Methods And Methodologies For Qualitative Data Analysis

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Abstract

The main aim of this paper is to introduce the contributions that are published in the proceedings. As a side-line, I follow up on an observation that I made (not only) at the conference – which is the distinction between methods and methodology. I hope that you will enjoy and benefit from reading the articles in the proceedings and watching the corresponding videos of the original presentations on the conference YouTube channel.

Keywords

Method, methodology, ATLAS.ti, grounded theory, discourse analysis, ethnography, symbolic interaction, phenomenology, hermeneutics, critical theory, NCT analysis, computer-assisted, epistemology, research reports, reporting practices, teaching ATLAS.ti, learning ATLAS.ti, ethnographic content analysis, primary data, secondary data, thematic coding, constant comparison, inductive, deductive, case studies, auto coding, open coding, a multimodal rhetorical analysis, adductive thematic network analysis, critical discourse analysis, trustworthiness, graduate level, method course, team projects

Some Observations

This paper begins where the 2013 user conference ended. During the final session participants worked in five break-out groups on topics that were assigned to the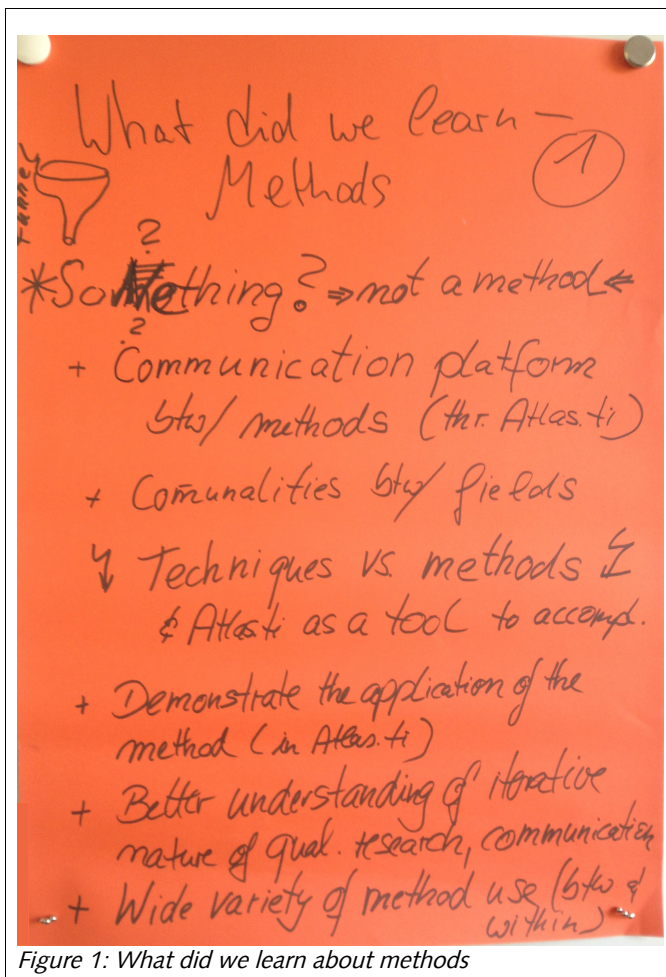m. The topics were: Training & Teaching, Ideas for Future Development, Suggestions for the Next Conference, What Conference Participants Learned About Features and Functionality of ATLAS.ti, and What Conference Participants Learned About Methods. The group that prepared the last topic on methods started their presentation by stating: "We did not learn anything about methods, but…," and eventually went on to speak about a variety of other insights they gained from the conference presentations (see Figure 1).

I was very surprised by this summary because two sessions had explicitly carried "Methods" in their title.[1] Four of the presentations from these sessions can also be found in the proceeding: The paper by Komalsingh Rambaree on the application of grounded theory, thematic network analysis and deductive critical discourse

Figure 1: What did we learn about methods

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analysis[2], the paper by Trena Paulus and Jessica Lester on discourse analysis,[3] the paper by Brett Hansen on ethnographic content analysis,[4] and the paper by George Rossolatos describing a methodological framework for conducting multimodal rhetorical analysis.[5]

As becomes obvious from Figure 1, the term "method" has been interpreted as being more than just a technique or procedure. In preparing the topics of the five break-out groups, I actually meant both – method and methodology, but failed to specify it properly. In providing an overview of the proceedings papers, let me be a bit more specific: . Three of the above-mentioned papers report on how they have utilized ATLAS.ti within a given **methodological framework**; whereas George Rossolatos's paper suggests a methodological framework and how ATLAS.ti can be used within it.

Some of the papers describe a particular way (a procedure, **a method**) how the authors had used the software to accomplish a certain goal. For instance, Michael Kolocek's paper describes how he worked with ATLAS.ti to make sense of a large body of data material. He outlines step-by-step manner how he used the auto coding function to find data segments that were relevant for his area of research, how he then continued to code these segments in more detail, and how he analyzed the data further.[6]

So where does **methodology** come in then? In a figural sense, it is surrounding or embedding the computer-assisted part. The methodological framework for instance can serve as a guide for how and what type of data to collect–fairly open conversations, structured or semi-structured interviews, focus groups, survey data, narrative interviews, documents, observational data, multimedia data (e.g., photo elicitation), or a mixture of a number of sources. Should data be collected and analyzed in a cyclical or a sequential manner? Do you immerse yourself in the field for a few months? What kind of role does the researcher take on? How important is self-reflection? Is the focus of analysis on the perceptions and meanings of the people participating in the research, or is the aim to uncover truth and meaning residing in certain objects and situations themselves?

Distinguishing between the terms method and methodology is not knew and there is no need to reinvent the wheel. As a little reminder, let me cite a few passages from Crotty's 1998 book, *The Foundation of Social Research*. Crotty identifies four elements that we need to/should think about when developing a research proposal: methods, methodology, theoretical perspectives and epistemology. He defines the four elements as follows:

> "*Methods:* the techniques and procedures used to gather and analyse data so some research question and hypothesis.

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> *Methodology:* the strategy, plan and action, process or design lying behind the choice and use of particular methods and linking the choice and use of methods to the desired outcomes.

> *Theoretical perspective*: the philosophical stance informing the methodology and thus providing a context for the process and grounding its logic and criteria.

> *Epistemology:* the theory of knowledge embedded in the theoretical perspective and thereby in the methodology." (Crotty 1998, p 3).

According to these definitions, ethnography, grounded theory (GT), or discourse analysis, for instance, are methodologies, whereas symbolic interactionism, phenomenology, hermeneutics or critical theory are theoretical perspectives. Sampling, questionnaire, observations, case study, narrative, statistical analysis, theme identification, document-, content-, conversation- , or NCT analysis are methods. GT may also be classified as method, if understood and used as a series of procedures (as often is the case).

Crotty goes on to explain:

> "It is not uncommon to find, *say*, symbolic interactionism, ethnography and constructivism simply set side by side as 'methodologies', 'approaches', 'perspectives', or something similar. Yet there are not truly comparable. Lumping them together without distinction is a bit like talking about putting tomato sauce, condiments and groceries in one basket. One feels compelled to say, ' Hang on a moment! Tomato sauce is one of many forms of condiment. And all condiments are groceries. Let's do some sorting here!' Similarily, one may feel urged to so some sorting out when confronted by items like symbolic interactionism, ethnography and constructivism all slung together. "(1998, page 3).

The four elements described by Crotty inform each other, namely in the following sequence: first comes epistemology, followed by the theoretical perspective informing methodology and methods. In the literature, according to Crotty, you find "several epistemological positions, quite a number of theoretical stances, many methodologies, and almost countless methods." (1998, pp 4-5).

If you take a look at the articles published in the proceedings, you find a good example of separating theoretical perspectives, methodology, and method in the paper by Michael Kolocek.[7] The focus of most other papers is on methods, i.e. how they went about conducting their research project and which functions of ATLAS.ti were utilized.

The explicit objective of the conference, and subsequently for the written up presentations, was to show how ATLAS.ti is utilized in the research process. Thus, some might have left out the description of the theoretical perspective and methodological framework on purpose. For others, such academic considerations may not be relevant, as their projects are situated in a more pragmatic context. The paper in the present volume on "Current reporting practices of ATLAS.ti users in published research studies" by Paulus, Woods, Atkins and Macklin shows that in about half of the articles researchers did not specify a particular methodology. They just mention that they used a "qualitative design."[8] The articles Paulus et

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al. examined were published between 1994 and 2013 and came from the Scopus database, the largest abstract and citation database of peer-reviewed literature.[9]

One possible explanation is that the content taught in research methodology/philosophy of science courses does not stick long enough in people's minds and they have forgotten it by the time they actually need to apply it. In some disciplines like law, medicine, education, or history, empirical research methods are not necessarily part of the curriculum. Students of such disciplines who wish to conduct empirical research frequently are forced to acquire the necessary skills on their own, or statistical methods are taught without linking these to philosophy of sciences classes and students learn methods without being informed about the theoretical perspectives that these methods are derived from. From my own teaching experience I know that students are not necessarily challenged to think about their own world view and how it relates to scientific research, choice of methodology and methods. From the papers in the present volume, we can learn at the basic (method) level how certain research problems have been tackled to find answers.

Overview Of Papers

Reports On Empirical Research With ATLAS.ti

Tanja Kronberger reports on a study about the role of privacy within mobile software development from the perspective of developers.[10] She interviewed 21 mobile app developers in Germany and the US. For data analysis she made use of the method toolkit provided by grounded theory methodology in developing categories and their properties. These were then used to retrieve the data and to write up the analysis.

Brett Hansen's paper is situated in the context of instructional design and he describes the method of ethnographic content analysis (ECA) and how he applied it within ATLAS. According to Brett, "ATLAS.ti was both the manager and the manipulator of data." It allowed him to manage 173 documents organized in 42 different groups (= PD-families) and 134 themes and sub-themes (= codes). Further he made use of the auto-coding and the code-coocurence tools and explains how the entire ATLAS.ti project served as one big bundle of "validity evidence."[11]

The study by Ani Munirah Mohamad involves both primary and secondary data. She investigated legal implications of ICT adoption in the justice system of the high courts in Malaysia. The secondary data was comprised of law text, court cases, government reports, rulings of the bar council and the like. As primary data, interviews were conducted. Thematic coding and constant comparisons were used as methods to analyze the data. ATLAS.ti helped her managing both her secondary and primary data and it support-

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9 http://www.elsevier.com/online-tools/scopus
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ed the process of inductive as well as deductive coding. For further exploration of the data, Ani made use of the query tool, the codes-primary documents table as well as the network view function to link codes on the conceptual level representing three major findings.[12]

From the world of law, we move to the world of health professionals in paper by De Pires, Matos, Trindade, and Scherer. They address the implications of technological innovation on the workloads of health professionals and describe how they utilized ATLAS.ti in a team to analyze multiple case studies in two countries (Brazil and The Netherlands), involving three cities and five hospitals. Data were collected from 2003 to 2009.[13]

Also in the field of health research, Sylvia J. Hysong and her team analyzed the simultaneous existence and function of a general organizational culture and a subcultures of feedback. The data base consisted of one hour telephone interviews with four informants at each of the four selected sites. As data from an existing data set were used that also addressed other issues, at first a deductive coding approach was used with the purpose of retrieving data segments that were relevant for the research question at hand by two pairs of coders. Inter-coder agreement was checked and disagreements were resolved by consensus. The retrieved data segments then served as primary data and were inductively coded by the main investigator. The codes-primary documents table and the query tool in combination with the scope button supported the analysis across the four sites.[14]

Sylvia Hysong's study was conducted in the US. We now not only shift research areas but also continents and move to Africa, more specifically to Kenya, Malawi and Zambia. Benson Banda examined the sustainability of teachers' continual professional development (CPD). The data consisted of historical documents, the evaluations of past INSET programs, and of interview and focus group transcripts. The analysis made use of methods derived from grounded theory, mainly open coding, constant comparisons and the linking of concepts. As in the paper above, case-based comparisons were realized with the support of the codes-primary documents table.[15]

Another report of empirical research analyzed with ATLAS.ti continues our virtual journey and brings us to Colombia. Óscar Enrique Gómez Rodríguez's paper discusses the social representation of kidnapping in the online media. He shows how ATLAS.ti supported the analysis of a large data set covering a period of 6 years and including a number of different data types (text, image and video). He shows how he used the ATLAS.ti text search and auto-coding function in the first phase of analysis and illustrates conceptual level work with the aid of network views and hyperlinks.[16]

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Application Of Various Methodologies And Methods Within ATLAS.ti

In this section you find papers where authors in addition to reporting on empirical research projects, emphasize the methodological framework used or the methods applied. The first paper in this section is by George Rossolatos. He describes a methodological framework within which he shows us how video data can be analyzed with the aid of ATLAS.ti. George conducted a multimodal rhetorical analysis of advertising films. For those how are not familiar with multimodal analysis, here is a short explanation:

> "Multimodality is an inter-disciplinary approach that understands communication and representation to be more than about language. It has been developed over the past decade to systematically address much-debated questions about changes in society, for instance in relation to new media and technologies.
>
> Multimodal approaches have provided concepts, methods and a framework for the collection and analysis of visual, aural, embodied, and spatial aspects of interaction and environments, and the relationships between these." (http://mode.ioe.ac.uk/2012/02/16/what-is-multimodality/)

After introducing the framework, George explains in detail the kinds of considerations that need to be made based on the methodological framework when for instance deciding on segmenting the data, i.e creating quotations. This is followed by an explanation of the coding schema that was applied. The second part of the paper is designated to the results of his analysis and should be an interesting read for those who are interested in the approach of multimodal analysis of image and video data.[17]

In the next paper, Trena Paulus and and Jessica Lester explain how ATLAS.ti can be used for discourse analysis. When using CAQDAS, often it is assumed that it is necessary to code the data first. Read for instance a recent discussion on Research Gate where some writers argue that CAQDAS prevents you from being immersed in the data because everything is structured and systemized.[18]

Trena and Jessica, however, show nicely that ATLAS.ti is not just about coding. They started their analysis by creating free quotations and writing memos for an "unmotivated look" through the data. In a second step they linked data segments that were meaningfully connected via the hyperlink function, added their analytical thoughts, captured in memos, and visualized it all in network views. Codes were used last to narrow down the analytic focus and to query the data across cases.[19]

Komalsingh Rambaree describes in his paper how he has used ATLAS.ti within three methodological frameworks. In three different studies over the years he applied ATLAS.ti using discourse analysis, grounded theory and abductive thematic network analysis. Different to Trena's and Jessica's inductive form of discourse analysis, Komalsingh conducted a deductive critical discourse analysis.[20] In sum, these last three papers demonstrate nicely that ATLAS.ti as a tool can successfully be used in vastly different methodological contexts.

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18 https://www.researchgate.net/post/What_is_your_experience_with_or_attitude_towards_using_software_tools_CAQDAS_in_hermeneutic_phenomenological_and_exploratory_analysis
19 http://nbn-resolving.de/urn:nbn:de:kobv:83-opus4-44263
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The paper by Azza J. Ahmad-Tajuddin from the University of Nottingham Malaysia Campus shows how the trustworthiness of qualitative data analysis can be improved by using software. Azza begins by providing a theoretical introduction of issues around trustworthiness. Her framework is based on Lincoln and Guba (1985) who describe trustworthiness to be a combination of the four components credibility, transferability, dependability, and confirmability. Exemplified by a study on professional communication skills, Azza then shows which functions and features of ATLAS.ti she used to achieve trustworthiness.[21]

Teaching And Learning ATLAS.ti

The section around teaching and learning ATLAS.ti from a number of different perspectives begins with a personal reflection of Rebecca Chikondi Ngalande from Malawi on the benefits and challenges of using ATLAS.ti from a beginner's point of view, embedded in a particular institutional context.[22]

Christina Silver and Christine Rivers report results of a user study in the UK. They followed participants of software courses over a period of one year after initial training and asked them about their perception of the training, how it impacted their view of CAQDAS, and their intention to use it. One of the objectives of their study was to provide information on current training practices and on the aspects which should possibly be changed to benefit learners.[23]

Another view on learning is provided by Andrea Potgieter from the University of Johannesburg. She describes the process of supervising a BA student in conducting a research project and while doing this learning and teaching how to use ATLAS.ti as a tool to analyze the data.[24]

How to teach a larger group of students is described in the paper by Trena Paulus and Ann Bennett. They describe how their faculty have integrated the teaching of ATLAS.ti into a graduate level advanced research methods course at the University of Tennessee. Students were first introduced to ATLAS.ti during their undergraduate course work, so the software was not completely new to them by the time they attended the advanced method course. In the advanced course they were required to use ATLAS.ti as a data management tool for their semester work. The aim was to prepare the students for using the software. The paper concludes with some best-practice suggestions for this instructional approach.[25]

The paper by Florio Arguillas, Janet Heslop, Kim Burlingame and William Block provides insights on the lessons learned when using ATLAS.ti for collaborative team projects. Some of the issues described relate to the specific institutional context, which, however, may not be unique to Cornell University, and thus their experience may likely be of interest to a considerable number of other users as well. Also pointed out in the paper are common user mistakes, and reading about them may help others to avoid falling into the same trap. Florio and his team also reported on the difficulties of working in teams on different

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projects when there is only one team library. This raised primarily security concerns. In the initial version of the paper, the authors described the workarounds they used to overcome the problem. By the time these proceedings are published, it is, however, no longer necessary to use these workarounds. The development team at ATLAS.ti took these concerns seriously, and in the near future (May/June 2014) it will be possible for teams to create their own library for each project. Thus, the descriptions of the work-arounds have been removed from the manuscript. A special thank you goes to Florio and his co-authors to point out these issues for the benefits of other users.[26]

Reporting Practices

The proceedings are rounded out by a paper on reporting practices of ATLAS.ti users that I have already mentioned above. Trena Paulus, Megan Woods, David Atkin and Rob Macklin conducted a literature search aimed at finding out how the authors of qualitative research studies describe the use of ATLAS.ti in their research reports.[27]

Genesis And Future

The conference opened with a talk by the "grandfather" of ATLAS.ti, Prof. Heiner Legewie. He provided insights in how it all began and gave a lively account of the of the now-historic "ATLAS" project at the Berlin Technical University in 1989.[28]

His remarks are followed by the keynote address given by Nicholas Woolf, an independent ATLAS.ti consultant based in Santa Barbara, California, and visiting academic fellow at the University of Reading, UK. Nick's presentation on analytic strategies and analytic tactics elicited a very lively discussion as he used some though provoking metaphors. The presentation[29] and paper also provide a sneak preview of Nick's forthcoming book on ATLAS.ti. Like me, Nick gained his skills by using the software in many projects and by teaching it for many years. By looking at user projects and the issues and problems they are dealing with, as teacher and consultant one learns best practice rules over time. The question is how to short-cut this learning experience so that also novice researchers can benefit from the full potential of the software. My book "Qualitative data analysis with ATLAS.ti" (Friese, 2014) presents one way of bypassing the long learning curve, and Nick's forthcoming book: "How to Use ATLAS.ti Powerfully" will provide a different take on the same matter. The article in the present volume provides a taste of what there is to come and offers an insight into the underlying theoretical ideas.[30]

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28 http://nbn-resolving.de/urn:nbn:de:kobv:83-opus4-44140
29 http://www.youtube.com/watch?v=ORbsN09DxOw
30 http://nbn-resolving.de/urn:nbn:de:kobv:83-opus4-44159

Reviving Conference Memories Or Participating Even If You Have Not Been There

Thanks to our assistants Lisa Handke and Tilman Rüsch, the conference presentations and atmosphere was captured nearly in full on video. The recorded presentations and other material (e.g, , the poster session) can be viewed on the ATLAS.ti conference channel.[31] By publishing the videos we would like to reach out to those who were not able to attend the conference. We invite you to use the comment function to engage with the presenters as well as other ATLAS.ti users, and hope to extend the fabulous conference experience over geographical boundaries and time.[32] Enjoy!

Appendix

Below are definitions of the terms "method" and "methodology" as given in various dictionaries:

Method

- A means or manner of procedure, especially a regular and systematic way of accomplishing something / a way of doing something, especially a systematic way; implies an orderly logical arrangement (usually in steps) (The Free dictionary)
- A way of proceeding or doing something, especially a systematic or regular one / a particular way of doing something (Collins English Dictionary – Complete and Unabridged)
- A particular procedure for accomplishing or approaching something, especially a systematic or established one (Oxford dictionary)

Methodology

- A body of practices, procedures, and rules used by those who work in a discipline or engage in an inquiry / The branch of logic that deals with the general principles of the formation of knowledge. (The Free Dictionary, http://www.thefreedictionary.com/methodology)
- The system of methods and principles used in a particular discipline / (Philosophy) the branch of philosophy concerned with the science of method and procedure (Collins English Dictionary – Complete and Unabridged)
- A system of methods used in a particular area of study or activity (Oxford dictionary)

Thus, methods are part of a larger methodological framework and this framework is defined by a certain discipline. Methods are describing the "how" something should be done, whereas methodology is concerned with the philosophical question of how to generate knowledge. It belongs to one of the three questions that every researcher needs to deliberate at the beginning of his/her career and probably even a couple of times throughout: the question of ontology (what there is to be discovered), the question of epistemology (how and what type of knowledge can be generated) and the question of methods (how to go about finding out what there is to be known).

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31 http://www.youtube.com/user/ATLASticonference

32 Note: As the papers ultimately underwent a lengthy review processs, they may differ at times from the presented versions captured on video. Thus, if you are looking for best-practice examples, we recommend that you refer to the paper versions.

The American Heritage® Dictionary of the English Language also points out the recent development of using both terms interchangeably:

> "Methodology can properly refer to the theoretical analysis of the methods appropriate to a field of study or to the body of methods and principles particular to a branch of knowledge. In this sense, one may speak of objections to the methodology of a geographic survey (that is, objections dealing with the appropriateness of the methods used) or of the methodology of modern cognitive psychology (that is, the principles and practices that underlie research in the field). In recent years, however, methodology has been increasingly used as a pretentious substitute for method in scientific and technical contexts, as in The oil company has not yet decided on a methodology for restoring the beaches. People may have taken to this practice by influence of the adjective methodological to mean "pertaining to methods." Methodological may have acquired this meaning because people had already been using the more ordinary adjective methodical to mean "orderly, systematic." But the misuse of methodology obscures an important conceptual distinction between the tools of scientific investigation (properly methods) and the principles that determine how such tools are deployed and interpreted."

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Friese, Susanne (2014). *Qualitative data analysis with ATLAS.ti*. London: Sage Publications.

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Collins English Dictionary – Complete and Unabridged © HarperCollins Publishers 1991, 1994, 1998, 2000, 2003

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