

**ON THE DANGER OF TAKING CODES TOO SERIOUSLY:
SOME METHODOLOGICAL CONSIDERATIONS**

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Background

After learning about the ESF initiative, the TERM II programme, ideas for a proposal were put together in the early summer months of 1999 by Lucia Reisch (Germany) and Susanne Friese (Denmark). As participants from 2 EU member states were not sufficient for the submission of a proposal, we brainstormed who else might be interested in a project concerning environmental issues and contacted them via email. Initially, our group comprised 8 people covering 7 European countries. The initial proposal idea was then further developed seeking the input of all interested parties. Early in 2000 we received the acceptance of our proposal and planned our first meeting in June. By then, one more person from the communication field had joined our team based on a request by the ESF committee.

Via Email conversation, we agreed on having accomplished the following tasks before the first June workshop: a) a preparation of the background data report, and b) the primary data collection. The aim of the workshop was to present the data and to talk about data analysis procedures.

The first workshop

At the workshop, it became evident that the various project participants operated within different research paradigms. At that time it was still believed that the differences could be overcome. It was clear to all of us that we might use different approaches because we were coming from different disciplinary backgrounds. But at the same time there was a willingness to learn from each other, to compromise and to overcome possible differences by developing an analysis plan we all could 'live with'.

I would like to mention here two major points of discussion: One problem area was related to the research question that was felt needed clarification. The other problem area was the coding schema. Working with an emergent coding schema, as it is generally the case within a constructivist paradigm employing a qualitative approach was not acceptable for some team members, as they were not familiar with this approach. They were worried that we end up with results that cannot be compared across countries. The difficulty of comprehending what a qualitative coding schema implies, if one is used to thinking about it in quantitative terms, became first obvious to me when the following statement was put forward, as a kind of verification in response to my explanation.

So what you actually mean is: if a certain topic is mentioned in the text, then it is like coding it with 1; if it is not there, then it is 0.

This was a key experience for me, as I had never thought about it in those terms. But yes, one could have explained it in that way. Following Spradley (1979), I had not explained what I meant by (qualitative) coding using native language terminology. The statement

reminded me that this is how you see coding from within a worldview that I was familiar with, but that diverged from my own practically applied one.

Based on the difficulties that were experienced by some team members with regard to the coding schema, it was briefly considered whether it might be more appropriate to proceed with a quantitative content analysis. It was felt that this was not an adequate solution, as we all agreed that the issues we were interested in was not likely to be found in the single words, but in the context. Thus, based on the underlying research questions we began to collect ideas about coding categories that we could use in the analysis process. The three main theory driven categories we came up with were myth of nature, images of nature and quality of life indicators. In addition to being derived from theory, the categories were also reflecting the research area and expertise of some of the group members.

Having developed a coding schema, the next logical progression was to suggest that we should first apply it in a quantitative fashion to the data material. That was the outcome and task of the first workshop that we all took home with us. The next meeting was scheduled to be held in December 2000. By then we had applied the coding schema using lots of 0s and 1s according to the above stated logic: 'theme x is present or is not present' to the data.

The second workshop

At the second workshop we realized that there were some discrepancies with regard to how the various categories had been interpreted by the various team members, even though we had initially clearly defined the various codes. A good deal of the workshop time was used for coding exercises to arrive at a more unified understanding of what each code meant. We also re-worked the research questions, as focus was still lacking. This became necessary due to the changed methodological approach that was chosen. We now had added a quantitative analysis and the initial research questions did not match this approach. Quantitative approaches demand questions that ask for magnitudes, something that can be answered on the basis of numbers. Typical qualitative questions ask for the how (but not how much) and why something is said, done and presented, the way it is said, done and presented. Such a question was added to reflect the original project idea, as something to be done after the quantitative analysis was completed; homework until the third and final workshop.

The conference

Before the final workshop, the next deadline was a presentation at the ACR conference in Berlin in June 2001. Until then the task was to re-code the data according to what we had discussed during the December workshop and to conduct a cross-cultural analysis. Looking

at the result of that analysis, I became somewhat conspicuous and questioned the validity of some of the significant findings pointing at differences between countries. Based on my knowledge of the data material and the coding schema, it looked as if some of the differences were due to coding artefacts rather than presenting real differences. This was confirmed at the last meeting, when we once again looked at the data material and engaged in some coding exercises.

The third workshop

We came to the conclusion that some of the coding categories, especially the 21 Quality of Life Indicators, were too narrowly defined for them to be applicable to the data. Even though the data were coded using numbers, the evaluation, which code to apply or not to apply was still subjective and the process escaped all efforts to establish objectivity. The image of nature codes were more broadly defined and left more room for interpretation and application, and we found that here the coding was much more consistent across the group. This defies all (quantitative) logic that a coding category that is more stringently defined leads to less reliable results than a more loosely defined category. It, however, fits the (qualitative) logic that data for which no predefined answer categories exist, as for example would be the case in a questionnaire, are difficult to be squeezed into a narrowly defined schema.

Therefore, in qualitative research an emergent coding schema is used. Following Kelle and Kluge (1999), such a coding schema is also likely to contain codes that have been derived from theory. Further, it can contain codes that have been developed based on an interview guide that has been used in the process of data collection. A third type of codes, however, is a result of having worked intensively with the data material. Thus, a qualitative coding schema always has to be open for new codes that are developed in a dialectic process between the researcher and the data material.

CODES AS HEURISTIC DEVICES

When talking about the coding process at the third workshop in January 2002, and in trying to analyse what went wrong (and what could ideally have been done), I learned another important lesson. This was not obvious to me at the time. While reflecting on the workshop a couple of days later, a paper written by Seidel and Kelle (in: Kelle, 1995) came to mind. I had read it at least twice in the past, but from the insight I gained now it seems that I never understood it properly. Seidel and Keller describe codes as being heuristic devices, they are signposts similar to road signs that point out a direction, e.g. 150k to New York. We know, if we follow the sign that we at some point will reach New York. Where exactly we will enter the city, this is not obvious from the sign. We may gain further

clarification if the name on the sign includes labels like South, West, East or North. But still, these are only approximations.

Another type of code that can also be used in a qualitative analysis is 'an objective code'. Such a code is similar to the kinds of codes used in quantitative analyses. Even if applied to non-structured material by various researchers located at different places, the likelihood that it is applied in a consistent manner is very high. In some computer packages, these codes are referred to as attributes, or as variables to be entered into a face sheet or, as is the case in ATLAS.ti, as document families. In the present research project such codes were for example: type of newspaper, date/week, type of article, audience or product category. These codes have been used in the project to arrive at a more detailed description of the data. There is no doubt that this type of information is useful and necessary in order to gain a general overview, regardless of the underlying perspective guiding the research process. In the present project, we established such an overview as part of the quantitative analysis. The instrument used in this case was SPSS, although it could also have been an integrative part of a qualitative analysis using a QDA package. But as the final outcome would have been more or less the same, this issue does not demand much further discussion.

More importantly is a discussion around the issue of working with codes as heuristic devices. It is unfortunate that the word 'code' and 'coding', rather than for example indexing became the established terminology in the qualitative research field, because the sameness in terminology does not add in bridging the gap between researchers working within different paradigms. Rather, as the same term is used for essentially describing two different processes, misunderstandings prevail.

A code for a qualitative researcher is a tool, it is not meant to present an entity in an objective manner. Qualitative data material generally is quite voluminous. Codes are meant to make the masses of data more manageable, and very clearly so in the beginning of the coding process. Code labels possibly change over time. If labels are taken from theory, they may be too abstract at the beginning to match the data content and thus, may become more descriptive over time with increasing insight gained through working closely with the data. If code labels are generated based on the data material, they may be too close to the data at first. With progressing analysis these codes are then developed further to become more inclusive, reflecting identified subcategories or domains. The labels themselves should not be taken to present an objective reality. What is most important are the quotations behind them. The label cannot (or should not) stand independently of its content. As stated by Seidel (in Fielding and Lee, 1991), the conflation of coding with analysis heralds 'analytical madness'. It overlooks that qualitative coding is not an end in itself but a means to achieve an end. And this end is the knowledge that can be gained from working with the data; the codes merely serve to establish access to the data. Paraphrasing Strauss and Corbin (1998), the analysis process in a qualitative study is

generally more ‘extensive and elaborate. Analysis does not necessarily end with conceptual ordering (coding), but rather may go on...’.

The number of occurrences of a particular phenomenon is an interesting piece of information by itself, for example that the code label ‘nature as nice place to be’ has been applied 43 times as compared to the code label ‘mastery over nature’, which only has a count of 13. What, however, is more important is to look beyond the label and the number attached to it and to describe what nature as a nice place actually means in for example in the context of a car advert or in the context of describing a tourist destination in a newspaper report. The label is only used to gain access to these segments of data. It would not make any difference if in one country this code had been labelled ‘nature as a nice place to be’ and in another ‘nature as a pleasant place’ – if, based on the content description the meaning assigned to these labels would have been the same. This, however, does not free the researcher from being precise and from writing clear definitions of what is meant by a specific code. Only on that basis a coherent coding schema can be developed in a team process *over time*. Note the emphasis on the time frame here. The final coding schema is not a result of a brainstorming process outside the data material; it is a result of having been immersed in the data. Only then the code labels become meaningful and one does not fall into the trap of repeatedly trying to match pre-formulated categories with yet unfamiliar data content. As Bong (2002) puts it:

The coding process becomes problematic when we presuppose that meaning is ‘out there’ (inherent in codes and family of codes), waiting to be discovered by the objective researcher and that multiple occurrences more viably signify meaning.

This poses the danger of taking codes too seriously. Just because I have labelled something x, y or z, this does not mean that x, y or z really exist. While working more closely with the data, I may find out that a different meaning is hidden behind the label and that the label therefore may become obsolete or can be replaced by another one. Having applied the first label, however, was not ‘wrong’, as otherwise the resulting meaning construction would not have been possible.

Above it was mentioned that the image of nature codes, although they were also predetermined, were experienced as less troublesome in the current project than the Quality of Life Indicators. The results based on these codes were also better comparable between countries. The reason for that is that the image of nature codes can be, following Seidel and Kelle, classified as heuristic devices. They only broadly point out a direction.

The quality of life concept by itself would also have been suitable to include in the analysis, albeit without all of the sub-dimensions. The way to work with such concepts in a qualitative sense is to create a code with the label QoL. Under this code, one then collects all instances that indicate an aspect related to the concept of quality of life. By going through that code at a later stage in the analysis process (which means to read through all the instances that have been coded as QoL), sub-domains are likely to be noticed. For

these domains further code labels are created. These labels, in contrast to the given 21 indicators, are then defined based on the content of the segments that comprise the code.

Such an emergent coding schema needs to be compared and discussed on a regular basis amongst team members in a team project. Based on the label definition, it then needs to be clarified whether the various team members could identify similar (same) or different domains. If language is not a barrier, this can be double-checked by looking at a few of the data segments coded by the respective team member(s). It can then be decided if a common code label for similar (same) domains should be adopted. This process of developing the coding schema does not require that all data material be coded up. In a Grounded Theory approach, for example, the coding schema is developed based on the first interview that one conducts. Taking into consideration the data format of the current project, a more in-depth exploration of the first 10 newspaper articles and the first 10 adverts would have probably been sufficient to accomplish the task of developing a useable coding schema. This was proposed as one way to proceed with the analysis at the first project meeting.

ADDED BENEFITS OF USING COMPUTER SOFTWARE TO ANALYSE QUALITATIVE DATA

One question that arose at the last workshop was what the aided benefit of applying specialized software in the analysis process is. Unfortunately, it needs to be stated that in the project we never got as far as that we would have properly applied the software. At the beginning we looked for example at the various television adverts with the aid of a VCR. The purpose simply was to classify the entire advert for the purpose of the quantitative analysis. At the last workshop we used ATLAS.ti for this purpose as the data by then were digitised. This meant that we could easily pick and choose the adverts that we wanted to look at. This of course could have also been accomplished using other video playing software. Having used ATLAS.ti for this purpose did not mean that we were finally arriving at the stage of qualitative analysis. We were still caught up in the process of classifying entire ads on the basis of predefined codes in order to clarify some questionable results of the quantitative analysis.

The benefit of software comes in when data are decontextualised, i.e. cut up into meaning units with the help of codes to be recontextualised later to provide an answer to the research question. The software allows for a much more detailed coding process as ever could have been accomplished by hand. Before computer programs became available, overlapping segments and the application of multiple codes to one segment constituted greater problems because the data needed to be photocopied multiple times and then cut and sorted into containers. Data retrieval by hand meant that one had to look through all the boxes to collect all the instances of text one was interested in.

When computer software is used and if the data were coded well, then the answers to the research questions lay at the researcher's fingertip. With a few mouse clicks one can access and enter the data at exactly those points that are relevant to a particular question. Asking for a combination of coded segments also in conjunction with certain data attributes (here attributes like media type, days of the week, audience, etc.) is an easy task for a computer. Shortly said, the software becomes the data management tool. Instead of having to look through boxes of index cards, stacks of paper laying around on the floor, using needles and punched index cards to find the data segments related to a particular issue,¹ the computer does it for us. Comparing and contrasting or finding negative incidences – tasks that are very important to improve the validity of the findings - becomes thus much easier.

Another tool that software offers is the creation of visual images that show the linkages between data segments and possibly our emergent theory, without - and this is an important aspect - losing access to the data. When a computer is used to manage data, the researcher can easily return to the original material at all stages of the analysis. This means also at the conceptual level when 'playing' around with concepts, it is still important to go back and read/listen to/look again at the primary data sources in order to pre-empt conclusions that are not supported by the data.

Unfortunately, in our project we never got as far as to work with the software. It then would have also been easier to see how a computer programme could be helpful in aiding a qualitative data analysis process. The following article explains further why software is beneficial in a qualitative data analysis process: Fielding, N. (1994). Getting into computer-aided qualitative data analysis. *ESRC Data Archive Bulletin*, 57, September. <http://www.soc.surrey.ac.uk/caqdas/getting.htm>

I have been mentioning that from the very beginning I had the feeling that it would have been necessary for me to complete the analysis first in order for the other project members to see how such an analysis can be conducted and what the outcome would be. The response was that this would represent a very autocratic approach on my part. I will explain in the next section, why this nonetheless would have been the best way forward, at least in the present context.²

MATCHING RESEARCH QUESTION AND METHOD

Somewhere along the way of becoming an academic researcher, we have learned something about the formulation of research questions and the methods that we can apply in order to find an answer to them. The problem that we encountered in our project was that the

¹ All of these were practiced techniques before computer programs became available to relieve the researcher from these manual tasks.

² This would of course had not been necessary, if we all had shared the same understanding of what qualitative research and qualitative data analysis is.

research question as stated in a proposal was linked to a qualitative methodological approach. As shown throughout this paper, we spent quite a lot of time in our meetings to refine the research question as it appeared too vague to some participants. While writing this paper and in trying to explain everything from the beginning, I first realised what actually had occurred over the two-year period. Due to the above-mentioned problems, at the first workshop we all (including myself) had agreed on initially coding up the data quantitatively. This was the beginning of our hopeless journey of reformulating the research question in order to achieve a better match between research question and method. The journey was hopeless, because at the same time we were still committing ourselves to a mix of methodological approaches since we wanted to show our will to compromise and to learn from each other. Following a German saying, this was neither fish nor meat and thus, the outcome was bound to be disappointing.

As the initial problem seem to have been related to the formulation of the research question that initially was linked to a qualitative analysis approach, I would like quote out of one of the most established methods book in the field of qualitative research written by Strauss and Corbin (1998, 2ed edition):

What do questions look like in qualitative studies? How do they differ from those of quantitative studies, and why? The main purpose of this form of qualitative research is to develop theory. To do this, it is necessary to frame a research question in a manner that will provide the flexibility and freedom to explore a phenomenon in depth. Also underlying this approach to qualitative research is the assumption that all of the concepts pertaining to a given phenomenon have not yet been identified, at least not in this population or place (p. 40).

Although the initial question starts out broadly, it becomes progressively narrowed and more focused during the research process as concepts and their relationships are discovered. So, the research questions begins as an open and broad one, but not so open, of course, as to allow for the entire universe of possibilities.

The research question in a qualitative study is a statement that identifies the phenomenon to be studied. It tells the reader what the researcher specifically wants to know about this subject. Following is an example of how one might write a qualitative research question: "How do women manage pregnancies complicated by a chronic illness?". This question (at least in such global form), although too broad and unstructured for a quantitative study, is a perfectly good one for a qualitative research study (p. 41).

In our study, we started with the broad question of how environmental issues are presented in the European News Media. This question was further subdivided into appeals made to ecological and non-ecological motivations, use of and appeal to quality of life aspects like social relations, development, pleasure, beauty, health, privacy, safety, etc. and the utilisation of culturally shared meanings. Given this task, I would have read through/looked at the collected data material and would have begun the coding process.

The analysis then progresses from these first steps and becomes more structured over time. However, it is difficult to state up front in which direction it will go and even more difficult to explain this to someone who is not familiar with this approach. It would have necessitated an already completed analysis on my part.

I have been charged for having presented the way I imagined the data analysis for this project to precede as being radically different from what ‘everybody’ else is doing, as something completely new. I accept the charge of it being different from more widespread quantitative approaches (even they may incorporate qualitative data), but of course it is not something new. What was new in our proposal was the combination of data from various media sources. The inclusion of multimedia data in a computer-aided qualitative analysis became only possible in recent years due to advancements in technology.

Another point that Strauss and Corbin make is that:

A researcher’s own preference, familiarity, and ease with a research mode inevitably will influence choices. Although the purpose of the research and the nature of questions asked often will determine the mode, a researcher ultimately has to work with those modes with which he or she feels most comfortable (p. 33).

The two authors promote an interplay of methods, which in their understanding does not mean triangulation in the traditional sense. It is an either/or.

The qualitative should direct the quantitative and the quantitative feedback into the qualitative in a circular, but at the same time evolving, process with each method contributing to the theory in ways that only each can (p. 34).

In our context, this means that we should have focused on either a qualitative or a quantitative approach on the basis of research questions matching the one or the other. As mentioned above, we briefly discussed the possibility to analyse the data using a quantitative content analysis approach, but this was dismissed, as this clearly did not match the research question. Since the will to cooperate and to learn from each other, however, was there, we tried to comprise. Unluckily, this was done at the expense of finding the right match between research question and method. As a consequence, we ended up with research questions that were too unstructured for a quantitative approach and too structured for a qualitative approach. We could see from the results that something was not working, or at least only partially. The results from the quantitative analysis dealing with typical descriptive information like where and when articles related to environmental issues were published or when TV commercials with nature themes were aired made sense and were useful. They also posed no problems when comparing them between countries. Anything related to actual content, however, turned out to be problematic, with the possible exception of the occurrences of various images of nature. Reasons for this have been given above.

If we had continued the project on the basis of the initially proposed qualitative research question, an emergent design would have been necessary. To let Strauss and Corbin speak again:

...a researcher cannot enter an investigation with a list of preconceived concepts, a guiding theoretical framework, or a well thought out design. Concepts and design must be allowed to emerge from the data. [...] Such a task calls for sensitivity to the nuances in data, tolerance for ambiguity, flexibility in design, and a large dose of creativity.

We admit that this open approach to design can pose some problems when trying to obtain permission from human subjects committees or when writing proposals and grants (p. 34).

And I need to add: ... or when working with a team of researchers that work within a different research tradition.

I still argue, as I have always done, that even if working with such an emergent design, it is possible to arrive at results that are comparable between countries. There is not yet an extensive body of literature on this topic, but the links to the following two articles may show that team based qualitative research is do-able and that it is practiced:

Kate Ford, Iddo Oberski, & Steve Higgins (2000). Computer-Aided Qualitative Analysis of Interview Data: Some Recommendations for Collaborative Working. *The Qualitative Report*, Volume 4, Numbers 3 & 4, March, 2000. <http://www.nova.edu/ssss/QR/QR4-3/oberski.html>

MacQueen, K.M., McLellan, E., Kay, K., Milstein, B. (1999). Codebook Development for Team-Based Qualitative Analysis. *In Cultural Anthropology Methods* 10(2): 31 – 36. <http://www.cdc.gov/hiv/software/pubs/codebook.pdf>

Conclusion

My conclusion that may not necessarily be shared by other project participants is rather bleak, at least as far as this project is concerned. I do not think that the problems we encountered in this project were due to disciplinary divides (as was often the case in other projects under TERM II; e.g. the frequently discussed struggle between economists and psychologists), rather it was a problem of non-matching worldviews in terms of research approaches. Indirectly this is certainly also related to disciplines as one is socialised into looking at the world in a particular way, which also entails particular methods of approaching this world in order to find out what is deemed to be interesting and worthy to research. In consequence, it boils down to the following three questions:

- # **Ontology:** What is the nature of reality and what is there that can be known?
- # **Epistemology:** What is the relationship between the knower and that what can be known.
- # **Methodology:** How does the researcher go about finding out that what can be known?

Trying to compromise the answers to these three questions, rather than to seek an interplay of methods that result from the answers given to the ontological and the epistemological question, bring about project outcomes like ours. This is not to say that all of the results are useless. All of the quantitative findings that investigate descriptive variables like source, date, time, type, duplicate adverts, product category, brand name etc. provide valuable information. From this point onward, qualitative analysis methods as explained above would have been the better choice. Given the composition of the group, I am however not sure whether this could have been realised. Therefore, my personal conclusion that I draw from this experience is that in putting together a group of researchers, it is important to consider that the researchers not only share a common interest in a research area but also a common research approach. If the latter is not the case, but the researchers still want to work together, then the proposal needs to be written in a way that tasks are clearly divided by methodological preferences and that the research process evolves dialectically by trading methods when appropriate. Method medley, as we have attempted it, is not an effective solution.

Literature

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Commentary by Ernst Halbmayer:

Based on reading the above paper, the following question can be put forward: Is it feasible to go ahead with a research project that is comprised of participants that bring very different understandings of how research should be conducted to the project? If the answer is “no”, then this means that already the selection of the project participants in relation to methodological issues is critical and one should prepare appropriate guidelines for choosing project participants. If the answer is “yes”, then a number of issues need to be discussed given the framework of TERM II where only two workshop meetings were planned and where the project participants otherwise resided at different locations being exposed to different academic environments and work traditions. The question, thus, is how can under such conditions a common understanding of processes and contents be generated?

Thesis 1

It became obvious that it is not sufficient to meet for 2 days where decisions needed to be made under time pressure also taking into consideration group dynamics that are not always rational. Decisions and agreed upon tasks made in such a situation are either not followed or are interpreted differently.

Thesis 2

Different or new forms of virtual project management are required. The requirement for realising such a format would be that the project is virtually accessible at all times, so that all heterogeneity aside the basic understanding that is shared between project members is permanently present and visualised. This would also relieve the project meetings.

Thesis 3

Such formats of project management must for the most part first be developed and moreover, it needs to be shown how this can be transferred to research processes.

Thesis 4

This poses new problems with regard to the management of research projects, especially if they are international, at multiple localities and interdisciplinary – in other words, highly complex. Exactly this is what the ESF project has shown in an impressive and interesting way.

Thesis 5

Project participants generally don't notice such problems while caught in the middle of it and it only became obvious to me, at least in parts, through the discussion at the third workshop between Aad and Susanne. The principal problem is often linked to other issues, as in our case the discussion between qualitative and quantitative approaches.

CONCLUSION

If the aim is to contribute to qualitative method and software applications, then it is necessary when selecting project participants to look for homogeneity in relation to the basic research orientation. It would also be desirable if they had a basic knowledge of the software package to begin with.

If one also allows for heterogeneity in terms of research orientations (and not only with regard to interdisciplinary orientation)³, one needs to develop a concept that is not based on confronting qualitative with quantitative approaches, but rather on the notion that the underlying issues guiding the research process are reflected in both traditions, albeit in different ways. Questions that could be raised are for example the notion of validity and reliability in both traditions, e.g. in the coding process.

The main problem is therefore, according to my opinion, not exclusively related to the quantitative/qualitative debate, but in strategic decisions that need to be taken at an earlier stage. These are: the definition of the tasks, the selection of the project members in relation to the various tasks, and the issue of virtual project management.

³ A possibility would have been to include psychologists, sociologists, anthropologists, media and communication specialists that work within a qualitative paradigm.