthermore, spatial elements can be analyzed with regard to their nature and representation (e.g., size of depiction, details) and their position in the overall drawing (cluster, distance, proximity).

> "[This] analysis of the spatial qualities of subjective maps hinges on the plausibility of a central postulate, which claims that there is a striking similarity between the space drawn on paper and the psychological or 'inner' space of the draftsperson. So if a house, the family home or a friend's house, is large, detailed, and drawn in the middle of the page, then we can conclude that the illustrated centrality most likely corresponds to the psychological centrality of the house in the lifeworld." (Behnken/Zinnecker 2010: 17, own translation)

This assumption is often criticized (see Pocock 1976, Evans 1980, and Blades 1990; or comprehensively in reference to Lynch, see Seifert 2011), for example, because the piece of paper itself represents a physical frame and the placement of further information on the paper becomes more limited with each element drawn.

A potential validation tool, for example, is comparing the mental maps with objective professional maps (for further details, see Behnken/Zinnecker 2010: 17 below). This comparison focuses on the subjective features of the drawing. It is possible to identify sub-

jective particularities of the lifeworld and "distortions": "These can involve the position of the spatial elements in relation to one another being changed in the personal drawings, the linear dimensions deviating from the official maps, certain spatial elements being left out or others being added." (ibid.: 18, own translation) For this purpose, the mental maps are transposed, in whole or in part, into objective maps to allow for an in-the-moment analysis of the subjective perspective of the respondents regarding their lifeworld.

In addition, verbal information can also be translated into maps and condensed to draw relevant conclusions. In his study *The Image of the City* (2007: 167–174), Lynch also generated maps from the verbal descriptions of the respondents and superimposed individual sketches to form collective maps. These maps were compared with the inventory surveys of the researchers who were trained in cartography. Technically, today this type of mapmaking can also be done using digital image editing programs, which can superimpose computerized, scanned sketches and drawings, show or hide those sketches and drawings individually as layers, or use them as a basis for professional maps. These professional maps, in turn, are created in computer-aided design programs (*CAD*) or geographic information systems (*GIS*).

4.2 Synthesizing analysis: Triangulation

In a synthesizing analysis, the mental map, the supplementary drawing on transparent paper, the documentation of the drawing process by the researchers (if available), the audio recordings of the explanations related to the drawing process, and the interview are merged as data sources (Behnken/Zinnecker 2010: 20). Any supplementary material that was collected is also added, such as the field notes of the researchers. At the same time, information about the context is helpful and can complement the survey: this includes information about the neighborhood (photos, a map of the neighborhood, aerial images, or even historical map material or official planning documents to retrace changes) and about the broader cultural context in which the respondents live. The information mentioned above, provided it is of a cartographic nature, can be digitized and combined with subjective or collective maps in geographic information systems (*GIS*) (see previous section) and overlaid with other data (e.g., crime monitoring surveys).[3]

This synthesizing approach has a compensating and explanatory effect as it makes it possible to read and interpret unclear and even omitted information reliably from mental maps or interview statements: "In general, the triangulation method reduces the greater ambiguity of visual expressions compared to verbal expressions." (Behnken/Zinnecker 2010: 21, own translation)

Additionally, data sessions with local experts who are familiar with the field of investigation and the cultural context are helpful (see Fig. 4). Here we collaborate with local planning offices and scholars from the local universities.[4]

3 For the current state of research, an overview of studies, and the technical limitations of the method, see Curtis et al. 2014.

4 For challenges and guidance regarding comparative cultural research and interpretation using data sessions, see Reichertz 2021.

Fig. 5: Data session with a colleague from Bogotá: Interpretation of narrative maps (drawing and interview statements) using areal images, Google Street View, and online material. | ©SFB 1265 Learning Spaces subproject

With regard to the spatial knowledge of children and youth, we look at spheres of action as a whole and individual spaces inside and outside of those spheres. We assume that mediatization not only results in an equal "expansion" of spatial knowledge but also that access to media, media consumption, media coverage, and travel opportunities have an influence in this regard. In a subsequent step, prototypical examples are chosen from the multitude of narrative maps in the different case studies and compared according to the "*structural similarities*" principle (Katz 2004).

When interpreting mental maps in general and using synthesizing approaches to analyze narrative maps in particular, it is important to make the symbiotic operations of comparing, cutting, and embedding empirical material transparent for other researchers. Behnken und Zinnecker (2010: 21) recommend an interim report to document advances in knowledge discovery, which should also include interim cartographic products created by comparing, transposing, translating, and superimposing maps. In addition to methodological decisions during the research process, the "results of syntheses [are recorded] based on the structure of developed and used categories (topics, definitions, relationships) [and] findings (interpretations and conclusions)" (for details, see Flick 2014: 421).

5 Methods with high interdisciplinary integration and potential for further development

Despite all of the methodological challenges, the advantages of combining mental maps and interviews are plain to see: Respondents can choose between two forms of expression depending on the situation and their personal preference. With regard to difficult or taboo topics, drawing methods seem to facilitate conversations with respondents (Søndergaard/Reventlow 2019). Thus, the use of both approaches is relatively straightforward, potentially promoting communication in intercultural settings and breaking down power asymmetries in interview situations. Furthermore, the technique can be adapted to the respective situation and object of investigation (Behnken/Zinnecker 2010: 23).

However, since there are many different ways to collect and analyze data, the procedure must be described in detail in a research report (Flick 2014). Decisions made in every step of the process influence the final product. Especially when working with mental maps, the transparency and replicability of the results are essential and further development is required in terms of both the survey and analysis methods (see lists in Curtis et al. 2014: 267). This development work is rewarding because working with mental maps has proven to have high interdisciplinary integration potential, bringing together scholars from various disciplines to carry out not only basic research but also applied research. Therefore, it represents a methodological bridge between action-oriented disciplines and planning practice.

References

Behnken, Imbke/Zinnecker, Jürgen (1991): *Modernisierung von Kindheit im inter- und intragenerativen Vergleich. Familien- und regionbezogene Fallstudien von Kindern, Eltern und Großeltern*. Programm. Informationen zur Studie. Siegen: Universität Siegen.

— (2010): Narrative Landkarten. Ein Verfahren zur Rekonstruktion aktueller und biografisch erinnerter Lebensräume. In: *Enzyklopädie Erziehungswissenschaft Online*. Online: www.erzwissonline.de/?mef (accessed: 16 April 2020).

Blades, Mark (1990): The Reliability of Data Collected from Sketch Maps. In: *Journal of Environmental Psychology*, 10(4), pp. 327–39.

Chawla, Louise (2002): *Growing Up in an Urbanizing World*. London: Routledge.

Curtis, Jacqueline W./Shiau, Ellen/Lowery, Bryce/Sloane, David/Hennigan, Karen/Curtis, Andrew (2014): The Prospects and Problems of Integrating Sketch Maps with Geographic Information Systems to Understand Environmental Perception: A Case Study of Mapping Youth Fear in Los Angeles Gang Neighborhoods. In: *Environment and Planning B: Planning and Design*, 41(2), pp. 251–71.

Downs, Roger M./Stea, David (Eds.) (2005 [orig. 1973]): *Image & Environment: Cognitive Mapping and Spatial Behavior*. Revised Edn. New Brunswick, NJ: Transaction Publishers.

Evans, Gary W. (1980): Environmental Cognition. In: *Psychological Bulletin*, 88(2), pp. 259–87.

Flick, Uwe (2014): Gütekriterien qualitativer Sozialforschung. In: Baur, Nina/Blasius, Jörg (Eds.): *Handbuch Methoden der empirischen Sozialforschung*. Wiesbaden: Springer VS, pp. 411–424.

Golledge, Reginald G. (1992): Place Recognition and Wayfinding: Making Sense of Space. In: *Geoforum*, 23(2), pp. 199–214.

Goodchild, Barry (1974): Class Differences in Environmental Perception: An Exploratory Study. In: *Urban Studies*, 11(2), pp. 157–69.

Gould, Peter/White, Rodney (1992 [orig. 1974]): *Mental Maps*. 2nd Edn. London/New York, NY: Routledge.

Kaplan, Rachel/Kaplan, Stephen (1989): *The Experience of Nature: A Psychological Perspective*. New York, NY: Cambridge University Press.

Katz, Cindi (2004): *Growing Up Global: Economic Restructuring and Children's Everyday Lives*. Minneapolis, MN: University of Minnesota Press.

Kitchin, Robert (1994): Cognitive Maps: What Are They and Why Study Them? In: *Journal of Envrionmental Psychology*, 14(1), pp. 1–19.

Lynch, Kevin (1960): *The Image of the City*. Cambridge, MA: MIT Press.

— (1977): *Growing Up in Cities. Studies of the Spatial Environment of Adolescence in Cracow*. Melbourne, Mexico City, Salta, Toluca, and Warszawa. Cambridge, MA: MIT Press.

— (2007): *Das Bild der Stadt*. 2nd Edn, 5th unmod. Repr. (of the 1989 Edn. Braunschweig/Wiesbaden: Vieweg) (Bauwelt Fundamente 16). Gütersloh: Bauverlag.

Matthews, Michael H. (1987): Gender, Home Range and Environmental Cognition. In: *Transactions of the Institute of British Geographers*, 12(1), pp. 43–56.

— (1992): *Making Sense of Place: Children's Understanding of Large-Scale Environments. Developing Body and Mind*. Hemel Hempstead/Lanham, MD: Harvester Wheatsheaf/Barnes & Noble.

Muchow, Martha/Muchow, Hans Heinrich (2012 [orig. 1935]): *Der Lebensraum des Großstadtkindes*. 2nd Edn. of new Edn. edited by Behnken, Imbke/Honig, Michael-Sebastian. Weinheim/Basel: Beltz Juventa.

Pocock, Douglas C. (1976): Some Characteristics of Mental Maps: An Empirical Study. In: *Institute of British Geography*, 1(4), pp. 493–512.

Reichertz, Jo (2021): Limits of Interpretation – Interpretation at the Limits. Perspectives from Social Hermeneutics on the Re-Figuration of Space and Cross-Cultural Comparison. In: *Forum Qualitative Sozialforschung*, 22(2), Art. 18

Schütze, Fritz (1987): *Das narrative Interview in Interaktionsfeldstudien*. Erzähltheoretische Grundlagen (Teil 1). Hagen: Studienbrief der Fernuniversität Gesamthochschule Hagen.

Seggern, Hille von/Schmidt, Anke/Detten, Börries von (n.d.): *Stadtsurfer, Quartierfans und Co. Jugendliche unterwegs in der Stadt*. Ludwigsburg: Wüstenrot Stiftung.

Seifert, Jörg (2011): Stadtbild, Wahrnehmung, Design: *Kevin Lynch revisited* (Bauwelt Fundamente 148). Gütersloh/Berlin: Bauverlag; Basel: Birkhauser.

Søndergaard, Elisabeth/Reventlow, Susanne (2019): Drawing as a Facilitating Approach When Conducting Research Among Children. In: *International Journal of Qualitative Methods*, 18, pp. 1–11.

The urban layer analysis

Felix Bentlin

Since the discipline of urban design was founded, the characteristics of urban space have primarily been represented by means of visual abstraction and reduction. Builders and architects use morphological, typological, and topographical structures to describe spaces and buildings graphically. In response to industrial urban growth, drawings and print versions of expansion plans[1] arose in the middle of the 19th century on an unprecedented scale. As a result, spaces could be discussed before being implemented. The accompanying process of scientification and institutionalization of urban planning—based on the field of architecture—transformed urban design and planning experiences into principles and collections of best practices for a budding discipline: This gave rise to the pioneering works on urban design by Baumeister (1876), Sitte (1889), Stübben (1890). Graphic production methods were used to represent and imagine the city in individual layers. Builders draw their plans layer by layer, reducing buildings and urban spaces to depict them in various forms.

Not only was this practical knowledge passed down through graphic products, it also served to establish the method of graphically extracting simple objects in urban planning. This method has since evolved into a basic tool in urban design, without any methodological improvements to note: Urban structural elements with selected characteristics are isolated and compiled in a thematic map. For example, only tree-lined avenues, front yards, and parks are depicted on an urban landscape design in order to understand the street-level greenery. In urban design practice, experts refer to these geographically localized thematic maps as *urban layers* (see Fig. 1 and 2). Graphically reducing urban structural properties on a plan represents a method used to extract properties, correlative arrangements, and logics of space gradually from the barely manageable urban organism.

1 City expansion projects with published plan drawings were organized at virtually the same time in Copenhagen (Seidlin 1857), Barcelona (Cerdà 1859), Madrid (Castro 1860), Berlin (Hobrecht 1862), and Brussels (Besme 1866). A detailed description and plan drawings of the Berlin planning processes can be found in Dolff-Bonekämper et al. 2018.

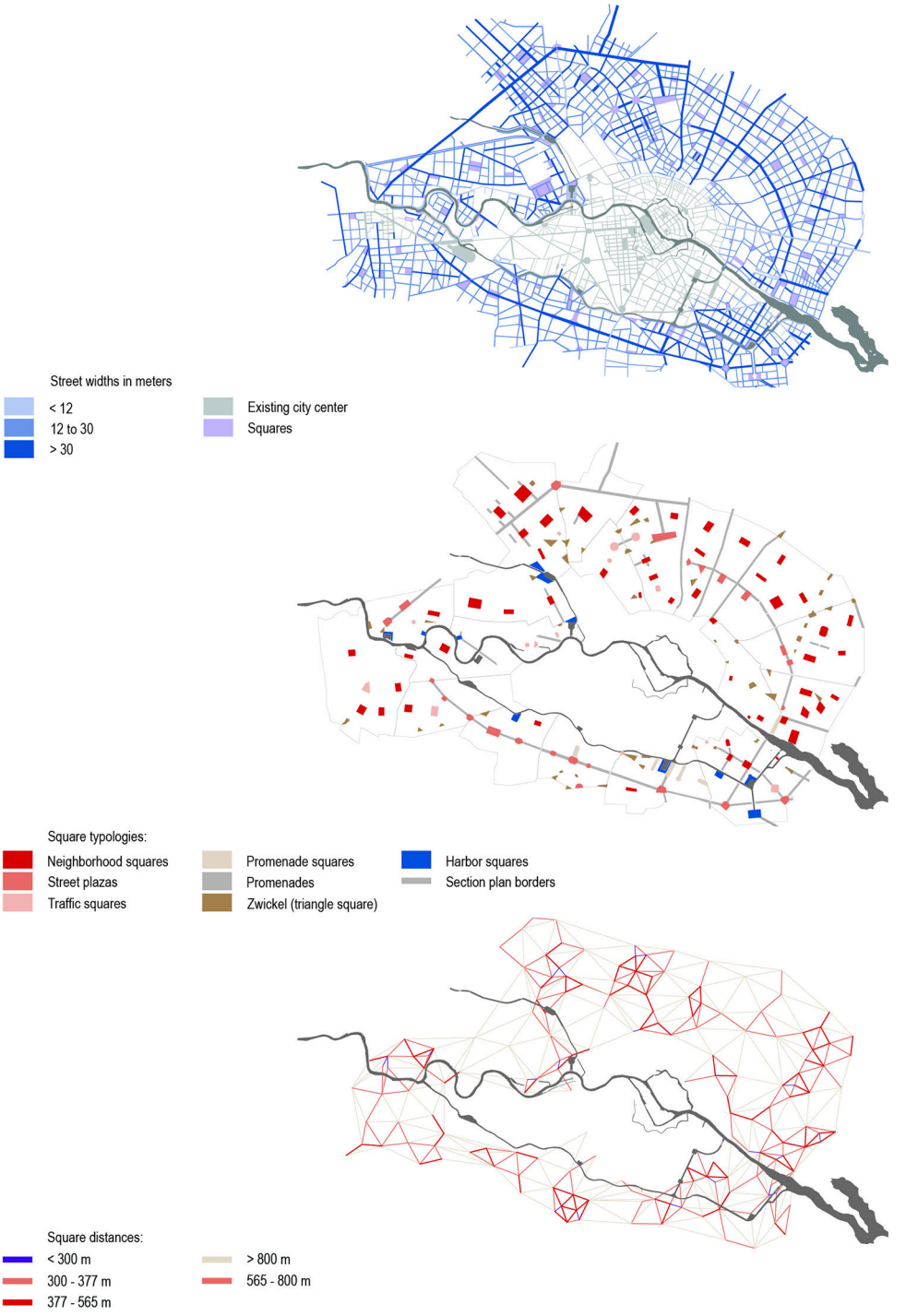


Fig. 1: Example of thematic maps featuring "urban layers": Squares on the 1862 Berlin expansion plan are reduced in relation to the street network, typology, and distances. | © Author's own diagram

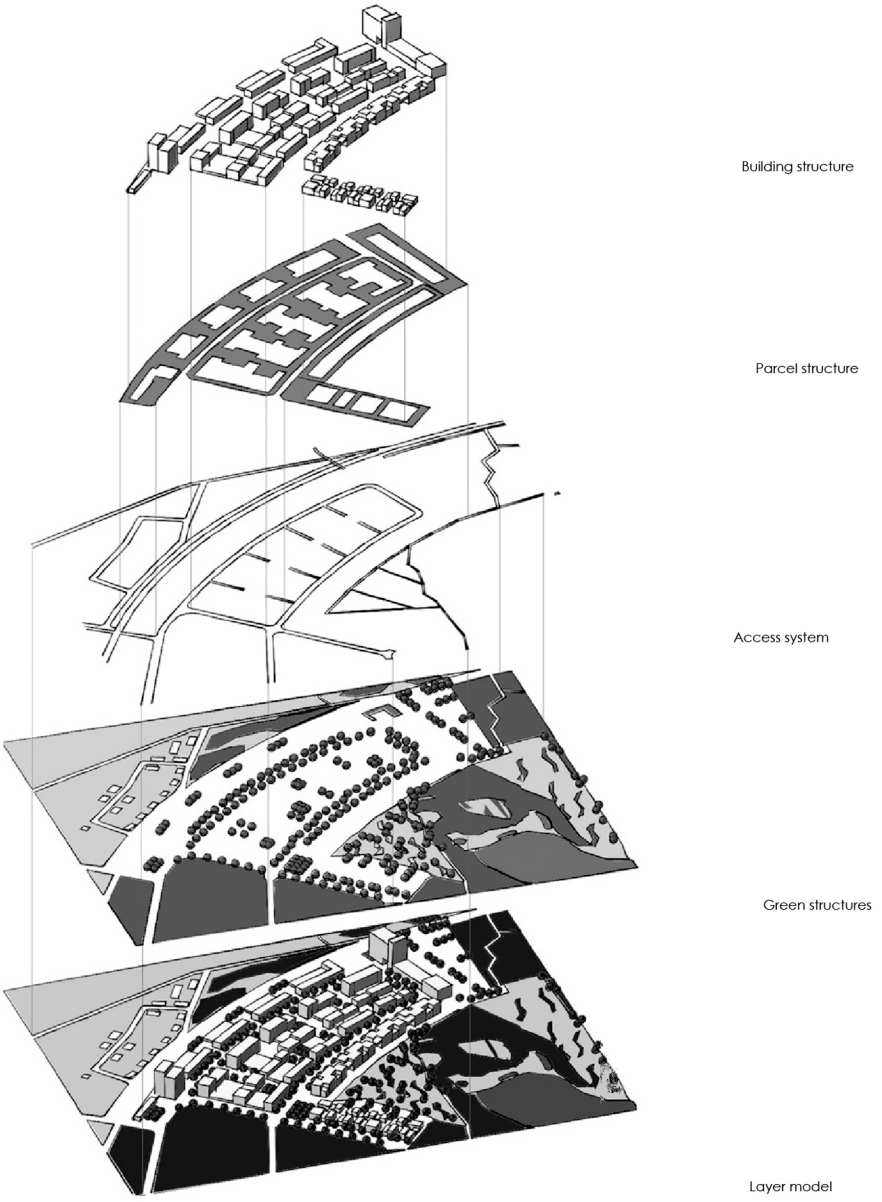


Fig. 2: The layer model developed by Reicher shows individual disjointed layers above the overlay as an exploded axonometric drawing (Reicher 2012: 131).

As an interdisciplinary field, urban design has always relied on this method in its endeavor to meet the high standards of using social, political, and structural parameters as a starting point for the architectonic and urban concept. Overlaying and combining isolated layers offers enormous potential for generating knowledge in the spatial sciences.

The layer analysis is used in basic research, while at the same time serving as a tool for proposing new design concepts—creating a blueprint of the city. Temporal layers and urban spaces are recorded analytically, and new design solutions can be tested in terms of their effectiveness and capacity to be integrated into a typological-morphological context. In order to produce this design and planning knowledge, urban designers break down spaces: Reduction makes it possible to read, interpret, and design the place (Greek *tópos*) and to elaborate on spatial typologies (Greek *týpos*) analytically. In order to facilitate the analysis, the "urban spatial structure is understood practically as a whole composed of layers" (Streich 2011: 351, own translation). Furthermore, knowledge about spatio-structural subareas and principles in the overall urban system offer links for qualitative spatial research. Places can be conceived based on their history, as well as their natural, material, and social qualities. Thanks to this reduction and abstraction work, new contexts are created for spatial interpretations, place-bound innovation, and interventions in the urban environment.

1 Urban theory background: A morphological and typological analysis in urban design

Morphological and typological analyses have served as a basis for knowledge acquisition in the theory of urban design since its advent. They are also closely related to disciplinary and social discourses on the urban and on how physical space should be conceived and transformed. Literary topoi and landscape topographies were paramount in the discourse on architecture even before the studies by Leon Battista Alberti (*De Re Aedificatoria/On the Art of Building*, 1485) and Frank Lloyd Wright (*Fallingwater* house, 1939). Topography is an integral element, while buildings are considered moments or parts of a whole. Numerous theoretical models and structures document how topography and architecture are negotiated in both written and drawn relationships (Song/Cinn 2015). The cartographic analysis of geographic localities does not merely abstract landscape based on contour lines, but rather the topos is in fact the abstraction of physical spatial models.

Hence, the literal meaning of the term morphology can be traced back to the ancient Greek words *morphé* (shape, form) and *lógos* (prose, reason, principle). The term *typos* (mark, impression, type) refers to the examination and theory of the types and classification systems (Lang 2005: 43) used in the architecture handbooks of the 19th century by Jean-Nicolas-Louis Durand and Gottfried Semper. The relationships between urban morphology and building typology are a key subject in attempts at defining terms in architectural theory: At the end of the conference presentation *Typology, Handbooks, and Architecture* from 1965, Aldo Rossi (*L'architettura della città/The Architecture of the City*, 1966) explains the difference between both concepts by referring to the definition by architectural theorist Quatremère de Quincy in the *Dictionnaire historique d'architecture* (1825):

> "The word 'type' presents less the image of a thing to copy or imitate completely than the idea of an element which ought itself to serve as a rule for the model. […] the type [is] an object after which each [artist] can conceive works of art that may have no resemblance. All is precise and given in the model; all is more or less vague in the type." (Rossi 1978: 39, own translation)

Basic principles and key ideas are preserved despite changes. In reference to the definition by Guido Canella:

> "Typology should be conceived as […] a system that explores the invariants of morphology, whereby morphology ought to be understood as a series of events expressed in a historical fact and typology as the categorical aspect resulting from the particular sequence (of events)." (ibid., own translation)

Architectonic perspectives of these terms in particular tend to accept that universal cohesive forces determine whether spatial and material types are generated *a priori*: that is to say, the typological form strongly characterizes space without further verification.

This interpretation of the built environment was established internationally as a typological-morphological approach (Sharr 2007; Lee 2010) calling for more appreciation of and more focus on the traditional gestalts of the historical city (Rossi 1973 [orig. 1966]; Krier 1975). Contrary to the functionalist strategy adopted in post-war planning, architects and urban planners from the second half of the 20th century turned to the wealth of historical urban forms, thus rediscovering the formal analysis of building types and urban figures (Fig. 3) as inspiration for their designs. A comprehensive analysis of urban form as a collection of different yet equal morphologies and types—independently of the historical and modern city—can be found in the trailblazing work *Collage City* (Rowe/Koetter 1984 [orig. 1978]).

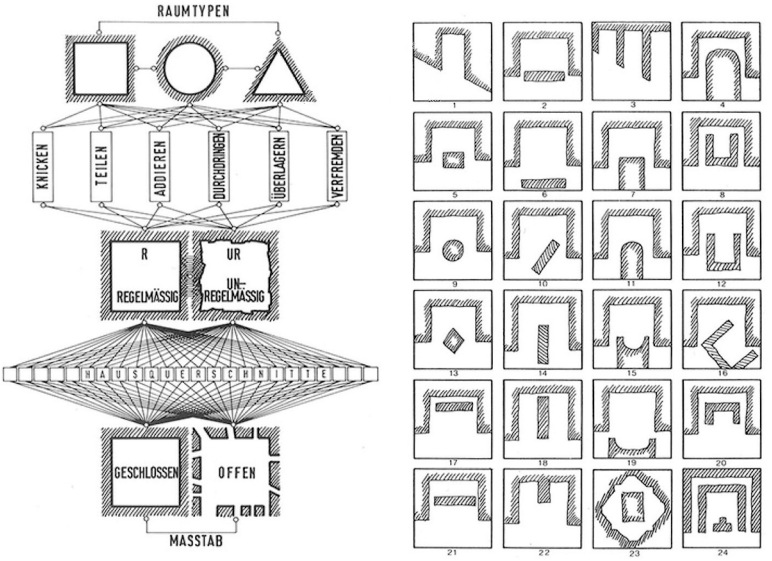


Fig. 3: Morphological categorization of urban space types according to Krier: Overview (left) and collection of example public squares with arranged buildings (right) (Krier 1975: 15, 23).

Morphological collections and typological analyses are not only key tools in architectonic design but also influence the spatial sciences around the world. As a scientific method, morphological analysis consists of exploring the form of objects, while typology is a flexible approach to grouping together common characteristics. This analytical approach compiles the characteristics of, for example, streets, squares, buildings, and monuments that share the same structural features in order to reveal and interpret the history of planning and urban development and the collective memory—and thus the formal intrinsic logic of a city.

The Rome Plan by Italian architect and cartographer Giovanni Battista Nolli (*Nuova Pianta di Roma/Large Plan of Rome*, 1748) is one of the most-cited abstraction drawings in the history of architecture (Führ 2018) and illustrates the basic concepts of abstraction in the urban layer analysis (see Fig. 4). This graphical section of the complete work for the *Topography of Rome* (ital. *La Nuova Topografia di Roma*) is the origin of the term *Nolli Plan*, which is used universally for all figure-ground drawings of cities. The plan depicts the city of Rome in the 18th century in an unconventional manner: It shows not only the outer appearance of the city morphology—the outer edges of the built structures—but also another layer containing the public places within buildings. Church interiors, as well as palace halls, courtyards, and gardens, are classified as public spaces together with streets and squares. This reflected the pope's desire to influence all spaces of the city.

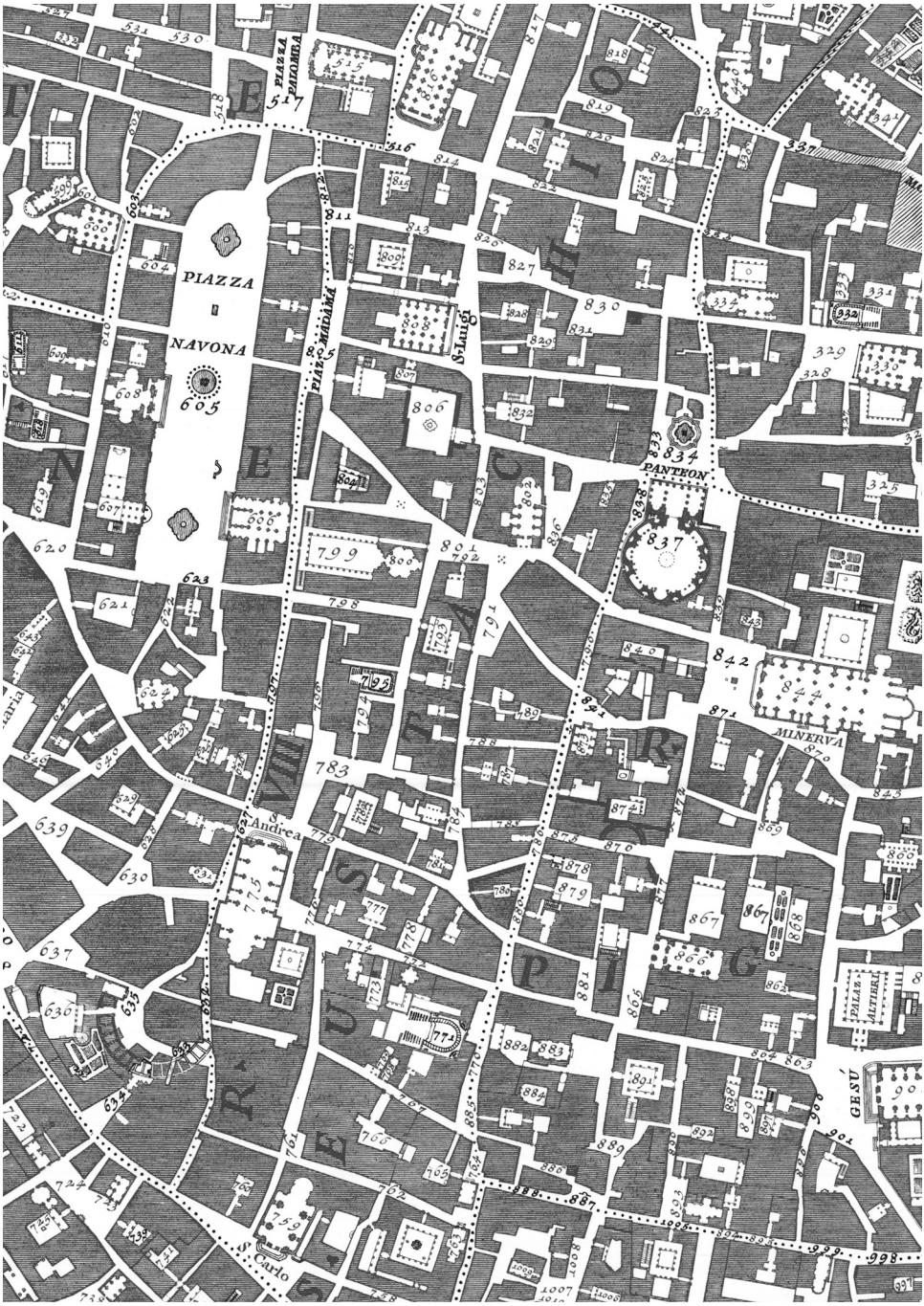


Fig. 4: Section of Nuova Pianta di Roma (1748) by Giovanni Battista Nolli between Piazza Navona and the Pantheon. | ©Photographic Collection of Bibliotheca Hertziana

By representing all ground floor plans of all public buildings, the figure-ground diagram is more complex. As such, the Nolli Plan expanded the concept of urban morphology to include a simple analysis of spatial volume elements by identifying spaces of social interaction.

2 From the birth of the discipline to a tool for planning practice

The first urban design textbooks were published in response to the mass urban expansions of the 19th century in order to categorize and illustrate model urban spaces and design principles (Lampugnani et al. 2017). These works were based on the practical knowledge gleaned from different expansion plans and knowledge about spatial structures (Kegler 1990: 65; Lampugnani et al. 2017: 7). Initially concentrating on the two- and three-dimensional shape of the city, modern morphology takes into account the forms of constantly changing networks, blocks, and buildings in the city, in addition to incorporating other factors that characterize space, such as transport infrastructure, industrial infrastructure, vegetation, and open spaces (Benevolo 1980). In the modern theory of urban design, the built city is perceived as an object and construct with social, economic, ecological, and structural-spatial dimensions, where urban design is considered a subdiscipline of urban and spatial planning (Frick 2011: 13, 193; Düwel/Gutschow 2005: 35–41). Kegler also classifies urban design as part of the discipline of urban planning, referring to "fluid borders" (Kegler 1990: 66, own translation) within the disciplines; notwithstanding, the discipline of urban design primarily arose from the fields of architecture and civil engineering (Albers 1975: 10; Frick 2011: 21; Herold 2018).

An understanding of the internal structural conditions of the physical form is essential for understanding urban development processes and, beyond that, for the successful "manipulation" and design of the urban. In short, the layer method is used as a tool in basic research: an "approach to conceptualizing the complexity of physical form" (Larkham 2005: 22). To this day, this theory purports that urban forms can be characterized by specific, discernible architectural elements and their relationships on different scales (Humpert 1997; Moudon 1997; Dempsey et al. 2010; Kropf 2005, 2011; Eberle/Tröger 2014). This working hypothesis of the urban analysis still defines a significant portion of design practice today (Çalişkan/Marshall 2011; Mohamed et al. 2017; Stojanovski/Axelsson 2018).

In German-speaking countries, the layer method, as an analysis and design tool, is based on the morphological and urban-structural theories of architects Gerhard Curdes (1995, 1997) and Klaus Humpert (1997; Humpert et al. 2002), as well as their academic spheres of activity (especially Christa Reicher and Heinz Nagler).[2] A distinction should be made between the "basic elements of urban structure" according to Curdes and Humpert—such as block, courtyard, and solitary—and the "components of the city" (Reicher 2012). As a student of Curdes, Reicher added several thematic areas to the

2 Heinz Nagler was assistant to Prof. Humpert at the Institute of Urban Planning and Design of the University of Stuttgart from 1983 to 1988. Christa Reicher worked as a research associate at the Chair of Urban Design for Prof. Curdes at RWTH Aachen University.

urban layer model, sorted according to their function in the city: open space, public space, residential, commercial and industrial, social and school infrastructure, trade and care (ibid.: 92–157). Another version of the spatio-structural layer model according to the teachings of Heinz Nagler—a student of Humpert—defines the "layers of the city" as follows: natural surroundings, history, development, parceling, building structure, building typology, open space typology, public space, ecology and environment, and the invisible city. The urban layer model (see Fig. 2) is characterized primarily by the urban and structural layers of building structure, parcel structure, green structure, and access system collectively.

This structural thinking based on basic geometric shapes (line, area, and point)[3] influences the discipline of urban design and the planning sciences to this day: In complex cityscape-forming processes, it is necessary to study relevant linear, planar, and concentric structural models of the city on the one hand (Curdes 1995: 49–57; Streich 2011: 266; Reicher 2012: 42–47). On the other hand, the point elements (building, center), linear elements (traffic routes, networks), and area elements (parcels, area units) form the compositional basis for generating urban units that are organized according to the basic principles and logics of design. Therefore, in analysis and design practice, the complexity of urban form is understood as the development of physical elements according to regulatory systems of different temporal layers (Conzen 2004; Gauthiez 2004; Raith 2000; Koolhaas/Mau 1997; Krier 1979, 2006). Especially in practice, this structural approach in the urban layer technique is combined with analytical or design-related objectives to carry out place-bound and task-specific studies.

3 Performing an urban layer analysis

The abstraction of urban complexity is the main principle of this integrative method: In order to examine certain arguments, relevant elements of the city's spatial appearance are highlighted. The theoretical foundation of this decompositional approach (Hettich 1969: 455–457) to urban structures rests on the ethnomethodological practice of *visual research* with qualitative and quantitative analysis techniques (Emmison/Smith 2000; Rose 2007). On the one hand, breaking down and decoding space can serve to describe, explore, and evaluate specific compositional correlations. On the other hand, adding and removing layers can help to visualize relationships between spatial elements or time periods. These combinations are preferably always depicted on a one-layer analysis plan as the basis. This results in thematic maps and map sections that reduce the diverse range of information on the maps to the key aspects. In addition to empirical indices and qualitative descriptions, this also makes planning processes replicable.

The identification and selection of different layers refers to a specific design task or research question: This means the analysis can serve both as a basis for the urban design

3 The basic forms according to Humpert are derived from three fundamental anthropological principles of human settlement patterns: move (line), occupy (area), and erect (body). The approach is based not only on their own research but also on the contributions and insights of architects Gerd Albers (1919–2015) and Oswald Matthias Ungers (1926–2007).

process and as a basic research tool. Isolated layers first appear in the analytical approximation, abstraction, and then drawing (physical and/or virtual). The draftsperson does not simply select the objects of investigation by means of a place-bound and topic-based definition of the task, but instead incorporates their biographical learning experiences as well (see Bentlin/Klepp in this handbook). The object of analysis, the interpretation, and the biographical expertise are directly related to one another. Therefore, the method used should not be regarded as a predefined sequence of analytical layers but rather as partially parallel and interlocking strands that influence each other iteratively.

3.1 Defining a topic of interest and study area

In order to reduce the amount of information, the method starts by defining the center of interest. The analytical focus on one topic reduces the complex pool of data by removing and simplifying objects of investigation. For example, the analysis of a city district is reduced to green areas, bodies of water, and impervious surfaces to make assertions regarding the microclimate. Selecting a geologically defined study area increases the focus still further. Differentiating between a key study area and an extended study area allows for a comprehensive place-based analysis.

3.2 Creating the pool of data and selecting elements of investigation

Based on the definition of the task and area, urban layers are selected for the mapping: The structural plans for the building development, parcels, and access are the basic elements for the analysis and can be expanded to include spatial, functional, sociological, ecological, and any other conceivable layers (see Fig. 2). The maps to be created consist of geographically localized information and select structural elements in accordance with the topics. For example, the street vegetation is reduced to only trees and front yards, which are depicted in a simplified manner in terms of their size and type. As a result, certain spatial qualities are correlated and evaluated. Depending on the topic, the scaled approach should be revised. Furthermore, the elements of investigation should be compared with the possibilities for querying and collecting data.

3.3 Drawing and presenting layers

Based on the underlying cartographic data, the entire pool of data is examined and broken down into one layer graphically. The graphical analysis by hand or with GIS/CAD tools should be understood as a means of synthesis that can investigate physical-material and other spaces for itself and in its reciprocal relationships. These analytical and synthesizing drawings, as well as their combinations, are also frequently referred to as *mapping* and include different forms of presentation, such as sketches, diagrams, building plans, city maps, or mental maps (also see Million in this handbook). For all layers to be correlated, a uniform section and scale is useful.

3.4 Evaluating individual layers and layer combinations

As soon as the drawings have been created, the graphical preparation and formulation of the acquired knowledge begins. To compare the layers, graphic codes, symbols, and the layout are harmonized. Analytical findings are highlighted so that they can be compared by the human eye. Depending on the planning task at hand, the layers can be evaluated with regard to their potential and defects, meaning every layer is classified according to the urban design expertise of the creator (Fig. 5). These findings can be transferred layer by layer into a spatial SWOT analysis. Doing so makes it possible not only to interpret information and characteristics but also to create or reconstruct abstract planning concepts and processes.

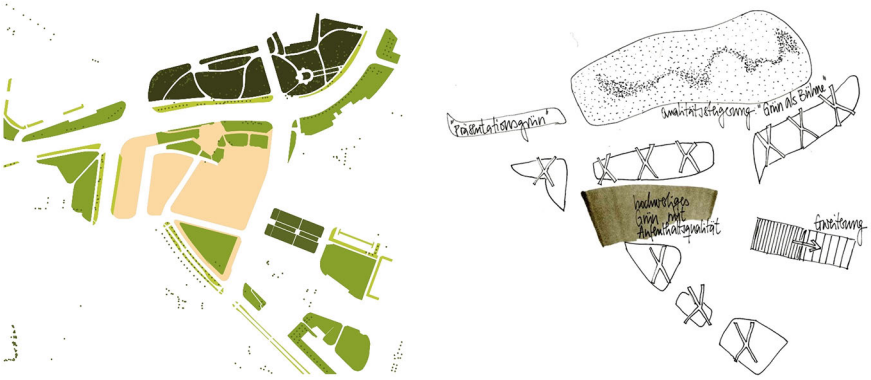


Fig. 5: Graphic knowledge acquisition: Green structures with color-coded quality indicators as digital drawing (left) and inferences for the urban design as a hand-drawn sketch (right). | ©Author's own diagram in cooperation with Svende Albrecht

Georeferencing makes the method more flexible and allows it to be integrated into other analyses. The transferability and comparability of the data beyond the chosen analysis offer a great deal of potential. It is also possible to continue combining layers at will. By comparing them with other studies and documents, the findings can also be contextualized and verified. As a result, it is possible to justify the statements regarding the characteristics of the city; this in turn illustrates the influence and significance of planning steps. Knowledge of built structures and spaces serves as a repertoire in the design process.

4 Basics principles of the analysis

4.1 Creating and selecting the underlying data for the layer model

Visual figures and technical data are used to select a study area and to create an appropriate digital or analog pool of data. However, these are two-dimensional depictions of the city without any portrayal of three-dimensionality, which is indicated by means of coding and modeling. The visual-geographic depiction of the city can be analyzed based on the following representations:

- Orthophotos: Undistorted and true-to-scale illustrations of the earth's surface are created by means of photogrammetry from aerial or satellite photos.
- Plan drawings: The Authoritative Real Estate Cadastre Information System (ALKIS) has been providing georeferenced and precisely measured plans with nationally standardized plots and buildings for all of Germany since 2015.

In general, analog and digital sources are available:

- Public city planning, land surveying, and land registry offices
- Museums, libraries, and archives
- NGOs, websites, and open-source databases
- Companies
- Own production by means of site visits, surveying, and mapping (also see Tabačková in this handbook)

The underlying data serve as a basis for investigating geographic sections, different time segments, and spatial scales. In order to compare the analysis maps better and help observers navigate easily, the extracted layers can be correlated with, for example, landscape elements such as bodies of water, the existing urban structure, or special buildings.

With the help of a geographic information system (GIS)—depending on the software—it is possible to create a digital cartographic basis with a virtual system of layers: In *computer-aided design* processes (short: CAD), *layers* are a common concept used for the process of hierarchizing and structuring data within the drawing files. Because it is easy to show and hide the individual layers, the graphical representation can be customized to suit the purpose of the drawing. The finished data collage makes it possible to access sectoral planning knowledge. This methodology is also used when processing geographic information systems in applied and scientific cartography (Hake et al. 2002: 31, 216).

In the subsequent analysis, the spatial structures to be investigated, as well as their arrangement on different scales, are selected. The selection is based on the design and research objectives, the data sources, and the expertise of the users. In order to study the building structure of a city district, for example, visual axes, construction heights, and building typologies are selected as structural elements in the comparison with the underlying data for a layer plan, then rendered graphically and outlined. The structural decomposition, graphical exploration, and thematic combination underscore striking individ-

ual motifs and recurring motifs in the building structure layer. Within this interplay, it is possible to depict urban design and planning principles layer by layer.

4.2 Graphical analysis of the layers

In order to carry out the graphical analysis, hand-drawn or computer-assisted plan drawings can be created (based on GIS/CAD). Using transparent sketch paper, the draftsperson can collate information from different base maps; or the draftsperson can create a virtual layer database. With the help of GIS and CAD analysis tools, it is possible to calculate, assess, and categorize attributes of the digitized elements according to complex parameters and key figures, such as surface area.

This is where drawing abilities and technological possibilities converge. While handmade plan drawings are characterized by a variety of urban design overtones, graphical inconsistencies, and scale tolerances, the computer-assisted analysis is based on object-specific definitions accurate to the millimeter. This discrepancy represents a methodological challenge. The study includes interpretive decisions and corrections to the drawings, even in the digitization stages.

Both the graphical analysis of the maps by hand and the digitization process are considered iterative processes. In essence, a shift takes place between data and knowledge acquisition using maps and drawings, which resembles the methodological method used in grounded theory (Strauss/Corbin 1996). As with the *concept maps* in grounded theory, maps and drawings in particular—and not just the potentially formulated text—are part of the layer analysis method and are used to illustrate the acquired knowledge. Consequently, the iterative process is described as "thinking with the pen." The sketches created in the process should therefore also be considered a result of the analysis, like the revised presentation drawing.

5 Basic definition of the urban layer model

The categorization into layers forces users to reduce complex forms to their key characteristics. This abstraction of the complexity of the city has also been the subject of criticism (Albers 2000: 27; Kropf 2005). While the generic arrangement of infrastructure networks, blocks, and buildings remains relatively consistent across different planning approaches, structural layers are always the result of social and cultural processes. In this case, a more detailed analysis can demonstrate the diverse range of spatial products within different social environments. Scaling and defining the degree of abstraction are therefore part of the individual analysis process. The flexible and additive approach of the layer analysis offers possibilities for both adjustments and corrections: for example, by adding (socio-spatial) layers or adjusting the section.

Until now, the layer technique in urban design has been based on a structural model without any concrete methodological procedure. The basis for identifying and designing place-bound regularities requires a methodological definition in order to ensure interdisciplinary integration between urban design and qualitative spatial research. In order for the principles of order and design to serve as a starting point and link in urban lay-

ers, I as an urban designer and academic have defined five study areas as the basis for the urban layer analysis within the direct sphere of activity of the Aachen School (Curdes, Reicher) and Stuttgart School (Humpert, Nagler):

- **Building structure**: Built (*solid*) is differentiated from unbuilt (*void*) as a figure-ground diagram in this layer. Spatial configurations in urban design can be identified based on the shape and arrangement of structures. Units, ensembles, and spatio-structural connections indicate characteristics of neighborhoods and city districts: for example, the building history or building typology.
- **Parceling**: Parcels regulate ownership and represent the smallest unit of the urban order and regulatory structure. This layer shows a network of property boundaries. Dimensioning, type, and scale of use refer to the flexibility for public and private builders and show the growth processes and ownership structure of the city.
- **Access**: The access network shows transport areas for all forms of mobility. Link roads and intersections can be identified based on dimensioning, hierarchies, and connectivity. Technological, cultural, and social function descriptions are closely connected to public space.
- **Open space and green structure**: The open space shows the unbuilt areas in the city with public and private use claims. Aspects of the urban ecology and environment are described as a cross between urban functional areas on the one hand and natural and landscaped areas of vegetation on the other. Open space plays a special role as the "stage for the city."
- **Landscaping and settlement structure**: The natural elements of the landscape, such as bodies of water and relief, as well as anthropogenic changes, such as canals and cultural landscapes, reflect the connection between urban development and site specifications.

The method is especially relevant for planning and design practice as users can carry out a spatio-structural inventory survey and generate inspiration for new urban spaces at the same time. The spatio-structural results serve as the basis for the *further design* and *further exploration* of the city. The act of anatomizing in particular provides insight into "designing a new picture, a concise statement initially consisting of one layer" (Reicher 2012: 174, own translation). By breaking down the general context, the method opens up sectoral insights into a previously obscure whole. The complexity and above all the interconnectedness and interdependence of different sub-aspects of the city (e.g., function, form, use) can be made manageable by simplifying them and structuring them thematically. As a tool in planning practice intended to make it easier to understand places and spaces, it establishes a basis for planning interventions and advancements in the spatial sciences, striking a balance between practical application and basic research: capturing, interpreting, and rethinking the place with its history and its natural, material, and social qualities.

References

Albers, Gerd (1975): *Entwicklungslinien im Städtebau. Ideen, Thesen, Aussagen – 1875–1945: Texte und Interpretationen*. Düsseldorf: Bertelsmann.

— (2000): Zur Rolle der Theorie in der Stadtplanung. In: *Deutsche Akademie für Städtebau und Landesplanung (DASL)* (Ed.): Wer plant die Stadt? Wer baut die Stadt? Bericht zur DASL-Jahrestagung in München 2000. Berlin: Edition Stadtbaukunst.

Baumeister, Reinhard (1876): *Stadterweiterungen in technischer, baupolizeilicher und wirthschaftlicher Beziehung*. Berlin: Verlag von Ernst & Korn.

Benevolo, Leonardo (1980): *Die Geschichte der Stadt*. Frankfurt a. M.: Campus.

Çalişkan, Olgu/Marshall, Stephen (2011): Urban Morphology and Design: Introduction. In: *Built Environment*, 37(4), pp. 381–392.

Conzen, M. (2004): *Thinking about Urban Form: Papers on Urban Morphology*, 1932–1998. Bern: Peter Lang.

Curdes, Gerhard (1995): *Stadtstrukturelles Entwerfen*. Stuttgart/Berlin/Cologne: Kohlhammer.

— (1997): *Stadtstruktur und Stadtgestaltung*. Stuttgart/Berlin/Cologne: Kohlhammer.

Dempsey, Nicola/Brown, Caroline/Raman, Shibu/Porta, Sergio/Jenks, Mike/Jones, Colin/Bramley, Glen (2010): Elements of Urban Form. In: Jenks, Mike/Jones, Colin (Eds.): *Dimensions of the Sustainable City*. Dordrecht/Heidelberg/London/New York, NY: Springer, pp. 21–51.

Dolff-Bonekämper, Gabi/Million, Angela/Pahl-Weber, Elke (Eds.) (2018): *Das Hobrechtsche Berlin. Wachstum, Wandel und Wert der Berliner Stadterweiterung*. Berlin: DOM publishers.

Düwel, Jörn/Gutschow, Niels (2005): *Städtebau in Deutschland im 20. Jahrhundert. Ideen – Projekte – Akteure*. Berlin/Stuttgart: Borntraeger.

Eberle, Dietmar/Tröger, Eberhard (2014): *Dichte Atmosphäre: Über die bauliche Dichte und ihre Bedingungen in der mitteleuropäischen Stadt*. Basel: Birkhäuser.

Emmison, Michael/Smith, Philip (2000): *Researching the Visual. Images, Objects, Contexts and Interactions in Social and Cultural Inquiry*. London: SAGE.

Frick, Dieter (2011): *Theorie des Städtebaus. Zur baulich-räumlichen Organisation von Stadt*. Tübingen: Wasmuth & Zohlen.

Führ, Eduard (2018): Schwarz – Weiß – Denken. In: *Wolkenkuckucksheim, Internationale Zeitschrift zur Theorie der Architektur*, 23(37), pp. 115–146.

Gauthiez, Bernard (2004): The History of Urban Morphology. In: *Urban Morphology*, 8(2), pp. 71–89.

Hake, Günter/Grünreich, Dietmar/Meng, Liqui (2002): *Kartographie. Visualisierung raum-zeitlicher Informationen*. Berlin: De Gruyter.

Herold, Stephanie (2018): Disziplinäre und ideengeschichtliche Hintergründe. In: Dolff-Bonekämper, Gabi/Million, Angela/Pahl-Weber, Elke (Eds.): *Das Hobrechtsche Berlin. Wachstum, Wandel und Wert der Berliner Stadterweiterung*. Berlin: DOM publishers, pp. 106–123.

Hettich, Urs (1969): *Dekomposition als Weg zur Lösung komplexer Probleme*. In: *Schweizerische Bauzeitung*, 87(23), pp. 455–457.

Humpert, Klaus (1997): *Einführung in den Städtebau*. Stuttgart/Berlin/Cologne: Kohlhammer.

Humpert, Klaus/Brenner, Klaus/Becker, Sibylle (2002): *Fundamental Principles of Urban Growth*. Wuppertal: Müller + Busmann.

Kegler, Harald (1990): Stadtplanung – Zur Genese einer wissenschaftlichen Disziplin. In: *Geschichte der Naturwissenschaften, Technik und Medizin*, 27, pp. 65–73.

Koolhaas, Rem/Mau, Bruce (1997): *S, M, L, XL. New York*. NY: Monacelli Press.

Krier, Rob (1975): *Stadtraum in Theorie und Praxis: an Beispielen der Innenstadt Stuttgarts*. 4th unchanged Edn. Stuttgart: Krämer.

— (1979): *Urban Space*. London: Academy Editions.

— (2006): *Town Spaces. Contemporary Interpretations in Traditional Urbanism*. Basel: Birkhäuser.

Kropf, Karl (2005): The Handling Characteristics of Urban Form. In: *Urban Design*, No. 93, pp. 17–18.

— (2011): Morphological Investigations: Cutting into the Substance of Urban Form. In: *Built Environment*, 37(4), pp. 393–408.

Lampugnani, Vittorio/Albrecht, Karin/Bihlmaier, Helene/Zurf luh, Lukas (Eds.): (2017): *Manuale zum Städtebau. Die Systematisierung des Wissens von Stadt 1870–1950*. Berlin: DOM publishers.

Lang, Jon (2005): *Urban Design: A Typology of Procedures and Products*. Oxford: Architectural Press.

Larkham, Peter (2005): Understanding Urban Form? In: *Urban Design*, No. 93, pp. 22–24.

Lee, Christopher (2010): *Working in Series: Towards an Operative Theory of Type*. London: AA Publications.

Mohamed, Syahidah Amni/Harun, Nor Zalina/Alias, Abdullah (2017): Typo-Morphology as an Approach for the Conservation of the Early Malay Towns. In: *Asian Journal of Environment, History and Heritage*, 1(2), pp. 143–154.

Moudon, Anne (1997): Urban Morphology as an Emerging Interdisciplinary Field. In: *Urban Morphology*, No. 1, pp. 3–10.

Raith, Eric (2000): *Stadtmorphologie. Annäherungen, Umsetzungen, Aussichten*. Vienna: Springer.

Reicher, Christa (2012): *Städtebauliches Entwerfen*. Wiesbaden: Springer.

Rose, Gillian (2007): *Visual Methodologies. An Introduction to the Interpretation of Visual Materials*. London: SAGE.

Rossi, Aldo (1973 [orig. 1966]): *Architektur der Stadt, Skizze zu einer grundlegenden Theorie des Urbanen*. Düsseldorf: Bertelsmann Bauwelt Fundamente.

— (1978): *Das Konzept des Typus*. In: Arch+, No. 37/1978, pp. 39–40.

Rowe, Colin/Koetter, Fred (1984 [orig. 1978]): *Collage City*. Basel: Birkhäuser.

Sharr, Adam (2007): *Thinkers for Architects. Heidegger for Architects*. London: Routledge.

Sitte, Camillo (1889): *Der Städte-Bau nach seinen künstlerischen Grundsätzen. Ein Beitrag zur Lösung moderner Fragen der Architektur und monumentalen Plastik unter besonderer Beziehung auf Wien*. Vienna: Springer.

Song, Hayub/Cinn, Eungee (2015): The Complementary Relationship between Architecture and Topography: Focus on the Performative Relationship between the Houses of

Kim Incheurl and Topography. In: *Journal of Asian Architecture and Building Engineering*, 14(2), pp. 271–278.

Streich, Bernd (2011): *Stadtplanung in der Wissensgesellschaft*. Wiesbaden: Springer VS.

Strauss, Anselm/Corbin, Juliet (1996): *Grounded Theory. Grundlagen qualitativer Sozialforschung*. Weinheim: Beltz, Psychologie-Verl.-Union.

Stojanovski, Todor/Axelsson, Östen (2018): T*ypo-Morphology and Environmental Perception of Urban Space*. Conference Paper ISUF 2018 XXV International conference Urban Form and Social Context. Online: https://core.ac.uk/download/pdf/224957286.pdf (accessed: 29 September 2020).

Stübben, Joseph (1890): *Der Städtebau. Darmstadt.*

Multiscalar mapping

Dagmar Pelger, Emily Kelling, and Jörg Stollmann

With the emergence of urbanism as an interdisciplinary field of urban research, cartography, similar to ethnography, has enjoyed widespread popularity as a spatio-analytical tool in all space-related research disciplines (Glaser 1974; Lindner 2004). As geography, sociology, ethnology, and anthropology have been combined with urban planning, regional planning, landscape architecture, and architecture—as well as further economic, ecological, or historical fields of research related to urban spaces—urban research has detached cartographic methods from their role as descriptive tools. Just as descriptive-theoretical and design-related disciplines come together in urban research, the field of cartography has evolved (like the field of ethnography, which is not discussed in detail here) from geography, to landscape architecture, and architecture from a visualization tool into an analytical tool and finally into a design tool (Corner 1990; Cosgrove 2004 [orig. 1999]).

What is special about the term mapping compared to the map is the fact that cartography originated explicitly from the graphic production of maps as territorial inventories by means of surveying, while the term mapping clearly evokes the procedural aspects of the production. In mapping, focus is placed on the production of maps as a reflective process during data collection and analysis. We use the concept of mapping to describe, beyond the reference to purely geographical reference models, also the assignment and relatedness of data and/or textures, as is the case in ethnography or in the social sciences (Wildner/Tamayo 2004). Due to its rather loose use of geographic reference models, we believe the term mapping, in contrast to maps, is particularly suited for interdisciplinary studies related to space.

The objective of this article is *to make mapping applicable as a design-based tool in the analysis of urban spaces and ways of life in an interdisciplinary context*. For this purpose, we reflected on our experiences from an interdisciplinary teaching research project, in which we used cartographic methods as one of the key tools. In the project we combined a sociological and urban design approach and, by working collectively on a multiscalar mapping process, developed a methodology for exploring urban phenomena within a socio-spatial context, which we intend for other researchers to apply and develop further.

For the field of sociology, we illustrate the possibilities offered by mapping as a tool for studying spatial phenomena; and for the field of urban design we explicate further the

methods of empirical social research as a basis for mapping. We refer to this integration of methods as relational mapping, which is characterized in particular by its ability to capture the action level. Relational mapping makes it possible to capture graphically and to spatialize both the social factors that constitute spaces and the spatial factors, which in turn shape the social relationships.

This article addresses the integration of methods, as well as the potential of using text and mapping to complement each other in spatial research regarding both the generation and transfer of knowledge. In the applied case, we synthesized four interrelated sociological and urban design levels of analysis into a single comprehensive multiscalar mapping (Fig. 1). While semantic data collection and synthesis processes sort information into a temporal sequence of what was said or what was written, mapping is based on a spatial arrangement, which makes it possible to *interpret parallel and superimposed information*. By virtue of its visual character, a drawing makes it possible to link different levels simultaneously and thus condense the findings. We start by discussing the particular narrative quality of mapping, upon which we address how the content is arranged in our project in order to then describe mapping as a multiscalar process in eight steps.

1 Mapping as a multiscalar narrative

Understanding mappings as *narratives* is deeply rooted in the history of cartography. While design plans, such as the floor plans of buildings, generally refer to a future situation to be created, mappings depict spaces that have already been produced. As such, the action producing the space is always implicitly embedded in the mappings. This can be interpreted as a graphic trace of an action.[1]

Thus, a narrative structure along the lines of a spatio-temporal description resides in every map (Caquart/Cartwright 2014). While oral or written stories describe spatial references in a linear temporal structure as verbal/linguistic narrations—the narration itself unfolds as a succession of words—the cartographic and figurative stories of the mappings communicate references to times and actions in a spatial structure as sign-like narrations; these narrations take place in parallel. Therefore, mappings are limited to a snapshot into which all temporally relevant elements must be inscribed, while texts are limited to linear communication through which space can only be narrated step by step. The readers of mappings undertake a considerably larger share of the synthesis work, as with maps and images. At the same time, the synthesis takes place within a much

1 This is where the historic debate on cartographic works as powerful instruments comes into view, claiming property rights, ownership, and power over territories, people, and everyone involved in the production of a cartographically surveyed, recorded, determined, and therefore politically appropriated space. Both this debate and the deconstruction of this hegemonic power with the rise of critical mapping in the 1980s and the critical practices of counter-mapping since the 1990s were not systematically addressed as part of the educational research project since the mapping methods were applied within the secure spaces of the university in this case and were used "solely for academic purposes" at first. Nevertheless, these aspects were discussed with participants in conversations, interviews, and mental mapping projects, as well as in the results published in journals, books, and websites and at events organized by the local and state governments.

shorter period of time than when reading a text, virtually instantaneously: The contents of the narration are revealed to the readers on the map as an overall picture before they can address the details, descriptions, side notes, and lines of argument that make up the mapping process.

For spatial research in the social sciences, the parallel and superimposed information in the mapping is particularly promising for the analysis as the spatial references can be understood differently than in the linear text.

A third difference between mapping and text is the greater vagueness in mappings as graphic artifacts due to their ambiguity. While both linguistic and cartographic narratives are first translated into meanings and statements following the synthesis performed by the readers, there is a great deal more scope in the synthesis when reading a mapping. This is due to the ambiguous nature of sign systems, which are less explicit in terms of their meaning than the words of a language. The difficulty in creating an informative legend illustrates this in particular, where graphic symbols are captured in words and thus ascribed meaning. Mappings express themselves only indirectly by means of the legend or additional text elements; instead, mapping contents are primarily communicated via graphic sign systems. Although these systems, in turn, are based on established and ideally comprehensible conventions, the medium is a non-verbal means of knowledge transfer. A mapping must first be translated before it is possible to discuss it.

This demonstrates how important the interplay between mapping and interpretive text is in space-related research, which is precisely what offers such great potential.

Mappings facilitate a multidimensional analysis and interpretation by means of spatially structured sign systems. The linguistic interpretation of the—generally ambiguous—drawing and the relationships depicted in it allows for a second, more explicit interpretation and analysis. Only after this second interpretation—or multiple interpretations in multiple texts—is it possible to integrate cartographic findings into verbally structured (academic) discourses. Whether the respective interpretation should be captured in text form, by whom, and at what point in the cartographic experimental design can only be determined in connection with the specific objective of the research. Ideally, the mapping and the text form a mutually supportive, cooperative research format for argumentation in spatial questions.

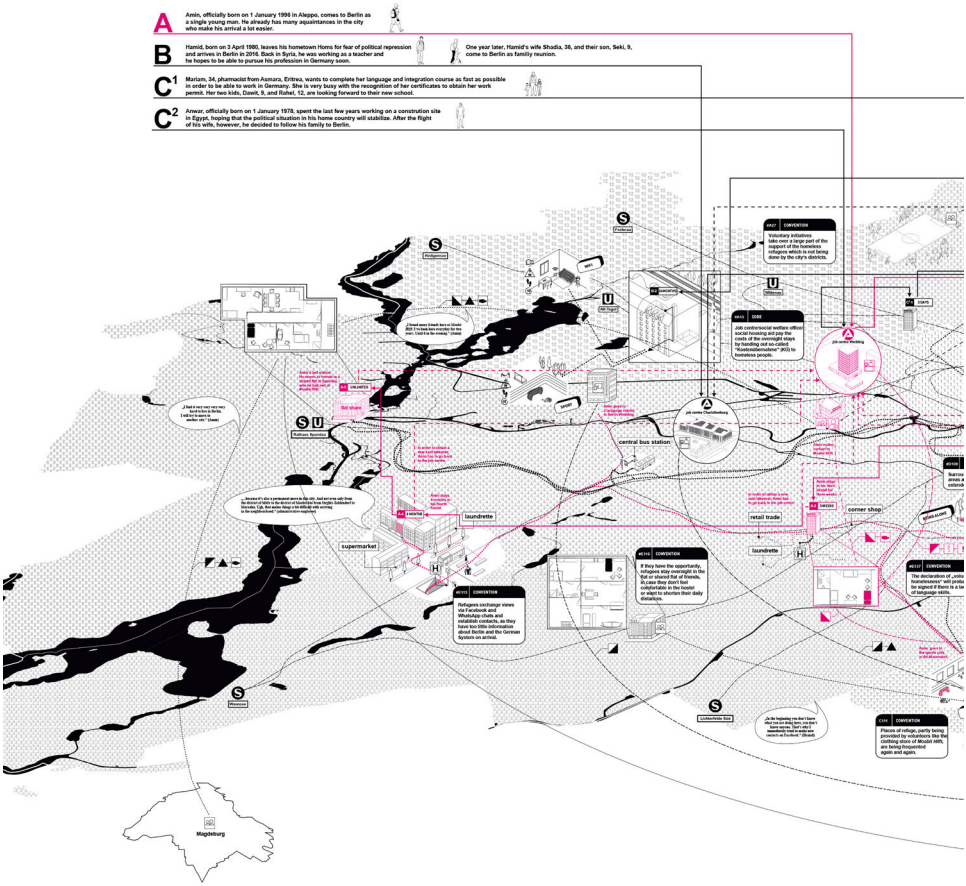
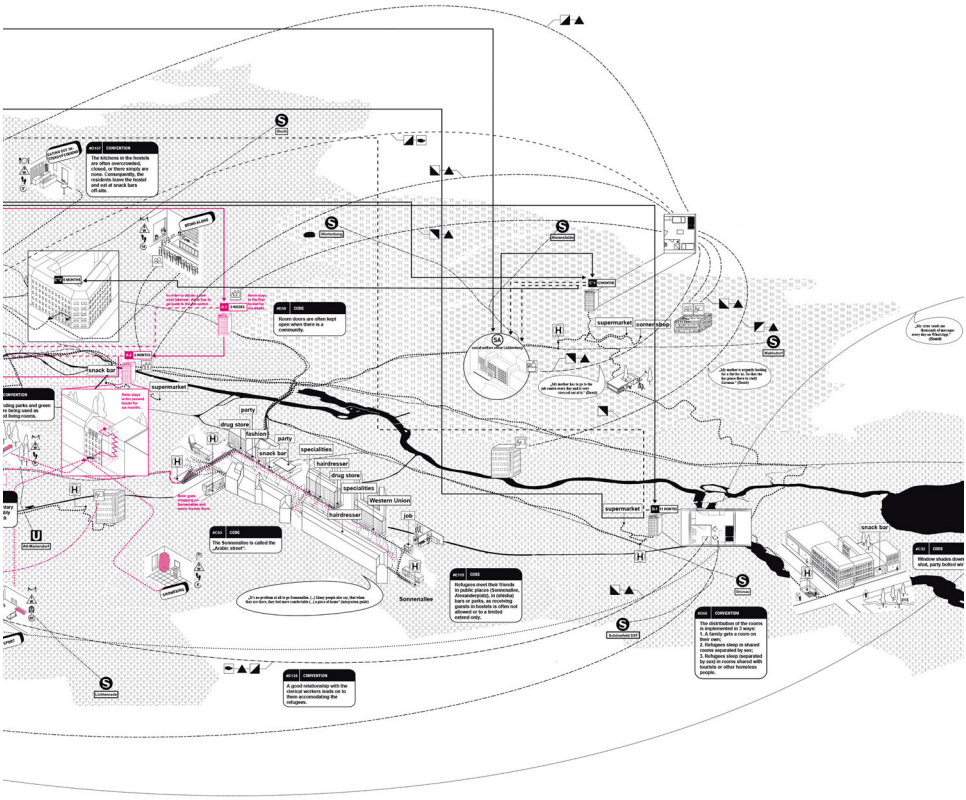


Fig. 1: Mapping project on Berlin's hostel industry with homeless people. | ©Flavia Biianu, Edda Brandes, Pauline Bruckner, Almar de Ruiter, Valentin Dobrun, Finya Eichhorst, Stefan File, Anne Guina, Christopher Heidecke, Dariya Kryshen, Farina Runge, Alina Schütze, Lisa Wagner and Jonas Wulf (map available at: htt ps://depositonce.tu-berlin.de/ handle/11303/11090)


supermarket
snack bar
party
drug store
fashion
specialities
hairdresser
Western Union
job
Sonnenallee
supermarket
cornershop
supermarket
snack bar

2 Case study: The mapping of the hostel industry with homeless people

Against the backdrop of a growing housing shortage in Berlin, we decided to focus on the topic of accommodating homeless people in hostels. This phenomenon, which affected more than 30,000 people in December 2016 (Senate Department for Integration, Labour and Social Affairs 2017) and in summer 2018 (event organized by Senate Department), is not easy to recognize spatially in the city, nor is there much information available about it in public debate. Thus, we hypothesized that this phenomenon has remained hidden, which we confirm and substantiate in the course of our research. The perspective of the hidden nature of inhumane living situations, which can be considered a response to the housing shortage, stems from the debate on urban informality (Dovey/King 2011). The second basis of our approach is founded on the debate surrounding the commons, which speculates about urban goods and spaces beyond the categories of public and private (Ostrom 1990; Stavrides 2016). In the case of the hostel industry, we talk about a forced, nonvoluntary production of space, which nevertheless produces a common good. We used the dual concepts of *codes* and *conventions* to combine these two debates with their different research interests, as well as the two different methodological approaches, based on social sciences and cartography.

The two topic areas intersected with one another at the assumption that space is constituted as a result of the interplay between social action and physical environment (Löw 2001), giving rise to sets of rules. On the one hand, these sets of rules comprise the aspect of conventions, meaning how certain actions are typically carried out (Giddens 1984; Friedberg 1995). On the other hand, they contain the aspect of codes as semantic or spatial sign systems. We understand codes as both the establishment of rules (e.g., in the form of laws) and the spatialization of rules (e.g., signs of usage or arrangements). Despite their differences, both aspects share the fact that codes first have to be used and interpreted in order to gain meaning, which we in turn explore based on the *conventions* of spatial production. Thus, the dual concepts of codes and conventions were used in an interdisciplinary context from the perspectives of sociology and urban design in order to connect the thematic areas of urban informality and spatial commons, as well as to focus on rules and rule-based procedures in the methodology of the social science approach and in the mapping. For both research questions, we were interested in the organizational dimension of the production of space: How are actions coordinated together, and how are rules negotiated?

Our objective of uncovering the organizational phenomena of the hostel industry by mapping codes and conventions was based on the hypothesis that, despite being hidden, the processes, actions, and sets of rules leave spatial traces that can be seen and interpreted upon closer inspection. With this hypothesis, we entered a field of research in which the combination of analytical methods from sociology and urban design/architecture promised to reveal more than they ever could alone. Because mapping is a medium that includes and creates narrations on a wide range of different scales of measurement, it is ideally suited for this type of integration.

To integrate both the topic areas and the methodologies, the project was designed with a two-pronged approach and with various moments for interlinking the different perspectives. Below we describe how these moments can build on one another, although

this is by no means mandatory. We regard our approach as an experimental arrangement that can serve as the basis to develop the methods further. The steps were developed didactically in a teaching project with students, but they can also be translated to interdisciplinary research teams.

2.1 Introduction: Exploratory mapping

As an initial and experimental introduction, it can be helpful for non-designers in particular to create exploratory mappings addressing the spatial reference of the drawing and their own experiences with regard to capturing space. One possibility is to try out a mapping in a one-to-one scale with the aim of testing the concept of space in the act of drawing based on your own body dimensions and imagining the thematic research question that should be developed in the map—in our case, the housing situation of homeless people—cooperatively: in other words, testing the narrated and projected aspects in the mapping. In the project, we made available the workroom that is normally intended for architecture students to the seminar group as a research studio and tasked them with appropriating the space as their space of home for an indefinite period of time by means of surveying and drawing. The students "drew" the floor plans and elevation plans of their appropriated areas and furniture on the floor and wall using simple tools, such as tape.

Fig. 2: One-to-one mapping in the studio. | ©Chair for Urban Design and Urbanization, TU Berlin

2.2 Linkage: Sociological observation levels and urban design scales of measurement

In the second step, it is helpful to connect the research questions of the project, which are derived from theory, to spatial contexts and thus to drawing scales. This results in an analytical reference system between the social science observation levels and spatially constructed scales of measurement. For urbanistic and space-related research questions, there are usually various scales that can be used for the study. The mapping encompasses multiple scales almost automatically. For the social science perspective, different approaches regarding informality were outlined and the terms codes and conventions were clarified in the course of an in-depth literature reading. Throughout the project, we had to continuously amend these approaches based on the challenges that arose, which required a certain degree of conceptual openness for the integration. Right at the beginning of the reading phase, we split up the seminar participants into four groups, making sure to distribute the seven students of sociology, seven urban design, and three architecture students evenly. Each group was assigned an *observation level* that could be related to a corresponding *scale of measurement*: the city-wide level of the administration, the level at which the hostels are embedded in their neighborhoods, the level of the living activities that were originally expected to take place inside a hostel but that often ended up moving outside the building, and finally the level of interpersonal relations among the residents. During the literature reading, each group formulated its own research questions. As an initial means of addressing the object of investigation, guests were invited to the seminar for interviews and were also consulted in individual interviews organized by the groups themselves.

2.3 Thesis development: Concept mapping

In order to interpret new correlations between different theoretical components, relate them to the specific object of research and study site, and make a first attempt at developing a personal graphical language, the linearly structured contents from the literature reading are rearranged into multidimensional concept mappings.

During the project, the concept mappings were elaborated in parallel to the literature reading by visually and spatially correlating text modules with hypotheses, questions, concepts, ideas, and empirical aspects in order to allow for new syntheses. Thus, students and teachers were forced right from the start to link the graphical and visual study methods directly to the verbal and textual collection and reflection. The linguistically formulated texts were "deconstructed": that is to say, they were broken down into key messages and partially referenced to the respective scales.

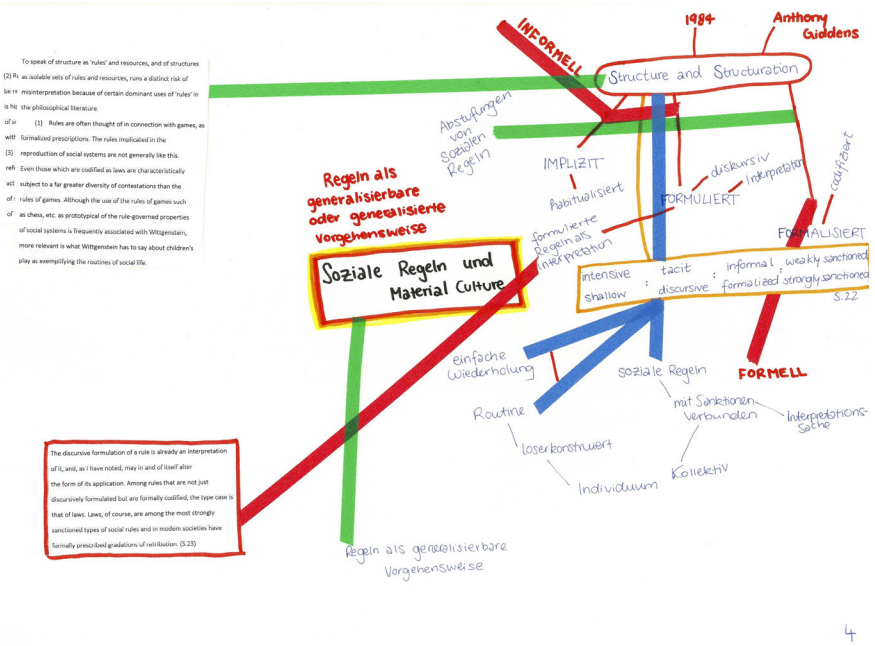


Fig. 3: Concept Map. | ©Luca Sonnen

2.4 Implementing linkages: Individual thematic mappings

The data transmitted linguistically from the literature review and from the research running in parallel in the form of site visits with drawing modes inspired by ethnography, architecture, and planning should now be merged into cartographic sketches for each observation and scale level. Ideally, this results in individual experimental and hand-drawn mappings in which the processes of collecting data and developing hypotheses can be combined gradually in order to derive one individual argument per theme. These individual mappings can depict graphically, for example, individual interior spaces such as apartments, streetscapes, or collective spaces, as well as movements through the city or relations between the different places.

In the project, very different data—from expert interviews, resident interviews, observations, personal drawings, mental maps, GIS databases, and the literature review—were collated in parallel to the theoretical preliminary work and translated into four thematic maps during the first mapping workshop. At the city-wide level, a sketch of the administratively relevant contact points for homeless people was created in order to keep track of the channels used to apply for asylum, for example. At the neighborhood level, the road networks were illustrated between the hostel locations and relevant services such as schools and shopping facilities.

Fig. 4: Compilation of individual thematic maps. | ©Chair for Urban Design and Urbanization, TU Berlin

At the hostel building level, axonometric representations of different apartment types, as well as numerous "compensation areas" outside the apartment provided information about the precarious distribution of functions in the hostels. At the individual room level, infographics were used to show the dependencies between material and immaterial resources in the spaces.

2.5 Synthesis: Synthesized overall mapping

In the next step, the individual thematic and mono-scale mappings are merged into a multiscalar drawing. This step is intended to uncover correlations between the individual observation levels that were less visible until now, thus facilitating the synthesis of the proposed hypotheses. This step poses a major drawing challenge because the type of drawing must be constantly adjusted and revised for the benefit of legibility. This gives rise to questions such as: How big can a zoom-in or spatial detail be shown without covering up the urban structure beneath it? How much writing and how many symbols can the map tolerate before becoming too "dense" and illegible?

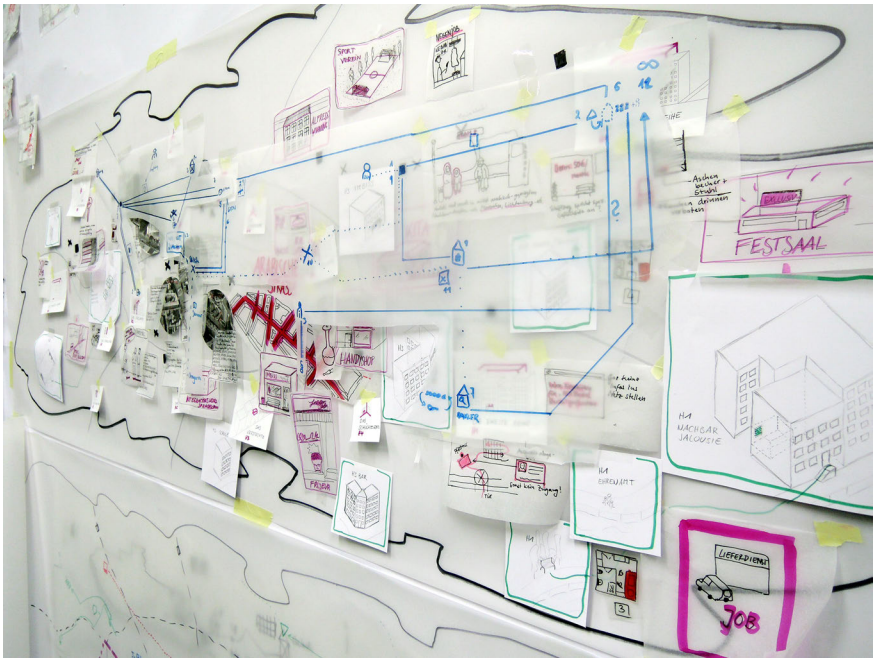


Fig. 5: Preliminary result of multiscalar collage. | ©Chair for Urban Design and Urbanization, TU Berlin

During a second workshop, compiling the four thematic maps into one large overall mapping proved to be the greatest challenge for the project. Multiple attempts were made to draw up a concept by hand for the overall drawing on large-format pieces of paper pinned onto partition walls, whereby it was necessary to check iteratively time and again whether the respective conceptual assumptions could really be brought together with the contents of the four maps.

We experienced a breakthrough thanks to a collage technique in which minimal assumptions were first made about merging the contents and then these assumptions were inserted, pasted into, and embedded step by step using single analogue modules from the different thematic mappings. For this purpose, we used sheets of transparent paper, cut-out paper printouts, copies of scanned hand sketches, adhesive tape, highlighters, and ink pens. During this laborious process of constantly readjusting the overall composition, the most important structural tool was merging the four legends into one, which could then be used as a basis to define a hierarchy and a code for the overall mapping.

2.6 Digitalization: Reproducible artifact

The overall map can now be used to advance the synthesis process by correlating the hypotheses formulated together with all of the research findings. This step serves to create a printable and thus reproducible document. In our project, this organizational process resulted in a graphical spatial model of Berlin created digitally, consisting of a black foun-

dational drawing with textures and in different line widths as a representation of the Berlin urban area.

Fig. 6: Multiscalar map as a reproducible printout. | ©Chair for Urban Design and Urbanization, TU Berlin

The different design layers and elements from the thematic mappings are embedded into this foundation consisting of different urban elements—water and road networks, district borders, administrative locations. The hostel locations themselves were localized, slightly offset; a slight distortion of the urban layout along the vertical axis helped anonymize the hostel locations without impairing the legibility of the mappings. In this version of the map, a four-color code for highlighting elements made it easier to assign the symbols and levels to the four corresponding observation levels and scales levels.

2.7 Reading key: Fictitious stories

Often a legend is not sufficient for communicating the contents of a mapping. It is only useful to readers in the sense that it provides linguistic codes next to the graphic and visual codes. Therefore, it is necessary to create an additional reading key to supplement the legend. Based on the complex data underlying the mono-scale mapping components embedded in the multiscalar overall mapping, this key should make it possible to interpret the trans-scalar correlations resulting from the parallel and superimposed codes of signs.

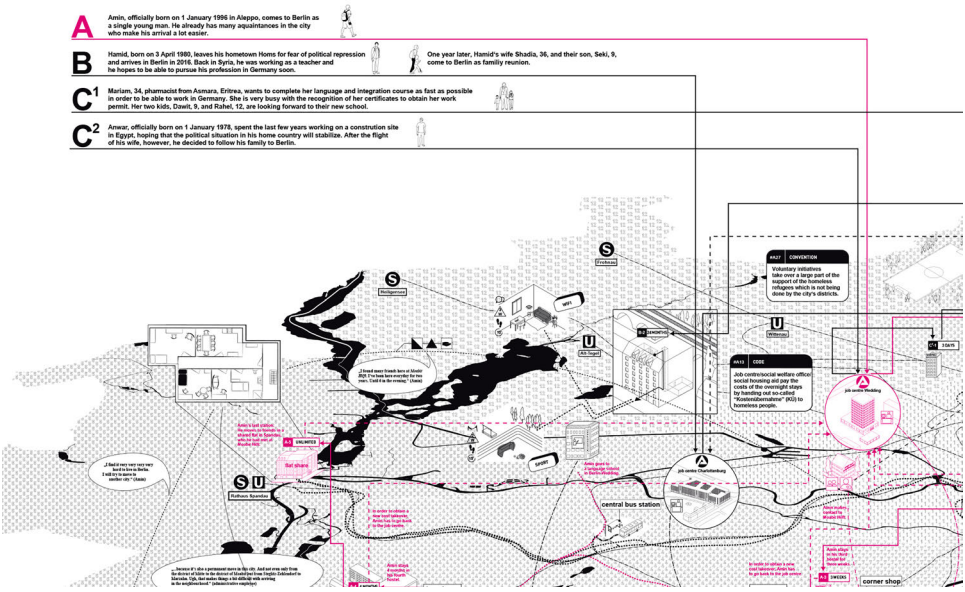


Fig. 7: Zoom-in key. | ©Flavia Biianu, Edda Brandes, Pauline Bruckner, Almar de Ruiter, Valentin Dobrun, Finya Eichhorst, Stefan File, Anne Gunia, Christopher Heidecke, Dariya Kryshen, Farina Runge, Alina Schütze, Lisa Wagner, and Jonas Wulf (map available at: https://depositonce.tu-berlin. de/handle/11303/11 090)

Therefore, to communicate the research by means of the large-format mapping of the hostel industry with homeless people in Berlin (Fig. 1), we had to find a second interpretation key for the project in addition to the legend. An illustrative linear translation of the mapping contents into single storylines was required to demonstrate the complex reference systems with an example. Thus, the group formulated its own interpretation of the mapping before handing it over to the readers for their interpretation work.

The reading key was developed by means of *fictitious stories* about three individual people and a family. Thus, the narratives of four different protagonists were integrated into the map so that it was possible to understand by way of example the special situation regarding *Berlin's hostel industry with homeless people* in accordance with our findings. Although the references to individual people and places were anonymized on the map, they remain localized in the rough context of the city and can be read graphically.

2.8 Text: Describing and interpreting mappings

In the particular structure of a research project, mappings serve as insightful tools that must be outlined and analyzed textually for academic publications. Only at exhibitions can mappings be shown to observers without comment as an invitation to be read and synthesized, as is typical in artistic contexts in particular.

Even if consolidating the four observation levels into the overall mapping revealed new spatial connotations in our project, doing so does not yet explain what this means

for homeless people on the one hand or for the discourse on informality and commoning on the other. The textual interpretation enables researchers to refine their knowledge from the mapping in relation to the defined research question. In addition to the overall mapping and its four underlying thematic maps, finalizing the teaching research project involved the production of four atlases in which the thematic mappings were analyzed textually in relation to the allover mapping and the research question.

After completing the seminar, these four texts were condensed and consolidated for a publication, which was edited based on the mapping-based research (Kelling et al. 2020). Lastly, this corresponded to the request from the Berlin senate to make the findings easier to access for their employees. In this context and to improve legibility, the mapping was revised and a single color was used to highlight a fictitious story instead of the four-colored codes for the four levels (Fig. 1).

3 A spatially structured synthesis method

This description of the development of an interdisciplinary method for addressing socio-spatial research questions can serve as a guide for similar projects and researcher constellations. Adherence to the proposed and proven sequence of steps is less important in this regard.

Rather, the combination of these possible steps depends on the project and must be adapted to the specific working conditions. However, based on the application example, we believe it is important to highlight the interplay between text and mapping in the research process. In order to apply this mix of methods as a structured interdisciplinary approach in the spatial sciences, it is important to bear in mind several challenges:

To facilitate interdisciplinary cooperation and method integration, it is essential to establish a *common conceptual basis* and *research perspectives* from the outset. At the same time, these must be refined in the course of the project based on the challenges that arise, which requires a certain degree of conceptual flexibility.

Work in an interdisciplinary collective requires a certain level of joint unlearning in terms of the members' individual disciplinary approaches in order to accept the relevant tools from the other disciplines. Sociologists should (help) draw and architects should (help) write, even if all of the participants can and should revert to their specific talents and expertise to finalize the work. But a mental and physical understanding of the tool set used by the other disciplines is essential especially in collective work processes.

The workshop format is extremely conducive to providing enough time and space for the complicated negotiation processes when collecting and selecting heterogeneous data, and especially when interpreting those data and relating them to the research questions. The linking of the levels of observation and scales, as well as the compilation of the very different types of data, calls for numerous iterative cycles, which are only possible by progressively discussing the graphically and linguistically structured information. These discussions must be tolerated by the group. If this succeeds, then the both sides stand to gain a great deal of knowledge.

There is a series of helpful approaches intended to facilitate interdisciplinary cooperation. For example, it is possible to integrate the often very different research ap-

proaches—both contentwise and methodologically speaking—in the social sciences and urban design using conceptual intersections, as we did here with the dual concepts of codes and conventions. This makes it possible to search for the same aspects on different scales and to collect very different data in each spatially organized drawing.

It is not always easy to draw data that were collected using social science methods. However, at the levels in the project at which it was the most difficult to provide information about the spatial dimensions of social relationships, we found: In cases where we knew the least about the relevance of space, we learned the most with an integrative methodological approach. The project also showed that it is ok if the focuses of the individual research fields are very different as long as there is an element to link their distinct content and methods, such as codes and conventions. This type of integration can even represent a special opportunity to discover unforeseen relations of meaning and interpretation between the components of narratives, which in themselves are based on comprehensible data collections and analyses, and thus to change the perspective on a research question.

Some might be surprised at how many steps are drawn by hand on paper and other material and only digitized relatively late in the process. We realized that when working on a team with designers and non-designers, it is easier to read physical drawings, to work directly on those drawings, and to rearrange together on a wall in the workroom. Even if digital interfaces and desktops are increasingly performing these tasks, we believe that hand drawings and the conscious use of physical visualization techniques offer an advantage for interdisciplinary work in particular.

Multiscalar mappings enable us to interlace a wide range of different research perspectives by allowing us to transcend the limits of scale and interpret heterogeneous data across scale levels. This results in a spatially structured and linguistically argued image of the overall contexts, which would not be possible to produce without combining the studies into a multiscalar overall mapping. We attribute this to the observation that we are not trained sufficiently in incorporating spatial thinking into our everyday knowledge. Mapping methods can help us counteract this, at least in the field of research.

About the teaching research project

The following people contributed to the research and mapping in the teaching research project on Berlin's hostel industry with homeless people (*Wohnhaft im Verborgenen*): Flavia Biianu, Edda Brandes, Pauline Bruckner, Almar de Ruiter, Valentin Dobrun, Finya Eichhorst, Stefan File, Anne Gunia, Christopher Heidecke, Dariya Kryshen, Farina Runge, Alina Schütze, Lisa Wagner, and Jonas Wulf. The co-authors of the publication *Wohnhaft im Verborgenen. Die Hostelwirtschaft mit Wohnungslosen in Berlin* (English: *Living in Hiding: Berlin's Hostel Industry with Homeless People*) are: Finya Eichhorst, Anne Gunia, Farina Runge, Alina Schütze, Lisa Wagner, and Jonas Wulf.

References

Caquard, Sébastien/Cartwright, William (2014): Narrative Cartography: From Mapping Stories to the Narrative of Maps and Mapping. In: *Cartographic Journal*, 51(2), pp. 101–106.

Corner, James (1990): The Agency of Mapping: Speculation, Critique and Invention. In: Cosgrove, Denis (1999): *Mappings*. London: Reaktion Books, pp. 213–252.

Cosgrove, Denis (2004 [orig. 1999]): Bedeutung kartieren. In: *An Architektur, Produktion und Gebrauch gebauter Umwelt,* 11 (Material zu: Brian Harley, Das Dekonstruieren der Karte), pp. 20–25 (engl. Orig.: Introduction: Mapping Meaning. In: Cosgrove, Denis: *Mappings*. London: Reaktion Books, pp. 1–23).

Dovey, Kim/King, Ross (2011): Forms of Informality: Morphology and Invisibility of Informal Settlements. In: *Built Environment*, 37(1), pp. 11–29.

Friedberg, Erhard (1995): *Ordnung und Macht: Dynamiken organisierten Handelns.* Frankfurt a. M.: Campus.

Giddens, Anthony (1984): *The Constitution of Society: Outline of the Theory of Structuration*. Cambridge/Oxford: Polity Press.

Glaser, Hermann (1974): *Urbanistik. Neue Aspekte der Stadtentwicklung.* Munich: C.H. Beck.

Kelling, Emily/Pelger, Dagmar/Löw, Martina/Stollmann, Jörg (Eds.) (2020): *Wohnhaft im Verborgenen. Die Hostelwirtschaft mit Wohnungslosen in Berlin*. Berlin: Universitätsverlag der TU Berlin, doi: https://depositonce.tu-berlin.de/handle/11303/11090.

Lindner, Rolf (2004): *Walks on the Wild Side. Eine Geschichte der Stadtforschung.* Frankfurt a. M.: Campus.

Löw, Martina (2001): *Raumsoziologie.* Frankfurt a. M.: Suhrkamp.

Ostrom, Elinor (1990): *Governing the Commons. The Evolution of Institutions for Collective Actions.* Cambridge/New York, NY/Melbourne: Cambridge University Press.

Senatsverwaltung für Integration, Arbeit und Soziales (SenIAS) (2017): *Antwort auf die Schriftliche Anfrage Nr. 18/12539 vom 17. Oktober 2017 über Wohnungslosigkeit in Berlin*. (Answer to Written Question No. 18/12539 of 17 October 2017 on homelessness in Berlin.) Abgeordnetenhaus Berlin, Drucksache 18/12 539. Online: https://pardok.parlament-berlin.de/starweb/adis/citat/VT/18/SchrAnfr/s18-12539.pdf (accessed: 25 August 2020).

Stavrides, Stavros (2016): *Common Space: The City as Commons.* London: Zed Books.

Wildner, Kathrin/Tamayo, Sergio (2004): Möglichkeiten der Kartierung in Kultur- und Sozialwissenschaften. Forschungsausschnitte aus Mexiko Stadt. In: Möntmann, Nina/Dziewior, Yilmaz (Eds.): *Mapping City.* Stuttgart: Hatje Cantz, pp. 104–129.

Mapping and photo documentation

Proposal for a space-sensitive mixed methods design using the example of retail mapping

Julia Fülling, Linda Hering, and Elmar Kulke

In the context of spatial research, mapping is a classic strategy for generating primary data on the spatial location and characteristics of the entities under investigation. It constitutes an essential part of many disciplines—including social and natural sciences—such as in human and physical geography, urban and regional planning, soil science, geomorphology, and geology. Typical application areas range from the surveying of vegetation to the expansion of public transportation infrastructure in towns and cities. Similarly, photographic images have—to a varying extent—been incorporated into a wide range of research projects since the advent of photographic technology. Since the emergence of debates on *visual culture* (Rose 2007: 4 et seq.), extensive disciplinary and interdisciplinary attempts have been made to theorize the relevance of images for social cohesion and to highlight the value of their inclusion in scientific research projects.

Using the example of a comparative survey of retail landscapes, we would like to outline the key processes involved in mapping. We will also show how the inclusion of photo documentation can help to generate additional information to complement data obtained from maps: a method we refer to as a "space-sensitive mixed methods design." The parallel adoption of both methods provides data in order to combine conclusions of a functional-structural nature (where the focus is on the surveyed *area*) with those of a symbolic-distinctive nature (where the focus is on the surveyed *entity*) and therefore constitutes a relational approach to space in which different analytical perspectives can be compared with each other.

1 Mapping

In the broadest sense of the word, mapping can be understood as a structured method of observation (Wessel 1996) that is tailored to the research topic and typically features highly systematic and standardized processes (Behnke et al. 2010: 259). It is thus pri-

marily a quantitative method that involves surveying certain entities within a designated area in the context of a spatially related question. During this process, the locations and characteristics of the predefined entities/objects[1] are recorded on one or more specified dates within a clearly defined area. Data can be documented on a topographical map with precise coordinates (often supplemented with GPS coordinates) or on a mapping sheet (see below). Whereas in the past only printed versions were used, it is now possible to carry out such surveys completely with digital tools (e.g., KoboToolbox).

In general, numbers and quantitative data, as they are collected through mapping, are particularly effective at increasing the acceptance of arguments and facilitating comparability (*"numerical difference,"* Heintz 2010: 167, own translation). The value of mapping lies in its ability to spatially locate objects and thus present special spatial arrangements and relationships in a way that goes beyond mere numbers and statistics (Cromley 2013: 118). Data obtained from mapping can also be presented visually on maps or evaluated with statistical methods, for example, by using geoinformation systems (e.g., *QGis* or *ArcGis*) or statistical software (e.g., *R* or *SPSS*). In addition, the collection of data also requires categories to be created, which reduces complexity. This makes it possible to differentiate between the surveyed objects based on specific properties (e.g., type of business and target group, in the case of retail mapping), which are defined by the researchers in accordance with the research topic. However, other properties of the objects (e.g., shop exterior or design of the space in the immediate vicinity) cannot be represented and therefore cannot be evaluated.

2 Preparation of the mapping: Mapping sheet and code plan

The entities and objects to be included on the map depend on the research topic in question. The precise definition of these objects and their properties/categories must be completed before the actual mapping process and should encompass the thematic, spatial, and temporal dimensions of the study (Baur et al. 2014: 14). For example, in soil science, it may be necessary to distinguish between spaces based on their soil type, whereas in retail geography (such as in our example), the retail outlets located within a certain area may be the objects of the study.

To begin with, the *thematic scope* of the survey must be defined, which depends on the nature of the research topic. In other words, the objects of the study must be precisely defined by listing the properties that the objects must exhibit in order to be included on the map. In the case of a map of retail outlets, it must be clearly specified which objects can be classified as retail. Definitions from official statistics can provide a useful guide, although these typically need to be supplemented to ensure they are appropriate for the survey in question. Once the overall scope of the study has been defined, categories must be created. The strategy for doing this also depends on the nature of the research topic. General guidance on how to create a category scheme is provided by Behnke et al. (2010:

1 It is also possible to map criteria that are not classified as objects, such as noise, odors, sensations, and air quality levels (using corresponding instruments). As our example involves the surveying of buildings and their use, we use the terms "objects" or "entities."

294). For example, in the context of a retail map, it may be useful to classify the objects (retail outlets) by sector (e.g., clothing, electronics, household items, furniture, shoes), to estimate the surface area (e.g., by pacing off the area or by using a laser rangefinder), and to categorize the objects according to the type of business (e.g., discounter, hypermarket, or specialist store)[2]. The scope of these categories must be defined as clearly as possible and documented in advance. Nevertheless, during the mapping process, ambiguity often makes it necessary to reconsider categories or to deliberately exclude certain cases. The aforementioned properties are defined by means of a code plan (Fig. 1, right), which contains a code for every possible manifestation of each property, together with a detailed description. These codes are then recorded by hand or digitally on the mapping sheet (Fig. 1, left), on a source map in the corresponding scale (e.g., OpenStreetMap), or in a predefined table. In the meantime, there are more and more possibilities to collect data directly via digital applications. This saves time and prevents errors in data transmission. However, one should first familiarize oneself with the special features of the tools used and test the input with different devices (filters and displays, etc.).

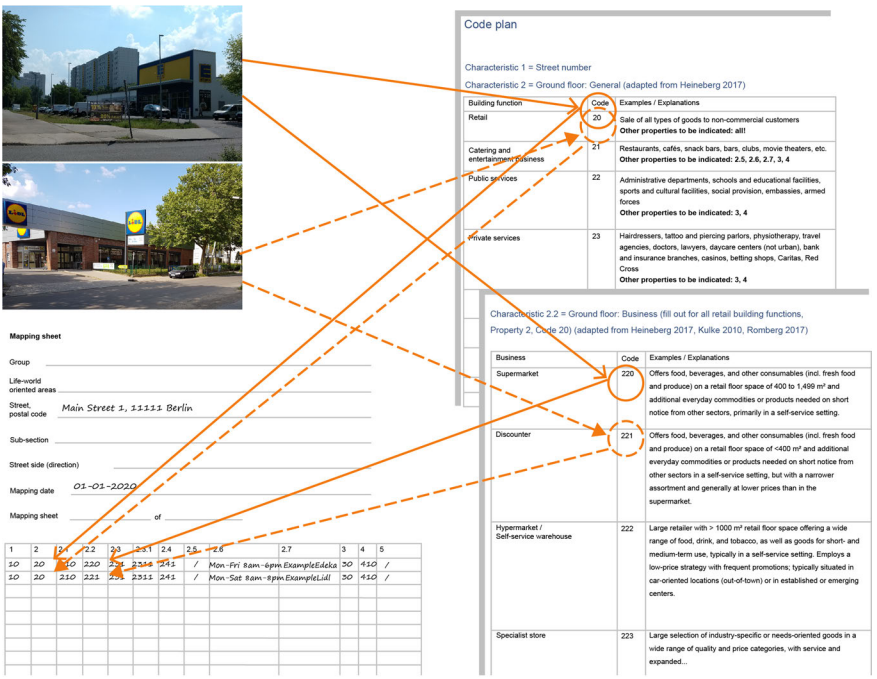


Fig. 1: Extract from mapping sheet and code plan | ©Julia Fülling and Linda Hering

2 This type of data can often be found in surveys conducted by local authorities for the purpose of developing retail concepts. However, such data should always be checked thoroughly to ensure it is complete and qualitatively suitable/useful for the research topic in question (if necessary, the data must be supplemented or edited).

The first part of the mapping sheet contains all relevant information on the area to be surveyed in order to define the geographical and temporal scope of the survey, as well as to document the surveyor (Fig. 1, left center). The second part of the sheet contains a table with all of the properties to be surveyed. The column headers contain the abbreviations for the corresponding properties (e.g., Property 2.2 Ground floor: Business type, see Fig. 1, bottom left); each object (e.g., building) is then entered in a separate line together with the codes for the corresponding manifestations of the aforementioned properties.[3]

The next step is to define the *geographical scope* of the survey: in other words, the area or region to be included on the map. This can be done with reference to functional considerations in the context of the nature of the survey. For example, if the purpose of the survey is to map retailers in an urban center, the boundaries of the center must first be defined (e.g., 100 meters after the last retailer).[4] It is also customary to adopt established definitions from other surveys as this ensures that results are both valid and comparable. In the case of maps, functional considerations are often aligned with administrative boundaries (e.g., a district or local authority) as this typically allows for other relevant statistical data (e.g., population statistics) to be adopted from secondary sources.

Defining the *temporal scope* of the survey is also essential since objects change continuously over time. As with other types of surveys (e.g., censuses), the standard practice is to define a specific date. Objects that are added or removed after this date (e.g., the opening or closure of a store) are thus excluded from the survey. Specifying a date also makes it possible to remap the area at a later point in time and then analyze the changes to objects by means of comparative statistical analysis. In the case of dynamic observations, it is also possible to define a date range in order to record the changes that take place over a certain period. However, this results in a greater workload as changes to objects must be monitored and documented continuously during the specified period.

The thematic, spatial, and temporal scope of the survey must be defined before the mapping itself begins and should only be supplemented during ongoing data collection in exceptional cases. Before proceeding to the main survey, it can also be useful to conduct a preliminary test in order to tailor the data collection tools to the characteristics of the area and prevent errors during the actual data collection.

During the analysis phase, the definitions should be clearly stated to ensure statistical reliability and enable a comparison with other maps. In the case of subsequent surveys conducted at a later date (e.g., follow-up surveys), the same definitions must be used to ensure that changes can be documented and analyzed.

---

3 The categories for the operating forms of the retail shops were formed and described according to a typical German retail landscape. Depending on the study region, these must be adapted accordingly.

4 In this case, it can be useful to search for official documents and statistics on retail centers (e.g., retail master plans or existing retail concepts).

3 Photo documentation

Photos can be used to generate findings based on visually recorded observations that cannot be obtained through the mapping of object properties—particularly when photos are systematically incorporated into the research process, as they can be used for interpretation purposes (Rose 2007: 239). Heavily standardized survey methods such as mapping inevitably exclude, or, homogenize the features of surveyed entities for illustration purposes—limitations that can be offset by incorporating visual survey methods in the form of photo documentation. Over the course of our lives, we learn to interpret spaces and things, such as buildings, and understand their symbolism—for instance, by learning to distinguish a church from a shop—and thus know how we should behave in different types of spaces or in front of or inside them (Löw 2016: 130 et seq.).

Based on the idea that images have their own logic (Bohnsack 2020: 45 et seq.), social action takes place *through* images; they do not merely represent but also constitute part of reality. This action-guided effect has become deeply ingrained in our everyday lives and manifests itself physically through our individual actions. Photographic images and their production—that is to say, photographic action—are embedded in a variety of social contexts, but also shape our cultural knowledge (Baur/Budenz 2017: 74 et seq.).

Meanwhile, the ever increasing diversity of visual technologies in almost all social contexts has sparked discussions about the opportunities and problems of this "visual culture": the term typically used by researchers to describe this phenomenon (Rose 2007: 4 et seq.). In this context, a photograph is never an objective representation of reality—on the contrary, it is affected by technical factors and the photographer and is therefore shaped subjectively both during the shooting process and subsequent editing (Baur/Budenz 2017: 93).

4 Preparations for photo documentation: Shooting script

According to the photo documentation method of Charles S. Suchar (see Rose 2007: 244 et seqq.), the researcher/team formulates a series of research questions, which are then used to generate photographs. How does gentrification manifest itself in a particular district—for example, through the juxtaposition of old and new—or what is the condition of public spaces, such as sidewalks or play areas? These questions are recorded in a *shooting script* (Fig. 2), similar to an interview guide. When creating a shooting script, it is important to define in advance *what* will be photographed, as well as *where* and *why* the photographs will be taken (i.e., provide a clear definition, as was the case for the mapping sheet). In this context, it can be useful to formulate sub-questions to the main question to enable researchers to focus on the relevant issues during their field trip and to facilitate a comparison between different images. Reference can be made to the thematic, spatial, and temporal definitions described above. As images do not speak for themselves, it is essential to follow the shooting script when shooting photographs. In addition, notes or *metadata* should be appended to each image. This should include factual information such as the date, time, and precise address, a short comment on how the image contributes to the questions listed in the shooting script, and a label (initials of the photog-

rapher) that serves as a code. This guide functions as a checklist for the researchers to photograph the surveyed entities or objects. Once the images have been taken, the required metadata are added to enable an in-depth analysis.

In addition, it is also important to consider the legal and ethical implications of methods that involve photography. These can vary from country to country or region to region and should be researched beforehand. The applicable copyright law and codes of practice of (sociological) research associations can be of importance here. The regulations for Germany are presented here as guidance: For example, Section 59 (1) of the German Copyright Act only permits photographs *of* public spaces (i.e., facades, open spaces, streets, etc.) that are taken *in* public spaces (i.e., freely accessible locations), not photographs that are taken from or that show the interior of private homes.

When an individual is photographed, consent must be obtained in every instance if the person is recognizable on the basis of their physical appearance. According to Section 23 of the German Copyright Law for Works of Art, people who form a *supplementary part* of a location or who are present at a gathering or similar activity can be photographed without obtaining prior consent. In principle, however, prior consent should still be obtained for ethical reasons.

More information on fundamental ethical considerations, which should form the basis of any research project but lie beyond the scope of this paper, can be found in the publications of the German Council for Social and Economic Data (RatSWD 2017) or Friedrichs (2019).

5 Case study: Space-sensitive mixed-methods design in the comparative survey of retail landscapes with a focus on food

The project *Knowledge and Goods: Consumers' and Producers' Spatial Knowledge* investigated the interactions between customers and suppliers in the food retail sector. One of the objectives of the study was to survey markers and references that are linked to spatial knowledge. As part of this process, a research project entitled *Market – Neighborhood – Milieu* was conducted in the summer semester of 2018 in order to compare the different types of food retail stores in four Berlin neighborhoods and to draw relations between these stores and the building structure and the socio-economic characteristics of the corresponding neighborhood.

Working in interdisciplinary teams, geography and sociology students surveyed food retail stores in four Berlin neighborhoods using a combination of a functional map of the buildings and photo documentation (Fülling/ Hering 2020a). The functional-structural maps aimed to survey the geographical distribution of food retail stores with a particular focus on identifying differences between the four neighborhoods. The purpose of the photo documentation was to supplement this statistical data with a qualitative-visual approach in view of the fact that food retail is heavily influenced by visual factors (such as the way in which products are displayed, the design of external facades, or the sidewalks in front of stores). In this context, photographs were used to demonstrate how food retailers are embedded into the architectural styles and urban planning of the local area.

5.1 Mapping the use of buildings: Abstraction for visualizing homogeneity and differences on a local level

The map was used to survey the locations and categorial features of food retailers from a quantitative perspective. The geographical boundaries were based on the so-called "*lebensweltlich orientierte Räume*" (*lifeworld-oriented areas*), a small-scale planning unit defined by the Berlin city administration using criteria such as "building structures and neighborhoods, major roads and thoroughfares, and natural barriers, as well as population numbers and statistical attributes" (SenSW n.d., own translation). The surveyed neighborhoods were selected according the principle of greatest possible heterogeneity with respect to building structures and socio-demographic composition. In addition, each district was required to have at least one store belonging to a leading food retail chain. Due the large amount of data involved, it was not possible to define a specific date for the survey. Instead, the survey was conducted over the course of June 2018. The thematic scope of the survey was defined based on the topic of the research project and therefore covered all usages (both commercial and private) of the buildings (from the basement to the 3rd floor) in the four surveyed neighborhoods (see map key, Fig. 1; for more information, see Fülling/Hering 2020b).

The data were collected in four interdisciplinary teams of students, each of which was responsible for one neighborhood. In the case of mappings that are conducted concurrently by different individuals, it is important to provide a thorough definition of the geographical, temporal, and thematic scope of the survey in consultation with the research team in order to ensure that comparable results are obtained.

Before the mapping stage, a preliminary test was conducted in a test neighborhood in order to debug and refine the map code and map sheet, and thus provide a precise category scheme. A map code must enable the researchers to "prepare identical, consistent and complete reports on one and the same subject matter" (Wessel 1996: 141, own translation). Due to the broad scope and complexity of the map code in this project, it was necessary to discuss and revise the categories. In general, it is only during field research that it becomes clear whether the objects in the surveyed area can be mapped using recommended categories, or whether the definitions in the map code allow for potentially different interpretations. For example, as many bakeries (usually classed as artisanal stores) offer in-store seating (a feature typical of catering businesses), a consensus had to be reached on whether a new category (hybrid store) should be created or on which category these bakeries should be placed in on the basis of jointly defined criteria. The objectives of the research project should always play a central role in determining the answers to these questions. Regular meetings of all participants were therefore held during the mapping stage in order to reach quick decisions on ambiguous cases and communicate these decisions directly to everyone involved. As the focus of the survey was on retail, a distinction was made in the category scheme (see map key, Fig. 1) between different retail sectors (e.g., food, clothing, and cars) and different types of stores (e.g., conventional, organic, and ethnic grocery stores). A distinction was also made between different types of catering businesses. While the focus of the project was on food retail, a decision was made to survey other building usages in order to perform a differentiated analysis of neighborhoods with reference to different building functions (retailers, service providers, and

catering businesses). In order to deduce the structural characteristics of the retail stores in each neighborhood and compare their accessibility by various transportation methods, the building type (e.g., low-rise, freestanding, or store in shopping center) and the availability of parking spaces were also added to the map (public transportation stops were added subsequently).

After collecting the data, the project team completed a comprehensive data cleansing process to refine the results. This involved verifying the plausibility of the data, supplementing missing values (where possible), ensuring that data were assigned to the correct categories, and clarifying problem cases (e.g., in the case of uncertainties or missing entries). This subsequent data processing aimed at standardizing the results is common practice for maps that are generated by different individuals. After this time-intensive step, the data were entered into a geographic information system *(GIS)* for further processing, analysis, and presentation. To begin with, maps of the surveyed neighborhoods were created (see map 1 and 2) to facilitate an initial comparison of all research areas in terms of the geographical distribution of (food) retail stores and the provision of different services. A geostatistical technique was then used to conduct further analysis: for instance, to investigate the distribution or concentration of food retailers. In our cases, during the study, we identified various different ways in which the urban functions of living and shopping were integrated/separated due to a combination of structural features and the contrasting development of the four neighborhoods in terms of public transportation options and motorized private transport (Scheffler et al. 2020). In addition, the mapping data (with and without spatial references) could be analyzed in conjunction with data on social structures in the surveyed neighborhoods in order to generate additional findings (Hettich et al. 2020).

The surveys conducted during the course of the case study also highlight the limitations of maps as a research method. The concept of maps as a product of scientific research is viewed with criticism, as are the classic mapping methods outlined above. This is because mapping as a research method and maps as a presentation format pose the risk of the content being received as objective reality without prior reflection (Baur et al 2009: 17 et seqq.; Mose/Strüver 2009: 315 et seq.). This also applies to the category scheme produced by researchers, which may not be able to fully capture the inherently subjective and quite varied experiences of users within the surveyed neighborhood. These limitations of the quantitative results produced by maps and statistical analysis can be reduced by employing a parallel or subsequent participative approach (e.g., collective and participative mapping, mental maps) (see Risler/Ares 2018) or by using ethnographic methods such as go-alongs. During the case study, the subjective perspective of relevant groups of the neighborhood (retailers and consumers) was subsequently incorporated by means of interviews and go-alongs. As visual abstractions of the surveyed neighborhood, maps produce evidence by highlighting the homogeneity of certain entities. They therefore present a temporal, spatial, and thematic excerpt of a supposedly objective reality and are influenced by the way in which they are designed by the researchers. This in turn depends on how the map will be interpreted by viewers and is limited by the nature of the medium itself, as numerical methods are less flexible and therefore the scope for interpretation is narrower (Heintz 2010: 177).

5.2 Photo documentation: Features of individual objects

The research team also used photographs in order to capture the individual characteristics of food retailers and document their integration with other building functions (e.g., services, living). For example, in addition to categorical and numerical information, such as the type of business or sector, the team was able to incorporate qualitative aspects into the comparison of the surveyed neighborhoods, such as aesthetic, design, and urban planning-related factors (e.g., facade design or availability of in-store seating). This enabled the research team to obtain a second, contrasting source of data to complement the information obtained during the mapping process.

In preparation for the photo shoot, the participants and teaching staff worked together to produce a *shooting script*, which was then used to take photographs of food retailers and their immediate surroundings. The aim was to capture the way in which food retailers were integrated into the surveyed neighborhood with reference to factors such as urban planning and architectural design. The resulting shooting script comprised a main question and additional sub-questions (see Fig. 2).

As with mapping, a test stage is also useful for photo shoots in order to check that the shooting script is fit for purpose. During the test phase, the team sifted the data and revised the first version of the shooting script—a process that involved prioritizing and deleting existing questions and supplementing the script with new questions. Based on the revised shooting script, the researchers proceeded to complete the photo documentation, supplementing their photo collection with relevant images in order to answer the corresponding questions. During this process, the researchers captured over 100 images of the facades of food retailers and their immediate surroundings. A selection of these images is shown in Figures 3 and 4.

The photo shoot was followed by a coding/analysis stage (Rose 2007: 244), during which a code was assigned to each image in order to help the researchers obtain answers to the research questions. The codes were aligned with the map's category scheme and indicated the type of business, the availability of bicycle stands, and the color scheme (bright or subdued).

Excerpt from the shooting script

Main question:

How are food retailers embedded into the surveyed neighborhoods from an urban planning and architectural perspective?

Sub-question:

- Which types of food retailers are there in the corresponding neighborhood? Will new sub-categories be identified?
- How are the stores designed (standalone, on the ground floor of a multi-story building, elaborate, etc.)? How big are they?
- How are the stores integrated into the surroundings?
- Does the store have a clear target market (e.g., from its name, product range, or advertising displays)?
- Does the store utilize the spaces in front of the entrance (e.g., as an additional display area)?
- To what extent do food retailers utilize opportunities for outdoor advertising?

Fig. 2: Excerpt from the shooting script; ©Julia Fülling and Linda Hering

This enabled the researchers to make comparisons, such as similarities and differences in color schemes, the availability of in-store seating, and the use of sidewalks to display products. The researchers also compared the use of advertising, both by the same types of business within a single neighborhood and across different neighborhoods. In our project, for example, the widespread use of graffiti by different types of businesses was identified as a common feature in one of the surveyed neighborhoods. This is an example of how new insights can emerge from photographic images, which can then be incorporated into the shooting script during the review stage. During the follow-up phase of the photo documentation, evaluation meetings were held with internal and external participants in which the images served as visual stimuli—similar to the method of photo elicitation (see also Dobrusskin et al. in this handbook), which involves selecting images based on their content and then presenting them to interviewees to function as stimuli for the topic under discussion. During these external group discussions, the participants' ability to match the location of the stores to their respective neighborhood was easier for some images than others, and depended on the participants' prior knowledge of these neighborhoods. In addition, the participants were able to make very spontaneous subjective assumptions about food retailers based solely on their impression of the external facade, such as the type of fruit and vegetables on sale, the origin of the goods, prices, and quality. The aforementioned comparisons covered a wide range of different experiences and expectations of the surveyed food retailers among a culturally, geographically, and generationally diverse group of participants. People's tendency to *form conclusions about retail spaces* based on their subjective experiences—which then influence their decisions for or against a particular store—was clearly revealed during the discussion.

In order to present the results, several series of images were created, each of which focused on specific research questions (Baur/Budenz 2017: 88 et seqq.). In addition, each series was accompanied by corresponding explanations, both to assist researchers with limited experience of handling visual data and because the interpretation of photos is typically a demanding task. Providing an explanation helps to prevent misinterpretations and ensure that viewers do not completely ignore one or more photos (Rose 2007: 250).

Photographic images should reflect as much as possible the themes the researcher deems relevant for the research question: in other words, they should serve as an illustration of interpretations or as evidence in itself (Baur/Budenz 2017: 73), for example, by presenting things that words cannot (Rose 2007: 247 et seq.). However, there should still be room for interpretation as photographic images only ever reach a state of "quasi naturalness" (Baur/Budenz 2017: 75, own translation), both in amateur and professional contexts. This is due to the technical properties of the medium, as well as subjective decisions (e.g., which spaces are included in the image) (ibid. 80 et seq.).

5.3 Relationship between spaces and objects: Synthesis of mapping and photo documentation

The following section summarizes the characteristics of the space-sensitive mixed-methods approach presented in this paper. In the context of the case study, the maps could be used to draw a range of conclusions, such as the number, distribution, and accessibility of food retailers in the predefined neighborhoods. The structure and layout of the entities/objects in the selected geographical area was presented on one or more maps. In the case of the two neighborhoods that are presented below for comparison (see map 1 and 2), there appear to be many similarities in terms of the concentration and distribution of food retailers. Based on the maps, it is possible to identify separate local retail communities together with their location and accessibility (such as via traffic hubs) and to evaluate each neighborhood with respect to the availability of different types of retail stores. Creating maps enables researchers to convert individual objects into a spatial representation in order to identify similarities and differences, which can be used to inform subsequent classifications of these spaces. For example, maps can be used to assess the provision of services for the local population: for example, by defining provision-related indicators or by conducting accessibility analyses (see Wieland 2015). These conclusions can then be used for other purposes, such as by local authorities for planning purposes.

Based on the photo documentation of the buildings, the surveyed neighborhoods have many similarities from a functional and structural perspective; however, in terms of the socio-spatial character of food retailers, the neighborhoods are very diverse. The reverse would also be conceivable. The photographic images can be used to draw conclusions about how retailers are incorporated into urban planning concepts, as well as their aesthetic character and the atmospheres they create. These conclusions can then inform interpretations on how symbolisms and design rules (e.g., advertisements, logos, decorative elements, and design features of the building) that are typical for a specific neighborhood (typefaces used by stores or graffiti on walls) or type of business

(widespread use of advertisements by discounters) are used. This enables the researchers to provide a symbolic-distinctive perspective that contrasts with the functional-structural perspective (Meier et al. 2020; Jascheck/Ulrich 2020). Our case study demonstrates how images—thanks to their descriptive and qualitative nature—can supplement quantitative findings from maps by visualizing aspects of surveyed objects that cannot be captured by the category scheme of a map. While the strength of maps clearly lies in their ability to generate a comprehensive overview of the surveyed neighborhoods and provide number-based information in a spatial context, images help to visualize, verify, and refine the interpretation of data from the map, as well as provide important data for analyzing the surveyed neighborhoods by focusing on individual objects.

The greatest advantage of this proposed synthesis of methods is its ability to create a data basis that incorporates different ways of representing the surveyed spaces. This makes it possible to combine functional- structural interpretations with symbolic-distinctive perspectives. Content that we presented *side by side* in our findings (i.e., the maps and photos were presented separately) can now be integrated using new digital software tools. For example, geotagging can be used to directly insert photos and accompanying text into digital maps.

Fig. 3: Excerpt of photo documentation from high-rise housing estate | ©Own images, 2018

Map 1: Distribution of food retailers in high-rise housing estate. | ©Own survey, 2018

Fig. 4: Excerpt of photo documentation from detached housing estate. | © Own images, 2018

Map 2: Distribution of food retailers in detached housing estate. | ©Own survey, 2018

6 Maps and photography as complementary representations of a space

Maps and photographic images are two visual media with different communicative properties: they are not mutually convertible, nor can they be rendered as text. We have shown how maps and photographs can complement each other and, through their specific effects, generate unique representations of the surveyed entities/neighborhoods, thus winning acceptance by presenting specific evidence. Maps are primarily useful in order to survey, compare, and visualize spatial links and structures of objects within a confined geographical area. Photo documentation, on the other hand, focuses more on the specific features of individual objects. In our example, it illustrates the aesthetic aspects of local retailers, demonstrates how retailers are integrated into the neighborhood, and also allows conclusions to be drawn about the symbolic functions of consumption and distinction. It therefore substantiates the qualitative aspects of the differences between the surveyed neighborhoods that cannot be determined from the map.

By combining maps, which serve as a functional-structural method of representing the neighborhood, with photographic images, which provide a symbolic-distinctive depiction of individual food retailers, questions and comparisons concerning the structure and significance of retail landscapes can be discussed more comprehensively than would be the case if only one of the aforementioned methods were used.

References

Baur, Nina/Budenz, Patrik (2017): Fotografisches Handeln. In: Eberle, Thomas (Ed.): *Fotografie und Gesellschaft. Phänomenologische und wissenssoziologische Perspektiven*. Bielefeld: transcript, pp. 73–96.

Baur, Nina/Hering, Linda/Raschke, Anna Laura/Thierbach, Cornelia (2014): *Theory and methods in spatial analysis*. In: Historical Social Research, 39(2), pp. 7–50.

Behnke, Joachim/Baur, Nina/Behnke, Nathalie (2010): *Empirische Methoden der Politikwissenschaft*. 2nd Edn. Paderborn: Schöningh.

Bohnsack, Ralf (2020): Qualitative Bildanalyse. In: Friese, Heidrun/Nolden, Marcus/Rebane, Gala/Schreiter, Miriam (Eds.): *Handbuch Soziale Praktiken und Digitale Alltagswelten*. Wiesbaden: Springer VS, pp. 455–463.

Cromley, Ellen K. (2013): Mapping Spatial Data. In: Schensul, Jean J./LeCompte, Margaret D. (Eds.): *Specialized Ethnographic Methods. A Mixed-Methods Approach*. Lanham: Alta-Mira Press, S. 117–192.

Friedrichs, Jürgen (2019): Forschungsethik. In: Baur, Nina/Blasius, Jörg: *Handbuch Methoden der empirischen Sozialforschung*. 2nd Edn. Wiesbaden: Springer VS, pp. 67–76.

Fülling, Julia/Hering, Linda (2020a): *Markt – Quartier – Milieu. Der Berliner Lebensmitteleinzelhandel aus interdisziplinärer Perspektive* (Arbeitsberichte, Heft 197). Berlin: Geografisches Institut/Humboldt-Universität zu Berlin.

— (2020b): Fallauswahl. In: Id. (Eds.): *Markt – Quartier – Milieu. Der Berliner Lebensmitteleinzelhandel aus interdisziplinärer Perspektive* (Arbeitsberichte, Heft 197). Berlin: Geografisches Institut/Humboldt-Universität zu Berlin, pp. 15–23.

Heineberg, Heinz (2017): *Stadtgeographie*. 5th revised Edn. Paderborn: Schönigh.

Heintz, Bettina (2010): Numerische Differenz. In: *Zeitschrift für Soziologie*, 39(3), pp. 162–181.

Hettich, Greta D./Kracht, Markus/Bormann, Jens (2020): Betriebsformenvergleich. In: Fülling, Julia/Hering, Linda (Eds.): *Markt – Quartier – Milieu. Der Berliner Lebensmitteleinzelhandel aus interdisziplinärer Perspektive* (Arbeitsberichte, Heft 197). Berlin: Geografisches Institut/Humboldt-Universität zu Berlin, pp. 41–56.

Jascheck, Carla/Ulrich, Lisa (2020): Straßen- und Umfeldgestaltung. In: Fülling, Julia/Hering, Linda (Eds.): *Markt – Quartier – Milieu. Der Berliner Lebensmitteleinzelhandel aus interdisziplinärer Perspektive* (Arbeitsberichte, Heft 197). Berlin: Geografisches Institut/Humboldt-Universität zu Berlin, pp. 57–70.

Kulke, Elmar (Ed.) (2010): *Wirtschaftsgeographie Deutschlands*. 2nd revised Edn. Heidelberg: Spektrum.

Löw, Martina (2016): The Sociology of Space. New York, NY: Palgrave Macmillan

Meier, Sebastian/Melisch, Marika/Schmidt, Elisabeth/Fila, Dennis (2020): Außenwerbung und Außengestaltung der Ladengeschäfte. In: Fülling, Julia/Hering, Linda (Eds.): *Markt – Quartier – Milieu. Der Berliner Lebensmitteleinzelhandel aus interdisziplinärer Perspektive* (Arbeitsberichte, Heft 197). Berlin: Geografisches Institut/Humboldt-Universität zu Berlin, pp. 71–91.

Mose, Jörg/Strüver, Anke (2009): Diskursivität von Karten – Karten im Diskurs. In: Glasze, Georg/Mattissek, Annika (Eds.): *Handbuch Diskurs und Raum*. Bielefeld: transcript, pp. 315–326.

RatSWD [Rat für Sozial- und Wirtschaftsdaten] (2017): *Forschungsethische Grundsätze und Prüfverfahren in den Sozial- und Wirtschaftswissenschaften*, 5. Berufungsperiode, Output 9. Berlin: RatSWD. Online: https://doi.org/10.17620/02671.1 (accessed: 30 March 2020).

Risler, Julia/Ares, Pablo (2018): Manual of Collective Mapping. In: kollektiv orangotango (Eds.): *This Is Not an Atlas*. Bielefeld: transcript, pp. 183–204.

Romberg, Mattias (2017): Berliner Spätkauf im Bezirk Prenzlauer Berg – Fallstudie inhabergeführter Convenience-Stores. In: Dannenberg, Peter/Willkomm, Maximilian/Zehner, Klaus (Eds.): *Einzelhandel in Deutschland. Aktuelle Dynamiken im Kontext neuer Rahmenbedingungen* (Geographische Handelsforschung, Vol. 25). Mannheim: MetaGIS, pp. 83–106.

Rose, Gillian (2007): *Visual Methodologies. An Introduction to the Interpretation of Visual Materials*. 2nd Edn. London: SAGE.

Scheffler, Clara/Seiffert, Robert/Koll, Uta/Osmanlic, Benjamin (2020): Wohnen, Verkehr, Einzelhandel. In: Fülling, Julia/Hering, Linda (Eds.): *Markt – Quartier – Milieu. Der Berliner Lebensmitteleinzelhandel aus interdisziplinärer Perspektive* (Arbeitsberichte, Heft 197). Berlin: Geografisches Institut/Humboldt-Universität zu Berlin, pp. 24–40.

SenSW [Senatsverwaltung für Stadtentwicklung und Wohnen] (n. D.): *Lebensweltlich orientierte Räume (LOR) in Berlin. Planungsgrundlagen*. Online: https://www.stadtentwicklung.berlin.de/planen/basisdaten_stadtentwicklung/lor/ (accessed: 31 March 2020).

Wessel, Karin (1996): *Empirisches Arbeiten in der Wirtschafts- und Sozialgeographie.* Paderborn: Schöningh.

Wieland, Thomas (2015): *Nahversorgung im Kontext raumökonomischer Entwicklungen im Lebensmitteleinzelhandel – Konzeption und Durchführung einer GIS-gestützten Analyse der Strukturen des Lebensmitteleinzelhandels und der Nahversorgung in Freiburg i. Br.* Projektbericht. Online: http://webdoc.sub.gwdg.de/pub/mon/2015/5-wieland.pdf (accessed: 11 August 2020).

Image-based techniques in artistic research

Relevance for visual arts and spatial research

Stefanie Bürkle

This paper focuses on artistic research methods used to create images or image spaces. After providing a brief introduction to the significance and visual readability of these methods in the context of image studies and artistic work, the paper goes on to discuss the interpretation of general artistic methods in the various disciplines in which they are employed. It concludes by outlining a range of specific artistic methods and practices with reference to my own art and research projects.

The growing significance of the image in all aspects of life and research is undeniable (Breckner 2010: 9). In recent years, there has been a considerable increase in the scope and intensity of academic research into this topic (Meier et al. 2014: 12). Academic disciplines that employ phenomenological approaches, such as visual anthropology, ethnology, human geography, and promenadology (Burckhardt 1985, 2004, 2006), have developed research methodologies that involve the use of artistic methods. This *iconic, pictorial,* or *visual turn* (Burda/Maar 2004; Mitchell 2008; Bredekamp 2004) is reflected in the growing number and specialization of publications in the fields of image studies and sociology and is also occurring in pedagogy, design, and film and literature studies. For example, "photography transformed art history into a field of image studies because it became a research tool instead of a mere object of research" (Bredekamp 2004: 367, own translation). In addition to highlighting the ubiquitous presence of images, this *visual turn* also addresses calls for a differentiated and interdisciplinary approach to image studies.

In an academic context, images are increasingly being used both for collecting data and for communicating ideas. Against this backdrop, it has also become evident that "in the medium of the image, in the medium of iconicity, processes of understanding and conveying meaning take place; to date, there are very few empirically and methodologically sound approaches for interpreting these processes" (Bohnsack/Krüger 2004: 3, own translation). Images are not merely visual representations, they also present the world as a book in their own language. It is no longer just the written word that is usurping the place of reality (Blumenberg 1983 [orig. 1981]: 17)—due to its universal availability and simultaneity, the image is also attributed with making reality obsolete as a definitive, unambiguous concept. "Comprehensibility is increasingly oriented toward aesthetics"

(ibid.: 20, own translation). This means that artistic methods can also convey aspects of reality instead of merely capturing them empirically. In this context, artistic methods can be used to acquire knowledge in areas where quantitative research methods are unable to reach individual stakeholders or groups. However, from an academic perspective, the subjectivity of qualitative artistic approaches is often viewed critically due to the challenges of obtaining verifiable results, and therefore intersubjective verifiability is typically preferred. This is not always possible, as demonstrated by a range of receptions in an artistic and academic context—for example, people who visit a photo exhibition may have very different experiences of works, which are open to interpretation. In contrast, written academic findings should not be open to interpretation. In the context of an academic publication, the readability of images, which are typically used as supporting evidence, is assured by means of an explicit caption within the text. In an artistic context, on the other hand, images place different demands on viewers. With regard to the academic interest in artistic methods, the following aspects can be noted:

- Artistic methods are regarded as epistemic tools of knowledge in order to generate data, conclusions, and results that cannot be obtained with conventional academic methods. In addition, the use of intuitive artistic approaches opens up the possibility of researching topics that may be inconceivable from an academic perspective. At the same time, artistic expression opens the door to a wider audience (for instance, by staging an exhibition or production).
- Artistic methods and artistic media have been used to envision information (Tufte 1990): in other words, to represent, convey, and illustrate discoveries, knowledge, and findings visually.
- Artistic methods are also deployed in art therapy in the fields of depth psychology and therapeutics, although this lies beyond the scope of this paper.

The second purpose for visualizing information—namely to convey information (e.g., in publications, exhibitions, or as *maps*) more quickly, easily, and clearly to the academic community or interested members of the public—is application-oriented. This form of artistic practice is more process-oriented and involves the use of artistic methods and media as tools in order to fulfill a specific purpose. "Mapping artistically requires you to explore spaces, question conventional wisdom, and make new discoveries." (Busse 2008: 20, own translation). Maps that were not produced during an interview or sketches that were not drawn during a walk or while inspecting a material (see Section 3.2) and that serve merely for visualization purposes have a graphic and illustrative, but no artistic character, notwithstanding the use of creative media and methods. Leaving aside the definition of contemporary art as having no purpose, there are a wide range of influential studies inspired by nature, whether as drawings, etchings in books, or photographs, such as Karl Blossfeldt's plant studies, which were released in 1929 in an international publication as *Art Forms in Nature* (Stump 2000: 11). These images were originally intended as teaching materials for his plant modeling course (1899–1932) at the Kunstgewerbeschule school of arts and crafts in Berlin during the Jugendstil period. In 1926, a gallery owner exhibited his photographs for the first time alongside other works from the artistic avant-garde. In addition to facilitating the publication of this unique collection of plant im-

ages, the exhibition also presented Blossfeldt's extensive photographic works in an artistic context for the first time. His photographs subsequently came to be regarded as the "Neue Sachlichkeit" style of German art.

The exceptional example of Karl Blossfeldt is testament to the regularity of the aspects listed above, as his extensive photographic work on plants involved the use of an artistic practice that became a work in its own right. This, in turn, is consistent with the definition of artistic methods as epistemic tools of knowledge.

Strictly speaking, only this first aspect can be interpreted as the type of artistic method found in a work. Artistic methods arise from a creative process, in connection with an interest in divergent effects and efficacies, as well as a desire to capture spatially aesthetic and social contexts using different mediums of notation, such as sketches, travel drawings, mental maps, photography, film, and video. If, over many years and projects, an artistic method evolves into a comprehensible and replicable system of artistic approaches, a work of art may be created by the artist or collective. A more detailed analysis of the role of work and artist, as well as the concept of art in this context, is not within the scope of this paper.

1 Arts-based methods

The sociologist Patricia Leavy defines arts-based methods as a "transdisciplinary approach to knowledge building that combines the tenets of the creative arts in research contexts" (Leavy 2019: 4). This definition of creative arts is very broad and encompasses all forms of artistic expression, including designs and artisanal practices. It therefore goes beyond the application-oriented approach of McNiff, who defines arts-based research "as the use of artistic expression by the researcher, either alone or with others, as a primary mode of inquiry" (McNiff 2014: 259). McNiff's definition focuses on the art-therapeutic approach, while Leavy und Chilton refer to a wide range of methodical approaches and terms, such as *art-based inquiry, arts-based social research, performative inquiry, practice-based research*, or *aesthetic research practice* (Chilton/Leavy 2014). Their definition of arts-based research methods therefore encompasses all investigative approaches used in sociology, psychology, pedagogy, psychotherapy, and anthropology that are based on an understanding of art. No reference is made here to artistic methods within visual arts. For the purposes of a residual definition, do artistic research methods include all instruments that cannot be precisely described (McNiff 2019: 31)?

A wide range of different approaches can be subsumed under the term arts-based research methods, which cannot be addressed comprehensively in this paper—just as it is not possible to provide a comprehensive definition of the concept of art or artwork. However, artistic research methods can be clearly explained through their original disciplines—the visual and performing arts—in which procedural creation plays an elementary role.

2 Process orientation

Process plays a key role in art as the outcome is generally open-ended. Adopting an open-minded approach is essential when engaging with an encounter or phenomenon. Allowing accidents, failures, surprises, and impressions that differ from expectations and viewing this as an open-ended process is comparable with *heuristics* or *grounded theory* in sociology. This is a process-oriented strategy that does not necessarily require the use of a linear approach. Process orientation is an iterative process in which the proposition is gradually consolidated in numerous phases. The conception of an exhibition or the creation of an image space for viewers typically takes months, from the initial research and collection of information through to the choice of theme for field research, the choice of images, and the exact content, installation, and composition techniques.

The following section outlines a few of the image and image-space generating artistic methods (Bürkle 2016: 39–45) that I have employed in my capacity as an artist and academic and provides an in-depth analysis of their artistic processes and qualities, as well as their content-motivated application in the context of an art and research project.

The following seven criteria from Patricia Leavy (2015, 2017, 2019a) summarize the essential characteristics of artistic research methods:

- Artistic methods must be suitable for the research topic in question, and should be transparent and precise.
- The meaning and effectiveness of the work must be considered.
- The results must be made available beyond the world of academia (wider public).
- The research participants must play an active role.
- The result must be authentic and have artistic merit.
- The research method should lead to the creation of a new and unique work.
- Artistic research methods must also comply with ethical standards, such as safeguarding the privacy of participants and respecting copyright.

Within the framework of the art and research projects I have worked on in collaboration with interdisciplinary teams of artists and academics, I have developed a series of interrelated and mutually influencing methods for arts-based research. In addition to fulfilling Leavy's evaluation criteria, these methods have enabled me to better combine my own artistic work with qualitative socio-spatial research with reference to *objective hermeneutics* (Oevermann 2002; Scherf 2009). Using the example of an artistic research project on migration, spaces, and the identity of architecture in the context of Turkish remigration, the following section provides an overview of the artistic methods I have developed and practiced during my research projects (Bürkle 2016: 39–45).

3 Artistic methods in the art and research project *Migrating spaces/architecture and identity in the context of Turkish remigration*

During the course of this art and research project, spatial perceptions and built spaces of Turkish returned migrants were investigated under the assumption that the intercul-

tural reality of migrants and their construction of identity corresponded to their experience of architecture. Using a series of approaches derived from spatial theory, the project also identified clear two-way relationships between physical space and social phenomena.

The project team investigated the design and spatial characteristics of houses built by returning or commuting migrants in Turkey. By conducting a visual analysis of their building culture, the team was able to draw conclusions about continuity and change in the lifestyles of returning migrants. The aim of the project was to create a typology of architectural styles against the backdrop of the migrants' transnational links—in other words, a typology of spaces in the context of Turkish remigration (see Fig. 4 and 7).

In addition to demonstrating how a migratory background determines the design of a migrant home in their country of origin, the project also revealed how perceptions of images and spaces from Turkey and Germany influence, supplement, overlap, or contradict each other. At the same time, the research showed how the link between identity and architecture (see Schoper 2010) reflects the relationship between remigrants as home builders and their homes—the images and spatial models on which the vernacular architectural styles of Turkish remigrants are based.

3.1 Visual field research

As a multidimensional (sociological, ethnographic, and artistic) method of perception, visual field research constitutes an important methodological basis of artistic research. In the context of this project, it enabled the team to access interviewees via the visual appearance of homes, which indicated the German migration background of the occupants who built them. Using a set of predefined criteria, such as identifiable deviations from the local building style as an indicator for homes that might belong to German-Turkish returning migrants in the project *Migrating Spaces* (Bürkle 2016: 41), the team shortlisted potential interviewees and formulated a strategy for making contact. Interviewees were contacted either directly or through neighbors. A "snowball sampling" (Akremi 2014: 272, own translation) strategy was then deployed to identify other potential interviewees from Germany who had built a house in the local area. In this context, the inclusion of photographs in field work implies the broadening of visual perspectives (Boost et al. 2018: 30).

In addition, in the context of urban environments, visual field work can itself be used as a method of participant observation. For example, photography and videography can be used to collect spatial data (such as locations) in the form of static and moving images of homes and the surrounding urban environment. In this context, visual field research encompasses both sociological methods and artistic practices. In the interdisciplinary team, this method of visual research was extended in a specific way, as the project involved both the description of spaces from a visual cultural studies perspective and socio-spatial analysis, all underpinned by an artistic understanding of spaces as *place* and *space*. The results of this research project are consistent with the thesis of Löw et al. (2008: 354)—as symbolic agglomerations, images are fundamentally based on materiality, and as visual arguments, provide interpretative models for political, historical, and normative meanings, which must be sociologically linked back to the materiality of spatial con-

stitution. Visual field research therefore describes and analyses the self-constitution of individuals in and through space.

3.2 Using mental maps in structured interviews

As a first step to narrow down the field of research, a convenience sample (Akremi 2014: 272) was used to interview Turkish migrants living in Berlin about their perceptions of space. In 2013, the research team developed a questionnaire for these interviews based on previous student research projects in the Department of Visual Art at Technische Universität Berlin. The questionnaire was designed to provide insight into perceptions of built and urban space. Respondents were also asked to draw (from memory) their house or apartment in Germany and the home they had built in Turkey.

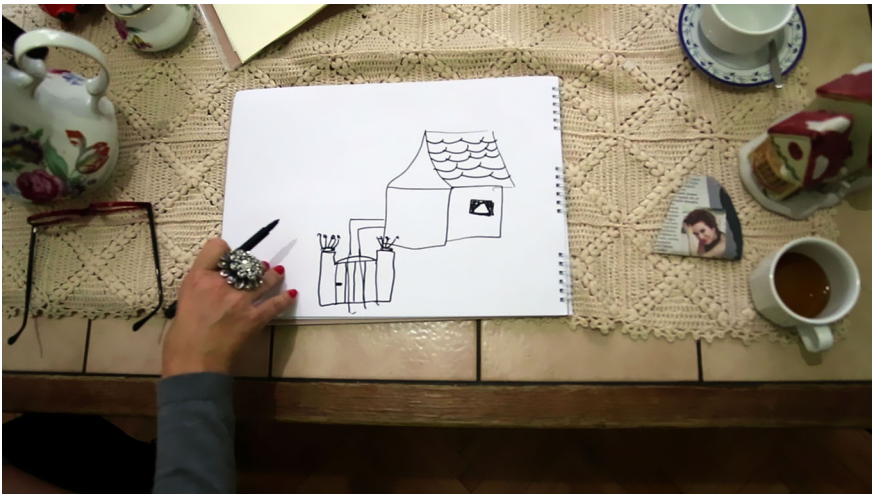


Fig. 1: Mental map drawn by an interviewee | ©Stefanie Bürkle/VG Bild-Kunst Bonn, 2013

This mind-mapping method laid the groundwork for an in-depth discussion of space with the interviewee. As a form of graphic notation, the mind map played a supporting role in conveying the subjective spatial knowledge of the interviewees and enabled the interviewer to ask more targeted and specific questions to encourage the expression of implicit spatial and planning knowledge.

3.3 Topological matrix

To enable the systematic collection of data and a comparable overview of selected images, statements, and textual information, a multi-dimensional topological matrix was developed with the aim of bringing different sources together relative to the spatial-locational relationships in thematic categories. As a form of information architecture and as a tool for presenting spatial data, it provided the foundation for an integrative, aca-

demic, and artistic reappraisal of the previously evaluated data and results. During the research project, the constantly growing and changing topological matrix provided the interface between the investigation, research, and analysis phase as it created relationships that transcended biographical and spatial references. The topological matrix is itself a knowledge space and is consistent with the model of *visual grounded theory*, which was developed by sociologist Krzysztof Tomasz Konecki using his "mutltisliced" model of image analysis.

> "The multislice imagining is a grammar of visual narrations analysis that accents the following stages: a) an act of creating pictures and images (analysis of context of creation); b) participation in demonstrating/communicating visual images; c) the visual product, its content and stylistic structure; d) the reception of an "image" and visual aspects of presenting/representing something." (Konecki 2011: 131)

Fig. 2: Topological matrix | ©Stefanie Bürkle/VG Bild-Kunst Bonn, 2011

In this statement, Konecki describes the outcome of a consolidation of visual languages that occurs as a result of process orientation. The resulting multimedia walk-in spatial art installation generated by this topological matrix offers a multitude of refer-

ences, which encourage participation and create an individual experience (see Fig. 2). The installation is thus itself an image and in turn creates images as an experience.

3.4 Exhibition as a curated knowledge space

Photographs, texts, and videos from the visual field research and structured interviews were exhibited together with the topological matrix in an artistic spatial context as part of a walk-in, multisensual knowledge space (Bürkle 2018: 131). A key part of the exhibition was a multi-channel video installation, which merged the film, interview, and image sequences in an image and perceptual space (see figs. 3, 5, and 6). This gave the socio-spatial investigation into the architecture and identity of Turkish remigrants a spatial dimension within the exhibition spaces—in other words, visitors were able to experience the spaces for themselves. This constituted a transformation, as well as an educational experience. By presenting the results of an artistic research project in the form of an exhibition, we enabled a wider public beyond the world of academia to access socially relevant themes from potentially unusual perspectives, both aesthetically and sensually. Images, research texts, and discourses were then collated in an art-themed academic publication, which was published in place of a classic exhibition catalog, thus giving the visitors "access to sensual, physical, affective, emotional, and aesthetic spaces" (Boost et al. 2018: 30, own translation).

Fig. 3: Migrating Spaces exhibition at SALT Istanbul, 6-channel video installation | ©Stefanie Bürkle/VG Bild-Kunst Bonn, 2016

This multi-methodological approach enabled spatial-analytical and migration-related sociological issues to be explored by the various disciplines involved (art, sociology, philosophy, and planning studies) from new perspectives. To facilitate these exchanges, two discussion panels comprised of members of the public and guests were organized during the Berlin exhibition at *Haus der Kulturen der Welt*. The fact that the exhibition

could be shown both in Berlin and at SALT in Istanbul had additional significance: The same exhibition was received very differently in Berlin compared to Istanbul—this alternative perspective also revealed the explosive nature of the topic in a socio-political context.

Fig. 4: Migrating Spaces exhibition at SALT Istanbul, mapping and typology | ©Stefanie Bürkle/ VG Bild-Kunst Bonn, 2016

The empirical sources from the field research were developed into an artistic and sensual concept and made accessible to the academic community, as well as the wider public: an example of an innovative form of academic communication. In principle, a distinction should always be made between exhibitions as a form of free artistic expression and exhibitions that merely serve an illustrative purpose in the sense of "Communicating academic findings in an artistic form" or even the "Eventization of academic disciplines" (Gauß/Hannken-Illjes 2013/2012, own translation)

In an artistic context, exhibitions do not have a didactically mediating or purely knowledge-oriented purpose—instead, they exhibit "open works" as defined by Umberto Eco. In his observations on "open works" and "works in movement," Eco notes, "Our Western aesthetic tradition forces us to take 'work' in the sense of a personal production, which may well vary in the ways it can be received, but which always maintains a coherent identity of its own" (Eco 1973: 56, own translation). These works are characterized by the invitation to *create the work* together with the artist (Eco 1989: 139, emphasis

in original). With regard to the specific scenography of the *Migrating Spaces* exhibition, visitors were presented with an "open work" in the sense that they did not see a linear, documentary-style narrative but rather a composition of four translucent video screens that were freely positioned throughout the space (see Figs 3, 5, and 6).

4 Interpretation, ambiguity, and irritation

The *Migrating Spaces* exhibition was arranged such that visitors were unable to view all four video projections simultaneously from any point in the room. The soundtrack, which contained responses from interviewees and sound recordings (ambient sounds from the local surroundings), was played via speakers in the room. Subtitles in Turkish and English were projected onto the walls of the room to ensure they were easy for visitors to read (see Fig. 3, 5, and 6). As they walked through the exhibition space, each visitor pieced together their own film—no two visitors saw the same identical video installation. In addition, as the videos were shot from a tripod and no pan shots were used, visitors only saw fixed-position *frames* (videographies). Like stage portals, these show views of framed urban environments with changing scenes, such as moving vehicles and pedestrians crossing the road. As it was not possible to identify the source of the narrative on the video screens, some visitors attributed the "backstage" voices to other people in the exhibition room. This spatial interweaving of image, sound, and viewer created an almost theatrical, participatory dimension to the exhibition.

Fig. 5: Migrating Spaces exhibition in Haus der Kulturen der Welt in Berlin, 6-channel video installation | ©Stefanie Bürkle/VG Bild-Kunst Bonn, 2016

Fig. 6: Migrating Spaces exhibition in Haus der Kulturen der Welt in Berlin, 6-channel video installation | ©Stefanie Bürkle/VG Bild-Kunst Bonn, 2016

From Eco's perspective, there are many ways in which a work can be completed; as such, it must always be "open" in order to give viewers the space to interpret it in their own way. "The artist offers the interpreter a work to be completed: He does not know the exact fashion in which his work will be concluded, but he is aware that once completed the work in question will still be his own. It will not be a different work, and, at the end of the interpretative dialog, a form that is his form will have been organized, even though it may have been assembled by an outside party in a particular way that he could not have foreseen." (Eco 1973: 55, own translation)

Fig. 7: Migrating Spaces at SALT Istanbul, video portraits | ©Stefanie Bürkle/VG Bild-Kunst Bonn, 2016

Receptions of art are ambiguous, cannot be replicated, and vary depending on the viewer. This an inherent component of contemporary art. As a result, the unambiguity demanded by academic research is fundamentally at odds with the nature of visual arts. The use of artistic methods in academic research for the purposes of presentation and visualization should be regarded as illustrative in nature. The integrated application of academic and artistic methods as epistemic tools of analysis within the research process and their equivalent application for the purposes of producing academic texts can generate new perspectives and results for interdisciplinary research teams, and thus for the adoption of true interdisciplinary approaches. As demonstrated by the *Migrating Spaces* exhibition, empirical sources from artistic field research can be developed into an artistic, sensual, and spatial experience and made accessible to the academic community, as well as the wider public. The result was a physical knowledge space that gave visitors a sensual, multi-perspectival insight into the topic of research, and in doing so, encouraged visitors to complete the exhibited work through their interpretation of the space.

References

Akremi, Leila (2014): Stichprobenziehung in der qualitativen Sozialforschung. In: Baur, Nina/Blasius, Jörg (Eds.): *Handbuch Methoden der empirischen Sozialforschung*. Wiesbaden: Springer VS, pp. 265–283.

Blumenberg, Hans (1983 [orig. 1981]): *Die Lesbarkeit der Welt*. 2nd. Edn. Frankfurt a. M.: Suhrkamp.

Bohnsack, Ralf/Krüger, Heinz-Hermann (2004): Methoden der Bildinterpretation: Einführung in den Themenschwerpunkt. In: *Zeitschrift für qualitative Bildungs-, Beratungs- und Sozialforschung*, 5(1), pp. 3–6.

Boost, Marie/Schlenker, Kathrin/Meier, Lars (2018): Mehrwerte einer kombinierten qualitativen Bild- und Textanalyse zur Bedeutung sozialräumlicher Strukturen für resiliente Haushaltspraktiken. In: *Europa Regional*, 25(1), pp. 27–37.

Breckner, Roswitha (2010): *Sozialtheorie des Bildes. Zur interpretativen Analyse von Bildern und Fotografien*. Bielefeld: transcript.

Bredekamp, Horst (2004): Drehmomente – Merkmale und Ansprüche des Iconic Turn. In: Burda, Hubert/Maar, Christa (Eds.): *Iconic Turn. Die neue Macht der Bilder*. Cologne: DuMont.

Burckhardt, Lucius (1985): *Die Kinder fressen ihre Revolution. Wohnen – Planen – Bauen – Grünen*. Cologne: DuMont.

— (2004): *Wer plant die Planung? Architektur, Politik und Mensch*. Berlin: Martin Schmitz.

— (2006): *Warum ist Landschaft schön? Die Spaziergangswissenschaft*. Berlin: Martin Schmitz.

Burda, Hubert/Maar, Christa (Eds.) (2004): *Iconic Turn. Die neue Macht der Bilder*. Cologne: DuMont.

Bürkle, Stefanie (2016): *Kulturtransfer und Identität durch Architektur*. In: Ead. (Ed.): Migration von Räumen. Architektur und Identität im Kontext türkischer Remigration. Berlin: Vice Versa, pp. 32–61.

— (2018): Identität durch Architektur im Kontext türkischer Remigration. Über »Migrating Spaces«, ein Kunst- und Forschungsprojekt. In: *Mobile Culture Studies. The Journal*, 2018(4), pp. 131–146.

Busse, Klaus-Peter (2008): Den Atlas öffnen. In: Preuss, Rudolf (Ed.): Mapping. Brackel, Norderstedt 2008 (*Dortmunder Schriften zur Kunst, Studien zur Kunstdidaktik* Vol. 7), pp. 15–22.

Chilton, G/Leavy, Patricia (2014): Arts-Based Research Practice: Merging Social Research and the Creative Arts. In: Leavy, Patricia (Ed.): *The Oxford Handbook of Qualitative Research*. New York, NY: Oxford University Press, pp. 303–422.

Eco, Umberto (1973): *Das offene Kunstwerk*. Frankfurt a. M.: Suhrkamp.

— (1989): *Im Labyrinth der Vernunft, Texte über Kunst und Zeichen*. Leipzig: Reclam.

Gauß, Eva Maria/Hannken-Illjes, Kati (2013/2012): Vermittlung von wissenschaftlichen Erkenntnissen in künstlerischer Form. In: *KULTURELLE BILDUNG ONLINE*. Online: https://www.kubi-online.de/artikel/vermittlung-wissenschaftlichen-erkennt nisse n-kuenstlerischer-form (accessed: 23 June 2019).

Konecki, Krzysztof Tomasz (2011): Visual Grounded Theory: A Methodological Outline and Examples from Empirical Work. In: *REVIJA ZA SOCIOLOGIJU*, 41(2), pp. 131–160.

Leavy, Patricia (2015): *Method Meets Art: Arts-Based Research Practice*. 2nd Edn. New York, NY: Guilford Press.

— (2017): Research Design: *Quantitative, Qualitative, Mixed Methods, Arts-Based, and Community Particiapatory Research Approaches*. New York, NY: Guilford Press.

— (2019): Introduction to Art-Based Research. In: Ead. (Ed.): *Handbook of Art-Based Research*. New York, NY: Guilford Press, pp. 3–21.

— (2019a): Criteria for Evaluating Art-Based Research. In: Ead. (Ed.): *Handbook of Art-Based Research*. New York, NY: Guilford Press, pp. 575–586.

Löw, Martina/Steets, Silke/Stoetzer, Sergej (2008): *Einführung in Stadt- und Raumsoziologie*. 2nd Edn. Stuttgart: UTB.

McNiff, Shaun (2014): Art Speaking for Itself. Evidence that Inspires and Convinces. In: *Journal of Appllied Arts and Health*, 5(2), pp. 255–262.

— (2019): Philosophical and Practical Foundations of Artistic Inquiry. In Leavy, Patricia (Ed.): *Handbook of Art-Based Research*. New York, NY: Guilford Press, pp. 22–36.

Meier, Stefan/Sachs-Hombach, Klaus/Totzke, Rainer (2014): Bild und Methode. Theoretische Hintergründe und methodische Verfahren der Bildwissenschaft. In: *Netzwerk Bildphilosophie (Eds.): Bild und Methode. Theoretische Hintergründe und methodische Verfahren der Bildwissenschaft*. Cologne: Halem, pp. 11–24.

Meyer Stump, Ulrike (2000): *Karl Blossfeldts Arbeitscollagen: Ein fotografisches Skizzenbuch. In: Wilde, Ann/Wilde, Jürgen (Eds.): Karl Blossfeldt – Arbeitscollagen*. Munich: Schirmer Mosel.

Mitchell, William J. Thomas (2008): *Das Leben der Bilder. Eine Theorie der visuellen Kultur*. Munich: C. H. Beck.

Oevermann, Ulrich (2002): *Klinische Soziologie auf der Basis der Methodologie der objektiven Hermeneutik – Manifest der objektiv hermeneutischen Sozialforschung*. Online: https://www.ihsk.de/publikationen/Ulrich_Oevermann-Manifest_der_objektiv_her meneuti schen_Sozialforschung.pdf (accessed: 26 October 2019).

Scherf, Michael (2009): *Objektive Hermeneutik*. In: Kühl Stefan, Strodtholz Petra, Taffertshofer Andreas (Eds.): Handbuch Methoden der Organisationsforschung. Wiesbaden: VS Verlag für Sozialwissenschaften, pp. 300–325.

Schoper, Tom (2010): *Zur Identität von Architektur. Vier zentrale Konzeptionen architektonischer Gestaltung*. Bielefeld: transcript.

Tufte, Edward R. (1990): *Envisioning Information*. Cheshire, CT: Graphics Press.

Mappings as joint spatial display

Séverine Marguin, Dagmar Pelger, and Jörg Stollmann

Mappings are common tools of analysis, conceptualization, and communication in architecture and urban planning. Architects and planners use them to understand, imagine, and design space. There are numerous established mapping techniques that move relatively freely between the cartographic measurement of space, draft sketches, and detailed site plans or floorplans. Nolli plans[1], GIS visualizations, axonometric spatial image[2], and site visit notes—these and other types of mapping are used both for the collection and analysis of spatial information and for the actual design phase. Methodologically, mapping has also drifted away from its original meaning of cartography. Not all mapping is cartography, but all cartography is mapping.

The methods that are becoming widespread (Corner 1990; Cosgrove 1999; Müller et al. 2010) are primarily mapping techniques used in design and planning, which are largely disseminated in teaching and practice. Like many tools used in architecture, mapping has become part of the embodied, practice-based knowledge of the profession. For this reason—and surely also because research is not yet an established field in architecture (Marguin 2021)—mapping techniques are common in architecture and urban planning research projects but seldom reflected on as a research method (Pelger 2022). Basic questions remain unanswered: As a method of spatial analysis, what can mapping contribute to the production of knowledge about space? What challenges need to be considered?

These questions in architecture also parallel methodological needs expressed in the discourse of the sociology of space (Baur et al. 2014): The classic, mostly text- and number-based instrumentarium of the social sciences appears insufficient to empirically capture the refiguration of spaces (Löw/Knoblauch 2017). There is a particularly urgent need for visual methods as so far only photography (see Rose in this volume) and videography (Tuma/Schnettler 2019) have been methodologically considered to any significant

1 From 1736 to 1748, Italian architect and cartographer Giambattista Nolli drew up the city plan of Rome, known today as the Nolli plan. A Nolli plan is a two-dimensional drawing used to understand and document accessible spaces within a city.

2 An axonometric spatial image is a geometric drawing of spatial objects on one drawing plane in an inclined (skewed) parallel projection. It is a simple way to represent spatial volumes.

extent. We believe mapping has considerable potential and wish to spark a methodological deliberation at this juncture: How can mapping techniques—as cartographic design tools that allow for a synthesizing analysis of different data types relating to urban planning and architecture (research)—be used as an instrument in spatial research?[3] We suggest turning to current methodological discourses in sociology, especially the mixed methods literature (Thierbach et al. 2020), for conceptual help. Specifically, we mean the current debate about the tool called joint display (Creswell/Plano Clark 2011; Guetterman et al. 2015; Kuckartz 2017), which makes it possible to integrate and synthesize heterogeneous data by visual means. We wish to define mapping as a *joint spatial display*, since—like *joint displays*—it can integrate qualitative and quantitative information by using a graphic, spatial form of representation to relate these to each other. In this article, we seek to introduce the possibilities mapping offers to integrate and *synthesize* different types of data and media, such as drawings, diagrams, base plans, photographs, statistical data, and ethnographic data, by spatializing them and superimposing them.

First, we will describe the research gap in these different discourses (mixed methods, architecture and planning), which our approach addresses. *Second*, we will give an overview of different data integration possibilities by reconstructing each step of an example mapping process. *Thirdly* and finally, we aim to demonstrate both the potential findings and the challenges presented by this synthesizing instrument rooted in the social sciences and spatial research.

1 Architectural practice and sociological mixed methods approach

1.1 Mapping: The object of a heterogeneous discourse

In the humanities, mapping is gaining increasing attention in both cultural studies (Schmidt-Lauber/Zechner 2018) and history (Rankin 2016), as well as in ethnology and anthropology (Roberts 2016). A variety of definitions and processes of mapping are discussed and used in these heterogeneous discourses, but they rarely include a visual aspect. Even where this literature contributes to the understanding of the concept, it rarely provides field-specific methodological thoughts on applying mapping to empirical research.

At the same time, mapping has established itself as a popular practice in architecture and planning. Reference works for the methodology include urban planning handbooks and monographs written by design and planning offices that also engage in research. These include works like those by James Corner, Atelier Bow-Wow, AMO/OMA, Vigano Secchi, Dean Simpson, and Bureau D'Etudes, but artists like Larissa Fassler and graphic designers like Eva Le Roi have also contributed to the understanding of cartography in the research. They provide a large stock of techniques for studying socio-spatial phenomena, which have only begun to be appraised for scientific purposes (O'Rourke 2013; Müller et

3 We wish to refer here to the ideas generated in the "Hybrid Mapping Methods" work group, which underpin this article: https://www.sfb1265. de/forschung/methoden-lab/arbeitsgruppe-hybrid-mapping-methods/

al. 2010). Architects and planners also draw on critical geography when reflecting on their use of maps and mapping techniques. Following critical geography, the term *mapping* is often preferred to *map* because it emphasizes the process and not the "finished object of the map" (Cosgrove 1999: 1).

1.2 Status of the discussion about data integration in (critical) cartography

A rich discourse exists in cartography and geography about techniques of production, analysis, and representation of maps. Classic (quantitative) geography offers an extensive set of methodological tools for the production of allegedly "objective" measurements of territorial spaces. This tool set is designed to create the most accurate representation of Earth possible, first with topographical maps, then with photogrammetrical ones, and finally with GIS technology (Kohlstock 2004: 27 et seqq.). This positivistic idea of the "objective" measurability of space is the object of sharp critique in critical geography, which instead understands mapping as a co-construction of the observed reality (Harley/Markham 1989; Wood 1992). The critical perspective of maps as political constructs developed into a call for a "participatory" process of mapping (Bittner/Michel 2018: 304 et seqq.), which, as a practice-oriented and transdisciplinary approach, seeks to have a direct social effect.

In general, these geographical-cartographical debates offer an important foundation for the use of mapping as a tool in visual qualitative spatial research. However—and we see this as a fundamental challenge—the cited literature remains split into a strong dichotomy between a classic geographical, usually quantitative, research approach and a human geographical or socio-spatial, usually qualitative, research approach (Schäfer et al. 2018: 167). A consequence for the theory of space is that territorial and relational understandings of space are positioned as opposing each other and, as a result, are never empirically researched together. By conceptualizing mapping techniques as *joint spatial displays*, we seek to bring together and empirically parse these different understandings of space: territorial and quantitative on the one hand, and relational and qualitative on the other (see Löw et al. in this handbook).

The debate about "qualitative georeferenced information systems" (Schäfer et al. 2018) already calls into question any such epistemological dichotomy between the qualitative and the quantitative in cartography and seeks opportunities for integration. Yet this leaves open the question of how exactly heterogeneous data are to be integrated: in what order, using what practices? To address some of these blind spots about integration, we consolidate the methodological sociological literature in the mixed methods field below.

1.3 Joint display as a useful heuristic in the mixed methods literature

Since the 2000s, there has been a discourse about mixed methods research in the empirical social sciences. The purpose of mixed methods approaches is to bridge the two otherwise relatively hermetic fields of qualitative and quantitative social research. The necessary methodological discussion has so far focused primarily on the compatibility of research designs and epistemological paradigms. This disregards one of the great-

est challenges: the actual *integration* of the diverse data and results (Creswell/Plano Clark 2011; Kuckartz 2017); other synonyms in use are *combination* or *mixing*. The goal is to bring together different kinds of data and make them talk to each other (see Heinrich in this handbook). So far, the debate within the mixed methods discourse has distinguished between two methods of integration: either parallel or sequential implementation of qualitative and quantitative procedures (Creswell/Plano Clark 2011; 287–354). In parallel research designs, there is an additional split by point of integration, depending on whether integration is carried out at the level of the data or at the level of the results. The integration itself is, however, neglected (Kuckartz 2017: 159). Two reasons for this have been identified: first, a *technical* reason, because there is not yet a reliable software, and second, an *epistemological* reason, because "the quantitative data is analyzed using quantitative statistical methods and the qualitative data using qualitative methods" (Kuckartz 2017: 160).

It is in this connection that we consider the possibilities of integrated representations of data in "joint displays" (Creswell/Plano Clark 2011: 212–243; Guetterman et al. 2015). As a new tool from mixed methods research, joint displays are defined as follows:

> A mixed methods joint display represents integration or mixing in a single visual display. The overall intent is to represent integration and assist the reader in understanding the study. The content may consist of quantitative and qualitative data, analysis, results, or interpretation. It is important, however, that the display includes both qualitative and quantitative data, and clearly labels each for the reader. (Guetterman et al. 2015: 158)

Joint displays already exist in various formats—for example, as images, tables, matrices, or graphics—but are visually still relatively rudimentary. We believe that mapping processes can offer innovative strategies for integrating data and that cartography-based procedures can lead to novel findings. In other words, mapping makes it possible to display more than the sum of the individual (qualitative and quantitative) parts. It is the *spatialization* and *superposition* of heterogeneous data that gives mapping the ability to offer a synthesizing data integration process beyond the mere juxtaposition of the datasets.

2 Data integration through spatial translation and projection

Diverse types of data can be generated about the experience of space. Whether these are qualitative or quantitative depends on the research question. According to Dangschat and Kogler, "the qualitative spatial methods described below are the most widespread: observations and on-site viewings of space, visual approaches (like mental/cognitive maps and other visual techniques such as photo-elicitation), and spatial interview and combination techniques (like activating opinion surveys and the 'go-along' method)" (Dangschat/Kogler 2019: 1340, own translation). Quantitative methods in spatial research (especially in geopolitical and geographical sciences) primarily use survey data (whether generated by the researchers or as a secondary dataset), geotracking data, administrative data, official statistics, digital data, or network data.

The joint *spatial* display method is an integrative approach that creates varying combinations of these types of data, such as observational data combined with tracking data, or go-along interview data with digital data, and so on (see Fig. 1).

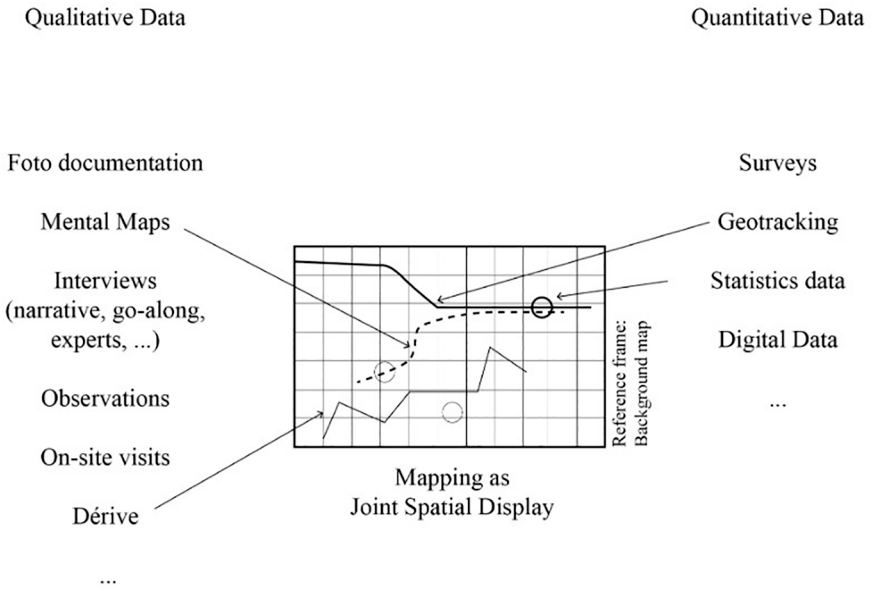


Fig. 1: Spectrum of possible data combinations in a joint spatial display | © Author's own diagram

Mapping offers the advantage of a standard reference framework (in the form of a background map) that acts as an interface for the integration, forming an artificially constructed "metaphorical," but convention-bound space in which the data can meet. This allows researchers to *view* and *read* congruences, interdependencies, proximity-distance relationships, etc. The great potential of the joint spatial display concept is therefore the integration of heterogeneous data within a spatially structured reference system.

This process requires a number of translation steps, as the datasets usually have different medialities—textual (e.g., interviews), numerical (e.g., official statistics), or visual (e.g., photodocumentation)—and yet must be related to each other. In addition, the spatialization or at least positioning of the more abstract data from interviews or statistics is indispensable: While geotracking data is already georeferenced, meaning positioned within the reference framework of *Earth*, sketches from on-site viewings must first be turned into *geo*data (Lakes 2019). It is not necessary for them to be *geo*referenced with exact coordinates, but they must be localized in the sense of assigned to some location. The second step is then to relate these geodata to each other by projecting them onto a shared reference framework or onto a background map. Data that cannot be positioned *per se* can be graphically inserted into the background map, for example, by thematic relationship. Rather than simply placing the datasets next to each other, the researcher is superpositioning them in a "layered display" (Löw/Marguin 2021). We would like to present

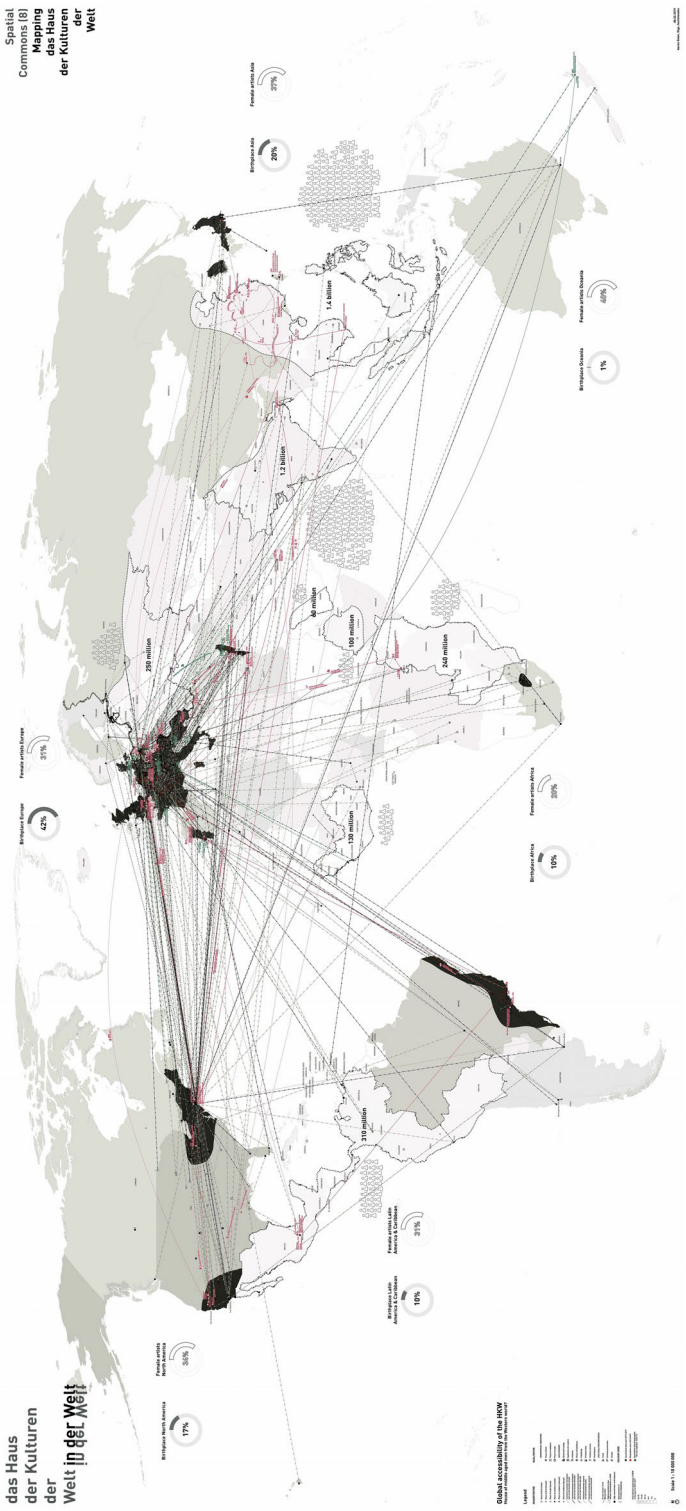
an example of this procedure to illustrate how it generates results before addressing the methodological questions raised by the positioning and superpositioning of heterogeneous data in the final section.

3 Case study: Mapping the accessibility of a cultural institution

As part of a methodological teaching research project combining sociology, architecture, and urban planning, we experimented with various mapping methods for a joint spatial display. The topic was the accessibility of one of Berlin's cultural institutions, the *House of World Cultures* (*Haus der Kulturen der Welt*, HKW). How global or local, how inclusive or exclusive is the institution?—we asked on both a spatial and a social level. To gather data about both the physical accessibility of the building and the social accessibility of the institution, we performed our analysis on four different scales: the interior spaces of the HKW, its embedding in the environment of Tiergarten Park, its situatedness in Berlin, and its location in the world; as well as four different user groups: employees, passers-by, visitors, and artists. Below we will discuss only the example of *world mapping* (see Fig. 2) in which we focused on artists.

We worked with two datasets on a global scale. The first consisted of a statistical record of all (n = 600) artists represented in the HKW between 2013 and 2017 and included information about place of birth, place of residence, gender, and age. The second dataset consisted of biographical data about a selection (n = 15) of artists originating from the Global South and resulted from an Internet search. The demographic data about the 600 artists was first transformed into geodata by determination of the geo-coordinates of the places of birth and residence. This made it possible to trace the movements of the artists from place of birth to place of residence and to the HKW on world map using the *QGIS* software. The geographical points of birthplace and residence were connected by arrows to make the movements more visible. The patterns arising from this quantitative aspect of the data (e.g., many residences in western Europe, very few birthplaces in Eastern Europe) could then be emphasized using a graphics program to make the key finding legible: There is a stark discrepancy between the few artists from Eastern Europe and the many artists from Western Europe. The former border of the Warsaw Pact was graphically inserted to show that this geopolitical-spatial barrier remains in effect in the group being studied even today.

Fig. 2: World mapping | ©Aaron Geier and Olga Juutistenaho



We worked on the legibility of this representation of biographical-geographical differences in (many) iterative steps. The secondary data consisting of the artists' biographies was evaluated using a thematic content analysis to search for factors related to the success of artists from the Global South. Almost all the artists had an academic career, but the key was recognition by western institutions or media. It was possible to identify different factors that "open the door" to the HKW, such as receiving a grant, publicity in international media, or attention garnered through political activism. These "door openers" on the "paths" of the artists to the HKW were displayed on the map as small iconographic codes created in the graphics program and positioned "by hand" (see Fig. 3).

The legend (see Fig. 4) became a central topic of discussion during the mapping iterations. Not only did it list the elements considered relevant to each level of analysis—whether global movements or individual biographies—it also grouped, categorized, and ranked these elements. The legend therefore became a tool for organizing the arrangement of mapping data. The superimposition of the two datasets on one world map showed that German political foundations (like the *Heinrich Böll Foundation*) and state cultural institutions (like the *Goethe Institute*) only open doors to artists in specific regions of the Global South (namely, the Near and Middle East and East Asia). These spatial patterns make it possible to carry out far-reaching analyses of the complex and ambivalent treatment of citizenship, nationality, and territoriality by a decidedly critical and post-colonial western cultural institution.

4 Methodological challenges in synthesizing mapping

Mapping is based on a synthesizing integration mechanism that results from the spatialization and simultaneous superimposition of data. However, this poses specific methodological problems for researchers: One the one hand, the necessarily deliberate handling of scalar and semiotic conventions in cartography (see Pelger et al. in this handbook), and on the other hand, the comprehensability of the process of creating maps, which must be ensured due to the inductive nature of mapping in research.

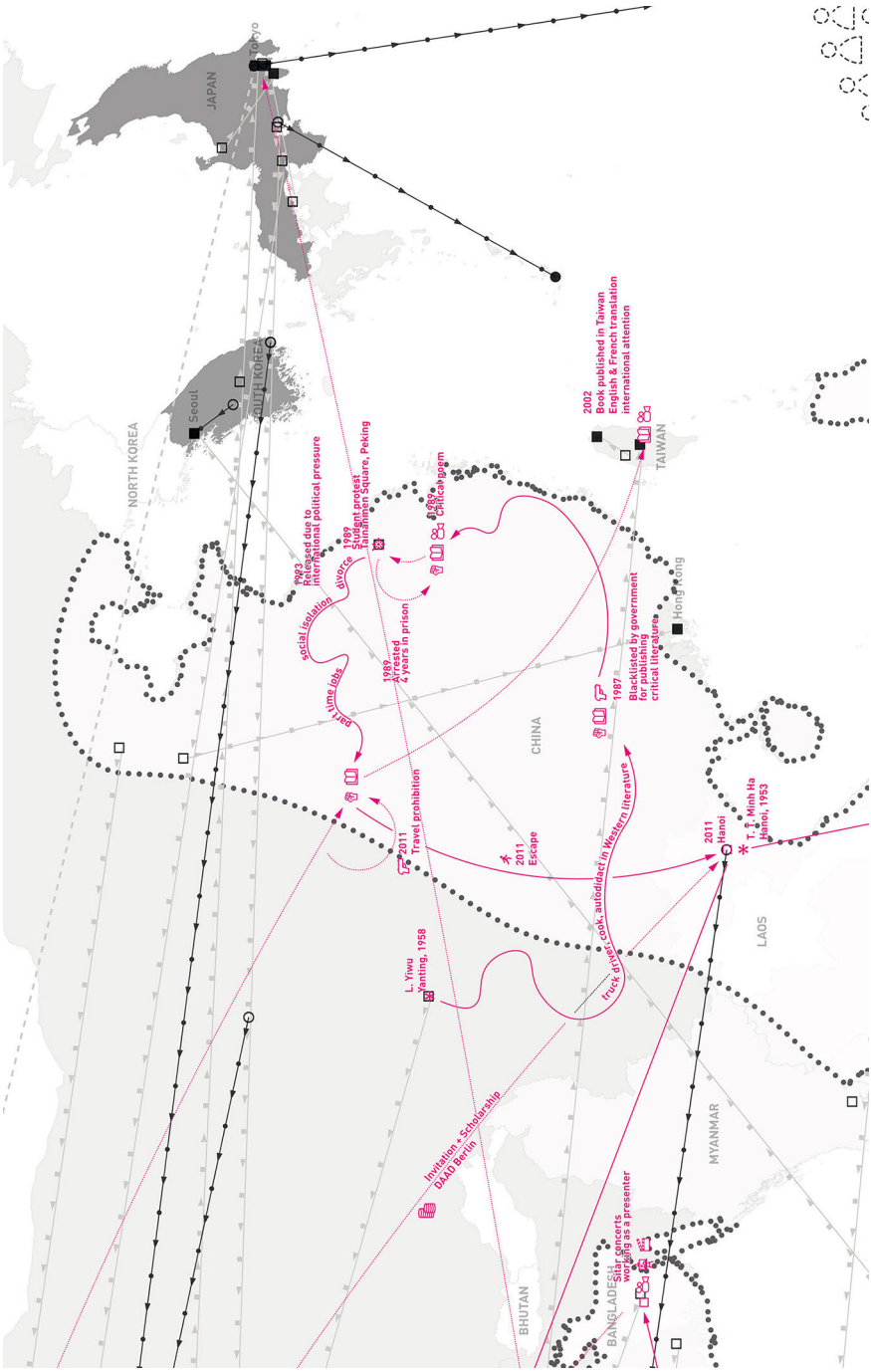


Fig. 3: Zoom-in with biographical narratives. | ©Aaron Geier and Olga Juutistenaho

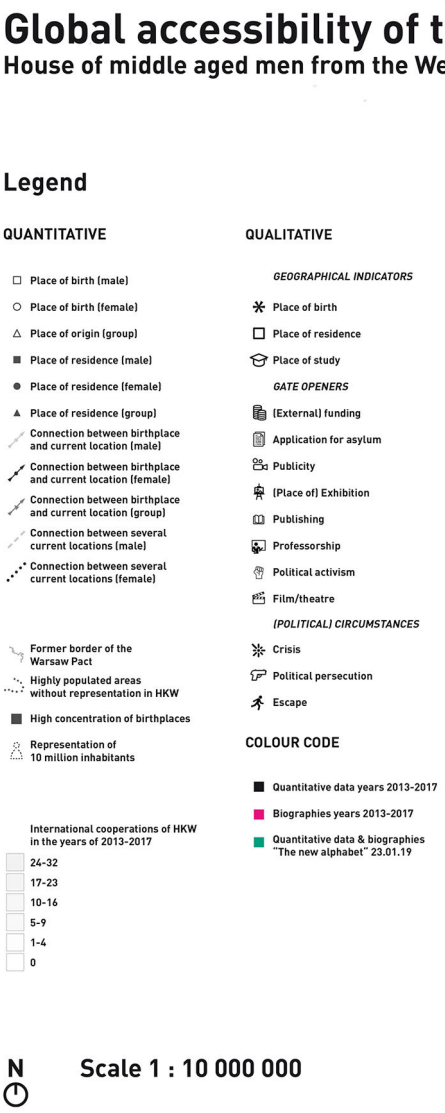


Fig. 4: Legend of the world mapping with graphical symbols for gate openers. | *©Aaron Geier and Olga Juutistenaho*

4.1 Scalar and semiotic conventions of cartography

The translation of the data through localization or georeferencing and the resulting question of how to represent the data requires the data to be adapted to a spatially structured reference framework, which can imply leveling. As discussed in the cartographic literature (Lambert/Zanin 2017), it is important to be very conscientious when determining the parameters of the framework.

Scales: Critical geography has shown that scales do not describe pre-existing territories but are co-constructed during the mapping process (Harley/Markham 1989). The scale should be determined accordingly based on the questions and the data being collected. However, qualitative and quantitative data may have to be projected together even if they do not share the same scale. It is important to understand that every scale implies all other scales and that a spatial phenomenon is never studied on only *one* scale. Rather, scales are interconnected (see Pelger et al. in this handbook) and are constructs that help the viewer navigate within the space. When creating the world mapping, for example, we discussed the scale of nation states extensively because the students possessed data about collaborations between the HKW and other *countries*, which they wanted to relate to the biographical data of the artists. It quickly became clear that neither place of birth nor place of residence indicated anything about the nationality or cultural identity of the artists—a fact also reflected in discourses critiquing a widespread national methodologism.

Representations: The second challenge concerns the choice of graphical means of translation. On a world map, for example, different projections can be used to project the sphere of Earth onto a surface (Robinson, Mercator, Buckminster Fuller, etc.), each of which comes with its own distortions and positioning of, for example, the continents with respect to one another. Hence the chosen form of representation must be developed based on the research question: If we are interested in the materiality of the city, for example, we can prepare an axonometric drawing because it provides the volumes of buildings as a reference framework, while if we are interested in the accessibility of public space, a Nolli plan can be useful, etc.

In a mixed methods approach to mapping, the particular challenge is to choose a form of representation that makes the graphical information legible for the purposes of the research question—for example, by facilitating the spontaneous association of a drawing with quantitative or qualitative data: Topographical maps are a common reference framework for quantitative research projects, while axonometric drawings have become well-established in ethnographic research approaches in architecture (Kaijima et al. 2010). As a combination of different forms of representation, a collage can be an additional inspiration in preparing joint spatial displays.

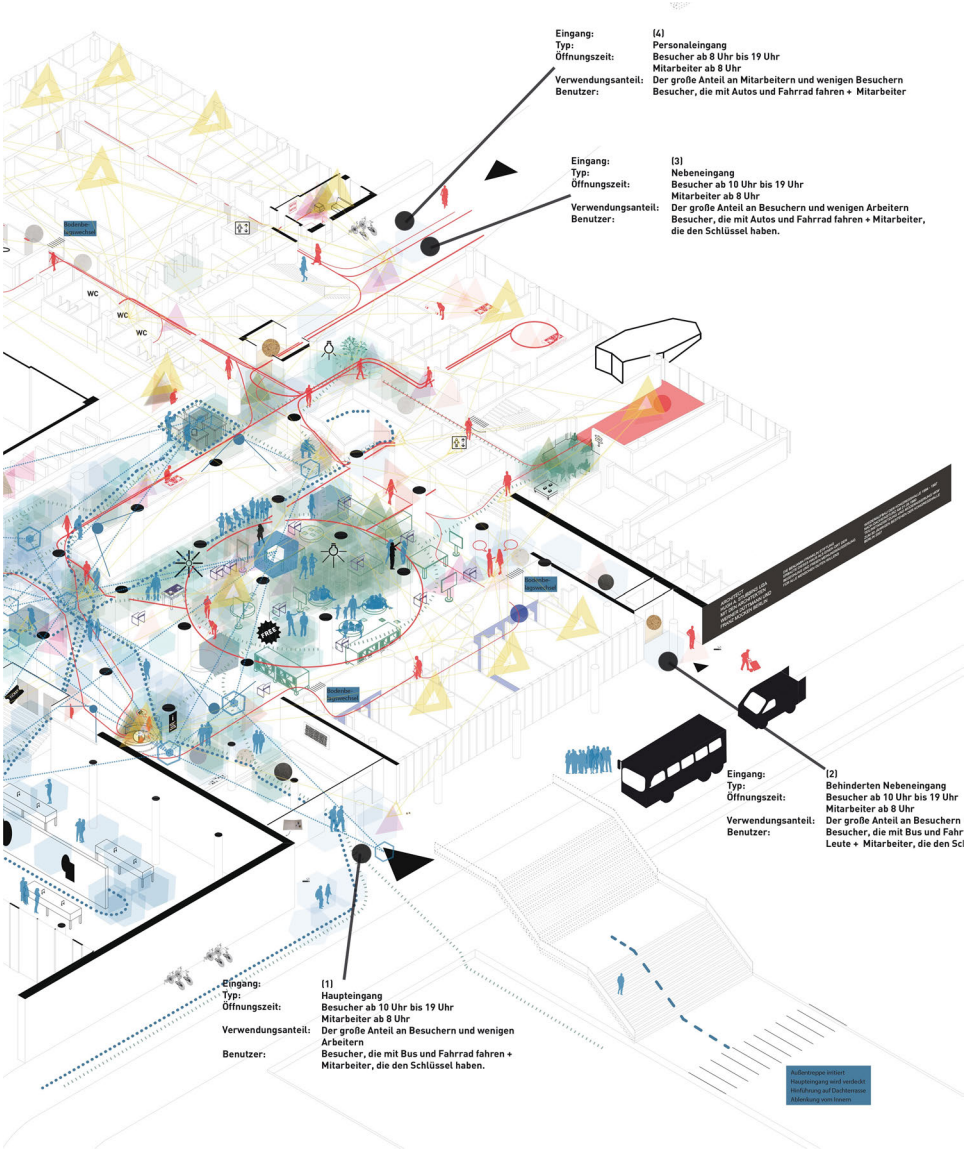


Fig. 5: Zoom-in on entrance hall of the HKW. | ©Anna Lesch and Muhannad Ghaza

We used the Robinson projection as the basis for the world mapping of the HKW (Fig. 2). Unlike other (more recent) projections, it is not based on a fixed geometric formula, but was developed to depict a two-dimensional representation of the world with as little distortion as possible. As with many older maps, the vertical middle point runs through Europe, reproducing its claim to hegemony. This by now disputed projection was chosen on purpose because a certain European focus on the part of the HKW crystallized out of the research process. When mapping the interior spaces of the HKW, on the other

hand, we chose an axonometric representation that makes it easier to orient oneself in the building and simultaneously makes legible the spatial structure of the building as a co-creator of processes (see Fig. 5). The placements of different user groups—employees and visitors to different exhibitions or events—can be read as movement patterns with the help of color codes and, at the same time, shed light on the social aspect of the overlapping systems of space within the building.

4.2 Iteration and comprehensibility

Mapping is iterative, each repetition bringing together seeing, thinking, and interpreting with the aim of extracting an argument in response to the research question. It is important to understand that the mapping need not be thought of as the end product but rather as a series of attempts in which we approach the argument.

Hierarchy: To construct a hierarchy, we visually evaluate the projected data: quantitative data analysis typically using a GIS software, qualitative data analysis using drawing tools chosen depending on the topic and scale. The resulting mapping is read, reflected on, interpreted, added to, reworked, potentially discarded, re-synthesized, etc. It is always helpful to (where applicable, print out and) hang up the mapping-in-progress to jointly discuss and evaluate the results, draw on it by hand, and add notes and corrections. It is precisely this iterative process of conceptual design that produces insights, as the researchers re-interpret the projections with every iteration. They try to reduce the projections, to group elements, to strike out the unnecessary, to emphasize different elements, until legible statements crystallize out of the work. A drawing program or manual drawing technique that supports the desired form of representation should be used to add notes, delete elements, or make corrections. For us, the difference between mapping and a map is this: mapping is a repetitive negotiation between the research question and the research data.

The process of reduction results in a selection and hierarchization of the data. The goal is for the qualitative and quantitative data not to cover each other up but to overlay each other. This makes it necessary to find a semiotic language for the representation that allows different types of data to be distinguished but still facilitates an interplay between them. The goal of this synthesizing integration is ultimately to draw out and elucidate the congruences, interdependencies, and proximity-distance relationships between the heterogeneous data. All of these connections then produce the findings (see Fig. 6).

Intersubjectivity: An important aspect of this process is the collective dimension of interpreting the mapping results. In architectural and planning practice, a group views and comments on mappings together. The interpretation is intersubjectively tested and potentially validated. In research projects, this should be done in data sessions with colleagues or, in participatory research, with the co-producers. The sessions should be recorded so the research process is documented.

Communication and conceptualization: The back-and-forth between concepts and visualizations plays a major role in the synthesis process based on the superimposed data in the mapping. The legend undergoes constant revision. This makes it necessary to bear in mind what type of data are being used, especially if they are secondary.

Fig. 6: Mapping process during the workshop at the House of World Cultures, in collaboration with the SFB. | ©Photo: Marc Volk

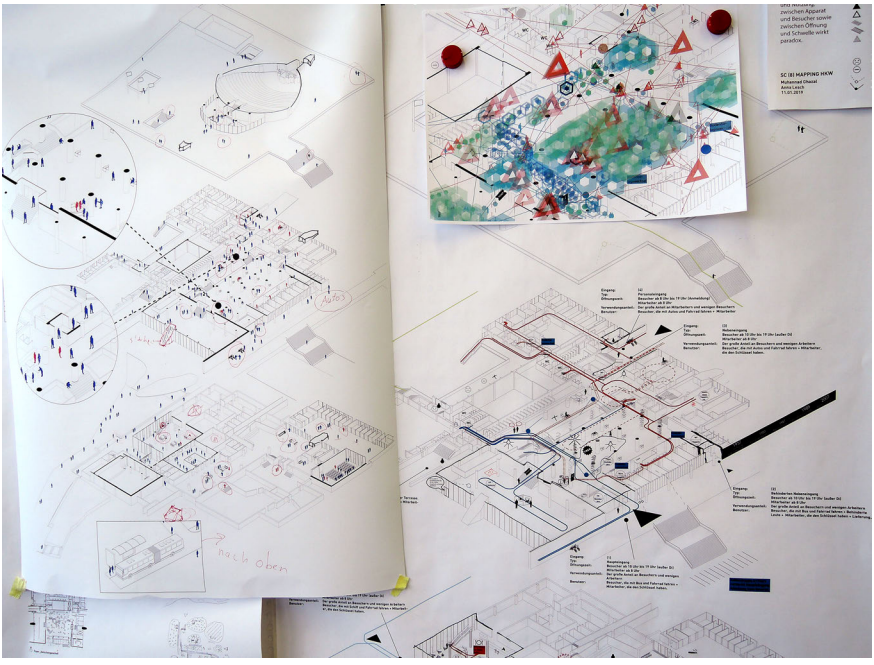


Fig. 7: Mapping process in the studio. | ©Anna Lesch and Muhannad Ghazal; photo: Dagmar Pelger

The conceptual formulations in the legend and the descriptive texts clarify what is being shown. On the other hand, visual conclusions make it possible to adjust the research question. As already mentioned, the legend plays a central role in this context. Mapping cannot stand alone as a reliable research tool: it gains its entire meaning from the descriptive text and the research question. We see several ways to ensure the comprehensibility of the findings. The most important one is to establish and record the research process in the text portion for purposes of reconstruction: how the important decisions about evaluating the mapping results were made and on what arguments they rest. Another is to make this process transparent using a series of mappings as working stages (see Fig. 6 and 7) to reveal the iterative character of the production. In addition, a reading aid can lead the viewer through the mapping using prototypical stories or narratives.

5 The temporal and the social

But what does this mean for the social sciences? What does it mean to take all data collected to answer a specific research question—qualitative or quantitative—translate them into geodata, and synthesize them in a spatially structured reference framework? How can the temporal dimension be integrated into a mapping? There have already been interesting attempts in geography and urban studies to incorporate temporality into cartographic production: through the creation of a sequence of mapping—for example, following the development of the Ukrainian border (Eckert 2017); for digital mappings, by embedding a time bar in the mapping—for example, for the development of Berlin's *Projektraum* scene; or through a multimedia presentation—for example, on the development of settlements in Palestine (Forensic Architecture 2019). These techniques for integrating temporal aspects are of great significance to the further methodological development of mapping as a joint spatial display as this is the only way the processual character of the social production of space can be carried forward into the research findings.

Even when it is possible to embed change over time into mappings, they often continue to depict "containers" in the sense of static depictions of space. This static character is due not only to the question of time, but also to the difficulty of depicting the social dimension, or as Harley writes: "Maps as an impersonal type of knowledge tend to 'desocialize' the territory they represent. They foster the notion of a socially empty space" (Harley 2001: 81). It is precisely here, in the integration of qualitative and quantitative data within mappings as a joint spatial display, that we see the chance to integrate the spatial shape of the social with the spatial shape of the place into something common: that is, to grasp and interpret its mutual conditionality.

References

Baur, Nina/Hering, Linda/Raschke, Anna Laura/Thierbach, Cornelia (2014): Theory and Methods in Spatial Analysis: Towards Integrating Qualitative, Quantitative and Cartographic Approaches in the Social Sciences and Humanities. In: *Historical Social Research*, 39(2), pp. 7–50.

Bittner, Christian/Michel, Boris (2018): Partizipatives Kartieren als Praxis einer kritischen Kartographie. In: Wintzer, Jeannine (Ed.): *Sozialraum erforschen: Qualitative Methoden in der Geographie*. Wiesbaden: Springer, pp. 297–312.

Corner, James (1990): The Agency of Mapping. Speculation, Critique, and Invention. In: Cosgrove, Denis (Ed.): *Mappings*. London: Reaktion Books, pp. 213–300.

Cosgrove, Denis (1999): *Mappings*. London: Reaktion Books.

Creswell, John W./Plano Clark, Vicki L. (Eds.) (2011): *Designing and Conducting Mixed Methods Research*. 2nd Edn. Los Angeles, CA: SAGE.

Dangschat, Jens S./Kogler, Raphaela (2019): Qualitative räumliche Daten. In: Baur, Nina/Blasius, Jörg (Eds.): *Handbuch Methoden der empirischen Sozialforschung*. Wiesbaden: Springer, pp. 1337–1344

Eckert, Denis (2012) : L'Ukraine ou les contours incertains d'un Etat européen. In: *L'espace politique,* 33(3).

Forensic Architecture (2019): *Conquer and Divide. Remote Sensing Map 1987–2017*. Online: https://conquer-and-divide.btselem.org/map-en.html (accessed: 28 September 2020).

Guetterman, Tim/Creswell, John W./Kuckartz, Udo (2015): Using Joint Displays and MAXQDA Software to Represent the Results of Mixed Methods Research. In: McCrudden, Matthew/Schraw, Gregory/Buckendahl, Chad (Eds.): *Use of Visual Displays in Research and Testing: Coding, Interpreting, and Reporting Data*. Charlotte, NC: Information Age Publishing, pp. 145–176.

Harley, J. Brian/Markham, Beryl (1989): Deconstructing the Map. In: *Cartographica*, 26(2), pp. 1–20.

— (2001): Maps, Knowledge, and Power. In: Laxton, Paul (Ed.): *The New Nature of Maps. Essays in the History of Cartography*. Baltimore, MD/London: The Johns Hopkins University Press, pp. 51–82.

Kaijima, Momoyo/Junzo, Kuroda/Yoshiharu, Tsukamoto (2010): *Made in Tokyo.* Tokyo: Kajima Institute Publishing.

Kohlstock, Peter (2004): *Kartographie: Eine Einführung*. Paderborn: Schöningh: UTB.

Kuckartz, Udo (2017): Datenanalyse in der Mixed-Methods-Forschung: Strategien der Integration von qualitativen und quantitativen Daten und Ergebnissen«. In: *KZfSS Kölner Zeitschrift für Soziologie und Sozialpsychologie,* 69(S2), pp. 157–183.

Lakes, Tobia (2019): Geodaten. In: Baur, Nina/Blasius, Jörg (Eds.): Handbuch Methoden der empirischen Sozialforschung. Wiesbaden: Springer, pp. 1345–1352.

Lambert, Nicolas/Zanin, Christine (2017): *Manuel de Cartographie: Principes, Méthodes, Applications*. Paris: Armand Colin.

Löw, Martina/Knoblauch, Hubert (2017): On the Spatial Re-Figuration of the Social World. In: *Sociologica*, 2, pp. 1–26.

Löw, Martina/Marguin, Séverine (2022): Eliciting Space. Methodological Considerations in Analysing Communicatively Constructed Spaces. In: Christmann, Gabriela/

Knoblauch, Hubert/Löw, Martina (Eds.): *Communicative Constructions and the Refiguration of Spaces*. London: Routledge.

Marguin, Séverine (2011): *Interaktive Karte über die Berliner Projekträume seit 1970*. Online: http://www.projektraeume-berlin.net/interaktivekarte/index.php (accessed: 28 September 2020).

Marguin, Séverine (2021): Interdisziplinarität als polykontexturale Wissensproduktion. Über die Kollaboration zwischen SoziologInnen, ArchitektInnen und PlanerInnen. In: Löw, Martina/Sayman, Volkan/Schwerer, Jona/Wolf, Hannah (Eds.): *Am Ende der Globalisierung. Über die Re-Figuration von Räumen*. Bielefeld: transcript.

Müller, Sabine/Wall, Axel/Kopper, Marcus/Weissmann, Markus (2010): *Multiskalar* (Lehrstuhlpublikation). Karlsruhe: Universität Karlsruhe, Institut für Orts-, Regional- und Landesplanung (ORL).

O'Rourke, Karen (2013): *Walking and Mapping: Artists as Cartographers*. Cambridge, MA: The MIT Press.

Pelger, Dagmar (2022): Mapping the Commons. In: Pelger, Dagmar: *Spatial Commons. Zur Vergemeinschaftung urbaner Räume*. Hamburg: adocs.

Rankin, William (2016): *After The Map. Cartography, Navigation, and the Transformation of Territory in the Twentieth Century*. Chicago, IL: The University of Chicago Press.

Roberts, Les (Ed.) (2016): *Deep Mapping*. Printed Edition of the Special Issue Published in Humanities. MDPI.

Schäfer, Susann/Muenchow, Jannes/Harnisch, Benjamin (2018): Qualitative Forschung und Geographische Informationssysteme. In: Wintzer, Jeannine (Ed.): *Sozialraum erforschen: Qualitative Methoden in der Geographie*. Berlin/Heidelberg: Springer, pp. 167–80.

Schmidt-Lauber, Brigitta/Zechner, Ingo (2018): Mapping. Begriff und Verfahren. In: *Zeitschrift für Kulturwissenschaft*, 1, pp. 11–18.

Thierbach, Cornelia/Hergesell, Jannis/Baur, Nina (2020): Mixed Methods. In: Atkinson, Paul A./Delamont, Sara/Williams, Richard A/Cernat, Alexandru/Sakshaug, Joseph W. (Eds.): *SAGE Research Methods Foundations*. London/Thousand Oaks, CA/New Delhi: SAGE, pp. 23–30.

Tuma René/Schnettler, Bernt (2019): Videographie. In: Baur, Nina/Blasius, Jörg (Eds.): *Handbuch Methoden der empirischen Sozialforschung*. Wiesbaden: Springer, pp. 1101–1202.

Wood, Denis (1992): *The Power of Maps*. New York, NY: Guilford Press.

V. Reading and reflecting

Applying process-oriented methodology to spatial research

Jannis Hergesell

From the perspective of historical and process-oriented research, spatial transformation processes—like any social change—are phenomena that should be studied while taking into account their *historicity* and *temporality*. The manner in which spatial structures change and the reasons for their current configuration can only be understood fundamentally if current events are put into context with their formation. Therefore, process-oriented research inquiries into the "being so and not otherwise [So-und-nicht-anders-Gewordensein]" (Weber 2002: 103) and understands temporality and processuality as a key analytical category (Baur 2005: 13). The objective of process-oriented social research is "to explain the existence of a circumstance based on its history, thus interpreting it as part of a process that led from the past to the present with the future lying ahead as an open horizon" (Schwietring 2015: 151, own translation). The historical-sociological study of spatial phenomena does not aspire to reconstruct the past in its own interests, but rather it involves using the explanation potential of socio-historical events for the present (Schützeichel 2004: 9).

Over the last several years, the debate about the socio-theoretical link between space and time has intensified. For example, Laux et al. (2017) raised the question of conceptualizing the relationship between space and time, developing the concept of a "social space-time [gesellschaftliche Raumzeit]." The authors characterize the added value of this debate compared to the established yet hitherto poorly connected works in temporal and spatial sociology "first based on the analytical connection between time and space, second given the incorporation of the materiality of time and space, and third thanks to the connection between theoretical concepts and the empirical exploration of time and space in society" (Laux et al. 2017: 4, own translation). However, they focus on theoretical aspects that are studied empirically but remain unsystematic from a methodological standpoint. Fraya Frehse (2020) addresses this gap in the state of research by developing "temporal-spatial scales," which provide a heuristic approach to the empirical study of the production of space. At the same time, she shows how the future, empirically driven, theoretical conceptualization of sociological spatial research can benefit from a spatio-temporal methodological foundation. However, it should be noted that process-oriented

analyses of space have not yet systematically addressed issues and consequences related to the methodologies beyond the different theoretical and methodological schools used for concrete operationalizations.

This represents a gap in the research that needs to be filled since the methodological perspective of process-oriented research offers great potential for diverse units of analysis in spatial research. This becomes clear when using process-oriented perspectives in exploratory studies on space, even though the methodological aspects of process-oriented spatial research are rarely substantiated in these studies (see Christmann 2014). For example, temporality is just as decisive for understanding how different cultural spaces or nations are formed (see Weber 1922; Elias 1994) or how the intrinsic logics of cities that evolved historically appear today in terms of their economic practices and how they see themselves and others (see Berking/Schwenk 2011; Baur et al. 2014), or for determining how types of road usage are constituted or how spatio-temporal perceptions affect biographies (see Frehse 2017; Weidenhaus 2017). A historical and process-oriented methodology is therefore suited for performing spatial research at different social aggregation levels (macro, meso, and micro) and on a wide range of different phenomena (e.g., structures of urban and regional development, economic or cultural processes, forms of communication, interactions, constitution of subjects, etc.).

Even if not every space-related research project can focus on time and historicity as its topic of interest (nor is this necessary), familiarity with the process-oriented methodology at least makes it possible to reflect on simplistic explanatory approaches for social change fixed entirely in the present and to take advantage of the socio-historical method.

Certainly, the process-oriented perspective is not an immutable doctrine of methods or a rigid research agenda. Rather, the historical, process-oriented methodology implies a series of taxonomic considerations spatial researchers must take into account when analyzing social change (Hergesell et al. 2020). In turn, these classifications affect the operationalization of the concrete research project. Below I present the key dimensions of the historical and process-oriented approach, as well as its duration and progression, while discussing which decisions must be made during the research process in this regard and which methodological consequences those decisions entail. Afterward, I describe the process of periodization according to the discipline of history.[1] Here my descriptions are based on the study of how the spatial knowledge of children and youth has changed (Million et al. 2020; Castillo Ulloa et al. 2021; also see Castillo Ulloa/Schwerer in this handbook).

1 Key dimensions of the process-oriented approach

The *key dimensions* of the process-oriented approach can be understood as a series of explanatory questions and steps in spatial research processes. The *duration* and *progression* of spatial transformation processes have a major impact on the amount of data available

1 The following definitions of duration, progression, and periodization, as well as their representation, are based on preliminary studies on process methodology carried out by Nina Baur (2005; et al. 2021).

and thus the data collection and analysis, as well as the interpretation of the findings in the end (Baur 2005). To what extent addressing the key dimensions of the process-oriented approach is meaningful and using a perspective focused exclusively on the present is beneficial always depends on the specific interest of the spatial research questions being asked.

The research project *Education: Spatial Knowledge of Children and Youth in Planning*,[2] which I use below as an example of a process-oriented methodology, analyzes how subjective spatial knowledge changes and the associated constitution of spaces (Million et al. 2020; Castillo Ulloa et al. 2021; also see Castillo Ulloa/Schwerer in this handbook). The topic of interest in this particular project lends itself for discussing the process-oriented approach as it investigates a prolonged process, lasting since the 1970s, associated with the refiguration of spaces (Knoblauch/Löw 2017) and thus at the same time answers a question relevant to the present day.

1.1 Duration

Spatial social change extends across different periods of time, depending on the phenomenon being studied and the concrete research question. This duration (also referred to as a temporal layer or *durée* in French) denotes the time during which the process unfolds and takes effect (Baur 2005: 99–103, 138–142). As is the case with all other social processes, spatial phenomena also exhibit different durations. These are relevant for deciding which methods can be used to study spatial phenomena and which data can be collected.

Three types of duration can be distinguished from one another within the process-oriented approach (Baur 2015; Baur et al. 2021):

Long duration (French *longue durée*) refers to processes that last from several centuries to 80–70 years before the present. An example of a long-term spatial process is the spread of the production-based and sedentary lifestyle (agriculture and livestock farming or Neolithic Revolution) from the *Fertile Crescent* in Western Asia starting in 12th century BC, which lasted several centuries and first reached Central Europe five to six centuries later. The formation of the European nations and the associated spatial transformation processes from the beginning of the modern era into the 20th century also fall within the scope of long duration. Geels and Kemp (2012) provide an example of a *shorter* process that is still included under long duration with their study on the transition from horse-drawn carriages to the spread of streetcars and finally the dominance of the automobile in the period from 1880 to the middle of the 20th century across US cities. This led to a massive restructuring of urban space in the field of urban design, transforming our way of life into a *car culture* (drive-ins, suburbanization, etc.) and impacting the image of our cities to this day.

---

2 The project is being led by Angela Million and is part of Collaborative Research Centre 1265 *Re- Figuration of Spaces* (https://sfb1265.de/en/subprojects/the-spatial-knowledge-of-young-adults-the-constitution-of-online-offline-and-hybrid-spaces/ I would like to thank Angela Million, Anna Juliane Heinrich, Ignacio Castillo Ulloa, and Jona Schwerer for agreeing to let me use the project as an example and for their cooperation.

It is clear that long-term processes can extend across very different periods of time. However, they all share the same implications for the selection of methods and data. Because the periods of investigation considered *longue durée* are in the distant past, it is not possible to collect research-induced data, meaning data generated as part of the research process. Therefore, it is necessary to use process-generated data. For example, any type of documents (certificates, official statistics, newspapers, letters, diaries, etc.) can be used, but material artifacts or landscapes can also provide information about the development of a process. The major challenge for (extremely) long-term processes is that researchers are forced to work with the data they can find. This requires a certain degree of flexibility and competence when preparing the data. The analysis methods used are primarily text-based techniques such as hermeneutic approaches and secondary analyses of data prepared from historical studies, among others (Hergesell 2019: 104–108). But methods focused on materiality, such as the artifact analysis, are also possible.

Medium duration (spanning generations) includes all periods of time the actors can still remember, which means a maximum of 60–70 years. However, it is important to note that memories are not always bound to biological entities. For example, collective memories in organizations can be *forgotten* sooner if there is a high level of staff turnover. Medium-term spatial phenomena include the development of regional (or city-specific) conventions for economic activity in response to the economic crises of the 1970s, as illustrated by Nina Baur et al. (2014) based on the example of barbershops in Dortmund, Frankfurt a. M., Birmingham, and Glasgow. But medium duration could also include how spatio-temporal transformations impact biographical self-perceptions (Weidenhaus 2017). Similar to long duration, medium-term processes can only be studied using ethnographies or observations to a limited extent. In contrast, other types of research-induced data can certainly be collected. The method of choice is usually collecting interview data. Interview techniques targeting events that occurred a long time ago are ideal for this purpose, such as retrospective qualitative interviews or narrative-biographical interviews (see Weidenhaus/Norkus in this handbook)—at least as long as people can be found to provide information about the processes being studied. Otherwise, it is necessary to use process-generated data.

And lastly, there is *short duration*, which can last from a few moments to several days or weeks. In short-term processes, the topic of interest is typically focused on series of interactions or linked actions that are very limited in terms of time and space, although they can be very complex nevertheless. For example, spatial research could be interested in orientation behavior, studying how actors orient themselves when reading maps and how spatial orientation is negotiated interactively (Baur 2013). In addition, it is possible to analyze how aggression builds up over extended periods of time—for example, due to the spatial arrangements for entry points at soccer games—and what role material spatial order can play in conflicts between fans and security personnel (Keysers/Reichertz 2019). The advantage of analyzing short-term processes is that the full range of data collection and analysis techniques from empirical social research can be used. For very short processes, methods that can be used to collect *thick* data are particularly appropriate, such as ethnography in general or video analysis specifically. Interviews can also represent effective data collection tools; they are especially advantageous in this regard because the respondents can usually recall the events being investigated well. However,

process-generated data are also suitable for recording quick or fast-paced events: for example, recordings from security cameras or GPS data.

Based on the descriptions above, it is clear that the project *Education: Spatial Knowledge of Children and Youth in Planning* (in the first phase of the CRC 1265) investigates a medium-term phenomenon. The researchers study how spatial knowledge changes as a result of the refiguration of spaces (Knoblauch/Löw 2017) starting in the late-1960s. As such, the researchers decided to use a qualitative analysis of approx. 70 scientific studies that deal with this subject area from the 1970s onward in order to reconstruct how spatial knowledge has changed (Castillo Ulloa/Schwerer in this handbook). In order to study the repercussions in the present, an additional three case studies are carried out on the participatory planning of public spaces and the spatial knowledge expressed by young people in the process. Therefore, the research design of the project combines both process-generated and research-induced data, thus using the options available for medium-term processes.

1.2 Progression

In addition to the duration of the processes being investigated, the key questions of the process-oriented methodology also include the question of sequence. The analysis of progression determines whether certain patterns or regularities can be found in the history of the processes that have to be taken into account in the research design and in the data collection.

From a methodological point of view, it is possible to distinguish three (ideal) types of progression (Baur 2005: 125–137; Hergesell et al. 2020):

- *Ordered transformations* (trajectories) represent typical systematic patterns of change. The observed transformations take place continuously and over an extended period of time. An example of this type of progression is the development of power asymmetries between different economic regions. So, the possibilities of enforcing strategic interests in the economic relations between the Global South and North can be described as stable over centuries. Even if decolonization saw a leveling of the distribution of power between the North and South, which represents a (ordered) transformation, this was a long-lasting process with no sudden or abrupt changes. In terms of data collection in the case of an ordered transformation, data must be collected repeatedly over a long period of time in order to establish an ongoing change (Baur 2005: 130–133; 152–159).
- *Processes characterized by fractures* (turning points) have a completely different type of progression. These processes are marked by abrupt change that permanently alters structural characteristics in a short period of time. Typical examples of such progressions include revolutions or crises: For example, the structures of cities can change radically in the wake of (natural) disasters. With regard to data collection and the selection of reference dates, a fractured progression means that data must be collected at least four times. Data should be collected twice before the fracture, first to characterize the general development that led to the fracture and then again shortly before the fracture to understand the triggering events. Likewise, data should be collected

once more shortly after the fracture to determine the immediate consequences of the fracture and one last time at a later date in order to observe the long-term consequences of the fracture (Baur 2005: 133–137; Baur et al. 2021).

- *Cycles* (recurrences) refer to recurring patterns in the course of the process, although the temporal intervals in which recurrences are observed can vary considerably. For example, the use of public space repeats itself cyclically in cities with temperate climates. The number of visitors to parks, open-air events, etc. or the selection of different modes of transport changes with the seasons and is repeated cyclically at regular intervals within the relatively short period of a year. It is much more difficult to identify cyclical patterns in a prolonged or irregular progression of events; although they are found in recurring, structural conditions, they manifest (empirically) in very different forms. For example, recurring phases of spatial mobility (or immobility) can be observed in the biographical course of a person's life (e.g., moving out of their parents' house, job-related mobility, etc.). However, these are generation-specific and therefore vary from generation to generation; as a result, it can be difficult to identify such recurring patterns. Hence, cyclical patterns of progression pose major challenges for researchers in terms of data collection, too. They require as much data and as many reference dates as possible in order to recognize latent recurring patterns in the body of data (Baur 2005: 127–130, 191–209).

With regard to the types of progression, it is clear that methodological and theoretical-conceptual aspects in spatial research processes are closely connected. If researchers decide to focus on the present or the recent past in their research question, the progression of a process can appear similar to a radical fracture, while choosing an extended period of investigation can result in a cyclical progression or a fracture that more closely resembles an overarching, lengthy transformation.

The type of progression the researchers identified in the project *Education: Spatial Knowledge of Children and Youth in Planning* depended in part on their initial empirical results. Previous key factors included the fact that the growing mediatization starting in the 1960s impacted the perception of spaces and could have been decisive when it came to a change in spatial knowledge. Accordingly, this would constitute an ordered transformation whose progression should ideally be studied by collecting data continuously throughout the entire course of the process (from 1960 until the present). Ultimately, however, this can only be clarified as the research project progresses. For example, it is necessary to determine how the spread of the smartphone in just a few years should be classified within this multi-decade process. Thus, the classification of progression types is in itself an empirical, far-reaching, and often difficult question, as illustrated in the descriptions of *periodization* below.

1.3 Periodization

While the key categories duration and progression should be taken into account in every process-oriented research project, periodization is an elaborate process that descended from historical studies and historical sociology and that is primarily used for longer-lasting processes (Baur 2005: 82–93; Hergesell 2019: 96–103; Hergesell et al. 2020: 13–16). Pe-

riodization refers to the division of the entire span of the study into individual temporal segments (periods). The purpose of periodization is to split the tremendous complexity of socio-historical processes into small manageable units: the periods. In addition to breaking up long processes analytically, periodization offers the advantage of allowing individual periods to be compared with each other after being reconstructed. By comparing *period-specific* developments, researchers can determine how the social transformation being studied took place, assign critical events to individual periods, and finally identify causal correlations between periods from long ago and events in the current time period (the present).

Periodization can be classified into roughly three different approaches, which vary in terms of how precise and time-consuming they are and which require more or less process-methodological competence. For all periodization processes alike, researchers first have to define the beginning of their analysis period, which is called the *formative period* (Berking/Schwenk 2011: 256). Key events that are thought to have brought about the constitution of the process being investigated are generally used for this purpose. Therefore, the formative period refers to the start of the social transformation that is to be studied and/or that is related to the phenomena of interest in the present.

- The periodization technique that requires the least amount of effort is to set fixed interval lengths (Baur et al. 2021; Hergesell et al. 2020). Starting from the formative period, fixed periods of time are defined—for example, ten-year intervals—to produce individual periods. Subsequently, the periods that were created can be analyzed little by little and the genesis of the social transformation can be gradually reconstructed. However, there are several disadvantages opposing the low effort involved in this type of periodization. On the one hand, this produces a relatively large number of periods, no fewer than 20 for a 200-year process. Since it is necessary to collect data for each period, qualitative-interpretative research in particular quickly reaches the limits of the amount of data that can be processed. On the other hand, setting intervals that are too large poses an analytical problem. In this case, it is necessary to collect data in each individual period in order to characterize the specifics of the period or the time-specific development of the process being analyzed. Because only a limited amount of data (and reference dates) can be collected for practical reasons, it is easy for relevant events to be omitted from the data in periods of 50 years and thus to be neglected in the analysis.
- Another option is to define periods (limits) based on the state of research or the prior knowledge of the researchers about the phenomenon (Baur et al. 2021; Hergesell et al. 2020). This makes it possible to study typical spatial dynamics of change effectively and to use them as a guide for the periodization. For example, the following events could serve as useful period limits for spatial-territorial transformation processes in the modern history of Germany: the beginning of the War of the First Coalition (Napoleonic Wars) (starting in 1792), the foundation of the North German Confederation (1867) or the German Empire (1871), the territorial-political changes following the First and Second World War or the Treaty of Versailles (1919), the Potsdam Agreement (1945), and German Reunification (1990). It is clear that the decisions made regarding periodization greatly depend on the object of investigation and that periodization is a

theory-based technique. Drawbacks include the fact that the preconceptions brought deductively into the study process can desensitize the researchers to new, unanticipated results, which is disadvantageous in exploratory-inductive research designs in particular. In addition, some spatial transformation processes have only been investigated to a limited extent, which means the state of research is not sufficient for performing periodization.

- Finally, it is worth mentioning the empirically based inductive definition of period limits (Baur 2017; Hergesell 2019: 96–99; Hergesell et al. 2020). In this case, relatively stable phases and structural fractures in the course of the process are identified as period limits based on the in-depth analysis of empirical material. Therefore, the periods determined in this manner are not random or theory-based, but rather they are defined by means of induction. For this approach, it is essential for the periods to be established in close connection with the process being investigated, which means they should be appropriate for the object of investigation and distortions caused by theoretical preconceptions should be avoided. In this case, period limits are always identified whenever a change actually takes place with regard to the period-specific characteristics in the body of data during the process.

Thus, empirical-inductive periodization for the research project *Education: Spatial Knowledge of Children and Young People in Planning* could mean that the formative period represents the onset of mediatization in the 1960s. Based on this theory, it is now necessary to verify which developments are period-specific for the first "mediatization" period (e.g., the rise of the television as a form of mass media). Here it would be necessary to clarify how mediatization affected the spatial knowledge of children and young people specifically and how these developments differ from past developments (e.g., the significance of spatial knowledge transferred via television). Next the researchers could define further period limits (e.g., the spread of the Internet or the spread of mobile end devices, especially the smartphone). Finally, contextual, inductive periodization raises the empirical question of which structural transformations in spatial knowledge are period-specific and how their individual developments could potentially explain spatial knowledge at present.

2 The potential of the process-oriented methodology for spatial research

In spatial research, the process-oriented approach plays a key role in understanding the cause of spatial transformation processes and in answering present research questions by reconstructing their underlying historical conditions. Although temporality and historicity can be observed in the methodology of virtually all spatial research endeavors, a temporal or historical reference can be pronounced differently depending on the phenomenon being studied, the research question, and the prior methodological knowledge of the researchers. This also raises the question of whether and how prevailing spatial knowledge must be taken into account at different times in order to understand the reasons behind spatial transformation processes. In some research projects, reconstructing the (subjective) spatial knowledge of different periods and the subsequent compari-

son of those periods are indispensable. This is the only way to assess spatial knowledge adequately for specific periods in terms of its temporal and social positionality and its effects. In other research projects, by contrast, it may be worth studying space-related changes by analyzing material remnants, which can be equally meaningful for the qualitative analysis of spatial transformation. Therefore, the potential of a (historical) process-oriented approach for qualitative spatial research does not lie in the definition of formulated instructions for the methodological procedure but rather in the awareness of process-oriented aspects to be considered in the research process and their implications for the operationalization of the research question.

These aspects include the key dimensions of the historical and process-oriented methodology: the types of duration and progression. The classified duration of the spatial and social transformation being studied has major implications for the type of data and survey methods that are available to the researchers. Analyzing the progression of spatial transformation processes provides information about patterns and regularities in social change, which in turn impacts the number and chronological order of the reference dates needed. Furthermore, the periodization method is suitable for defining the start of a spatial transformation process, breaking down the complexity of socio-historical processes analytically, identifying time-specific developments, and establishing references between the past and present.

References

Baur, Nina (2005): *Verlaufsmusteranalyse. Methodologische Konsequenzen der Zeitlichkeit sozialen Handelns*. Wiesbaden: Springer.

— (2013): Die Karte als Interaktionsmedium zur Raumkonstruktion. In: *SozBlog. Der Blog der Deutschen Gesellschaft für Soziologie*. Online: http://blog.soziologie.de/ ?s=Die+Karte+als+Interaktionsmedium+zur+Raumkonstruktion (accessed: 21 April 2020).

— (2015): Theoretische und methodologische Implikationen der Dauer sozialer Prozesse. In: Schützeichel, Rainer/Jordan, Stefan (Eds.): *Prozesse. Formen, Dynamiken, Erklärungen*. Wiesbaden: Springer, pp. 351–369.

— (2017): Process Oriented Micro-Macro-Analysis. Methodological Reflections on Elias and Bourdieu. In: *Historical Social Research*, 42(4), pp. 43–74.

Baur, Nina/Löw, Martina/Hering, Linda/Raschke, Anna Laura/Stoll Florian (2014): Die Rationalität lokaler Wirtschaftspraktiken im Friseurwesen. Der Beitrag der »Ökonomie der Konventionen« zur Erklärung räumlicher Unterschiede wirtschaftlichen Handelns. In: Bögenhold, Dieter (Ed.): *Soziologie des Wirtschaftlichen: Alte und neue Fragen*. Wiesbaden: Springer Fachmedien, pp. 299–327.

Baur, Nina/Braunisch, Lilli/Hergesell, Jannis (2021): Methoden der Innovationsforschung. In: Blättel-Mink, Birgit/Schulz-Schaeffer, Ingo/Windeler, Arnold (Eds.): *Handbuch Innovationsforschung*. Wiesbaden: Springer, pp. 949–969.

Berking, Helmuth/Schwenk, Jochen (2011): *Hafenstädte. Bremerhaven und Rostock im Wandel*. Frankfurt a. M./New York, NY: Campus.

Castillo Ulloa, Ignacio; Heinrich, Anna Juliane; Million, Angela; Schwerer, Jona (2021): *The Evolving Spatial Knowledge of Children and Young People. CRC Press Series: The Refiguration of Space*. Abingdon: Routledge. forthcoming.

Christmann, Gabriela (2014): Investigating Spatial Transformation Processes. An Ethnographic Discourse Analysis in Disadvantaged Neighborhoods. In: *Historical Social Research*, 39(2), pp. 235–256.

Elias, Norbert (1994): *Studien über die Deutschen. Machtkämpfe und Habitusentwicklung im 19. und 20. Jahrhundert*. Frankfurt a. M.: Suhrkamp.

Frehse, Fraya (2017): Relational Space through Historically Relational Time – In the Bodies of São Paulo's Pedestrians. In: *Current Sociology*, 65(4), pp. 511–532.

— (2020): *On the Temporalities and Spatialities of the Production of Space*. SFB 1265 Working Paper, No. 4, Berlin.

Geels, Frank/Kemp, René (2012): The Multi-Level Perspective as a New Perspective for Studying Sociotechnical Transitions. In: Geels, Frank/Kemp, René/Dudley, Geoff/Lyons, Glenn (Eds.): *Automobility in Transition? A Socio-Technical Analysis of Sustainable Transport*. London: Routledge, pp. 49–79.

Hergesell, Jannis (2019): *Technische Assistenzen in der Altenpflege*. Weinheim: Juventa.

Hergesell, Jannis/Baur, Nina/Braunisch, Lilli (2020): Process-Oriented Sampling. In: *Canadian Review of Sociology*, 57(2), pp. 1–21.

Keysers, Verena/Reichertz, Jo (2019): Die Vereinzelungsanlage als Sicherheitsdispositiv. In: Burzan, Nicole (Ed.): *Komplexe Dynamiken globaler und lokaler Entwicklungen. Verhandlungen des 39. Kongresses der Deutschen Gesellschaft für Soziologie in Göttingen 2018*. Online: https://publikationen.soziologie.de/index.php/kongressband_2018/article/view/1071/1366 (accessed: 8 June 2020).

Knoblauch, Hubert/Löw, Martina (2017): On the Spatial Re-figuration of the Social World. In: *Sociologica*, 11(2). doi: 10.2383/88197

Laux, Henning/Henkel, Anna/Anicker, Fabian (2017): Einleitung. In: *Zeitschrift für Theoretische Soziologie*, special volume 4 »Raum und Zeit«, pp. 3–9.

Million, Angela; Castillo Ulloa, Ignacio; Heinrich, Anna Juliane; Schwerer, Jona (2020): *Bildung: Raumwissen von Kindern und Jugendlichen in der Planung*. Online: https:// sfb1265.de/teilprojekte/bildung-raumwissen/ (accessed: 31 May 2020).

Schützeichel, Rainer (2004): *Historische Soziologie*. Bielefeld: transcript.

Schwietring, Thomas (2015): Gesellschaft geschieht. Zeit und Geschichtlichkeit als begründende Kategorien des Sozialen. In: Schützeichel, Rainer/Jordan, Stefan (Eds.): *Prozesse. Formen, Dynamiken, Erklärungen*. Wiesbaden: Springer, pp. 149–167.

Weber, Max (1922): *Gesammelte Aufsätze zur Religionssoziologie*. Tübingen: Mohr.

— (2002): Die »Objektivität« sozialwissenschaftlicher und sozialpolitischer Erkenntnis. In: Kaesler, Dirk (Ed.): Weber. *Schriften 1894–1922*. Stuttgart: Kröner, pp. 77–149.

Weidenhaus, Gunter (2017): Der Zusammenhang von Raum und Zeit. Zur Konzeption sozialer Raumzeit und ihrer empirischen Relevanz in Biografien. In: *Zeitschrift für Theoretische Soziologie*, special volume 4 »Raum und Zeit«, pp. 40–73.

Qualitative meta-analysis

Ignacio Castillo Ulloa and Jona Schwerer

The term *qualitative meta-analysis* refers to a methodological approach that is based on the cross-study interpretation of existing empirical studies (primary studies) by other researchers on a certain phenomenon or nuanced phenomena. The objective of the qualitative meta-analysis is to use the interpretive synthesis of different primary studies to generate new findings about a different or similar phenomenon or phenomena than the ones investigated in those studies and thus to go beyond their particular results. Therefore, the primary studies represent the empirical cases that are analyzed and synthesized to produce the new findings. A qualitative meta-analysis is therefore useful for interdisciplinary spatial research because it makes it possible to correlate the knowledge from existing space-related studies from different (spatial) disciplines—each with their own perspectives—systematically, in order to gain new insights into spatial phenomena.

Notwithstanding the great potential that qualitative meta-analysis offers for research, a standardized methodological approach has not yet emerged from the existing debate. This is reflected in the series of slightly different terms used to designate various approaches that follow a similar methodology and share the prefix *meta* (Timulak 2014: 481 et seq.), such as qualitative meta-ethnography (Noblit/Hare 1988; Doyle 2003), qualitative meta-analysis (Sandelowski 2004), meta-interpretation (Weed 2005), or meta-synthesis (Sandelowski et al. 1997).

In this chapter, we use the term qualitative meta-analysis and present its methodological approach accordingly. Moreover, the method we describe is based on the experience of using it (and adapting it) for a research project conducted at the Collaborative Research Centre 1265 *Re-Figuration of Spaces*. The objective of the project *Education: The Spatial Knowledge of Children and Young Adults and Its Application in Planning Contexts* was by and large to study the relationship children and young people establish with their spaces. More specifically, the project aimed to shed light on how their spatial knowledge has evolved over the past five decades in view of the refiguration of spaces (Knoblauch/Löw 2017) by means of a qualitative meta-analytical investigation of various empirical studies. While our approach to qualitative meta-analysis was inspired by the meta-ethnographic methodology developed by George W. Noblit and R. Dwight Hare (1988), and enhanced by Lynn H. Doyle (2003), at various points we had to modify and adapt it to the require-

ments of our research project. Therefore, we prefer the term qualitative meta-analysis to meta-ethnography, as we did not limit ourselves to the analysis of ethnographic studies.

We thus start the chapter by explaining what characterizes a qualitative meta-analysis and how it differs from literature reviews and quantitative meta-analyses (as typical forms of synthesis research). We then describe the approach we took to applying qualitative meta-analysis. Afterward, we discuss relevant methodological challenges and quality assurance measures. Finally, we outline opportunities offered by qualitative meta-analysis for interdisciplinary spatial research, aside from the platitude that it allows (almost) every existing study to be re-evaluated and reinterpreted from a spatial standpoint.

1 Qualitative meta-analysis: Explaining and defining the method

Qualitative meta-analysis represents a synthesizing research method that differs from other techniques used to combine research literature in terms of its objectives and interpretative focus in particular. Hence, it is important to differentiate the method from techniques such as quantitative meta-analyses and literature reviews.

The synthesis of previous studies is often (mis)understood as the process of creating a literature review or defining the state of research (Weed 2005), although these generally does not constitute synthesizing approaches. After all, processing individual studies and their contents in literature reviews does not provide any meaningful information about what the studies collectively express (Noblit/Hare 1988: 14 et seq.). In other words, literature reviews lag behind qualitative meta-analyses in terms of synthesis as they do not generate any cross-study interpretations from the primary studies and thus pursue a different objective: namely, the progressive linking of reviewed studies to form a chain of reasoning. As a rule, literature reviews are used as arguments for accepting certain analytical perspectives or for justifying why it makes sense to carry out a certain research project (Weed 2005).[1] By comparison, the objective of qualitative meta-analyses is to produce new cross-study interpretations about a phenomenon or phenomena from the individual studies sampled.

Likewise, qualitative meta-analyses differ from quantitative meta-analyses. The latter follow an additive logic regarding the data and synthesis to develop generalizable correlations across the studies, which in turn allows for predictions about similar situations (Doyle 2003: 324). In contrast to this logic, which strives for generalizations, the synthesizing process in qualitative meta-analyses aims, as mentioned above, for cross-study interpretations (Doyle 2003: 324 et seqq.). Noblit and Hare (1988: 16) describe the process of synthesizing different findings for the meta-ethnography as "essentially an interpretative endeavor." This interpretative focus of the synthesis, which aspires to develop cross-study interpretations from existing studies and which we refer to as meta-interpretations below, is not only what distinguishes qualitative meta-analyses from the

1 Typical examples of such literature reviews include defining the current state of research and state-of-the-art discussions, which are often found at the beginning of research proposals, dissertations, and final reports.

other methodological approaches to synthesis research (literature review and quantitative meta-analysis) but also why we believe it to be rewarding.

2 Our qualitative meta-analysis approach: From analyzing individual studies to their meta-interpretation

Below we present the procedure for carrying out a qualitative meta-analysis as we have developed and used it within the framework of the research project *Education: The Spatial Knowledge of Children and Young Adults and Its Application in Planning Contexts*. On the whole, the method is divided into three stages: case selection, analysis, and synthesis (see Fig. 1). These stages should not be understood as strictly segregated steps, but rather they are mutually dependent and can be used in an iterative process.

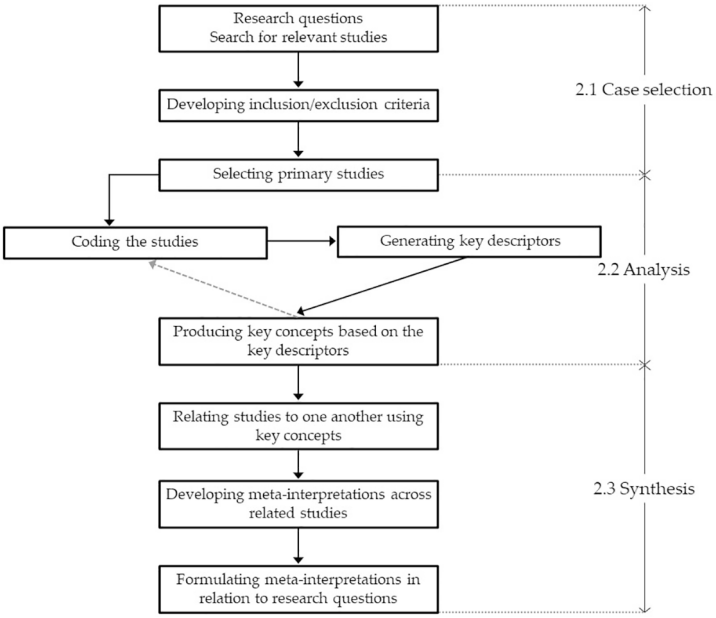


Fig. 1: Steps of the qualitative meta-analysis. | © Authors' own diagram

2.1 Case selection

The starting point and precondition for any qualitative meta-analysis is an adequate case selection, meaning a justified choice of the primary studies to be (meta-)analyzed. Before definitively settling on the cases in a deliberate manner based on defined criteria, it is necessary to identify the existing studies that are relevant for the research questions and the phenomenon or phenomena being investigated. This can be done, for example, through search queries in literature databases derived from the research questions and

by searching in the references of already known or tentatively selected studies (Timulak 2014: 486 et seq.).

After preselecting potentially relevant studies, it is necessary to define inclusion and exclusion criteria. These criteria can include content-related and methodological considerations: for instance, whether the studies should contain different methodological approaches or whether quantitative or mixed-methods research designs should be included in the sample (Timulak 2014: 487). For the case of the qualitative meta-analysis we carried out to study how the spatial knowledge of children and young people has changed, relevant case selection criteria for answering our research questions included the time period and the location of the studies, among other aspects.

Additionally, it might be helpful to base the case selection less on research questions and perspectives that are as similar as possible to the ones being pursued through the qualitative meta-analysis—in line with the principle of concentration (Behnke et al. 2006: 194 et seq.)—and to instead focus more on which studies appear to offer the most abundant and promising data for answering the research questions of the qualitative meta-analysis (Doyle 2003: 327). Such an approach to case selection implies that it is possible to achieve empirical saturation for the object of investigation in qualitative social research not only by means of the sheer number of cases studied but also by compiling a wide-ranging and diverse body of data (Strübing et al. 2018: 89).

Aside from these methodological and content-related criteria, quality criteria should also be defined for choosing the studies. For example, Lynn H. Doyle (2003: 329) suggests that the studies included in the analysis should contain more than just descriptions of the data and consequently offer interpretations and analyses based on accepted theories and methods. Therefore, verifying such quality criteria requires researchers to carefully read the studies they have found rather than simply skimming abstracts, references, and keywords.

The selection of primary studies for the analysis can follow different logics. Firstly, given a manageable number of potential studies, it is possible to carry out a complete survey of all of them. Likewise, in line with the concept of *theoretical sampling* (Behnke et al. 2006: 198 et seq.), the selection of the studies, from the very moment of preselection, may be seen as an iterative process in which the studies to be (meta-)analyzed are chosen based on previous analyses.

All in all, these different possible criteria and considerations for the selection of primary studies illustrate the importance of documenting and transparently describing the process and the individual case selection criteria used to allow for intersubjective validation (Timulak 2014: 487).

2.2 Analyzing the individual primary studies

The ultimate object of analysis in the qualitative meta-analysis method proposed here is the full texts of the selected studies, their interpretative evaluations, and their presentations of the empirical material. The descriptions of the theoretical framework and the methodological approach in the studies should also be read. They represent valuable objects of analysis by providing us with both important information for contextualizing the

respective primary study and the perspectives of the authors regarding the phenomenon they investigated.

Doyle (2003: 332), as well as Noblit and Hare (1988: 63), recommends using grounded theory techniques to analyze and synthesize the primary studies. The qualitative meta-analysis approach employed for our research project is based primarily on the modifications to Noblit and Hare's (1988) meta-ethnography proposed by Doyle (2003: 330 et seqq.). However, we adapted the individual steps and several terms to the requirements of our research process.

2.2.1 Coding

The first step of the analysis entails "distilling" the material from the individual primary studies that is relevant for the research question(s). Depending on how many different primary studies are to be examined as part of the qualitative meta-analysis, this also involves reducing the amount of material to render it (more) manageable. For this purpose, a coding scheme is developed as a "conceptual framework" (Timulak 2014: 489), which makes it possible to break down the primary studies into logical units according to diverse codes (and, if needed, subcodes). In our research project, for example, a coding scheme (see Fig. 2) was developed deductively, drawing on the research questions, to cover both different aspects of the research questions and the main research topic, *spatial knowledge*. Furthermore, by using a set of codes and subcodes, we were able to operationalize the elements of the research questions and main research topic that needed be considered for the analysis.

The development of the coding scheme is to be understood as an iterative task in the sense that, as the analysis of the texts begins, it can be supplemented and modified if necessary. The primary studies are then coded with the final version of the coding scheme. Software for analyzing qualitative data can be helpful in this regard.

If the primary studies are coded by various researchers, it is advisable, based on our experience, to perform several coding tests collectively in advance. This makes it possible to develop a common understanding of the different codes and the coding process. Moreover, difficulties and problems with the (joint) coding or coding scheme may be detected early on. We also consider it indispensable for the researchers coding to check in with each other regularly—even during the analysis and synthesis stages—in order to develop a uniform analysis style. Furthermore, such an exchange between the different coders can be extremely beneficial for discussing different viewpoints on the data material.

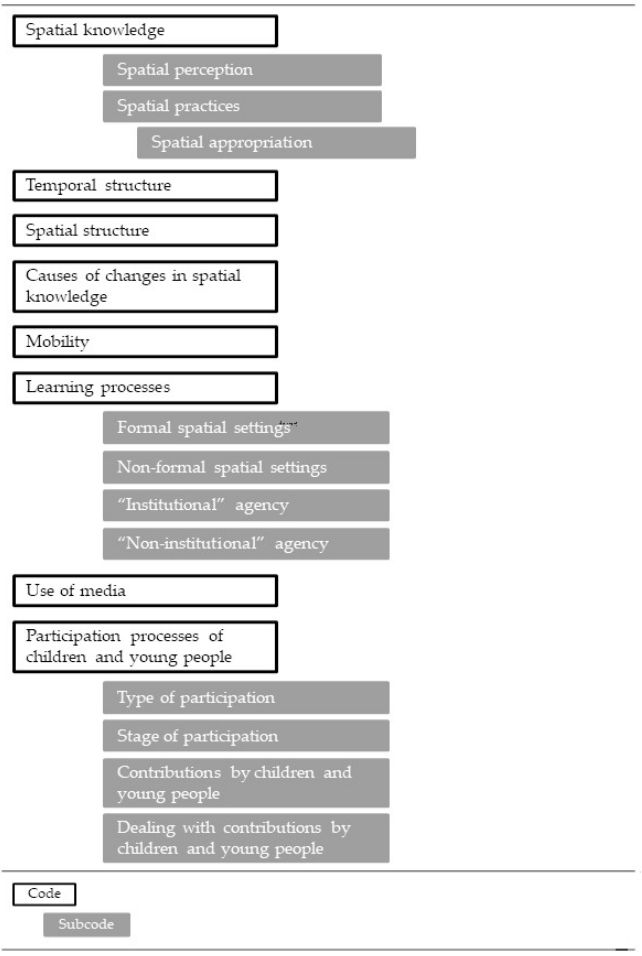


Fig. 2: Example of a coding scheme with codes and subcodes. | © Author's own diagram

2.2.2 Key descriptors

Following the coding of the studies, the individual coded positions in the respective studies are condensed into key descriptors for each code (see Fig. 3). In contrast to Doyle (2003: 333), our key descriptors consist of summaries of the coded positions in relation to the research questions. This results in one or more key descriptors for each code per study. As such, they form the basis for the synthesis. Therefore, key descriptors do not provide a separate interpretation and reconceptualization of the coded positions (even if this can never be completely avoided in the process of condensing the contents). Depending on the volume, length, and thematic breadth of the coded passages, key descriptors can either be just a few lines long or comprise multiple pages.

When converting the individual coded positions into key descriptors, we strongly recommend using original terms from the material. For example, Doyle (2003: 332 et seq.)

points out that "holding to the words of the original authors" makes it possible to retain the characteristics of the studies as much as possible in the analysis. This should help maintain the context and uniqueness of the primary studies in the key descriptors and avoid the use of excessively abstract interpretations of the individual textual passages.

CODE: **SPATIAL APPROPRIATION** (Tischer & Engelke 1978)	
KEY DESCRIPTOR	Children appropriate space in very different ways here. This can start with children taking a toy in front of their house in order to use the "outdoor space" as they see fit (see Tischer/Engelke 1978: 45) or using the surroundings of the urban environment differently than intended. This was illustrated at the row of shops in Garbsen, Germany, where children "transformed" the space for their own purposes: "'At Coop we go up on the roof, and if the bank leaves the window open, we kick [a ball] against it and inside' (3rd grade)." (Tischer/Engelke 1978: 46, own translation). Spatial appropriation can also involve asserting your own use of space in contested spaces, such as on the streets of Linden. This is shown strikingly by a group of children who made a street corner "their" corner: "This has turned into a permanent meeting point for a group of children with strong social cohesion. They consider this area to be their own and even prefer it to the playground. 'We play hide-and-seek there in the summer... I don't need to go to the playground. This is how we play.' (Ilonka, 9.J.). 'We' refers to 'the kids from our corner,' as the group refers to itself." (Tischer/Engelke 1978: 44, own translation).
KEY CONCEPTS	• Children augment the "facilities" of spaces or use the properties of the spaces for their own purposes, thus appropriating them. • Children can appropriate spaces by asserting their interests over those of other users – this can endow them with a sense of identity and be seen as them marking their territory.

Fig. 3: Example of an excerpt from a key descriptor and its key concepts. | © Author's own diagram

2.3 Cross-study synthesis

The synthesizing stage of the qualitative meta-analysis we conducted started with creating key concepts derived from the key descriptors we had produced per code for each individual study (see Fig. 3). These key concepts are intended to encapsulate and reformulate the central points contained in the key descriptors, thereby raising them to a more abstract level. This in turn makes it possible to gradually correlate the sampled studies with one other. Depending on the length and content of the respective key descriptor, various key concepts might be required. Essentially, the idea is to develop a common "language" among the studies through which to interconnect them. Although the resulting decrease in empirical references from the concrete primary studies and their specific characteristics represents the "price to be paid", it is also the precondition for the cross-study analysis and the formulation of meta-interpretations.

Based on the guiding research questions, it is then possible to compare the key concepts from the different studies by, for example, examining which thematic similarities exist between the key concepts or how the key concepts from different studies vary with regard to common topics. Doyle (2003: 335), who only addresses the synthesis process briefly, recommends using comparative strategies for this purpose. As a result, the col-

lection of studies can now be regarded as a collective—by using the key concepts to formulate and develop further cross-study meta-interpretations in relation to the research questions.

In order to compare and connect the studies with one another, visualization strategies can be helpful, such as diagrams, tables, or other types of graphical-textual depiction. For instance, during the synthesis stage of our research project, we printed out the individual key concepts including a short explanation and hung them up on a wall. This allowed us to establish connections between different key concepts visually and spatially, to cluster key concepts together thematically, and to rearrange them easily. Based on defined thematic clusters of key concepts, it was then possible to synthesize the findings from the individual studies—referring back to the key descriptors—and thus to formulate meta-interpretations to answer the research questions.

Overall, the synthesis constitutes the interpretive comparison between the analyzed individual cases or primary studies and the cross-study research questions based on the key concepts. This is the step in which the new meta-interpretations are developed about the phenomenon or phenomena being investigated through the qualitative meta-analysis, drawing on what is known from the primary studies to expand on the knowledge contained therein.

3 Methodological challenges

Conducting qualitative meta-analyses poses various methodological challenges that must be considered, several of which are discussed in this section. First, there is the issue of quality: the fact that the quality of the qualitative meta-analysis depends on the quality of the primary studies. After all, these studies provide the underlying data for the method. Thus, meta-analysts should point out any limitations in terms of the quality of the primary studies transparently (Timulak 2014: 493). Another option for overcoming this challenge is to define quality criteria, as described above, for filtering the preliminary studies so that they comply with established selection parameters. In doing so, it is possible to exclude studies with obvious qualitative deficiencies.

It is important to consider that the developed meta-interpretations come from a specific body of data that the meta-analysts construct by deliberately selecting the cases based on clearly defined criteria. Accordingly, we believe it is important both to reflect critically on the scope of the meta-interpretations and to disclose the particular perspective from which they emerged. Instead of assuming the data can be generalized, it is necessary to discuss critically and illustrate transparently which limitations apply to the body of data and where it is possible to make assertions: "Therefore it is probably more precise to say that qualitative meta-analysis may not necessarily provide a definite final picture or understanding, but rather a unique, systematic, in-depth analysing portrait and its interpretation of a studied field." (Timulak 2014: 492)

Another methodological challenge is the unavoidable decontextualization of the findings from the primary studies that occurs during the synthesis stage. This means that the researchers increasingly abstract from the concrete original contexts of the studies, as well as the specific methodological approaches and the theoretical perspec-

tives underlying the sampled studies. At the same time, this abstraction is required for comparing different findings and stocks of knowledge and for producing the meta-interpretations. In our research project, we dealt with this issue by creating a type of profile—a fact sheet—for each analyzed study containing basic information, including: its research questions, results, methods, and the disciplinary backgrounds of the authors. This makes it possible for all of the participating researchers to have the main information about the studies close at hand. In our opinion, the most challenging hurdle is the one related to synthesis, which requires striking a balance between performing the necessary abstraction on the one hand and staying attached to the concrete data on the other. The goal should be to ensure that the relationship between the abstracted meta-interpretations and the concrete primary studies remains clear (Doyle 2003: 336).

This challenge, moreover, is intensified if both the complexity and the size of the samples increase as a result of more studies being examined in the qualitative meta-analysis. It is easy to underestimate the effort involved in carrying out a qualitative meta-analysis if you are misled by the assumption that you only "have to read a few papers."

Hence, it is quite helpful to involve several researchers, especially in the case of large sample sizes. This makes it possible to not only handle the workload properly but also jointly discuss the procedure and the data. In addition, it provides diverse perspectives—especially in the case of an interdisciplinary team of researchers—of the complex data material, which can originate from different (disciplinary) contexts.

All in all, it is important to keep in mind these methodological challenges (and others) when carrying out a qualitative meta-analysis and when presenting the resulting meta-interpretations. Likewise, acknowledging limitations and obstacles encountered proves fruitful for contributing to methodological debates as it allows researchers to develop productive and critical solutions to dealing with challenges.

4 Quality assurance measures in qualitative meta-analyses

A key requirement for carrying out qualitative meta-analyses—as with any other methodological approach—is to ensure intersubjective validation for the method. This not only provides transparency for the readers but also reminds researchers of their own approach and allows them to reflect on certain steps. This holds true in particular as the qualitative meta-analysis becomes more complex with an increasing number of studies. It is necessary to document the different decisions that are made as part of the various stages of the methodological approach. This applies to presenting the criteria for selecting potential primary studies, to defining exclusion and inclusion criteria, and, in particular, to the method used for the analysis and synthesis.

Collaborating with other researchers represents another measure for assuring the quality of the qualitative meta-analysis and the resulting meta-interpretations. This could mean that the meta-analysis is performed by a multidisciplinary team whose members constantly discuss and reflect on its different steps and procedures. For our research project, this proved to be very valuable since it allowed for different (disciplinary) perspectives of the shared material and made it possible to discuss various interpretations and views of the primary studies, key descriptors, and key concepts in

the analysis stage. Furthermore, when developing meta-interpretations, we believe it is useful to discuss and validate initial ideas for interpretations with external experts from the field of study in order to reflect upon your own perspectives. This can be done in workshops or as part of a presentation of work-in-progress results at a conference (Timulak 2014: 490).

5 Conclusion: The value of qualitative meta-analyses for spatial research

We believe the potential of qualitative meta-analyses for spatial research is that the method enables researchers to combine different, otherwise separately regarded studies on a common phenomenon and then generate new findings. Therefore, individual case studies in the qualitative meta-analysis are not simply dismissed conceptually as being bound and limited to the local context; instead, the qualitative meta-analysis attempts to acknowledge the uniqueness of both the individual case studies and of the resulting collective of primary studies and to transcend the contextual borders by means of synthesis (Doyle 2003: 340). Furthermore, qualitative meta-analyses make it possible to compare and connect different stocks of knowledge in spatial research with each other. This could entail, for example, including primary studies that address different dimensions of space and that can be synthesized. Likewise, qualitative meta-analyses allow researchers to bring together studies from different spatial disciplines—such as architecture, sociology, urban planning, and geography—each with their own methods and perspectives, and to benefit from these diverse insights into a shared object of interest, which in turn is represented in the meta-interpretations. This can be helpful for developing more interdisciplinary terms and concepts in spatial research as these are needed for the purpose of cross-study synthesis and could be useful for future research projects and debates (Meacham 1998: 405; Doyle 2003: 340).

Moreover, qualitative meta-analyses enable spatial researchers to investigate processes of spatial transformation (see Hergesell in this handbook), as we did in our research project related to the spatial knowledge of children and young people. By including primary studies from different temporal contexts in the sample, it is possible to develop meta-interpretations about a certain period of time determined by the sample itself.

Finally, qualitative meta-analyses are (almost always) very time-consuming (regardless of whether only a couple or a large volume of primary studies are included), intellectually challenging (especially if the primary studies are taken from different disciplines, schools of research, and temporal and/or spatial contexts, etc.), and frustrating (you are likely to come across setbacks and dead-ends that have to be overcome). Nevertheless, we believe a meta-analysis is rewarding because it can uncover hidden interpretive potential in existing (spatial) analyses. Qualitative meta-analyses demonstrate it can be productive to re-examine already existing knowledge across studies when searching for new insights into certain research questions.

References

Behnke, Joachim/Baur, Nina/Behnke, Nathalie (2006): *Empirische Methoden der Politikwissenschaft*. Paderborn: Ferdinand Schöningh.

Doyle, Lynn H. (2003): Synthesis through Meta-Ethnography: Paradoxes, Enhancements, and Possibilities. In: *Qualitative Research*, 3(3), pp. 321–344.

Knoblauch, Hubert/Löw, Martina (2017): On the Spatial Re-Figuration of the Social World. In: *Sociologica*, 11(2). Online: https://www.rivisteweb.it/doi/10.2383/88197 (accessed: 30 October 2019).

Meacham, Shuaib J. (1998): Threads of a New Language: A Response to Eisenhart's »On the Subject of Interpretative Review«. In: *Review of Educational Research*, 68(4), pp. 401–408.

Noblit, George W./Hare, R. Dwight (1988): Meta-Ethnography: Synthesizing Qualitative Studies. Newbury Park, CA: SAGE.

Sandelowski, Margarete (2004): Qualitative Meta-Analysis. In: Lewis-Beck, Michael S./Bryman, Alan/Liao, Tim Futing (Eds.): *The SAGE Encyclopedia of Social Science Research Methods*. Thousand Oaks, CA: SAGE, p. 892.

Sandelowski, Margarete/Docherty, Sharron/Emden, Carolyn (1997): Qualitative Meta-Synthesis: Issues and Techniques. In: *Research in Nursing and Health*, 20(4), pp. 365–376.

Strübing, Jörg/Hirschauer, Stefan/Ayaß, Ruth/Krähnke, Uwe/Scheffer, Thomas (2018): Gütekriterien qualitativer Sozialforschung. Ein Diskussionsanstoß. In: *Zeitschrift für Soziologie*, 47(2), pp. 83–100.

Timulak, Ladislav (2014): Qualitative Meta-Analysis. In: Flick, Uwe (Ed.): *The SAGE Handbook of Qualitative Data Analysis*. Los Angeles, CA et al.: SAGE, pp. 481–495.

Tischer, Sylvia/Engelke, Wilfried (1978): Zur Situation von Kindern in alten und neuen Arbeiterquartieren. Eine Untersuchung am Beispiel Hannover-Linden und Garbsen-»Auf der Horst«. In: *Arch+: Zeitschrift für Architektur und Urbanismus*, 11(4/5), pp. 43–38.

Weed, Mike (2005): Meta Interpretation: A Method for the Interpretative Synthesis of Qualitative Research. In: *Forum Qualitative Sozialforschung*, 6(1), Art. 37.

Multimodal Discourse Analysis

Vivien Sommer and Kamil Bembnista

Over the course of its history, Poland has disappeared from the map of Europe three times—not least because of its geopolitical location between Germany and Russia. Territorial claims between nations led to partitions, wars, and territorial conflicts until well into the 20th century, with borders shifting and borders being redrawn as a result. According to Foucault, maps can be seen as materializations of power in discourses about (border) spaces (see also Harley 2001), and so these disappearances can also be seen as discursive disappearances.

From a discourse analytical perspective, access to reality is always a reconstruction of the representation of knowledge about this reality. Knowledge about (border) spaces can be described as a discursive construct consisting of both symbolic and material elements. Assuming a relational understanding of space (Löw 2001)—in other words, a relational arrangement of living beings and social goods within locations—the creation of space depends on material and symbolic factors and on constructive, synthesizing action in a reciprocal, meaningful relationship with others. Combining this definition of space and a discursive definition of knowledge (and its constitution by discursive practices), it is possible to analyze the process of creation and legitimization of spatial knowledge, with a focus on the *"how"*: How is knowledge about the German-Polish border constituted and legitimized? Discursive practices (re-)constitute, legitimize, and materialize systems of knowledge. Discursive practices can be defined as regular practices of statement, meaning individual statements following the same models (Foucault 1981: 156). In a space-related discourse analysis, we focus on how knowledge about space is constituted through discursive practices based on the understanding that material reality of these practices can be observed and analyzed. The historically situated existence of models, which Foucault defines as part of discursive practices and does not limit to acts of speech, is important to our understanding of knowledge about space. Thus, spatial knowledge is constituted not only by linguistic communication practices but also by visual forms such as designs or even completed buildings.

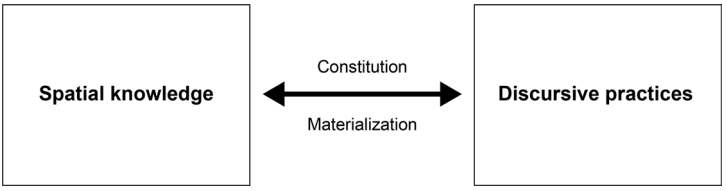


Fig. 1: Discursive spatial knowledge. | © Author's own diagram

To incorporate these materialized objectifications of knowledge into the analysis, it is useful to conceptualize discursive practices as multimodal. Space and spatial knowledge can be reconstructed and materialized in different ways. A purely textual analysis is no doubt the most frequently used dimension. But only by analyzing the textual *and* the visual in these materialized knowledge objectifications can space—which always becomes haptic/perceptible through the experience of seeing—be fully considered. "Multimodal" means subject to a social semiotic understanding that not just language but all available symbols are endowed with meaning (Kress 2012: 38).[1] Based on the understanding of discourses as multimodal discursive practices (Sommer 2018a: 80), an analysis of spatial dimensions can succeed by considering not only (written) language but also artifacts, technologies, and images as fully valid elements of discourse (Meier 2014).

In our article, we will first describe the methodological linking of discourse and space in order to then present our multimodal research program. This will then be illustrated in a third section using an empirical example analysis of German-Polish border regions.

1 Space and discourse

Foucault himself dealt with the spatial dimension of discourses in several studies, but without developing a clear understanding of space as part of discourse theory. In his study *The Will to Knowledge* (1978), Foucault describes different kinds of silence in the discourse about child sexuality in the 18th century. Using the example of a school education, he illustrates how this apparent silence is nevertheless materialized in various spaces: for example, in the architectural design of dormitories as with or without separating walls, with or without curtains, and with various rules for monitoring the sleeping times of children (Foucault 1978: 28). When we study space from the perspective of discourse analysis, we therefore also seek to make this *silence* speak through our analysis.

When we assume a relational and dynamic understanding of space (Löw 2001), we can study the symbolic and material organization of space (Keller 2016) as spaces and places do not present themselves but are represented by power relationships expressed in

1 Unlike in semiotics (de Saussure 2001), in social semiotics symbols are not considered to be arbitrary, that is to say, with no meaningful relation to the objects, because they are based purely on convention. Symbolic processes are not conceptualized as isolated but are always considered and studied in a cultural and situational context (Kress/Van Leeuwen 2001: 8).

discourses (Richardson/Benson 2003: 18). Spaces can be seen as both an effect and an impetus for discursive contestations. In our empirical example, borders are drawn through discursive practices, namely through categorizations, identities, affiliations, and the lack thereof, as well as through the construction of legalities. Border discourses involve not only "classic" territorial and political borders but also various forms of social borders (see Gerst et al. 2018). In more abstract terms, discourse analysis visualizes the spatial dimension within the powerful arrangements of knowledge. Conversely, an understanding of discourse analysis as an analysis of the social production of meaning in terms of specific truths results in the methodological potential to reconstruct the constitution of spatial realities in interdisciplinary spatial research (Richard/Benson 2003: 18).

Discourse research itself does not offer a coherent research program; rather, it is characterized by a broad inter- and transdisciplinary program of different approaches. In particular, the social-scientific version—the sociological approach to discourse (SKAD)—offers fruitful methodological links for interdisciplinary spatial research (Keller 2016) as it is not understood as merely textual research but rather examines the social interrelation of sign use and meaning production as a basis for the objectification of discursive stocks of knowledge (Keller 2011: 99). Analytical heuristics are a particularly important part of the analytical toolbox for the multimodal discourse analysis of space. Keller (2008: 240) fundamentally distinguishes between two dimensions of analysis in SKAD: first, the structure of the content of a discourse in the form of a typical *interpretative repertoire*, and second, the *materiality* of a discourse in the form of social actors and their actions within concrete practices.

Research approach	Dimension: Interpretative repertoire	Dimension: Materiality
Sociology of knowledge approach to discourse	Patterns of interpretation Narrative structure/storyline	Actors Practices

Tab. 1: Analytical categories of SKAD. | © Author's own diagram

The interpretative repertoire forms the basic structure in the sense of a typified core set of basic statements and basic premises of a discourse (Keller 2009: 46). It consists of the analytical units of the *patterns of interpretation* and the *narrative structure* or *storyline*. Keller understands patterns of interpretation as fundamental, meaning-producing schemata that can be considered a standardized sociocultural framework (Keller 2008: 192). Their function is both to make the world perceivable and to create a foundation for mutual understanding (Keller 2009: 48). Keller defines narrative structure as a storyline that links the different discourse elements in one through line. The second dimension of analysis consists of the discursive materiality in the form of social actors and the discourse coalitions they enter into, as well as the discursive practices performed by these actors.

Space, especially physical space and knowledge about it, is revealed in the specific analysis—for example, of the German-Polish border—through its concrete materiality;[2] in other words, not solely as spoken or written text, but also through visualizations in maps, photographs, videos, etc. in particular. Discourse is constituted from the combination of different sign systems (Fraas et al. 2012: 69). If we understand discursive practices as multimodal, not only does our analytical perspective expand from language to other forms of sign systems such as images, but the interaction of these different sign modes in their multimodal combination, meaning in their concrete interplay, can be captured. Semiotic modes are always embedded in their sociocultural contexts (Jewitt 2011: 16). Signs only become meaningful within communication processes, which does not imply that this occurs without structure or rules.

2 Multimodal discourse analysis in spatial research

A research design based on discourse analysis opens up the perspective on spatial representations within the framework of interpretative patterns that co-determine the process of how spatial reality comes into being. This means that spatial knowledge is (re)formulated by means of these patterns, with the possibility of representing space through interpretative schemes that co-determine the emergence of space. In concrete terms, the analysis involves reconstructing patterns of interpretation that, as discursive constructs, also co-determine the spatial reality of space (see Felgenhauer 2009: 261).

The concrete empirical process cannot be limited to the analysis of language. Only analyzing (moving) images would likewise be insufficient. It is instead the interplay between different symbolic systems that must be targeted. As explained above, our procedure is a variation of the sociology of knowledge approach to discourse.

We combine SKAD with the research program of grounded theory (GT), which, with its regularity in data collection and analysis, helps to structure the research process and, ultimately, with social semiotic discourse analysis (SDA), whose approach of multimodality and, in particular, image analysis, helps to analyze not only the language-based text but also the multimodal combination. Keller (2011: 83) describes the research process in SKAD as a circular process similar to that in GT, where different levels of analytical depth alternate with one another. The corpus formation and detailed analysis in SKAD also follow GT (Glaser/Strauss 2008), as do the specific procedural steps of theoretical sampling and coding. By means of the coding procedure, the interpretation of the data should lead to a conceptualization of the studied phenomenon. For this purpose, data sequences are compared with each other to form codes and categories (Strauss 2003: 25). In this way, the specific coding steps in GT can reconstruct the interpretative repertoire of a discourse. However, the specific multimodality of space-related discourses cannot be fully analyzed by triangulating SKAD with GT, and so SDA functions as an expansion

2 The corpus in our study consisted of (regional) print media in the most recent edition within the radius of the expanded border region from Berlin to Poznań, as well as regions in which surveys of actors took place: Tagesspiegel for Berlin, Märkische Oderzeitung for Frankfurt (Oder), Lausitzer Rundschau for Grießen, Gazeta Lubuska for Słubice, and Głos Wielkopolski for Poznań and Pózna.

of the discourse analysis process. SDA finally makes it possible to explore the visuality of the discursive practice and to make the materialization of the space visible through interpretation of the multimodal interplay between text and image.

Research Design	Methodical Elements for the Research Process
Grounded theory	· Circular research process · Theoretical sampling · Coding program
Sociology of knowledge approach to discourse	· Interpretative repertoire – Patterns of interpretation and storyline · Discursive materiality – Actors and practices
Social semiotic discourse analysis	· Metafunctions as "borrowed codes"

Tab. 2: Elements of a multimodal discourse analysis. | © Author's own diagram

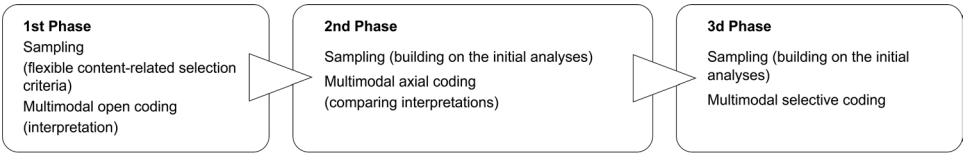


Fig. 2: Stages of collection and analysis | © Author's own diagram

We divided the combination and application of this research process into three stages. In accordance with GT, we pursue a logic of repeated sampling and interpretation that build on each other. The first step in the research program comprises the initial data collection and initial interpretation in the form of the first coding, which means nothing more than that we divide the discourse fragments into sequences and assign codes to them. We focus on the question: *What is being said and shown?* In the second step, we collect further data based on the first interpretation process. In the analysis step, we apply what is called axial coding, meaning we link the codes we have determined in the first step with each other. The focus of our analysis shifts somewhat in the second step: We are no longer working out only what is being said and shown but also how. In the third step, we collect data again based on the three research steps and interpret our data. Our aim is to order the discourse in the form of a story line,

that is to say, to analyze which patterns of interpretation, which speakers, and which practices are used to narrate the discourse. SDA is an important extension of the coding process and offers concepts and categories with which to analytically grasp multimodal, discursive communication about spaces. In particular, Kress and Van Leeuwen (2001, 2010) developed a method that can be appended to the coding process in GT. It is based on Halliday's (1993) functional grammar, which understands semiotic symbols as realizations of three types of functions related to meaning. These are the basic functions fulfilled by speech as an action (Halliday 1993: 112). The first function is the *ideational function*. It addresses the fact that language always expresses something about cultural experiences. The *interpersonal function* refers to the function of the language by which its speakers assume a position with respect to others and negotiate relationships. The *textual function* comprises the structure and internal logic of the language. Building on this, Kress and Van Leeuwen (2010) expanded Halliday's functional grammar to other semiotic modalities (Van Leeuwen 2006). For a multimodal analysis, this expansion of the metafunctions to visual forms of representation makes it possible to derive specific questions for the coding of visual data (see also Meier/Sommer 2013; Sommer 2018b).

Starting with the *ideational metafunction*, meaning the representation of content and concepts, we can derive the following questions and translate them into codes:

- Actors: Who is being represented?
- Social role: What are the social roles for the actors based on their appearance?
- Topic, event, object, situation: What is being represented?

The *interpersonal metafunction* refers to the relationship between the consumers of the image and the visually represented content, especially staging practices. To reconstruct the interpersonal metafunctions for visual communication, the questions mainly circle around production practices, such as camera settings, perspective, and section. The following questions for analysis and associated codes can be derived from this function:

- Camera placement/perspective: What camera placement or perspective has been chosen and what (spatial) relationship does this create to the scenarios being shown (full shot, medium full shot, close-up, extreme close-up and straight-on, low angle, or high angle shot and the associated role of the observer as a remote non-participating viewer, closely involved witness, participant, etc.)?
- Field of view: What view of image objects and contexts is permitted by the field of view and what relationship does this build with them?

The *textual metafunction* refers to the composition of the image elements. The following questions for analysis can be derived and translated into codes:

- Movements: Which movements or dynamics can be determined by lines (vectors) in the picture?
- Relationships between actors: How is the presumed relationship between actors established by body language, size differences, and positioning within the space?

- Closeness or distance: How is the distribution of objects in the image organized, and how does this organization constitute closeness and distance of the elements to each other?
- Dominances: What kind dominance, emphasis, and attention are constituted through the use of contrast (light–dark, big–small, blurry–sharp, gloss–matt, monochrome–colored, foreground–middle ground–background)?
- Affiliations and boundaries: What is the relationship between objects and context? (this includes questions about long shot, knee shot, close-up and extreme close-up, normal view, view from below, and what meanings can be gained from it?

The multimodal *metafunctions* play an equally significant role in the research steps of axial and selective sampling and coding as they expand and complement the analysis in a fruitful way.

3 Multimodal analysis: Empirical example

This section focuses on the actual process of coding. Below, we illustrate the methodological and practical use of the analytical categories of a multimodal discourse analysis in a process of interpretation by means of our empirical example.

3.1 First analytical step: Open coding together with a social semiotic image analysis

Our focus in the first phase of the analysis is oriented toward open coding in accordance with GT. We aim to obtain a general overview of the discourses and find an entry point into the debate. Open coding "breaks down" the collected data by comparing the data points to find differences and similarities. The W and H questions (Who? When? Where? What? How? How many? Why?) are used to code the data in an initial step. The codes themselves then describe the various concepts. These labels are initially provisional (Strauss 2003: 28). The labels can either be in vivo codes, meaning word usages that occur in the data, or "borrowed" codes from the researcher's prior knowledge (Mey/Mruck 2009: 115; cf. also Strauss 2003: 30, 125 et seqq.). In the excerpt below (see Tab. 3), we give an example of a few sections of text from our data to which we have assigned certain codes. A crucial point in multimodal analysis is that the codes can be contextualized not only linguistically but also visually. To do this, we apply a social semiotic discourse analysis by posing specific questions relating to the images. As a rule, it is necessary to look more closely at visual communication as it is impossible to determine the *what* without the *how* when it comes to images.

Text excerpts	Codes
"According to the BBC, ten thousand people crossed the borders to Germany and Austria over the weekend. The immigrants are already in the West." (Source: Głos Wielkopolski, author's translation)	THREAT_BEHIND_BORDER
 ▶ W ostatnich dniach na Węgrzech miało miejsce kilka protestów imigrantów, którym odmawiano podróży do Austrii i Niemiec ©Głos Wielkopolski	THREATENING_GROUP
"Friendly takeover. More and more Polish people are discovering the Uckermark for themselves, refurbishing vacant houses and restaurants." (Source: Tagesspiegel)	TAKEOVER_WORDPLAY_NS
 ©Tagesspiegel	IN-THE-CROSSHAIRS

Fig. 3: Example of open coding. | © Author's own diagram

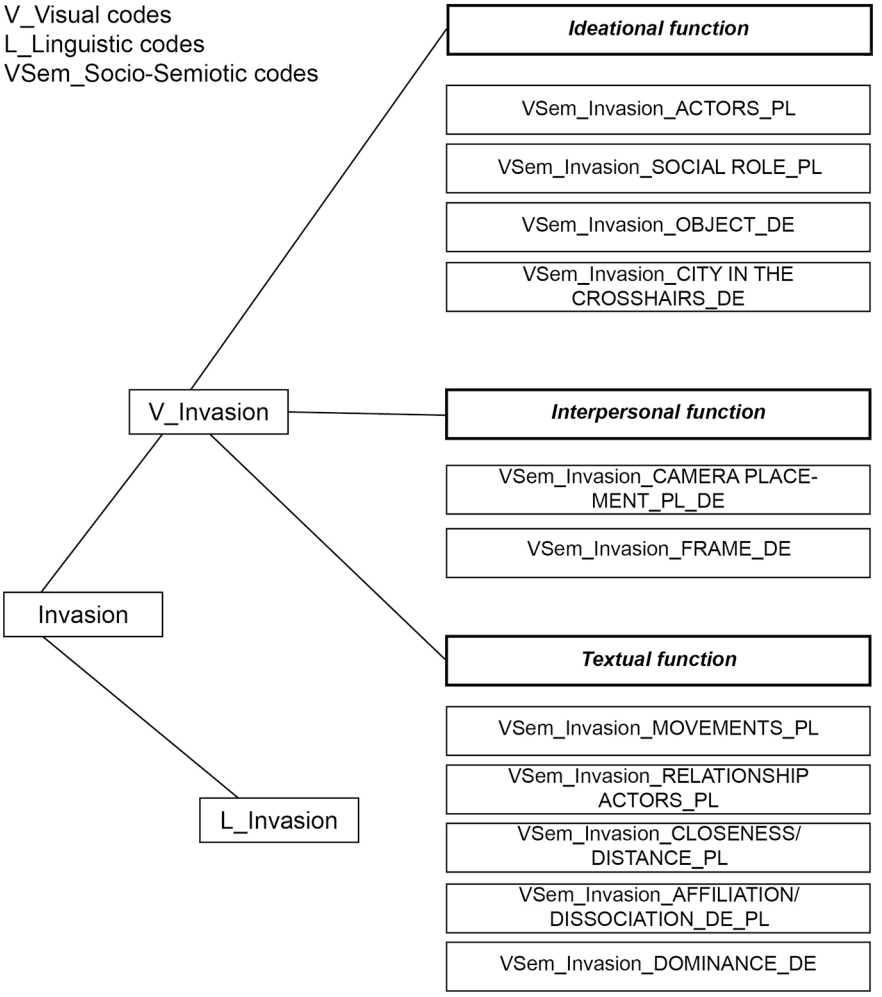


Fig. 4: Open multimodal coding. | © Author's own diagram

In our empirical example, both the German-language and the Polish-language discourse discuss the border by referring to an invasion in the sense of an invasive border violation. The coding excerpt shows that in the Polish-language discourse the topic of a threatening invasion by a specific group is pushed not only on the linguistic level but also on the visual level. This means visual representations can also be added to the code *Threatening_Group* in the Polish- language space. Their meaning is revealed at the organization level we have reconstructed using social semiotic coding. Specifically, we use the questions for analysis derived from the metafunctions (see previous section). Hence the analysis acts at different sign levels. In the open coding stage, these are "broken down" into their monomodal elements. From the perspective of research practice, this means that we generate monomodal categories and concepts from the visual and linguistic sequences.

In the example, young men [actors] are shown who create a threatening atmosphere because of their lowered eyebrows, wide-open mouths, muscular upper bodies, and a skull on one of their T-shirts (*ideational metafunction*). The staging is also conspicuous (*interpersonal metafunction*): The actors are shown in a medium full shot, so that the viewer experiences a feeling of being in the middle of the tumult of protesting actors [camera placement]. A slightly low angle creates the impression that one is being overrun by the crowd [frame]. For the third social semiotic metafunction (*textual metafunction*), the body language, such as the balled fists and tense bodies [movements], and the gaze and arms outstretched in the direction of the camera also suggest a threatening and invasive gesture [relationship actors].

Similar to the visualization in the Polish-language discourse, the German-language discourse also contains images illustrating border crossings. These include the field of view showing a city (see Tab. 3): At the level of *ideational metafunction*, there are no human actors [object] in the center, but—as the image caption explains—a part of the city of Prenzlau, which is close to the German-Polish border. The image shows the façade of a historic building on a street corner surrounded by the outline of an underpass [city in the crosshairs]. With respect to the *interpersonal metafunction*, the full shot camera positioning suggests a view of a chosen part of Prenzlau from the perspective of someone on the outside. The focus is clearly directed at the city as a (target) object and not at the inhabitants, whose presence/significance appears diminished by the cut-off torsos [field of view]. This example ultimately contains the key to interpreting the arrangement in the image (*textual metafunction*): The foreground contains the (slightly blurry) curved arch of the underpass framing the historic building façade [closeness/distance]. The curve is dark, like the edge of a gun sight, and the historic building façade shines in the sunlight as the object of desire [dominance]. The image arrangement in the context of Polish residents moving in and upgrading the cityscape suggests the martial act of placing something *into-the-crosshairs*. The playful treatment in this composition informs readers that something is heading toward the city and its inhabitants [affiliation/dissociation].

As the example illustrates, the different symbolic levels are coded separately, at the image level and at the text level. This analytical step is the foundation for reconstructing the multimodal interaction of the different symbolic levels in the next coding step.

3.2 Second analytical step: Multimodal discourse analysis – axial coding

In the second step of the analysis, we follow the axial coding process of GT. The goal of this step is to explore the multimodal relationships between the concepts and categories we have previously treated as monomodal.

3.2.1 The multimodal axial coding paradigm

In this stage, we adapt the axial coding paradigm of Strauss and Corbin (1996: 75 et seqq.). This coding paradigm makes it possible to specify the relationships between categories, key categories, and sub-categories by relating these to each other as phenomena, consequences, contexts, causal conditions, intervening conditions, and strategies. In our analysis, this coding paradigm helps compress the categories generated into interpretative schemes.[3] To break down and investigate the multimodal correspondences and relationships—for example, between text and image—we supplement axial coding from GT with social semiotic metafunctions. The aim of this stage is to reconstruct the interpretative schemes given the combination of these sign resources. The "borrowed codes" of SDA allow us to study the *how* (how is something expressed/represented?) for the combination of image and speech in the interpretative schemes: in other words, patterns of interpretation can be reconstructed from the multimodal elements.

For the components (phenomenon, context, etc.) of the coding paradigm, the key is determining how the different symbolic levels correspond to each other in ways that generate meaning. Patterns of interpretation can then be reconstructed from the multimodal elements and correspondences. From the perspective of research practice, we therefore interpret how the different semiotic modalities in the multimodal interaction realize the *ideational*, the *interpersonal*, and the *textual metafunction*.

3.2.2 Empirical example: Patterns of interpretation of invasion

We present multimodal axial coding using the example of the interpretative scheme of invasion. The interpretative scheme of invasion generally describes a threat caused by a spatial practice. The scheme arises from the interplay between what is viewed as the *intervening condition* for the potentially *threatening* and *ironically meant* invasion over the border and what ultimately corresponds to the *phenomenon* in this scheme (see Fig. 3). The intervening condition is stated to be the open border, which is not so much the underlying motivation as a prerequisite for migration. The causes of invasive border crossings are identified as problems involving demographic change in eastern Germany, which is expressed at the level of imagery through depopulated/empty streets. Of the social semiotic metafunctions, these elements of the interpretative scheme belong to the *interpersonal metafunction*.

3 Strauss and Corbin focus primarily on actions and interactions in various social situations. Accordingly, their axial coding paradigm is rooted in action theory (Strauss/Corbin 1996: 75 et seqq.; Strauss 2003: 56 et seqq.). For reconstructing the patterns of interpretation, however, the discursive interpretations stand at the heart of the coding. Hence, the phenomenon is itself the core of the interpretative scheme. Strauss and Corbin relate causal conditions to events or incidents that trigger the occurrence of a phenomenon. For the analysis in this study, we reconstruct what the particular patterns of interpretation identifies as the cause of a phenomenon. The same is true for the context and consequences.

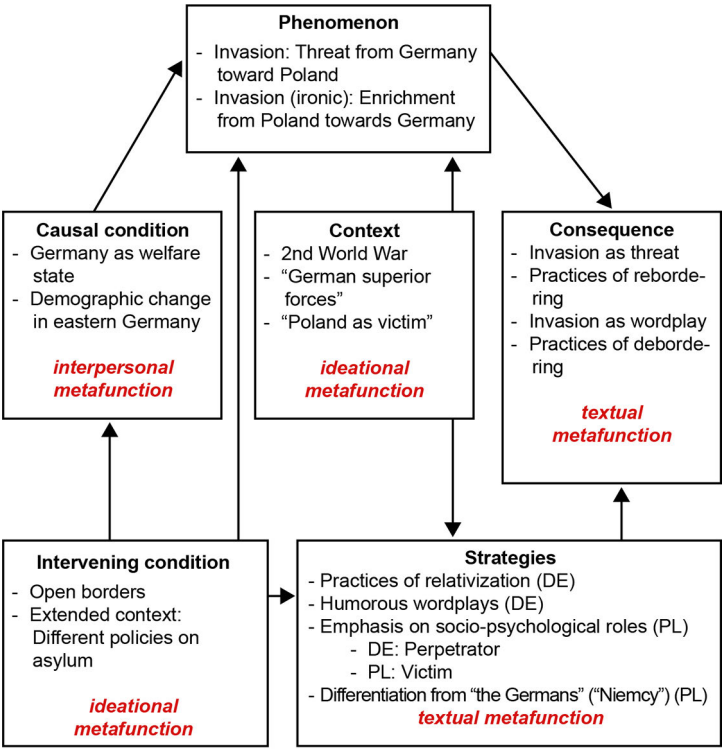


Fig. 5: Empirical example: Multimodal interpretative scheme of INVASION | © Author's own diagram

This is because the speakers suggest positions and causes to the readers that are practically a response to the open borders. As *strategies of action and interaction*, the German-language discourse engages in practices of relativization of the invasive character of the phenomenon, often based on humorous wordplay such as "friendly takeover" or "Poland is finally invading back." These boundaries are made clear at the visual level by the use of "peaceful" cityscapes to neutralize the implication of a threatening invasion. In the Polish-language discourse, in contrast, practices of separation are expressed by always formulating references to the neighboring country as an image of the Other (the Germans or *Niemcy* in Polish) and by attributing clear roles to Germans (perpetrators) and Poles (victims). From a social semiotic perspective, this fulfills the *textual metafunction* through mechanisms of inclusion and exclusion. The assignment of the roles of perpetrator and victim is reinforced by evoking specific *contexts*, such as the power imbalance between Germany and Poland during the Second World War, though only at the linguistic and not at the visual level. From the perspective of social semiotic metafunctions, these elements of the interpretative scheme fulfill the *ideational metafunction*: The social roles of the Poles as victims and the Germans as superior force is implied, relying on a culturally rooted foundation of experience. The elements of the interpretative scheme that imply the phe-

nomenon of invasive border crossing can therefore be interpreted in two ways within the axial coding paradigm. On the one hand, the interpretative scheme of invasion can portray a threat hidden behind the border, implying the border should be reinforced. On the other hand, the supposed threat of an invasive border crossing has an ironic connotation, implying the border should be dissolved. From a social semiotic perspective, the specific, structurally contingent use of language here fulfills the *textual metafunction*.

3.3 Third analytical step: Selective coding

In the third step, we also use the described analytical tools of axial coding to interpret the data at a higher level of abstraction. The aim of this phase is to reconstruct the narrative structure of the discourse and to fully map out the discursive practices and actors involved. To define the narrative structure, we relate the previously reconstructed patterns of interpretation to each other in order to describe the basic narrative, storyline, and pattern of the discourse. The multimodal patterns of interpretation are then the smallest elements at the level of the interpretive repertoire: One interpretive pattern can serve as a context for another or be a consequence of a phenomenal structure in the basic narrative.

In the selective coding process, we maintain an overview of all the interpretative schemes during coding. The advantage is that the code assigned to a pattern of interpretation can also form the context for coding another interpretative scheme. In this way, a *storyline* gives rise to the *interpretative repertoire*. In our example, let us assume that in addition to the interpretative scheme of *invasion* described above, we also discovered the interpretative schemes of *German superiority*, *Polish claim to sovereignty*, and *insecurity due to criminality* in our axial coding. It is already becoming clear that the interpretative schemes are characterized by unequal power relationships, the existence of aggressors, and vulnerability. Even though the interpretative schemes are identical, different internal relationships between the schemes result in two storylines, one in the Polish and one in the German discourse. In the German discourse, the interpretative schemes can be joined up into the German storyline *un/grateful neighborhood*, which alludes to the constant efforts and fears on the German side and the lukewarm and sometimes aggressive attitude toward a German-Polish relationship. An example of a speaker representing this storyline is an editor of the *Märkische Oderzeitung* newspaper referring to a "bridge without links." The storyline on the Polish side is *vulnerable at the border* and alludes to the historic and discursive graves belonging to the two countries, which manifest above all in the border region and thus represent a threat.

4 Potential of a multimodal discourse analysis

The multimodal discourse analysis research program we have presented focuses on patterns of meaning. In reconstructing multimodal pattern of interpretation in the Polish- and German-language discourse about the border, we focus on discursively negotiated knowledge about space. The combination of the sociology of knowledge approach to discourse analysis, grounded theory, and social semiotics also offers the potential of studying the material level of a discourse about space. In the SKAD, analytical categories are

created for both the interpretative repertoire and the material dimension, relating to actors and their discursive practices. The social semiotic concepts then make it possible to not only determine what statements are being made but also by whom and how. In this way, the issue of materiality—underexplored in discourse research—could become a fruitful approach in qualitative spatial research.

References

Felgenhauer, Tilo (2009): Raumbezogenes Argumentieren. Theorie, Analysemethode, Anwendungsbeispiele, In: Glasze, Georg/Mattissek, Annika (Eds.): *Handbuch Diskurs und Raum. Theorien und Methoden für die Humangeographie sowie die sozial- und kulturwissenschaftliche Raumforschung*. Bielefeld: transcript, pp. 261–278.

Fraas, Claudia/Meier, Stefan/Pentzold, Christian (2012): *Online-Kommunikation: Grundlagen, Praxisfelder und Methoden*. Munich: Oldenbourg.

Foucault, Michel (1978): *The History of Sexuality, Vol. I: The Will to Knowledge*. Trans. by Robert Hurley. New York, NY: Pantheon Books.

— (1981): *Archäologie des Wissens*. Frankfurt a. M.: Suhrkamp.

Glaser, Barney G./Strauss, Anselm L. (2008): *The Discovery of Grounded Theory. Strategies for Qualitative Research*. New Brunswick, NJ: Aldine.

Gerst, Dominik/Klessmann, Maria/Krämer, Hannes/Sienknecht, Mitja/Ulrich, Peter (2018): Komplexe Grenzen. Perspektiven aktueller Grenzforschung. In: *Berliner Debatte Initial*, 29(1), pp. 3–11.

Halliday, Michael (1993): *Language as Social Semiotic. The Social Interpretation of Language and Meaning*. London: Arnold.

Harley, John B. (2001): *The New Nature of Maps. Essays in the History of Cartography*. Baltimore, MD: The Johns Hopkins University Press.

Jewitt, Carey (2011): An Introduction to Multimodality. In: Id. (Ed.): *The Routledge Handbook of Multimodal Ananlysis*. New York, NY: Routledge, pp. 14–27.

Keller, Reiner (2008): *Wissenssoziologische Diskursanalyse. Grundlegung eines Forschungsprogramms*. Wiesbaden: VS.

— (2009): *Müll. Die gesellschaftliche Konstruktion des Wertvollen. Die öffentliche Diskussion über Abfall in Deutschland und Frankreich*. Wiesbaden: VS.

— (2011): Wissenssoziologische Diskursanalyse. In: Keller, Reiner/Hirseland, Andreas/Viehöver, Willy (Eds.): *Handbuch sozialwissenschaftliche Diskursanalyse*. Wiesbaden: VS, pp. 125–158.

— (2016): Die symbolische Konstruktion von Räumen. Sozialkonstruktivistisch-diskursanalytische Perspektiven. In: Christmann, Gabriela (Ed.): *Zur kommunikativen Konstruktion von Räumen. Theoretische Konzepte und empirische Analysen*. Wiesbaden: VS, pp. 55–78.

Kress, Gunther (2012): Multimodal Discourse Analysis. In: Gee, James P./Handford, Michael (Eds.): *The Routledge Handbook of Discourse Analysis*. London/New York, NY: Routledge, S. 35–50.

Kress, Gunther/Leeuwen, Theo van (2001): *Multimodal Discourse. The Modes and Media of Contemporary Communication*. London: Hodder Education.

— (2010): *Reading Images. The Grammar of Visual Design*. London: Routledge.

Leeuwen, Theo van (2006): *Introducing Social Semiotics*. London/New York, NY: Routledge.

Löw, Martina (2001): *Raumsoziologie*. Frankfurt a. M.: Suhrkamp.

Meier, Stefan/Sommer, Vivien (2013): Der Fall Demjanjuk im Netz. Instrumentarien zur Analyse von Online-Diskursen am Beispiel einer erinnerungskulturellen Debatte. In: Keller, Reiner/Schneider, Werner/Vierhöfer, Willy (Eds.): *Diskurs – Sprache – Wissen*. Wiesbaden: VS, pp. 119–143.

Meier, Stefan (2014): *Visuelle Stile. Zur Sozialsemiotik visueller Medienkultur und konvergenter Design-Praxis*. Bielefeld: transcript.

Mey, Günter/Mruck, Katja (2009): Methodologie und Methodik der Grounded Theory. In: Kempf, Wilhem/Kiefer, Markus (Eds.): *Forschungsmethoden der Psychologie. Zwischen naturwissenschaftlichem Experiment und sozialwissenschaftlicher Hermeneutik. Bd. 3: Psychologie als Natur- und Kulturwissenschaft. Die soziale Konstruktion der Wirklichkeit*. Berlin: Regener, pp. 100–152.

Richardson, Tim/Benson, Ole B. (2003): Linking Discourse and Space: Towards a Cultural Sociology of Space in Analysing Spatial Policy Discourses. In: *Urban Studies*, 40(1), pp. 7–22.

Saussure, Ferdinand de (2001): *Grundfragen der allgemeinen Sprachwissenschaft*. Berlin et al.: De Gruyter.

Sommer, Vivien (2018a): *Erinnern im Internet: Der Online-Diskurs um John Demjanjuk*. Wiesbaden: Springer VS.

— (2018b): Methodentriangulation von Grounded Theory und Diskursanalyse: Eine Rekonstruktion des Online-Diskurses zum Fall Demjanjuk. In: Pentzold, Christian/Bischof, Andreas/Heise, Neele (Eds.): *Praxis Grounded Theory: Theoriegenerierendes empirisches Forschen in medienbezogenen Lebenswelten. Ein Lehr- und Arbeitsbuch*. Wiesbaden: Springer VS, pp. 105–130.

Strauss, Anselm L. (2003): *Qualitative Analysis for Social Scientists*. Cambridge: Cambridge University Press.

Strauss, Anselm L./Corbin, Juliette (1996): *Grounded theory. Grundlagen qualitativer Sozialforschung*. Weinheim: Beltz.

Geolocalization of digital data

Daniela Stoltenberg, Barbara Pfetsch, and Annie Waldherr

When digital technologies first began to proliferate, some predicted the "death of distance" (Cairncross 1997). By now, however, we have come to realize that location and place have by no means lost significance in or as a result of digital media. Location information is embedded in digital data in many ways. For example, social media platforms allow users to disclose where they live in their profiles. Blog posts, news stories, and comments discuss places, and platforms like *Twitter* and *Instagram* make it possible to display the location where a post is made (see Lettkemann in this volume).

These applications have significantly increased the amount of data researchers can use to study spatial contexts in the digital realm. At the same time, the characteristics of this "big data" (Russom 2011: 6)—namely *volume* (size and required storage space), *velocity* (highly dynamic, undergoing change in real time), and *variety* (differing formats)—make the traditional methods of the social sciences largely inapplicable. Automated methods have become necessary.

These data and methods open up numerous innovative applications, triangulation opportunities, and interesting interpretations of content for qualitative spatial research. For example, geoinformation can be used to identify user groups whose interaction with spatial information can then be investigated in ethnographic studies or qualitative interviews: Why do some users share their locations in social networks, while others choose not to disclose location information? Geoinformation in digital data can also be a prerequisite for the qualitative analysis of local networks of people or groups. The reconstruction of user types based on digital location information can then, for example, be combined with qualitative network analyses (Hollstein/Straus 2006) to describe spatial and social interaction patterns. In discourse analysis, the frequency of references to specific locations in unmanageably large corpora of text can be important in describing patterns of meaning. If we can quantify *that* some locations are being discussed in a notable way, we can elaborate on this observation with qualitative and mixed-methods discourse analysis (Duchastel/Laberge 2019).

Finally, the automated analysis of location information in digital data opens up entirely new possibilities for the spatial contextualization of qualitative descriptions of social behavior. If information about the interactive space of people or groups has been obtained in a qualitative network analysis, this can then be combined with data about

their online communication to ask: What is the spatial and social structure of personal networks and how are these subjectively perceived? Or, for a location-specific discourse analysis: What other places are also evoked in the relevant communications? How do discourses about specific locations differ?

Even qualitative spatial researchers should view the automatic identification and classification of georeferences in large corpora of text without blinders and exploit these methods in their research. As the examples above show, the triangulation and iterative combination of digital big data applications and qualitative ethnographic analytical techniques open up entirely new horizons of research. At the same time, automatic procedures for extracting location information from texts are becoming more and more accessible even to researchers without a computing background and corresponding research designs are becoming easier to implement.

Given this background, this chapter aims to present simple automatic geocoding methods that, when combined with qualitative methods, facilitate original perspectives in spatial analysis. We begin with the characteristics of location information in digital datasets and the challenges posed by their analysis. We then give an overview of approaches to the automatic classification of location information and discuss their strengths and weaknesses. We introduce the practice of automatic analysis of digital geoinformation in two examples from our own research.[1] Finally, we take a step back and problematize questions of scientific ethics.

1 Properties of digital location information

References to place appear in digital media in many forms. As they are authentic manifestations of human behavior, they are considered observational data. Although geodata is easy to collect for scientific analysis, they are rarely standardized in something like a coordinate pair (e.g., GPS data from smartphones). Usually, unstructured location information poses significant challenges for researchers. This is illustrated by georeferences on the microblogging platform *Twitter*. Three forms of references to place are particularly relevant: (1) *geotags* in individual messages (tweets), (2) *location information in profiles* of users, and (3) mentions of places in the *text of tweets* (see Wilken 2014).

Geotags are the form of location information in *Twitter* data that is easiest to process. They provide information about the location of users at the time of tweeting. The location information is attached to the tweet as metadata and is generated by the GPS system of mobile devices. Geotags are accessible through *Twitter's* programming interface (*Application Programming Interface*, API). The name of the location, a description of the geographic unit (e.g., city), and degrees latitude and longitude are given as separate variables. However, geotag analyses can distort results considerably: Only about one percent of users around the world use the geotagging function, and this population differs sociodemographically from the general user base (Malik et al. 2015).

1 The research project *Translocal Networks: Public Sphere in the Social Web* of Collaborative Research Centre 1265, "*Re-Figuration of Spaces*," funded by the German Research Foundation (DFG).

The information in the *"location" field of user profiles* provides much better coverage. Depending on the user sample, roughly 80 percent of all profiles have text in this field (Hecht et al. 2011: 240; Kinsella et al. 2011: 64). It is a free text field where users can input their place of residence. Unlike a geotag, the location is manually entered information. Consequently, the location field may not necessarily contain useful geoinformation: Users can input entries that do not refer to real places. Hecht et al. (2011: 240) concluded that, in a sample of 10,000 US American profiles, a total of 66 percent contained references to real places. On the other hand, 18 percent of users entered no information and 16 percent entered non-geographical information. Problems can also occur because of spelling errors and the diversity of possible languages. Since the location field is a free text field, geographical information can be entered to any degree of detail, from an exact mailing address to the planet Earth. In addition, users can enter more than one place into the text field, causing problems for automatic detection. In Hecht et al. (2011: 241), this applied to 2.6 percent of all profiles.

Finally, *references to places in the body of tweets* can also be of interest. Unlike in the case of geotags and location fields, these are not so much the places where users reside, but rather those they are talking about. Such references pose the greatest challenge for automatic detection as, unlike geotags and location fields, it is unclear where to search for location information. In addition, the fraction of relevant references in the total volume of text is usually very low, increasing the risk of false positive coding, that is to say, extracting references to places where there are none.

Once such references have been found, researchers must consider how informative and high-quality the data is. We know that a substantial portion of users in most online datasets do not provide explicit information about their whereabouts. Assuming that these users may also differ from those who do share their whereabouts (e.g., sociodemographically, in their networking or communication behavior), this has consequences for the explanatory power of studies on socio-spatial behavior based on this data.

In summary, the problems of big data analysis (Russom 2011: 6) also apply to spatially determined digital (*Twitter*) data. These datasets are characterized above all by their sheer size (*volume*). They are too big for researchers to obtain a general overview of the embedded location information through manual coding. Secondly, the location information has considerable variance (*variety*): It varies in its structure, degree of detail, language, correctness, etc. Thirdly, the datasets themselves are undergoing continuous change (*velocity*) as new communications are constantly being added. In addition, the structure of the data can change because of the specific platform architectures.

2 Approaches to quantitative classification

The classification of geoinformation in digital data can have different goals, such as standardization of data according to a predetermined format (e.g., "city, country"), annotation with coordinates, or determination of geographical level. This means there is no standard procedure or best practice (Hoffmann/Heft 2020: 7) but rather an overwhelming number of different approaches and tools. Fundamentally, these fall into two categories: procedures that identify and standardize mentions of location and procedures

that attempt to infer missing geoinformation. Each category contains a variety of approaches (see Fig. 1).

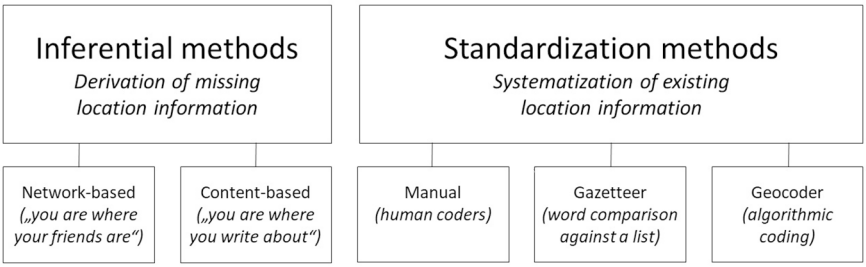


Fig. 1: Methods for extracting location information from digital data | ©Author's own diagram

Inferential methods can be divided into network-based and content-based methods. Network-based methods are based on the principle "you are where your friends are" (Rout et al. 2013), i.e., on the observation that social relationships are predominantly formed with people nearby. They use connections with users who have explicit locations to infer missing locations (see McGee et al. 2013; Sadilek et al. 2012). Content-based methods, on the other hand, are based on the principle "you are where you write about" (Rout et al. 2013): the assumption that users tend to generate content specific to their location. Machine learning approaches are useful here as they can identify topics strongly associated with particular locations (see Gore et al. 2015; Kinsella et al. 2011).

These inferential methods depend on many assumptions and are fraught with numerous problems (Hoffmann/Heft 2020: 7). Often only about 50 percent of their attributions are valid, or attribution is only possible to very rough territories. Their performance is also difficult to test, as a *ground truth* only exists for users who also provide their whereabouts.

Standardization of available geoinformation can be subdivided into three approaches: manual coding, gazetteers (geographical dictionaries), and automatic geocoding service providers. Manual coding can be considered the gold standard (Takhteyev et al. 2012: 76; Hoffmann/Heft 2020: 11). Human coders have a high level of contextual knowledge, allowing them to make complex assessments. A human coder will generally identify "Paris" as the French capital and will usually be right. In contrast, considerable training data and rules are required to reliably prevent automatic methods from choosing one of the 17 US American cities with the same name (Hoffmann/Heft 2020: 5). Human coders can also situationally use appropriate sources (e.g., maps, encyclopedia) to make decisions and can also consider when the available information does not allow for coding. With respect to quality criteria in the social sciences, the use of human coders maximizes validity. However, manual coding is time-consuming and expensive. The work is also tiring and error-prone, compromising reliability. For this reason, manual coding is a valid approach for small datasets, but possesses limited scalability. In contrast, computer-

assisted methods like gazetteers or algorithmic geocoders can be applied to arbitrarily large datasets.

A (digital) gazetteer (geographical dictionary) contains structured information about geographical places. A location can have multiple names, and locations can be identified at every geographical level (e.g., neighborhood or city). These need not be officially defined units; informal names can also be added (Goodchild/Hill 2008: 1041).[2] The location names contained in a gazetteer can be compared to the text to find references to places. This approach consists of dictionary-based location coding in which the constructs of interest (here: locations) are defined in advance and associated with corresponding features (here: location identifiers). These features are then compared to the words (tokens) in the texts (Scharkow 2013: 299). As the method uses word comparison, it is perfectly reliable. It will always return the same result if applied multiple times to the same study material. Validity, on the other hand, is only as good as the effort invested in constructing the dictionary. There are also limitations with respect to granularity and/or scalability. If the data refers to a limited geographic region, it is possible to achieve high coverage even of smaller places. If one attempts to scale to the global level, however, the problem of ambiguous names becomes acute.

One efficient way to code large amounts of location information is "geocoders": algorithmic applications that identify, standardize, and annotate location information in textual data. Geocoders are typically commercial services such as *Google Maps*. Depending on the use case, other providers with flat rate pricing (e.g., *OpenCage*) or even free services (e.g., *Datascience Toolkit Geocoder*) are possible alternatives. These applications are normally accessible through an API, to which researchers can automatically submit large numbers of queries. The process is highly efficient and requires very little programming skill. The entered input (e.g., the entry in a location field) is algorithmically processed and compared to databases (e.g., belonging to *Google Maps* or *Open Street Map*). As these databases have a high coverage of geographical information at all levels, a city is highly likely to be coded as accurately as a country or an exact address. Geocoders are characterized by considerably greater flexibility with respect to the input than dictionary-based approaches. However, these services have disadvantages for academic research because their rules are not transparent and therefore not intersubjectively verifiable. In addition, coding using geocoders can lead to many false positives (Takhteyev et al. 2012: 76). While a dictionary only finds exactly the terms contained in its lists, a geocoder relies on databases so comprehensive that almost any term can be included. This means non-geographic identifiers are often classified as locations.

Overall, there is no solution for the extraction and classification of location information in digital datasets that meets the criteria of transparency, reliability, and validity equally well. Researchers must consider the advantages and disadvantages of different methods in the context of the specific research question and data material.

---

2 Good coverage for major cities around the world is offered by, for example, the *iDAI* gazetteer of the German Archaeological Institute (https://gazetteer.dainst.org/ [last accessed: October 30, 2019]). In parallel, computer-assisted text analysis has developed tools aggregated under the term *named entity recognition* that can extract objects, including places, from text. One example is *SpaCy* (https://spacy.io/api/annotation#named-entities [last accessed: October 30, 2019]).

3 Geocoders and gazetteers: Two use cases and solutions

To illustrate the use, advantages, and disadvantages of the methods described, we present two examples from our research about the spatial location of *Twitter* networks. In one example, we demonstrate how to work with an automatic geocoder. In the second example, we identify location data using a dictionary created specifically for the research purpose. Both analyses were performed using the statistical programming environment *R* (R Core Development Team 2019).

3.1 Geocoder for systematizing location information

In our study of the spatial dimension of social networks, we investigated the digital interaction network around the city of Berlin. We wanted to know where in the world users who communicate with Berliners on *Twitter* are located. To map the geographical context, we had to standardize the inconsistent information from *Twitter* user profiles and assign coordinates to it. The dataset contained tweets by users who identified Berlin as their location and posted tweets in a two-week period in the summer of 2018. It also included all users with whom they interacted in their messages (through mentions, replies, retweets, and quotes). Overall, we had to classify the profiles of roughly 231,000 users.

Two reasons motivated us to use an algorithmically optimized geocoder: (1) The references to places were almost unlimited in their geographical and linguistic diversity. Such complexity is almost impossible to represent with existing gazetteers or even specifically constructed dictionaries. (2) As we had decided to analyze the location field, we could generally count on encountering usable place references. After comparing multiple service providers, we chose the German provider *OpenCage*, which is primarily based on *Open Street Map* data.[3] *OpenCage* offers monthly flat rate pricing models. After registering on the website, we used the API to submit queries using an authentication code. To do this, we used the *R* package *opencage* (Salmon 2018). One advantage was that the task required only minimal programming knowledge.

The *Twitter* dataset in our analysis stored the profile information for roughly 230,000 users in a number of variables (e.g., user name, description, number of followers, etc.). We extracted the location variable relevant for our study and geocoded them using *OpenCage* via the API. The result of each query was numerous structured annotations for each location, such as a formatted address, latitude and longitude, time zone, and individual variables representing geographical units at the level of neighborhoods to continents.

Data standardized in this way made it possible to create, for example, maps. We demonstrate this in Figure 2, which shows the most common locations of people connected to Berlin *Twitter* users at the level of cities (Fig. 2a) and countries (Fig. 2b). Further analysis, such as network analysis or linking locations to message content, is also possible.

3 https://opencagedata.com/ (last accessed: September 5, 2019).

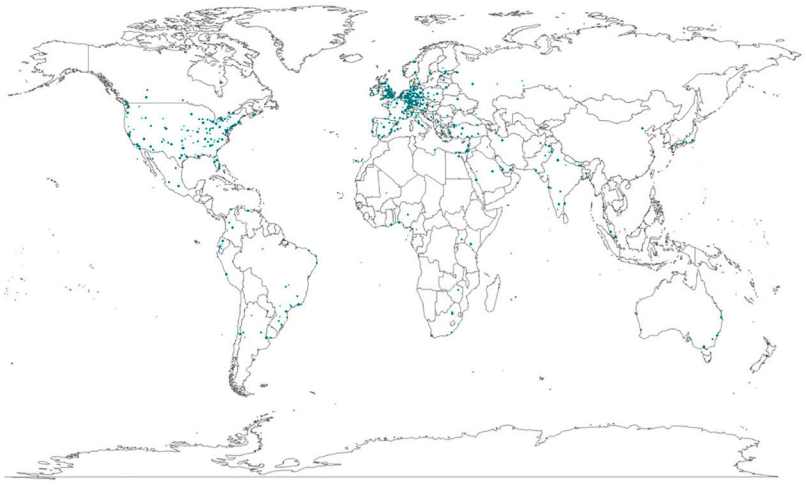


Fig. 2a: Locations of Twitter users connected to Berlin by city. |©Author's own diagram

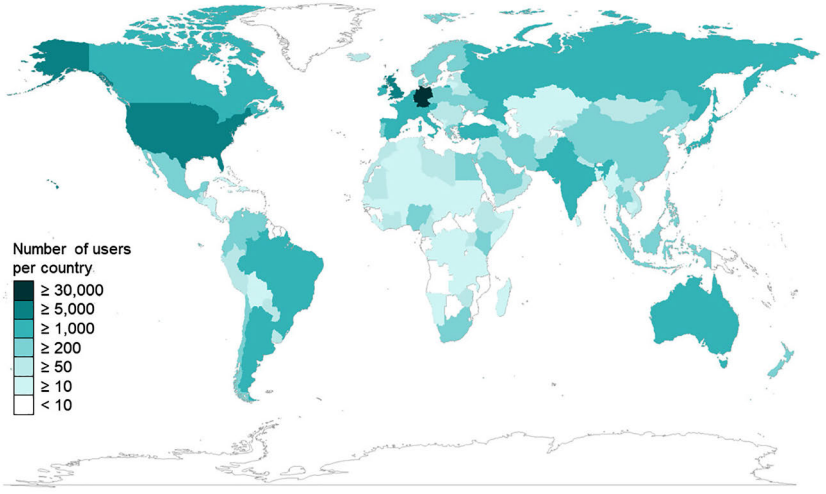


Fig. 2b: Locations of Twitter users connected to Berlin by country. | © Author's own diagram

Manual coding of a random sample of our dataset confirms that the chosen method produces valid results overall. Human coders judged the location coding identified by the geocoder to be correct in over 85 percent of cases. The most common type of error was false positives, in which the geocoder flagged a location but the human coder did not.

3.2 Coding with a specially constructed dictionary

In our second example, we aimed to extract references to places from running text. We used a dataset of around 50,000 German-language tweets concerning the Berlin housing market. What locations in the city were being discussed in this context?

Answering this question required a different approach than the first example. As that example showed, the main source of error in the geocoder was false detection of references to locations where there were none. If we had broken down the running text into individual words and coded them with the geocoder, we would have gotten a large number of false positives. The solution here was an analysis using a dictionary we prepared specifically for the project. It would be easy to expand classification to, for example, the extraction of streets or city neighborhoods. In the present case, however, we limited ourselves to references to Berlin's 96 urban districts. We performed two basic steps: first the preparation and then the application of the dictionary. We used the *R* package *quanteda* (Benoit et al. 2018), which contains a repertoire of functions for the automatic content analysis of text.

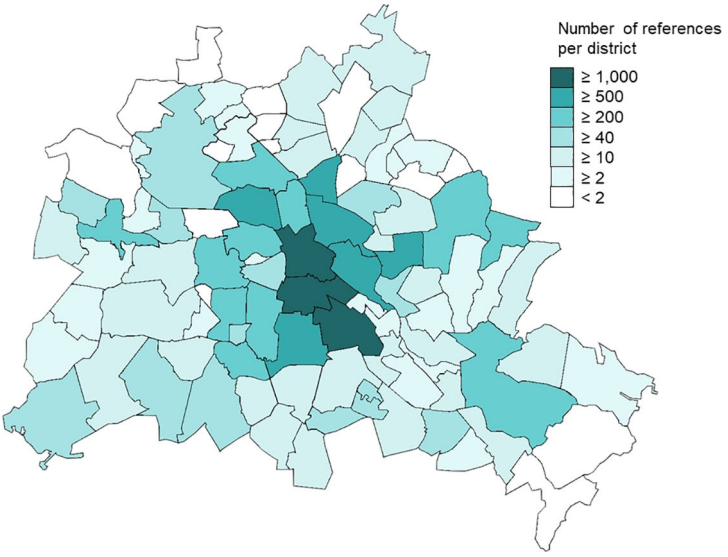


Fig. 3: Frequency of mentions of Berlin's urban districts in tweets concerning the housing market. | Map of Berlin's urban districts adapted from Angr (2007) for Wikimedia Commons.[4]

4 KarteBerlinDistricts.svg from Angr (2007) for Wikimedia Commons at https://commons.wikimedia.org/wiki/File:BerlinDistricts.svg (last accessed: April 29, 2020), licensed under CC BY-SA 3.0. Labels and colors have been removed from the original, the border of Borsigwalde district has been added, and districts have been colored to match the frequency distribution. The figures are likewise covered by the licensing conditions of CC BY-SA 3.0.

The most labor-intensive step in this method is preparing the dictionary. Researchers must specify what variations a place reference can have. A reference could be, for example, in uppercase or lowercase letters, with or without a hyphen, in the form of one or more words, or a hashtag. Abbreviations or inflections (e.g., "Pankow's residents") in which prefixes or suffixes are added to the place name can also make identification more difficult. The dictionary had to be constructed to reflect these variations.

The analysis itself was based on an existing function using only a few lines of code and took only seconds. The result was a *document feature matrix* (DFM), which records which urban districts are mentioned and how often for every tweet in our dataset. In our case, we found that 21.6 percent of all tweets referenced at least one district. This information can be displayed graphically, for example in the form of a simple frequency distribution (Fig. 3). Here, too, further analysis could consider, for example, the discourse relating to individual districts.

4 Research ethics

In this article, we have shown that digital data contains a multiplicity of location information, which opens up new perspectives for qualitative spatial research. The choice of the specific geocoding instrument depends on both the research question and the nature of the georeferences. While automatic geocoding has proven to be a valid method for classifying location information, dictionaries are better suited for the targeted analysis of individual georeferences in longer texts. The added value of digital geodata in the social sciences comes from triangulation and combination with traditional empirical methods. It opens up fresh perspectives in spatial research that are far from exhausted.

However, these opportunities for obtaining and analyzing large amounts of geoinformation also raise questions about research ethics. Although unimaginably large resources for scientific research are opening up as a result of this, location information is still observational data. The collection and analysis in aggregated form, creation of movement profiles of specific groups, and linking of the communication content to location profiles are generally done without the explicit consent of the users. Users consent to the collection of data in the general terms and conditions of the platforms and search engines. As long as they do not deactivate the location functions or location recognition of their device, these data resources can be misused for monitoring and *social scoring* (see Schütte/Klein 2020: 633). Calls for transparency to service providers whose business models are based on data with digital location information are therefore highly justified. Scientists who rely on access to the data should meet high standards of research ethics, methodological rigor, and compliance with data protection obligations. Only a transparent scientific process can justify using sensitive individual observational data in the service of social science research. This is true of all digital data, but it is especially true of digital location information because of the existing opportunities to link this information to social data.

References

Benoit, Kenneth/Watanabe, Kohei/Wang, Haiyan/Nulty, Paul/Obeng, Adam/Müller, Stefan/Matsuo, Akitaka (2018): Quanteda: An R Package for the Quantitative Analysis of Textual Data. In: *Journal of Open Source Software*, 3(309), pp. 774.

Cairncross, Frances (1997): *The Death of Distance: How the Communications Revolution will Change our Lives*. Boston, MA: Harvard Business School Press.

Duchastel, Jules/Laberge, Danielle (2019): Beyond the Quantitative and Qualitative Cleavage: Confluence of Research Operations in Discourse Analysis. In: Scholz, Ronny (Ed.): *Quantifying Approaches to Discourse for Social Scientists*. Cham: Palgrave Macmillan, pp. 23–47.

Goodchild, Michael F./Hill, Linda L. (2008): Introduction to Digital Gazetteer Research. In: *International Journal of Geographical Information Science*, 22(10), pp. 1039–1044.

Gore, Ross J./Diallo, Saikou/Padilla, Jose (2015): You Are What You Tweet: Connecting the Geographic Variation in America's Obesity Rate to Twitter Content. In: *PLOS ONE*, 10(9). Online: https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0133505 (accessed: 28. Mai 2020).

Hecht, Brent/Hong, Lichan/Suh, Bongwon/Chi, Ed H. (2011): Tweets from Justin Bieber's Heart: The Dynamics of the ›Location‹ Field in User Profiles. In: *Proceedings of CHI 2011*, Session: Twitter Systems, Vancouver, pp. 237–246.

Hoffmann, Matthias/Heft, Annett (2020): »Here, There and Everywhere«: Classifying Location Information in Social Media Data-Possibilities and Limitations. In: *Communication Methods and Measures*, 14(1), pp. 1–20.

Hollstein, Betina/Straus, Florian (Eds.) (2006): *Qualitative Netzwerkanalyse*. Wiesbaden: VS Verlag für Sozialwissenschaften.

Kinsella, Sheila/Murdoch, Vanessa/O'Hare, Neil (2011): »I'm Eating a Sandwich in Glasgow«: Modeling Locations with Tweets. In: *Proceedings of SMUC 2011*, Glasgow, pp. 61–68.

Malik, Momin M./Lamba, Hamank/Nakos, Constantine/Pfeffer, Jürgen (2015): Population Bias in Geotagged Tweets. In: *Standards and Practices in Large-Scale Social Media Research. Papers from the 2015 ICWSM Workshop*. Palo Alto, CA: The AAAI Press, pp. 18–27.

McGee, Jeffrey/Caverlee, James/Cheng, Zhiyuan (2013): Location Prediction in Social Media Based on Tie Strength. In: *CIKM' 13: Proceedings of the 22nd ACM International Conference on Information & Knowledge Management*, San Francisco, CA, pp. 459–468.

Rout, Dominic/Bontcheva, Kalina/Preoţiuc-Pietro, Daniel/Cohn, Trevor (2013): Where's @wally? A Classification Approach to Geolocating Users Based on their Social Ties. In: *Proceedings of the 24th ACM Conference on Hypertext and Social Media*, Paris, pp. 11–20.

R Core Development Team (2019): *R: A Language and Environment for Statistical Computing*. Vienna: R Foundation for Statistical Computing.

Russom, Philip (2011): Big Data Analytics. In: *TDWI Best Practices Report*, 19(4), pp. 1–34.

Sadilek, Adam/Kautz, Henry/Bigham, Jeffrey P. (2012): Finding Your Friends and Following Them to Where You Are. In: *Proceedings of the Fifth ACM International Conference on Web Search and Data Mining*, Seattle, WA, pp. 723–732.

Salmon, Maëlle (2018): *Opencage: Interface to the OpenCage API*. R Package Version 0.1.4. Online: https://docs.ropensci.org/opencage/ (accessed: 28. Mai 2020).

Scharkow, Michael (2013): Automatische Inhaltsanalyse. In: Möhring, Wiebke/Schlütz, Daniela (Eds.): *Handbuch standardisierte Erhebungsverfahren in der Kommunikationswissenschaft*. Wiesbaden: Springer VS, pp. 289–306.

Schütte, Hendrik/Klein, Maximilian (2020): Social Credit Ratings in der Praxis – dargestellt am Beispiel des Wareneinkaufsfinanzierers. In: Everling, Oliver (Ed.): Social Credit Rating. Wiesbaden: Springer Gabler, pp. 627–639.

Takhteyev, Yuri/Gruzd, Anatoliy/Wellman, Barry (2012): Geography of Twitter Networks. In: *Social Networks*, 34(1), pp. 73–81.

Wilken, Rowan (2014): Twitter and Geographical Location. In: Weller, Katrin/Bruns, Axel/Burgess, Jean/Mahrt, Merja/Puschmann, Cornelius (Eds.): *Twitter and Society*. New York, NY: Peter Lang, pp. 155–168.

Appendix

Authors

Nina Baur (Dr.) is a professor for methods of social research at Technische Universität Berlin (Germany). She is the director of the Global Centre of Spatial Methods for Urban Sustainability (SMUS), was president of the Research Committee on Logic and Methodology in Sociology (RC33), and is a board member of the Research Committee on Historical Sociology (RC56) of the International Sociology Association (ISA). She is also a member of Collaborate Research Centre 1265 Re-Figuration of Spaces (CRC 1265) and a member of the sections on Methods of Empirical Research, Methods of Qualitative Social Research, Biographical Research, and Sociology of Knowledge of the German Sociological Association.

Kamil Bembnista is a sociologist, border researcher, and filmmaker. He is a research associate in the Regional Planning department at the Brandenburg University of Technology in Cottbus-Senftenberg, Germany, with a special interest in the nexus of energy transformation, space, and borderlands.

Felix Bentlin (Dr.-Ing.) is a senior researcher and lecturer at the Chair for Urban Design and Urban Development of TU Berlin. After graduating in architecture and urban and regional planning, he investigated Baukultur and urban design in the context of educational processes and the participatory design of urban space in various teaching, research, and competition projects. He works in the field of conceptual urban design and completed his Ph.D. on the Berlin urban expansion of 1862. As the program coordinator of Young Professionals Shape the Future within the framework of the National Urban Development Policy in Germany, he is dedicated to planning and design issues regarding future urban and rural environments.

Stefanie Bürkle (Dr.) is an artist and professor of visual arts at Technische Universität Berlin. As an artist and urban researcher, she initiates artistic research projects. She investigates phenomena related to physical space such as construction sites, façades, ephemeral architecture, and the migration of spaces throughout artistic media such as painting, photography, and video. By combining artistic and scientific methods, she

develops new interpretations of projection surfaces and the spaces behind them. Her work is exhibited on the national and international stage. She leads the project Migrating Spaces and Tourism II: Imagination, Pictorial Space and Contextures of Venice of the SFB 1265 Re-Figuration of Spaces.

Anthony Miro Born (Dr.) is a sociologist and geographer with a particular interest in social inequality. His PhD project focuses on the intersections of urban marginality, class inequality, and social mobility. Before pursuing his Ph.D. at LSE, Miro worked at Humboldt-Universität zu Berlin and at the European Parliament in Brussels. He holds an M.Sc. in Inequalities and Social Science (LSE, 2016) and a B.A. in Geography (Humboldt-Universität zu Berlin, 2015).

Ignacio Castillo Ulloa (Dr.) is a research assistant and lecturer in the Department of Urban Development and Urban Design of the Institute for Urban and Regional Planning and scientific coordinator of the Global Center of Spatial Methods for Urban Sustainability (SMUS) at Technische Universität Berlin. As a research associate for the Collaborative Research Centre 1265 Re-Figuration of Spaces, he is part of subproject A02: The Spatial Knowledge of *Young Adults: The Constitution of Online, Offline and Hybrid Spaces*. His research interests include socio-spatial development and alternative disruptive (local) practices, critical urban research, and the use of spatial research methods.

Gabriela Christmann (Dr.) is head of the "Social Innovations in Rural Spaces" research group at the Leibniz Institute for Research on Society and Space in Erkner (near Berlin), Germany. She is also an adjunct professor in the Department of Sociology at Technische Universität Berlin, Germany. Her research areas include urban and regional sociology, spatial theories, social innovations, and methods of empirical social research. She is the spokesperson for the cross-sectional group on "Ruralities" in the Collaborative Research Centre 1265 Re-Figuration of Spaces and a member of the sections Sociology of Knowledge and Urban and Regional Sociology in the German Sociological Association.

Janina Dobrusskin is a Ph.D. student in cultural and social geography at Humboldt-Universität zu Berlin and a research associate teaching urban geography at Dresden University of Technology. As part of Collaborative Research Centre 1265 Re-Figuration of Spaces, she has conducted research in Germany and Singapore on the relation of emotions and geographical imaginations. Her research focuses on critical urban studies, as well as emotional and feminist geographies.

Ignacio Farías (Dr.) is a professor of urban anthropology in the Department of European Ethnology and co-director of the Stadtlabor for Multimodal Anthropology research platform. His research interests address current ecological and infrastructural transformations in cities and the associated epistemo-political challenges to the democratization of city-making. His most recent work explores the politics of environmental disruptions, from tsunamis and heat to noise. He is also interested in urban ethnography as a mode of city-making performed together with others (designers, initiatives, concerned groups, policymakers) and by other means (moving from textual to material productions).

Julia Fülling (Dr.) is an economic geographer and research associate in the research field of business, value chains, and consumption at the Institute for Ecological Economy Research in Berlin. Previously, she worked as a researcher in the Institute of Geography at Humboldt-Universität zu Berlin as part of the "Knowledge and Goods: Consumers and Producers of Spatial Knowledge" project in Collaborative Research Centre 1265 Re-Figuration of Spaces. Her research focuses on social innovations, sustainable lifestyles, and consumer politics.

Carolin Genz (Dr.) is a senior researcher and head of the "Housing in Urban Development" research cluster at vhw e.V. – Bundesverband für Wohnen und Stadtentwicklung. As a postdoctoral researcher, she was employed in the project area Geographical Imaginations (SFB 1265 Re-Figuration of Spaces) from October 2019 to October 2022. Her research interests include interdisciplinary housing research and the further development of ethnographic methods in urban and spatial research.

Anke Haarmann (Dr.) is a full professor for the practice and theory of research in the visual arts at Leiden University, where she directs the PhDArts doctoral program. She is also a professor of design theory and design research at HAW Hamburg, where she is the founder and director of the Centre for Design Research. She has a doctorate in philosophy and studied fine arts. She has been involved in artistic research and has published on epistemic practices for 15 years. She also investigates the social and spatial understanding of the public sphere.

Anna Juliane Heinrich (Dr.-Ing.) is a researcher and lecturer at the Chair for Urban Design and Urban Development of Technische Universität Berlin. She is the principal investigator of the "The Spatial Knowledge of Young Adults: The Constitution of Online, Offline and Hybrid Spaces" research project and co-head of the graduate school of Collaborative Research Centre 1265 Re-Figuration of Spaces at Technische Universität Berlin. She studied spatial planning at TU Dortmund and KTH Stockholm and completed her doctorate in the Department of Urban and Regional Planning of TU Berlin. Her research focuses on participation and co-creation in urban development, spatial knowledge, social infrastructures, and methodologies and methods of research in planning and design.

Professor **Ilse Helbrecht (Dr.)** is currently a professor of cultural and social geography at Humboldt-Universität zu Berlin, where she has taught since 2009. Her primary research interests include urban studies, housing markets, and urban governance. In 2018 she was awarded the Caroline von Humboldt-Professorship as part of the Germany Excellence Initiative in Higher Education, and in 2019 she received the Thomas-Mann-Fellowship of the German Federal Government (held at the Thomas Mann House, Los Angeles). Helbrecht completed an M.A. in Geography at the University of Münster, as well as a Ph.D. and habilitation at the Technical University of Munich.

Jannis Hergesell (Dr.) studied ancient studies at Freie Universität Berlin and sociology at Technische Universität Berlin. There he received his doctoral degree and currently works as a senior consultant for the research network on Old-Age Provision of the German Fed-

eral Pension Insurance. His research interests are social policy and welfare state, technology and innovation, and social research methodologies.

Linda Hering (Dr.) is a sociologist and research associate in the Institute of Geography at Humboldt-Universität zu Berlin. There she works in the project "Knowledge and Goods II: Communicative Action of Consumers and Intermediaries," a subproject of Collaborative Research Centre 1265 Re-Figuration of Spaces. Her research focuses on agri-food studies and the sustainable transformation of urban areas.

Sandra Huning (Dr.) is a senior researcher at the Faculty of Spatial Planning at TU Dortmund and a temporary professor in the Urban Planning Chair of Bauhaus Universität Weimar (2022–2024). Her research areas are planning theories, urban studies, and feminist planning. In a current project, she is working on the role of emotions in planning conflicts.

Emily Kelling (Dr.) holds a Ph.D. in sociology. She worked at TU Berlin as a researcher and lecturer for both the Institute of Sociology and the Institute of Architecture from 2013 to 2021. Her research focused on housing needs, urban informality, and the relationship between space and power. She is currently retraining to facilitate trauma-informed change processes in organizations and with individuals to increase agency when faced with challenges and uncertainty.

Sarah Klepp is a Ph.D. candidate at Technische Universität Berlin, where she investigates the interplay between discourses, socio-spatial practices and the development of educational landscapes within the context of social transformation. She holds a B.A. in Cultural Studies and an M.A. in Historical Urban Studies. From 2018 to 2023, she worked as a researcher at the Chair for Urban Design and Urban Development in the Institute for Urban and Regional Planning (ISR) at Technische Universität Berlin. Her interdisciplinary research focuses on the links between education and space, educational landscapes, urban and spatial theories, and the further development of qualitative methods in social and spatial research.

Hubert Knoblauch (Dr.) is a professor of general sociology and theory of modern societies at Technische Universität Berlin. His main areas of research are sociological theory, sociology of knowledge and religion, and qualitative methods with a focus on videography. For more information, visit https://www.tu.berlin/en/as/about-us/chair-of-general-sociology

Elmar Kulke (Dr.) is a professor for economic geography at the Humboldt-Universität zu Berlin. He completed his Ph.D. and habilitation at Leibniz University Hannover and has held professorships in Lüneburg, Erlangen, and Cologne. His research interests include changes in the spatial distribution of retail activities, of consumer and retail interactions, and of commodity chains for fresh fruits and vegetables.

Eric Lettkemann (Dr.) is a postdoctoral researcher in the Institute of Sociology of Technische Universität Berlin. Since 2018, he has been a member of Collaborative Research Centre 1265 Re-Figuration of Spaces, where he is currently working on the "Locative Media II: New Spatial Realities between Conflict and Coexistence" subproject. His main research interests include science and technology studies (STS), urban sociology, and qualitative methods of social research.

Martina Löw (Dr.) is a professor of sociology at Technische Universität Berlin, Germany. Her areas of specialization and research are sociological theory, urban sociology, space theory, and cultural sociology. From 2011 until 2013, she was president of the German Sociological Association. Currently, she is head of Collaborative Research Centre 1265 Re-Figuration of Spaces (DFG).

Séverine Marguin (Dr.), sociologist, is head of the methods lab at Collaborative Research Centre 1265 Re-Figuration of Spaces at Technische Universität Berlin. Her interdisciplinary research focuses on cultural and knowledge production, sociology of space, and experimental and design-based methods. She currently leads two research projects: "Museum Knowledge Space" at Humboldt-Universität zu Berlin and "Afronovelas: Spatial Stories and Production Regime in West-African Soaps" at Collaborative Research Centre 1265 of TU Berlin.

Angela Million (Dr.-Ing.), is a professor for urban design and urban development in the Institute of Urban and Regional Planning of TU Berlin. She is the director of the Global Center of Spatial Methods for Urban Sustainability and a principal investigator at Collaborative Research Centre 1265 Re-Figuration of Spaces at Technische Universität Berlin. Her most current research explores educational landscapes, neurourbanism, multifunctional infrastructure as well as hybrid spatial constructions of young people.

Maria Norkus (Dr.) works in the Institute of Sociology at Technische Universität Berlin. Her research interests include inequality, social structure analysis, and sociology of work and labor, as well as methods and methodology of empirical social research with a focus on biographical research and mixed methods.

Julio Paulos (Dr.) is an interdisciplinary urban scholar and associate research director at the Future Cities Lab (FCL) Global, ETH Zurich. His professional and academic activities span a range of issues, disciplines, and geographies, all related to contemporary urban challenges. In particular, Julio's research investigates the political and democratic controversies surrounding urban transformations and explores conflicting ontologies of urban expertise.

Dagmar Pelger (Dr.) is an architect and has been part of the architect and planner group coopdisco in Berlin since 2017. Currently, she teaches and researches as a visiting professor in the Department of Architecture, Urban Planning and Landscape Planning of the University of Kassel using mapping as an interdisciplinary or participatory method to study urban spatial systems of commoning and models of cooperative modes of plan-

ning between municipalities and civil society. In 2022, her Ph.D. thesis was published under the title "Spatial Commons. On the Communitization of Urban Spaces" at Adocs Hamburg.

Barbara Pfetsch (Dr.) is a professor of communication theory and media effects research at Freie Universität Berlin and a principal investigator at the Weizenbaum Institute for the Networked Society. Her research and publications focus on comparative political communication, online communication and digital issue networks, and transnational and European public spheres.

Jona Schwerer is a sociologist and research assistant at the "Transformations of Political Violence" (TraCe) research center at the Institute of Sociology of Technical University of Darmstadt. His research interests include urban studies, sociology of space, urban heritage, and urban violence.

Vivien Sommer (Dr.) is a PI of the Emmy Noether junior research group "Memory and Borders" at the Leibniz Institute for Research on Society and Space. She is also an associate member of Collaborative Research Centre 1265 Re-Figuration of Spaces. Her research focuses on the interplay between memory, borders, media, space, and knowledge.

Jörg Stollmann is a professor for urban design and urbanization at the Institute for Architecture of TU Berlin. He is a member of Collaborative Research Centre 1265 Re-Figuration of Spaces at Technische Universität Berlin. He graduated from UdK Berlin and Princeton University and has taught at UdK Berlin and ETH Zurich.

Daniela Stoltenberg (Dr.) is a postdoctoral researcher at Freie Universität Berlin. Her research interests include digital public spheres and the relationship between communication and the construction of space, as well as computational research methods.

Zuzana Tabačková is a founding member of the interdisciplinary collective Spolka, which is active in the field of urban design in Central and Eastern Europe. Since 2017, she has also been working as a lecturer at the Chair for Urban Design and Urban Development of the Institute for Urban and Regional Planning at the Technische Universität Berlin. Her work combines spatial practice, research, and education. Her areas of focus include participation processes, feminist urban planning, and urban commons.

Cornelia Thierbach is a research associate in the Department of Methods of Social Research at the Institute of Sociology of Technische Universität Berlin. She is currently working on the project "Barriers and Potentials for Job Integration of Disabled Employees (ERMTYP)." Her research interests are mixed methods, sociology of space, and healthcare research.

René Tuma (Dr.) currently works as the principal investigator of the project "Visions of Policing," funded by ORA/DFG. He is a researcher at the Department of General Sociology and Theory of Modern Societies at Technische Universität Berlin. In 2020, he worked

on the Group Violence project at the University of Amsterdam. He has been involved in Collaborative Research Centre 1265 at TU Berlin on the topic of control/space regarding the reconfiguration of Internet infrastructure since 2022. His research includes sociological theory and the sociology of knowledge, technology sociology, and qualitative methods, with a specific focus on video interaction analysis.

Annie Waldherr (Dr.) is a professor of computational communication science at the University of Vienna. She studies the changing structures and dynamics in today's digitized public spheres, combining computational and conventional empirical methods.

Gunter Weidenhaus, (Dr. phil.), born 1972, first studied philosophy and German literature, then sociology education, and finally sociology with minors in computer science and economics at TU Darmstadt. In 2013, he completed his doctoral degree on the topic "Soziale Raumzeit" (social space-time; published in 2015 by Suhrkamp, Berlin). He is a teacher and researcher at RheinMain University of Applied Sciences. From 2018 to 2022, he worked as a visiting professor for sociology of space at TU Berlin. His main areas of research include social theory, sociology of space, sociology of time, and biography research. Recently, he finished a book called *Spaces of the World* and led a research project on middle classes in Kenya and Germany.
Recently published: "Social Space-Time. On the Concept of Social Space-Time and Its Empirical Relevance to Biography." In: Civic Sociology 4 (1). 2023: University of California Press. Online: https://doi.org/10.1525/cs.2023.57492.

Michael Wetzels (Dr.) is an associate member of Collaborative Research Centre 1265 Re-Figuration of Spaces at Technische Universität Berlin. His research focuses on collectives, (mega-)events, and emotions and affects, using the perspectives of the sociology of knowledge and space. Methodologically, his work is based on qualitative empirical research, especially the application and further development of ethnographic and discursive methods.

Aylin Yildirim Tschoepe (Ph.D., Dr. of Design) is a professor in the Institute for Contemporary Design Practices (ICDP) at the University of Applied Sciences and Arts Northwestern Switzerland, responsible for theory-focused courses and feminist spatial research. She is an anthropologist, architect, urbanist, and gender studies scholar. In her ongoing research, she addresses body-spatial relations and new materialities in more-than-human visionary lifeworlds, urban activism and commons, and the role of an:archival bodies in queer futures. In her studies, research, and lab formats (www.ftrs.space), she applies a multimodal methodological framework, pairing spatial and sensory ethnography with expanded scenography and critical mapping approaches.