# Integrating visual and verbal data

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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)*.

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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.

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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

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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).

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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).

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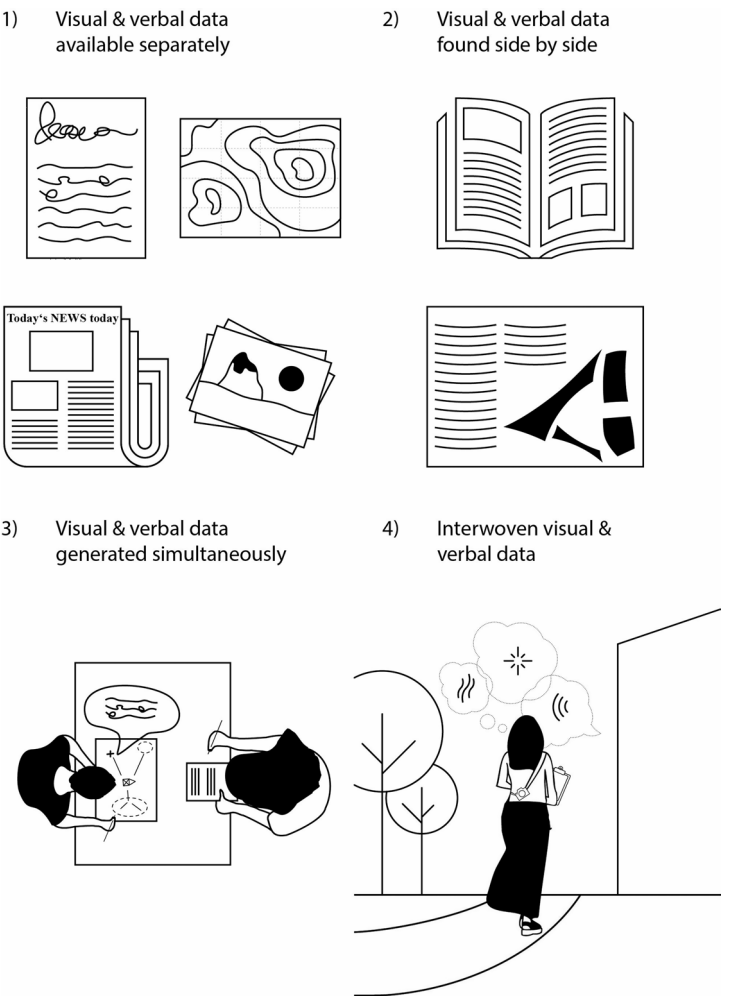


*Fig. 1: The interconnectedness of visual and verbal data—the connection between data(sets) has implications for the selection of an integration strategy. | © Anna Juliane Heinrich and Julian Kaiser*

## 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.

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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-

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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

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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

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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.

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## 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.

https://doi.org/10.14361/9783839467343-008 https://www.inlibra.com/de/page/agb - Open Access - (cc) BY

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.

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