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Analyzing the Qualitative Data Analyst: A Naturalistic Investigation of Data Interpretation

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Key words: expertise; analyzing aloud; conversation analysis; relational analysis

Abstract: Much qualitative research involves the analysis of verbal data. Although the possibility to conduct qualitative research in a rigorous manner is sometimes contested in debates of qualitative/quantitative methods, there are scholarly communities within which qualitative research is indeed data driven and enacted in rigorous ways. How might one teach rigorous approaches to analysis of verbal data? In this study, 20 sessions were recorded in introductory graduate classes on qualitative research methods. The social scientist thought aloud while analyzing transcriptions that were handed to her immediately prior the sessions and for which she had no background information. The students then assessed, sometimes showing the original video, the degree to which the analyst had recovered (the structures of) the original events. This study provides answers to the broad question: "How does an analyst recover an original event with a high degree of accuracy?" Implications are discussed for teaching qualitative data analysis.

Table of Contents

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1. Introduction

Analysts rarely analyze their own activity (ANTAKI, BIAZZI, NISSEN & WAGNER, 2008). How do they ascertain the quality of their analyses? In this contribution to the *FQS* Debate on Teaching and Learning Qualitative Methods, I provide an answer to the question: *How does an experienced researcher go about her task of analyzing data when she knows that someone else knows the story that produced the data and can therefore judge the extent to which the analysis matches the real events?* [1]

Data analysis is an integral and defining aspect of science. Although methods sections in research articles are intended to exhibit what the authors have done to arrive at the findings reported, these descriptions often are insufficient, even in the hard sciences, to allow investigations to be reproduced in other contexts (COLLINS, 2001; JORDAN & LYNCH, 1998). Although there are some who denounce methods courses favoring instead practical teaching methods at the elbow of experienced researchers (BOURDIEU, 1992), research methods courses continue to constitute a mainstay in graduate-level university courses. The quality of data analysis is an important issue in textbooks of research methods (e.g., BERG, 2004), but in much of ("constructivist") social science research "the idea of isomorphism between findings and an objective reality is replaced by isomorphism between constructed realities of respondents and the reconstructions attributed to them" (GUBA & LINCOLN, 1989, p.237). This is often taken as a license to analytic freedom, because in the social sciences, more so than the natural sciences, research results are the outcome of "social construction" under the best conditions and as "'mere' story-telling" (ANDERSON & SHARROCK, 1984, p.104) in other instances more critical to qualitative approaches in social science (GROSS & LEVITT, 1994). [2]

The task of data analysis in the social sciences can be viewed differently, that is, in analogy to police / detective work or inquiries in courts of law. Just as the police officers and judges cannot just construct something and inculpate a person, which would mean many innocent individuals might end up in prison or on death row, we might hold social science researchers accountable and require that they "get their story right," to the extent that this is possible. The purpose of this study is to provide an answer to the question posed in the opening paragraph. To model rigor in data analysis, the instructor of an introductory graduate-level course in qualitative research for the social sciences invited her students to transcribe video clips with contents of their interest. The transcriptions were to contain as few clues as possible about the original source. The instructor told students she would analyze the data aloud in real time, without any background information, in the attempt to reconstruct the situation that produced the verbal protocol. But she did not say that she was using any specific method of interpretation. In the subsequent class discussion, the owner of the data would then judge the degree to which the instructor had achieved the self-imposed task, often presenting the original video. In all 20 sessions videotaped (n = 11) or observed (n = 9), the instructor had not just constructed something but indeed arrived at identifying the type of social situation (school class, talk show,

interview, broadcast, outdoor science center), nature and relation of participants (e.g., interviewers, teachers, students, journalists, staff). The protocol includes evidence for the analytic work conducted and formulations of this work for the purpose of teaching analytic methods. [3]

2. Background

Data analysis is the bread and butter of research in all sciences. Learning how to analyze verbal data is an integral aspect of graduate training in the social sciences. The mode by means of which graduate students learn about and acquire data analysis practices differs. Having taught and supervised graduate students in different parts of the world, I know first-hand that in North American universities methods courses tend to be integral to the required program of studies, graduate training in other parts of the world often does not include course work so that the students learn research methods while doing research. Readers of methods textbooks or of special journal issues devoted to research methods—tend to read, at best, *about* data analysis. Readers of empirical articles are provided with *a posteriori* descriptions of what researchers have done. In both instances, they are in the same predicament as natural scientists, who may not be able to reproduce the analysis from the descriptions of method (e.g., COLLINS, 2001; JORDAN & LYNCH, 1998). In these and similar studies, the natural scientists come to reproduce the work of other laboratories only when actually doing analysis with the members of these laboratories. When graduate students work at the elbow of experienced researchers, they tend to learn data analysis in a tacit mode (e.g., BOURDIEU, 1992); in textbooks and journal articles on method or by reading empirical research, students tend to read about methods and may gain some experience by analyzing data in class or as part of assignments. They do not tend to get first-hand experience of how an expert analyses data. In this study, I investigate how an experienced researcher analyzes data aloud for the purpose of making the analytic process visible and, thereby, instructing graduate students. This type of instruction is known as the first step in cognitive apprenticeship, where experts model their practices by exhibiting learners to their expertise (COLLINS, BROWN & NEWMAN, 1989; VAN SOMEREN, BARNARD & SANDBERG, 1994). Because the graduate students had provided the transcriptions, and because analyzing aloud was part of the teaching strategy, this is a naturalistic study of expertise in data analysis including naturalistically produced (rather than researcher-designed) protocols. What are the features of expertise in verbal data analysis and which aspects of expertise are formulated for the audience? [4]

How experts reason while interpreting data, texts, or diagrams tends to be investigated using the protocols generated while experts do aloud what they normally do without externalizing their thoughts. Thus, for example, there are investigations on how scientists analyze graphs (e.g., TABACHNECK-SCHIJF, LEONARDO & SIMON, 1997), medical experts read electrocardiograms (GILHOOLY et al., 1997), pilots analyze the videotaped performances of peers (ROTH & MAVIN, 2015), how translators treat linguistic aspects during the translation of texts between two languages (KUNZLI, 2009), or expert historians

interpret historical texts (WINEBURG, 1998). However, (interpretive) social science research that (reflexively) investigates (interpretive) social scientists at work is much more rare; and, to my knowledge, there has been no study of this kind. These expertise studies focusing on interpretation tend to highlight the considerable role that content area knowledge plays in the interpretation of graphical and textual information. When such background knowledge is unavailable or not easily accessible, such as when experts are unfamiliar with graphs even when these are from introductory university courses of their own domain, then the performance levels drop considerably (e.g., ROTH & BOWEN, 2003). In such instances, a lot of the work is spent on identifying those aspects of the visual or verbal text that actually serve as a sign that expresses something about the situation of interest. But whether visual or textual feature actually is a useful sign depends on the structures of the possible referent situation. Thus, for example, whether the actual values or the slope of a curve is to be read is a function of the hypothesized phenomenon that has possibly given rise to the graph. However, even when given a specific phenomenon as the referent of a population graph, experienced scientists may focus on the wrong graphical feature in their explanations. [5]

What is the kind of knowledge brought to work by a social scientist whose work is concerned with constructing knowledge about the (functioning of the) social world? [6]

A classic study of researchers at work investigated how sociology graduate students coded the information in nearly 1,600 folders of an outpatient clinic (GARFINKEL, 1967). The purpose of the research was to find out, from an analysis of the folders, the trajectories of patients through the institution ("careers") given the characteristics of these patients, the clinical personnel, their interactions, and a given decision-making tree. The analysis shows that rather than abstractly matching folder contents with coding criteria, the coders were using and indeed "assuming knowledge of the very organized ways of the clinic that their coding procedures were intended to produce descriptions of" (p.20). That is, these coders used the actual folder contents as forms of documentary evidence of the ways in which a clinic works, and familiarity with the clinic practices was an integral aspect to ascertaining the sense of the folder contents. Moreover, the relationship—between familiarity with clinic practices and the records to be coded—was used to find the sense of the coding instructions. [7]

GARFINKEL provides descriptions of several other contexts to suggest that the documentary method of interpretation is a pervasive method in lay as in professional sociology generally and in fact finding more specifically. In one experiment, undergraduate students "interacted" with a counselor to obtain advice about personal problems. They could only ask questions that were to be answered by a yes/no reply. Although the "counselor" produced the yes/no replies at random, the students nevertheless took each as the document of a motivated, coherent and honest response even when there were contradictions were evident. [8]

In the two previous examples, the lay/professional analysts were confronted with forms of evidence (records, yes/no responses) and their task was to determine the system or thought that produced the pieces of evidence. That is, these analysts treated the pieces of evidence as accounts of something that has happened, and the analysts had to find out what happened. GARFINKEL also describes another type of situation, in which some final outcome is given and a search has to be conducted for pieces of evidence that provide a reasonable account of how this state was brought about. A coroner tends to be confronted with a dead person and then has to identify the mode of death. The coroner will collect materials that can be collected or photographed or recorded in some other fashion, including (written, taped) recordings of verbal statements. Here, again, the method works reflexively, selecting among materials those that are consistent with a particular mode of death, and taking the body to be expressing a mode of death consistent with the material evidence of a particular sequence of events. [9]

In ethnomethodology, a particular form of reflexivity is recognized (LYNCH, 2000). The very methods by means of which ordinary people (*ethno*-) make the social world appear in a structured way are prerequisites for studying the social world. This is so not only for ethnomethodologists who make this work their object of investigation (this ethno*methodology*) but especially for all those researchers using formal (qualitative or quantitative) methods to study social/psychological phenomena (GARFINKEL, 1996). That is, other than the stance that inductively oriented studies tend to take, investigations of social-psychological phenomena presuppose the very competencies and practices at the heart of the study. As a result, the social scientist "is literally beleaguered by [*the preconstructed*], as everybody else is" (BOURDIEU, 1992, p.235). The social scientist therefore is

> "saddled with the task of knowing an object—the social world—of which he is the product, in a way such that the problems that he raises about it and the concepts he uses have every chance of being the product of this object itself" (ibid.). [10]

BOURDIEU is concerned with the identification of objective structures of the social world and recommends the investigation of the methods of construction. Although the sociologist is critical of ethnomethodology, it appears that the practitioners of this field are pursuing precisely the type of studies required by doing a methodology, focusing on the mundane methods of making and accounting for the social world as it appears in everyday practice, scientific practice included. In fact, ethnomethodologists tend to be critical of reflexivity as it is used in other social sciences, where it often is an expression of academic virtue and a source of privileged knowledge (LYNCH, 2000). In ethnomethodological practice, reflexivity is presupposed between the work of producing the orderly properties of the social world and the accounts of this work that are its result (GARFINKEL & SACKS, 1986). An investigation of the analytic work was done in one recent conversation analytic study grounded in the ethnomethodological spirit, which not only focuses on the work of the analysts at work but also suggests that there is a paucity of such studies (ANTAKI et al., 2008). [11]

3. Method

This study was designed to investigate analytic processes exemplified by a social science analyst in the course of instructing graduate students on qualitative research methods. There are two aspects to the data. First, the instructor externalizes an analysis of transcriptions the origin of which are unknown; second, in this naturalistic setting of graduate courses, the instructor not only analyzes but also formulates what she is doing or has been doing. [12]

3.1 Participant

The participant is a known scholar publishing the results of qualitative studies and on research methods. She has about 20 years of experience in academia. She tends to teach courses in qualitative research methods. On average, there are 5+ peer-reviewed journal articles per year; and she has a number of books on a variety of topics to her record. The studies tend to use ethnographic and applied linguistics methods, including discourse analysis and conversation analysis. The participant does not claim to be a (core) member of the communities of practice that do discourse analysis or conversation analysis/ethnomethodology. The audience for the analyzing aloud sessions are graduate students, generally at the Masters level, registered in an introductory qualitative research methods course. The parts of the protocol concerning the method of analysis are directed towards this audience, whereas the analyses themselves take the transcriptions as their objects as if the instructor was conducting her own research. [13]

3.2 Context

The interpretation-aloud sessions and observations were conducted in the context of introductory qualitative research methods courses at the graduate level. To introduce students to the methods of analysis, to get students started on their course assignments, and to support her repeated reminder that "not anything goes," the instructor invites students to bring transcriptions of their interest and that they intended using for their final assignment. She likens her job of qualitative analysis to the work of detectives, using the sleuths Agatha CHRISTIE's "Ms. Marple" and Kathy REICH's "Temperance (Tempe) Brennan" or their male equivalents as examples, who must attempt to get the story right to prevent an innocent to be imprisoned or given the death penalty. The instructor framed the task as recovering from the transcription as much as possible about the situation. The owner of the transcription could then determine the extent to which the reconstruction corresponded to the actual video. In most instances, the class then watched the actual video of the transcribed excerpt. In class as well as during the analyses, she has already introduced students to the idea that they should not use high-level concepts and categories, but should be suspicious of them. The exercise actually prevents the introduction of categories because the reading of the data has to reconstruct the relations between the protagonists and their possible status based on the verbal interactions and any gestural/body movement information provided. Almost like a mantra, the instructor impresses upon students not to speculate but to use incontrovertible evidence that they can

place their finger on or point to. She discourages students to speculate about contents of the minds ("s/he thinks, feels, intends, etc.") or about social aspects ("power over") and to concentrate on exhibiting the processes by means of which the mental or social come to be constituted in the chosen arena. She suggests, for example, "analyzing a transcript where we don't know much about the people forces us to look at what's going on," thereby emphasizing that the analyst is forced to investigate processes ("what's going on"). She emphasizes "not [having] talked about power" but instead "looking for pairs, question | response pairs." In this game, the analyst cannot draw on institutional relations to explain behavior but rather has to take the relations, verbal interactions, to hypothesize how power/knowledge differentials are actually produced. Similarly, she points out that knowing the gender of the speaker might lead the analyst to import presuppositions about the role of gender in relations into the analysis rather than showing how the interaction actually produces any differences ("If I can figure out from the discourse that there are differences that would be much stronger"). [14]

The instructor projects the transcriptions that she has received at the beginning of the lesson onto screen. She points to or highlights parts of the text currently read, or she gets up and actually points to relevant places in the transcript standing next to the screen. [15]

As a result, there are three levels of text that feature in this study (Figure 1). First, there are the anonymized transcriptions that the graduate students brought to the seminars (Figure 1, L1). The instructor analyzes these transcriptions aloud for the purpose of allowing the graduate students to observe an experienced analyst at work. I transcribed the videotapes of this work, thereby producing a second level of text (Figure 1, L2). It is this text that is the focus of the analysis in this study, which constitutes a third level of text (Figure 1, L3).

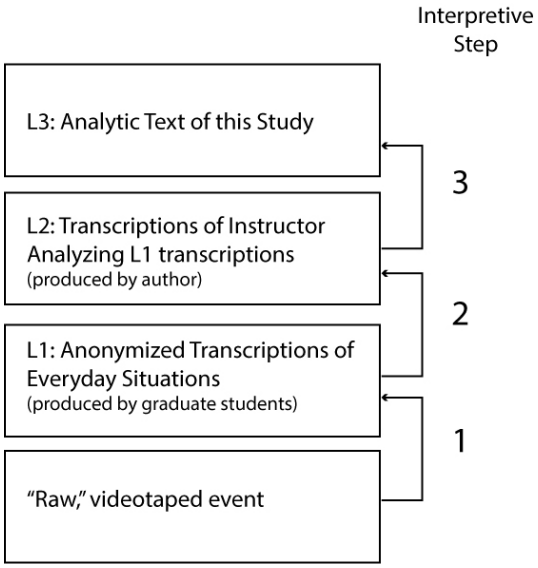

Figure 1: Interpretive levels and associated levels of text [16]

Importantly, the three levels constitute three levels of interpretation. The graduate students, in transcribing videotapes, already produce a form of interpretation: the transcription reflects their hearing and seeing of the episode as a whole. In fact, the analyst uses this in the interpretation of the transcriptions. On the second level, the instructor interprets the transcriptions; and on the third level, this author interprets what the instructor says analyzing the data. To make these three levels explicit, there are three corresponding levels of indentation: indented twice for the data students provided, once indented for the protocol as recorded, and normal text. [17]

3.3 Task

The tasks for the protocols for the purpose of investigating expertise tend to be selected by the researcher, such as when they select a set of graphs from undergraduate science courses and present them to successful scientists (e.g., ROTH & BOWEN, 2003). In those (relatively few) instructional settings where an expert analyzes aloud for the purpose of exhibiting the practices of the discipline in instructional settings (e.g., FREY & FISHER, 2008), instructors themselves select the task, which, in fact, may prime their performance. The present is a naturalistic study where the instructor sets herself up to do analyzing-aloud sessions where she does not know beforehand the materials to be used. Because the students in these graduate classes constitute a diverse audience, there was a broad range of material transcribed. The materials included talk shows, comedy shows, congressional hearings, documentaries, broadcasts, school lessons, interviews, and parent-children interactions. For example, there were transcriptions from 1. a documentary produced and animated by David SUZUKI, 2. a kindergarten class in which Vivian PALEY, a well-known early childhood educator demonstrates a particular storytelling technique, 3. an interview and part of broadcast on a school that encourages rough-and-tumble play on school grounds. In some instances, the students deliberately used video and transcriptions with the (subsequently declared) intention to make the task of reconstructing the original event more difficult to the analyst. A sample transcription can be found in the Appendix. [18]

The graduate students preparing the transcriptions were not experts. Thus, the transcripts sometimes contained more information than what the instructor had indicated as to be included. In such instances, she tended to point to such facts and to how these might mislead the analyst in articulating identifying relations rather than imposing these. For example, she pointed out that using "teacher" might lead analysts to import "power" to explain what is going on rather than identifying forms of interaction that exhibit the differential institutional positions of the participants. In another example, a student had included "David SUZUKI" (a Canadian scientist, broadcaster, and environmentalist taking children to the Badlands in Alberta) as the name of a participant. As the instructor repeatedly pointed out, this might lead unsuspecting analysts to see interactions through a lens shaped by presuppositions of how a well-known scientist, broadcaster, and environmentalist is treated, regarded, and related to in interactions. [19]

The transcripts are non-technical, that is, not produced by specialists. They do not contain turn numbers or special formatting features. (Graduate students learn to do this as part of the course.) The instructor takes this into account, considering the transcriptions to be the result of mundane, commonsense reasoning that operated during their production. There were instances where the transcribers had used the same letter when in fact there were two different speakers, two speakers and one speaking in direct and voice-over mode, or used different speaker denotations to refer to the same person (e.g., "Vicky" and "teacher"). [20]

3.4 Data

The database consists of 11 videotaped and 9 observed sessions during which the instructor analyzes transcriptions that students provided and that she had never seen before. Each session lasts about 30 minutes for a total of 6:11 hours of recording. Nine additional sessions, each lasting about 30 minutes, were observed. All student-produced transcriptions entered the database. The recordings were transcribed verbatim. [21]

3.5 Data analysis

The data analysis, informed by ethnomethodological and conversation analytic studies of work (LYNCH & BOGEN, 1996; SCHEGLOFF, 1996), makes use of the very methods that are the object of study. It first and foremost takes the transcribed lectures in which an instructor conducts public analyses of data and formulates some of the practices for the purpose of teaching methods for what they are: public displays of methods of analysis. The approach treats the data in an unmotivated and disinterested way, thereby contrasting common forms of analysis that make use of "a politically and socially charged description of, the speakers or the subject of the talk being analyzed" (ANTAKI et al., 2008, p.4). [22]

In this study, each video recording generally and the transcription more specifically is taken as natural protocols of data analysis activities, which are "seen as organized to produce the products they do" (ANDERSON & SHARROCK, 1984, p.103). With the data at hand, I engage in what is often recommended but much more rarely done: the application of a research method to its own practices (ANTAKI et al., 2008; ASHMORE & REED, 2000). I take the same attitude to my data as the instructor in the videotapes to the transcriptions that the students provided. The instructor both analyses and talks about the analysis for the benefit of graduate students in a course where they are to learn, among others, how to analyze data; the instructor's purpose is to encourage students to do such analysis with a high degree of rigor. The protocols, therefore, are representative of forms of data analysis in which rigor is exhibited and pointed to (in reflexive, formulating stretches of the talk). [23]

The present analyses and analytical stance are characterized by an acknowledgment of the structure of practical action, which can be articulated as the relation between some form of work and the notational particulars that

constitute its accountable text or gloss (GARFINKEL & SACKS, 1986). These authors propose expressions such as "doing [playing chess according the rules]," where the first term "doing" refers to the lived work being accomplished and the bracketed term "[playing chess according the rules]" is a gloss or verbal account of that work. In this approach, therefore, any transcription can be viewed as a protocol or account of the work actually done. The transcriptions of the instructor-analyst's analyzing aloud then are accounts of her work, which we may gloss as "analyzing transcriptions for the purpose of exhibiting and teaching forms of rigorous data analysis. [24]

4. Reconstructing an Event From a Transcription: The Documentary Method at Work

Previous research concerning data analysis shows that the analysts make use of their familiarity with a setting to categorize and interpret the documents that had been produced therein (GARFINKEL, 1967). Thus, as described above, sociology graduate students tasked with the categorization of hospital records for the purpose of deriving patterns that describe practices of outpatient treatment actually used their knowledge of hospital practice to categorize the files. That is, in their classification work, the research goal to inductively derive hospital practices was circumvented because the analysts used familiarity with the very practices that the research was to induce from the classification of the hospital records. In this instance, the situation that had produced the records as one form of account of what has happened was known, as was the nature of the data, that is, the records were known to be records produced by a hospital. Another type of situation discussed above constitutes the coroner's problem, where the coroner, faced with a corpse, attempts to reconstruct a possible sequence of events, based on existing data, that could have led to the death of the person (ibid.). Again, the situation is known (i.e., corpse), and the context is searched for data consistent with a possible eventual trajectory that would have led to a corpse. The present situation differs from both of these situations, as the instructor knows neither the situation that produced the transcription nor what in the transcription might provide clues to the type of situation that it would be a document of. [25]

Globally, we may describe the analyst's work in this way: She assumes that the transcript is a document of some kind of social situation all the while being (initially) "in the dark" about which aspect constitutes a specification of the general, that is, the *concrete* that will lead her to the *type* of situation. The analyst recognizes that there is a kind of bootstrapping process necessary, because she "does not have a good starting point." She does, and formulates it as such, describe what is happening in terms of talk. That is, we observe forms of structuring of the generally linguistic material, in terms of objective characteristics, such as the relation between speaking turns, grammatical characteristics, special word choices, and so forth. From this emerge different forms of possible joint actions expressed that provide clues to the possible situations that might have led to *this* transcript (Table 1). That is, for the analyst there is an objective sense (factual aspects in the transcription, which is a protocol of the situation), an expressive sense (what the practical and discursive

actions do), and a documentary sense (the type or types of situation that might produce the objectively given, indisputable facts). Table 1 lists, for the 11 recorded sessions, some of the objectively givens that the instructor-analyst highlights in each session, the different expressive senses she articulates, and the situations she hypothesizes as the sources of the transcribed protocols. Even without knowing situational specifics—i.e., the "thick descriptions" often asked for by peer reviewers—the analyst reconstructs *types* of situations based upon 1. factual materials taken from the transcriptions and 2. the intentions that (verbal) actions appear (are perceived by participants) to express. In the sessions, she tends to express what a situation "feels like," in an atheoretical or pre-theoretical way; and, through the structured, data-driven analysis she exhibits the invariants that situations *like this one* have in common. This requires the identification of transcription aspects that are invariant across situations rather than being specific to *this* situation, the specific one from which the transcription had actually been abstracted. In the following, I provide an account of how the instructor analyst moves through a transcription and ultimately arrives at a (subsequently judged as correct) situation description for the purpose of identifying invariants of rigorous data analysis (rather than identifying particulars about *this* analyst).

Dataset	**Objective**	**Expressive**	**Documentary**
1	- Names (David, Heidi, Amanda, Michael, Ashley), gender - Rocks = amazing landforms (camel-, pyramid-shaped) - Questioners and respondents - Most talk by David and Heidi	- Preformatted-answer questions - Teaching-to-see questions - Teacherly discourse - Questioner knows the answer - David and Heidi "in cahoots"	Do-you-see-what-I-see game Outdoor-center-guide-taking-visitors-around-a-park

Table 1: Three levels of sense characteristic of rigorous data analysis [26]

Ethnomethodologists and conversation analysts emphasize that the members to the setting exhibit to each other what is required to pull off the social situation at hand. That is, members do, for example, the work required in a sequentially ordered, triadic turn-taking routine that assigns one person (often teacher) the first (initiation) and third (evaluation) turn and another person (often students) the second, response-producing turn. The members may not recognize, however, such an order in their turn-taking sequences, just as the children do not identify in their language-use the grammatical features. Analysts, such as the instructor participating here, especially when somewhat familiar with conversation analysis, will more easily recognize the routine and use this to postulate / hypothesize a possible situation. The purpose of the analysis is "to piece together the story from the materials, by eliminating some alternatives and leaving open others." (In the

following, the source of the data that the analyst talks about is identified in parentheses, i.e., "Transcription 1.")

Fragment 1 (Transcription 1)

09	Heidi	When we get around here, you want to take a look around and see if there's any landforms that look like something that would be familiar to you, not just like a rock. So what do you think that landform over there is? Does this one look, look like anything to you?
10	Amanda	Hmm. Oh! That rock right there looks like a camel.
11	Heidi	Oh ... no ... that's it! We actually have a name for this guy. We call him Fred the camel ... see the hump ... see the big droopy lips pointing to the left. And if you look off in the back, can you see anything else?

The analysis

"*So what do you think that landform over there is like?*" You probably all play this as kids looking at the sky, "Oh, a sheep, oh, something else." That's what I kind of, what this generates the ideas. And if I am blank with the analysis, these are the kind of things that I build from. So I describe to get myself started. So, "*What do you think that the landform over there is? There's one look like anything to you?*" If I stop now, again, and I think about what kind of relations are there. Well the three, they haven't talked yet at all, they, whatever I said, the image I have. I haven't seen the video. The image I have maybe people unfamiliar with the wilderness and maybe younger people. There is David and there is someone functions in a situation where the kinds of questions seem to presuppose that the person already knows the answer. "*So what do you think? What do you think that that landform over there is? Does this one look like anything to you*?" It's a question that seems to already. There is something in this question that makes me think that the person already knows the answer or knows an answer. But it is not asked like, it's not like in a situation where a person says: "oh that looks like a sheep to me" or, you know, a question "what time is it?" And well and you respond. Whereas in teacherly discourse you will have: "what time is it?" And it is asked in a way where the person already has the right answer. And this seems to be the kind of a question and the person, the relation of the person to the others. So you see how even without having seen the video how, I am attempting to provide a description of the situation what's happening here. "*Hmm. Oh. That rock there looks like a camel." "Oh, no, that's it!*" I haven't been there, but the person saying, "*that's it,*" confirms that the answer was the one that's prefigured, preconceived in the question. So "*What do you think that landform over there is?*" There is a children's game. Do you know what I think? Or you look at the some cloud: "I see. What do I see?" [27]

In this part of analyzing the transcription, the analyst reads what is grammatically structured like a question, "Does this one look, look like anything to you?" and then provides a description of the kind of situation that she associates it with the children's game "Do you see what I see?" She uses this, as she formulates, to generate ideas for the analysis. She reads the two questions again, and stops to

orient her audience to the relations in play. She then describes a global situation that might have been the source of such a transcript, "people unfamiliar with the wilderness," and then specifies, "maybe younger people." She then articulates the nature of the data underlying the hypothesis: "The kinds of questions seem to presuppose that the person already knows the answer." The instructor elaborates that it is a kind of question where a person provides a possible description of the landform or where a person (genuinely) asks for the time. It is, she states, typical of "teacherly discourse," "where the person already has the right answer." After reading the next two turns, the reply to the question and what will turn out to have been the evaluation, she states having a confirmation that the question had a prefigured response. The turn "Oh, no, that's it" allows her to hear the earlier question as one with a prefigured answer. Here, the analyst did not just state the question to be of a particular kind but took it as a hypothesis about the possible nature of the question that was confirmed in and through the eventual evaluation turn. In fact, she first states several possible types of questions, suggesting that among these possibilities the question type with a prefigured answer appears more likely. The subsequent reading of the evaluative turn makes the alternatives —genuine questions where the questioner does not already have the answer against which the reply is to be judged—less likely. This approach bears similarities with Bayesian hypothesis testing, where evidence in favor and against two competing hypotheses is brought to bear on the change in probabilities. [28]

We see here a form of analysis that the instructor presents as a "first-time-through," where she generates hypotheses as she goes along, attempting to find confirming / disconfirming evidence. She points out that there is an initial sense that the locution might be of the type that presupposes the answer, and it is what "appears later on shows that [Heidi] already has the answer, *this* answer in mind." In contrast typical of confirmation bias, where individuals identify situations as confirming previously made taken-to-be factual *statements*, the analyst here explicitly articulates multiple possible forms of questions, though assigning higher probabilities to the one with prefigured answers, and using subsequent information to weigh on the relative probabilities of alternative hypotheses. This is evident when she arrives at the end of the third turn in the transcribed fragment, "And if you look off in the back, can you see anything else?" She says, "The question is of the kind that in the literature has come to be called by some 'preformatted'." [29]

In this instance, the analyst identifies an interactional feature, a form of question and the sequential ordering of turns, which fit the *i*nitiation-*r*eply-*e*valuation (*IRE)* pattern she is familiar with. Although this is identified as a teacherly form, it is not used to specify the type of situation from which *this* transcription may have been derived. There are formal properties of the statements (locutions), semantics and syntax, and of interaction sequences. These are characterized in terms of expressive sense, teacherly discourse or person who knows the answer (e.g., "Do you see what I see?"). In other transcripts, she identifies the same type of sequence where she points to evidence that the questioner already knows the answer, such as in a staged interview of eighth-grade students invited to demonstrate how they use a smart board or when parents read with their

children, read images, and, thereby, teach them reading images ("Do you see the bird?"). [30]

She derives that two of five participants in a situation are "in cahoots" from the fact that one (Heidi) asks a question and another (David) formulates providing a clue to the answer when the other three do not immediately respond.

Fragment 2 (Transcription 1)

18	David	Very good! Has Fred changed that much while you've been here Heidi?
19	Heidi	Not that much although he did get a bit of a facelift, he's lost his double chin. But, uh, we're really concerned that the cap rock on the hump of Fred may fall off. That ironstone. And if that falls off the hump could erode away very quickly.

The analysis

So David asks Heidi, "*has Fred changed that that much while you've been here Heidi?*" So David appears to know that Heidi is here or has been here more than once. The question also shows that Heidi has been here more than once. David knows; and David may actually be less frequently there. So because he, "*while you've been here*," if he says "*while you've been here*" it could be that Heidi has been working in that area. [31]

Without pointing directly to the grammatical feature, the prepositional conjunction *while* and the description "you've been here," the analyst uses it as a document for 1. Heidi has been in the location more than once, 2. David knows that Heidi has been in this location more than once, 3. David may be less frequently in this location, and 4. Heidi is permanently working in the (geographical) area. That is, there is a specific landscape feature, which David knows about and, as can be taken from his earlier giving a clue, has been in the location more than once. The grammatical features are consistent with Heidi's permanently working in the location for some time so that she would be knowledgeable about specific changes in the landforms that David may not be familiar with. In fact, she points out that there are multiple hearings of the utterance as a genuine question to which David does not know the answer, or one that is designed to instruct the children about something by having Heidi respond to a pertinent question. The question then is not to set Heidi up in an *IRE*-type sequence but to expose something unknown to the others present without doing so in person. It is a staging question to which David might already know the answer, but the purpose of which is not to test Heidi but to have her provide an answer for the other individuals' benefit. [32]

The analyst notes that it is Heidi who earlier had introduced the name of the camel, which now can be heard to be consistent with the fact that Heidi is more familiar with the place. The analyst points out that the "we" (in "we call him Fred") probably does not actually include David but to others working, like she does, in

the location. The instructor points to the very fact of having given a name to a landform points to familiarity with the place. And because she talks to (for) the three others, they are definitely not included in the "we," for this would be stating the self-evident. [33]

The analyst then formulates bringing together the present information with the fact that David (SUZUKI) is a known environmentalist and what she has identified as the type of questions with preformatted replies that are being asked. She further points to the (grammatical) clues that Heidi has been working in the area for a while, and to those that Heidi is in their particular location more than once. She describes a possible scenario that could have led to the transcript at hand:

> The analysis
>
> I could for example hazard a guess that Heidi is something like a ranger or a naturalist working in a particular area. There are three visitors to that park, and David is there. David works with Heidi for some time, they are in cahoots. This is my data: They know the questions and the answers that come. But David also gives away clues that Heidi has been there for a while. They actually be ... there more frequently than David. And he asks the question, "Has he changed?" [34]

With this description, the instructor-analyst has captured the essence of the situation, which the class subsequently ascertained by watching the clip. How does the analyst accomplish reconstructing an event based on the transcription without any more or less thick ethnographic description (often required by the reviewers during the peer review process)? She does so, as shown in this example, by treating the transcriptions as naturalistic protocols that exhibit aspects of the accountable work people do to produce the situation currently unknown to the analyst. That is, without acknowledging it as such, her analysis uses the transcription as an account that glosses the work done by the speakers. The analyst's self-posed problem is to find the problem that the speakers are solving. The protocol is the solution, the work that the participants did to do what they were about to do. The people in the transcription are solving some problem, and the transcription is the protocol of how they are doing and achieving it. So the analyst has the solution to the problem that her participants are solving and have solved, and she has to find out what the problem was in the first place (e.g., Heidi and David pointing out the children the special features of the Badlands). The analyst tends to take each locution as a piece of documentary evidence of a conversation in the making, where the participants themselves do not know what they will ultimately have said. The analyst's declared intent is to work up the sense that participants have for what is happening and what they are producing. For this reason, she focuses on turn sequences to see how the participants themselves react to and act upon the previous (discursive) actions. [35]

In the analyst's work, we may observe three levels of statements, which are actually the three levels of sense that constitute what has been called the *documentary method of interpretation* (MANNHEIM, 2004 [1921-1922]). Although the documentary method initially was attributed to sociological work intended to

derive the worldview of an era, subsequent work suggests that the documentary method of interpretation, at least partially, is an everyday method common to laypersons as much as to professional sociologists (GARFINKEL, 1967). MANNHEIM's notion of the documentary method of interpretation is narrower than GARFINKEL's (BOHNSACK, 1983), but it is precisely in the former's version that the instructor-analyst appears to operate. One difference is that GARFINKEL is concerned with the holistic sense of a situation, in which there is no segregation into three levels; professional analytic work, such as that investigated here, does indeed make such distinctions (e.g., ANTAKI et al., 2008). Pertaining to the analysis of transcriptions, at a first level the analyst takes note of the objective features such as what the participants actually name and reveal in their talk (Table 1). Any verbal articulation, such as "How are you today?," constitutes an action that points to and reflects an *in-order-to* orientation. However, it acquires its sense only in a shared system of anticipations and understandings (BOHNSACK, 1983). The greeting will function differently when uttered by the doctor in a consulting session, a person addressing a neighbor, or a rock star orienting to the audience during a concert. [36]

The names David, Heidi, and Amanda when participants address each other tend to give away the gender of the individuals; because the participants point to phenomena that they refer to as "landforms" and "rocks," very specific features of the setting become objectively and immediately available to the analyst. However, any one fact, such as in the preceding "How are you today?" may not point to a specific type of social situation. The other two levels are available to the analyst in a mediate, derived way (therefore ">" in columns 2 and 3 of Table 1). At a second level, there is the (intended) expressive sense. Thus, the statement "How are you today?" may be part of a meeting opening or a part of a question | response pair about a person's health status etc. It pertains to the analyst's sense of what some action actually does. For example, hypothesizing that a particular phrase may be heard as a question, assertion, or command refers to the sense expressed in and through a verbal or described physical action. At a third level, there is the documentary sense.[1] In the documentary sense, what is given in the situation is taken as document (evidence) of something that exceeds what is objectively available or (intended to be) expressed. That is, the situation as a whole is co-expressed in the concrete locution. It is this third sense that integrates the objective and expressive senses, because even though these may change, they all point to the same phenomenon. This something may be as narrow as a form of activity or a type of event (GARFINKEL, 1967) or as wide as the spirit of an era (MANNHEIM, 2004 [1921-1922]). For example, the types of questions that David and Heidi ask typically are found in didactical situations, which are also characterized by other features. Even though the features and the objective aspects are different for different classroom situations, they are different documents (manifestations) of the same (type) of situation. MANNHEIM suggests that an analyst's capacity to capture homologies in the face of very different

1 The English translation of MANNHEIM's essay renders the term *dokumetarischer Sinn* [documentary sense] as "documentary meaning." This replacement (meaning for sense) is counter to MANNHEIM's attempt to show that what is documented always presents itself in concrete form, which, inherently is available to the senses (Ger. *Sinn*).

objective and expressive forms is something special that has nothing to do with addition, synthesis, or abstraction of common features. The capacity is based on seeking and recognizing part-whole relations, where the parts, though they may be very dissimilar are manifestations of the same whole (e.g., different physical and psychological characteristics of the members of the *same* family). In the present instance, the instructor-analyst treated the transcriptions as documents of societal events (a guided tour in an outdoors nature center, a lesson teaching storytelling, an interview subsequently featured as part of a broadcast). That is, the analyst takes the objectively available features articulated by the members to the specific setting to hypothesize a range of forms of individual and social actions, and then takes both as documents of one or more *types* of situations that might have given rise to the transcription, which, thereby would be a verbal protocol of the former. [37]

5. Objective Features

Cultural objects and social situations are—like material objects—characterized by what is objectively available to participants. The objective sense related to what is indisputably given, constitutes the basis upon which everyday life and its interpretation is built (MANNHEIM, 2004 [1921-1922]). It is not surprising, therefore, that the instructor-analyst points to what can be identified as indisputably given in and through a transcription (Table 1). For example, in the following two excerpts, the analyst takes the gender of the individual talked about as indisputably given, as is the fact that whoever "she" is can be seen on the part of the intended recipients of the statement, and that she does look or intends (is intended) to look like a little girl.

Fragment 3 (Transcription 2)

04	P	Does she look like a little girl?

Fragment 4 (Transcription 10)

14	I [46]	here may be some people, some parents who think, "hmm, I don't want my children, my little girls, playing bullrush!" What do you say to those people?
15	M1 [47]	Well, if you think you can't handle it, well then, don't play ... that's just pretty much it. [38]

To derive what the statement is *intended* to do, its intended expressive sense, the instructor-analyst always identifies what is objectively given and can be pointed to. It is the basis of the data-driven method of interpretation that she encourages students to emulate and formulates to be an instructional goal. Names constrain hypotheses about the gender and cultural origin of a speaker or person talked about. Adjectives such as "little" that modifies "girl" further provide objective constraints on participants, things and persons, and events. [39]

The analyst points out that the slightest descriptions may influence analysts in the way s/he reads the data. Thus, a description such as "little girl" may lead the

analyst to read the data in terms of "little girl" rather than taking actions and talk for what they are. Thus,

> "as soon as we look at little girl, then we might look at it as 'little girl' rather than as another speaker. And as soon we look at someone as the 'little girl' then all our other cultural understanding of 'little girl' comes in." [40]

She recommends rendering the familiar strange as one of the strategies to break with the cultural habits that come when such descriptors as "little girl" and "teacher" are used. [41]

The language-in-use (or lack thereof) provides clues to the age of the participants, such as when in the conversation involving three individuals one of them says "Fern when she first got Wilbur he was too small to get selled and when he got bigger they selled." She comments that an experienced English teacher would be able to estimate the age more precisely from the type of grammatical error made in this situation. In that same context, one of the individual's used the word "inference," which troubled the hypothesis about the age of the participants, because it is more typical of teacher talk. Yet in the interaction, the person was in the position of a student, responding to another one who had a special role of supporting the generation of possible future events in the text being read and discussed. But the person who used the word "inference" also made a prediction about what might happen in subsequent chapters, which is inconsistent with the role of a teacher who already knows the story. Language also was highlighted in an instance where three individuals appeared to be discussing a book that they are in the course of reading. The participants hypothesize about what might happen in the next chapter and use words such as "inference" and "prediction," and are reflexive about the use of questions ("My question to you was ..."). The analyst uses these pieces as documents for a particular type of societal situation: A teaching strategy to get children read critically ("this may be a teaching strategy for teaching kids to read, and to read critically. Then what you want to have is them to anticipate, just what might happen"). [42]

The analyst attends to grammatical features such as the differences between a definite and an indefinite article, especially when these occur side by side. The definite article points her to something that those in the situation already share and can orient to. The same is the case for the use of the demonstrative pronoun "those." The analyst suggests, "We seem to be in the middle of something. Not at the beginning because there is something about "*like some of those questions you can answer*.' So it's about *the* questions they can answer." An example where the in/definite article arises in the transcription is provided in the following excerpt.

Fragment 5 (Transcription 2)

08 P Would you be the little house?

The Analysis

So *Would you be the-the little house?* Now it's not *Would you be a little house*. It's *the little house*. Here's *Does she look like a little girl*?, *Would you be a little boy?*' And here it's *the* and that might actually turn out to be significant in the sense that "a boy" [Turn 06] and "a girl" [Turn 03], it's indefinite. But here it's a definite article. And if the teacher uses the definite article whatever is to come may already be pre-figured or known to the participant namely there has to be, there is some house ... to be involved. [43]

She describes the use of the definite article as "striking her interest," because "there is something definite about what is to come." This subsequently is taken up as a clue to the fact that Mikayla is not telling a story unknown to everyone else, such as frequently during "show and tell" or "circle times," but that the teacher already knows the story, which she assists the girl to tell. The instructor offers "a hypothesis": "The teacher somehow knows Mikayla's story already, and what is to come, and so she appears to be scaffolding or whatever, Mikayla's story to be enacted, in that situation." [44]

Objective features are important in the sense that they allow a reconstitution of the world that has given rise to a protocol through the eyes of those involved. However, the analyst does not consistently point out the same types of objective fact; instead, what facts come to be highlighted is a function of the sense about the situation as a whole, which, in turn, is a function of the objective sense that is associated with individual words or statements. That is, the analysis scours transcriptions for anything that is available to the participants and that they take to be undisputed as factual; but this scouring process itself is determined by the overall, documentary sense that is in the process of developing as the analysis proceeds. If there was evidence that the factual nature of something is actually contested, it is this contest itself that can be objectively pointed to, for example, by means of alternative naming or describing of whatever is the object at hand. Reconstructing the viewpoint of the actors or witnesses in the situation or as available from the transcriber is perhaps the most important aspect characterizing the analyzing-aloud sessions. [45]

6. The Viewpoints of Actors and Witnesses

Whereas in many theoretical approaches, (social) relations are the result of individuals entering in an interaction, the cultural (societal)-historical approach takes societal relations as the phenomenon that constitutes all higher psychological functions, consciousness, and personality (LEONT'EV, 1983; VYGOTSKIJ, 2005). Anything that can be attributed to mind *is* a societal relation (first) and, therefore, enacted in relation. From the ethnomethodological perspective, it is in the relation that institutions become accountably rational (LYNCH, 2000). We do not therefore need to know institutional relations beforehand, but, as FOUCAULT (1975) suggests, differential knowledge and

power are effects of relations. In the present study, the instructor-analyst enacts what might be considered a backward analysis, where institutional positions such as between teacher and student are the result of the relational work articulated rather than the conditions of this work. The expressive sense therefore is derived from the ways in which the participants in the transcriptions related to each other (Table 1). The analytic perspective taken here also characterizes the work of the instructor-analyst, who reconstructs the situation based on what the speakers exhibit to each other and what they and their witnesses make available. [46]

6.1 The actors' point of view

The analyst may in fact hypothesize a particular type of situation, for example, irony, but then set the hypothesized in relation to another turn to see whether what *can be heard* as ironical was in fact heard in the situation as such. As part of the analysis, a first step might actually be a form of nontechnical appreciation—e.g., identifying a situation as rudeness. But to do so "is very definitely meant to be a first characterization of something in front of you, into which you then drill down and excavate, to discover its structure and its connections to the terrain around it" (ANTAKI et al., 2008, p.26). This statement reflects the fact that we do not generally experience situations in terms of three layers of sense but instead we experience situations as wholes.

Fragment 6 (Transcription 4)

05	Kent	why did he want to exercise when he could make someone happy ... by making bacon

The analysis

Okay here is a sort of a reflexive comment: W*hy would you want to exercise when you could become bacon and make someone else happy eating bacon*? So that's my hypothesis, maybe he wants to exercise, so there wasn't much exercising, and then this may be heard as an ironical comment, *Why would you exercise if you could become bacon?* And here, maybe he wants to lose weight, and so he doesn't have to become bacon? [47]

There is a focus on pairs of turns rather than on the individual turn, for the orientation to the individual turn might lead to inferences that do not actually matter to the unfolding event. In one instance, for example, she points out that "one may hear ... as almost ironical," a hearing to be discarded because the following turn "does not play with it," so that irony does not have an explanatory role "in the conversation." [48]

The actors participating in the production of an activity of which the transcription constitutes the protocol do not know what will come of their doings. What their (discursive) actions bring about will have been known to them only after the fact (SUCHMAN, 2007). Analysts interested in recovering a situation as it appeared to the original situation follow a strategy of "first time through." In this mode of working, "the objects worked on in the first time through are novel and thus fluid and indeterminate" (ASHMORE & REED, 2000, §37). The analyst both followed

this strategy (e.g., as shown above) and formulated the need of doing so for the purpose of her audience. Thus, she points out how a statement such as 'The grade eight students [are] explaining how they use a smart board" is possible only a posteriori. For at the time someone starts to speak it cannot be known whether s/he will have explained anything in the end. She further suggests, "first-time through means that nothing that has happened after, nothing that I knew only afterwards can be used in the analysis" and "I use the method to show what is going on, what people *actually* make available to each other." Although the analyst begins to "overhear" the conversation somewhere in its course, the first-time-through perspective still gives her the sense of an unfolding project that captures the participants' own uncertainty about precisely what it is that they will have produced once everything is said and done. [49]

Reading the transcription with the correct temporal order is important for hearing speakers in particular ways. For example, in a transcription where a teacher apparently assists children in play-acting a narrative, the precise temporal order of action and text matters. The statement, "Okay, little house" can be heard differently when it precedes a girls representation of a house, accompanies it, or follows it; and it also depends on the intonation, for produced with a rising intonation it may be heard as a question, whereas with a falling intonation, as a confirmation. If, for example, in a situation where a teacher is saying something that can be heard as an invitation ("Okay, a little house") but a child has moved or moves with the beginning of the locution, then she may takes this as "only the indication that there is a shared anticipation of what is to come. And even though the teacher seems to provide a main narrative, the children act as if they already knew what was coming." The temporal relations allow her to attribute different probabilities to the hypotheses concerning the function of a statement as running commentary of an observable event, invitation/instruction, or after-the-fact description/affirmation of what has happened (see below). [50]

6.2 Formulating

An important ethno-method for making aspects of social life visible is denoted by the term *formulating* (GARFINKEL & SACKS, 1986). Formulating occurs when a member to the setting says with a limited number of words what is, was, or will be happening. Formulating contributes to making "activities ... *accountably* rational" (LYNCH, 2000, p.43). When an interviewer begins by saying, "Let me ask you a question," then what will come after already has been formulated. Formulation also occurs when replies to a statement saying that she felt insulted and the original speaker says that he was only joking. In such instances, there are alternative descriptions of precisely what has been done. Formulating occurred at three levels: 1. in the situation by participants for participants, 2. in the situation by a participant for a different audience, and 3. in the transcription by means of punctuation and other features. [51]

6.2.1 In situation for other participants

Picking out formulations is a pervasive aspect across all sessions where and when this occurs. That is, the instructor-analyst picks out statements as formulating what can be seen or how a situation can be seen. Sometimes even a statement such as "Okay, a little house" may be heard as a formulation of what is currently happening: a child is enacting a little house. The analyst encourages her graduate students to focus on formulations rather than to speculate on inaccessible intentions, thoughts, or beliefs. The very fact that something is formulated provides her with clues as to the kind of social situation that she is in the process of attempting to uncover because the formulations render problematic or articulate what was, is, or will be happening.

Fragment 7 (Transcription 4)

01	Sophia	?? was that a question?
02	Kent	(no no -)
03	Kent	(yeah, no), that was like an inference

The analysis

Was that a question? So someone appears to have asked a question, this was a question whether there was a question, uh *no no yeah no, that was like an inference*. Okay, here we have a question | response. We don't know who spoke before, but you see the question | response, negative, and here *yeah*, *no, that was like an inference.* So perhaps Kevin might have said something; and it was not actually a question but an inference. So *yeah no it was*, so there it's both a question and not a question. And then we see an elaboration of what it was. [52]

In another transcription, when she comes across a statement such as "wait a minute, let me finish the freekin' sentence," the instructor-analyst takes this to be a formulation of the fact that the person has been cut off by the preceding speaker and prior to having finished saying whatever she was in the process of doing so. Formulations do not only occur in the forms of verbs, where the nature of an action is named and thereby brought to attention. Adjectives, too, formulate the nature of a (material) aspect of the situation. Thus, in the statement," What it shows is brainwave activity basically. It's a very simple but fairly accurate machine" (01, K, Fragment 8, Transcription 6), an aspect of the context, a device showing brain wave activity, is characterized as a type of device that shows something "basically," that is, in general. Further descriptions of the device as being "very simply" and "fairly accurate" become, in the reading of the analyst, formulations of the type of device being used and what the situation then might constitute (i.e., a demonstration rather than a real experimental setting). The instructor-analyst points out that the use of these adjectives "co-articulate something, for example, that this is a demonstration, a lesson for the specific audience of the talk. [53]

6.2.2 Running commentary

Formulations may appear in the form of narratives of what is presently happening. In the following fragment, the analyst hears "Okay. A little house" as a running commentary of events unfolding before the eyes of those present.

Fragment 9 (Transcription 2)

08	LG	[walks towards LG2 and stands beside LG2]
	LG3	[stands up, body swinging, hand to mouth]
	LG2	[grabs dress, looks at LG3,walks away from LG3 behind LG to stand beside LG]
09	P	Okay. A little house. How should Mikayla since it's your story how … should she make herself?

The analysis

So we have uh, we will have a pairing and the little house and is the third. Grabs dress, looks towards LG three and walks, stands up, body swinging from side to side, hand up to mouth, okay a little house. So, whatever has happened, we can see this as an event and the commentary. This ((*A little house*)) describes what has happened here, so whatever this configuration tells us, is being described. *A little house*. Okay then a little house has been formed in this particular situation; and those present, they'll understand that the little house has been formed. So it's both as a description of what was happened and a description of what was supposed to be, *Would you be a little house?* So these events have produced the little house. [54]

The analyst notes that the teacher invites children, and she comments on how the story plays. There are two levels to teacher's contributions: one organizes whatever event is (to be) unfolding and another one comments what the children are playing out in the situation. Similarly, a locution such as "Would you do that?" without further information is ambiguous, for the "you" might be a specific person in the situation, who, by means of a body movement and orientation may be the selected recipient, or it may be a general "you" in place of "one," "Would one do that?" ("Oriented, she addressed a particular person, not just generally.") [55]

6.2.3 Narrative commentary from outside

There are repeated instances in the database where the transcriptions contained two different audiences without being marked as such: a video 1. shows a teacher and then shifts depicting the teacher talking about her teaching, 2. features a talk show where the host engages the guest and then the audience, or 3. is a broadcast showing the situation being reported on and the anchor's commentary. In these instances, although the transcriptions that the students produced do not indicate the different level—sometimes for the after-the-fact stated intention to make the task more difficult—the analyst detects such differences in the audience for which a stretch of talk is designed. If this is so, then the talk itself (self-referentially) exhibits features that allow participants and analysts alike to know what kind of situation they are in. [56]

In one instance, for example, she points out three different levels, where the "I:" in turns 16, 18 and 20 actually refers to two different individuals (as it subsequently turns out to be). In fact, the instructor hypothesizes there to be three different registers, one between 16 and 18, who might be the same person whereas 20 is a different person speaking in a third register.

Fragment 10 (Transcription 10)

16	I	So what do the parents think?
17	P	Some parents have come and asked about it. They've wanted to be reassured ... but I think generally, I've had really good support from them. [Kids yelling and waving their arms in front of the camera.] I think our understanding of what is safe really means, is changing. And actually, kids are safe doing things, that, maybe we have thought, weren't safe ... for quite a few years
18	I	For these educationalists, the risks involved with a bit of rough and tumble, are far less than the risks associated with an activity.
19	P	The only time they get into trouble is when they're bored ... and they really don't get a chance to be ... [laughter]
20	I	And yes, before you ask, the kids do go back in the class after playing bulrush, with a bit of mud ... but the full on mud sliding, well, that's before they head home ... to the washing machine I presume.

The analysis

> [T]he interesting thing is that up there above ((*Turn 16*)), the person was in a questioning position. As if he or she was interviewing. Whereas here, this ((*Turn 20*)) is a statement that is as if the person knew. So, this ((*Turn 16*)) seems to be a different register than this one ((*Turn 18*)), and this one is again a different register ((*Turn 20*)) that was spoken to a different audience. The audience that followed the camera, and the other is oriented towards the people. Do you see how this feels different than this ((*Turn 20*)), this one ((*Turn 16*)) and this one ((*Turn 18*)), this one ((*Turn 20*)) is about that situation ((*above Turn 20*)), and this person *I:* ((*in Turn 20*)) must be familiar with the situation and now is talking for someone else. Because it is not a question, because the person knows that after playing bulrush the kids are going back. So the person already found out, from previous parts of that, or even before the camera turned on that person has found out and is now explaining, to whoever the audience, the recipient is of that this explaining that yes. May be a commentator. [57]

In another situation, the analyst repeatedly articulates "Let's look at first impression" as a key turning point where the voice changes. She first gives the example of the change of voice in novels, and points to the quotation marks that one might find there to distinguish the two levels. She then focuses on Vicky as setting "us" up. The analyst then articulates a situation in which such a set up

might occur: A teacher telling others about how to teach. Vicky prepares the students for a demonstration "to give a first impression," and then talks at a different level, where she explains to other teachers as the audience ("we're the teachers, we listen to Vicky").[2] She subsequently uses that there are two levels of talk from the fact that a second voice talks about Vicki: "Vicky's using traffic lights together with the controversial no hands up, policy." She takes this as the voice of a commentator talking about what Vicki does, who, in other parts of the transcripts, is actually shown teaching a lesson ("perhaps a voice-over, there seems to be an explanation of what's going on, if this is the case and here ((*Turn 01*)) we're in a real classroom, and there's ((*Turn 04*)) a commentator explaining to us what is happening." She actually hypothesizes three levels of talk, Vicky teaching, Vicky talking about teaching, and someone else commenting on what Vicky does. Focusing on the two turns "Does anyone know the relevance of that question? Hands down." and "Vicky's using traffic lights together with the controversial no hands up policy," followed by further "classroom talk," the analyst notes "the commentator commenting on this teaching lesson might tell the audience, 'Now you need to watch-watch, it's a hands down policy,' and the next instance what we see [is] the teacher implementing a no hands up policy." [58]

6.2.4 Transcriber as witness

The graduate students had been instructed to prepare transcriptions that contained "no clue" as to the situation. But during these sessions, the analyst repeatedly points out that there are in fact clues that students had not thought about as such. In these situations, the instructor-analyst treats the transcriber as a witness of the original situations. She treats something like a question mark in the situation as an index to the expressive sense on the part of the witness, who might have heard a question; and this is taken as an indication that the original statement could be heard as such ("You have an exclamation mark, which ... is sort of made as an assessment"). For example, she points out that a student "ha[s] an exclamation mark, which points [out] that this [was heard] as sort of, made as an assessment." That is, the analyst makes use of the ethno-methods of observers—here the transcribing student—to understand situations in particular ways and draws clues about the data drawing on the cultural competence of the student. She explicitly points to the uses of question marks, pointing out that the transcriber has heard a question, and then suggests that this does not mean that in the transcribed event the locution has functioned as a question.

2 The analyst subsequently finds further evidence that this might be a demonstration lesson, when one of Vicky's turns reads "(whispers) hands down, hands down" and the subsequent on begins with "There's some very enthusiastic students there who were dying to speak out." The analyst suggests, "They're so eager, they really want to participate even though this was this demonstration lesson for her method."

Fragment 11 (Transcription 2)

04	P	Does she look like a little girl?

The analysis

We also see the question mark here and what I suspect is that the transcriber is a competent speaker of the language and here is a question [mark] if there's a there's a question. *Does she look like a little girl?* Uh grammatically we grammatically that one is like a question. But the question mark also could mean that the prosodic feature, I mean, that the pitch has gone up. [59]

The punctuation is indirect evidence, where the analyst draws on the mundane analytic competencies of the people transcribing the video to articulate their understanding of what is being observed: a question, exclamation, statement. In the following example, she takes into account the quotation marks that appear in the student-provided transcription.

Fragment 12 (Transcription 4)

18	Kevin	Yea, cause it said ah I got a plan [60]

The analyst comments, "Yea cause it said I got a plan." So this student is generating a hypothesis or uses some evidence from the text. Actually, the transcriber gives us a clue that this was a quote. You can hear whatever was said as a quote. The transcriber knows that this is from the book or can hear that it's a quote." She then goes on explaining how she had abandoned in another session the hypothesis about possibly missing quotation marks, which would have provided a clue about two levels of talk. In the present situation, the quotation mark is consistent with the hypothesis of two levels of talk, one pertaining to the hypothesized situation of a book that students are reading and discussing. [61]

6.3 Relational analysis

> "[The] inference-making machine ... can deal with and categorize and make statements about an event it has not seen. And the first thing about the sort of events it can handle is that they can be sequential events" (SACKS, 1992, p.115).

6.3.1 Focus on ordered and ordering turn sequences

Throughout the analysis sessions, there is an attention to the ordered turn sequences. Turn pairs and longer turn sequences, in the ordered and ordering ways in which these unfold, provide materials for hearing how actors themselves hear what is being said and done, on the one hand, and their institutional relations, and the different relations to the topic at hand (e.g., knowledge). Thus, rather than attributing intentions, knowledge, understanding etc. to the actors, the analyst uses turn pairs and turn sequences to work up how the actors themselves deal with what is being said and done. She is emphatic about not reading statements through a lens of intentions. For example, when a transcription states "Would you be a little boy?," this in itself should not be taken as evidence that a

question has been asked. This is so even though there is a question mark and even though the structure of the sentence has the form of a question. Instead, she points out that what matters *in and to* the situation is how others respond to the statement. Thus, she explains to her graduate students, paired with the description of an action "*Would you be a little boy?* | *Gets up, stands next to LG, hands by side*" "would be an invitation to another girl to play the role of the little boy" rather than a question | response pair. Instead, even if staying with one locution for an instant, she articulates alternative possibilities for the next turn, which then points to different possibilities. Thus, for example, she contrasts a girl's getting up and entering the center of a circle with her possibly saying, "No I wanna be the little boy." To understand the situation, its unfolding and the entailment of actions need to be known from the inside. This requires the actors' view rather than the analyst's interpretation of what a speaker "really means." [62]

She considers turn pairs even when the second person does not speak, such as in the transcription which will turn out to be an excerpt from a lesson by the early childhood educator Vivian Paley.

Fragment 13 (Transcription 2)

01	P	Come on inside. Does she look like a little girl? [looking at little girl, left hand pointing at little girl, brings hand towards herself, looks down at page]
02	P	Here's Mikayla's story LG: [gets up and enters center of carpet stands and swings arms] [63]

She points out that in this situation, "we might see [Turn 02] as an invitation | acceptance pair. So ["Come on inside"] might be an invitation to enter the circle and ["gets up and enters"] an actual entering of the circle." This action thus constitutes the acceptance of an invitation. [64]

6.3.2 Staged questions

One important dimension of question | reply turns in the educational literature has been whether one person (generally the teacher) already has the answer against which another person's (generally a student) reply is evaluated (POOLE, 1994). The basic form of the sequence consists of three turns that have an IRE structure; teachers tend to take the first and third turn, and students the second. An example of this can be seen above when David and Heidi ask questions about landforms for which they already have preformatted answers (i.e., camel, pyramid). This is precisely how an ordered turn-taking sequence as an instance of *IRE* then would point to a "didactic situation," where the type of didactic situation—school, parent-child, outdoors center—still remains to be determined from other particulars of the transcription. In the case described above, those who question (David, Heidi) also assess using evaluative terms. But the instructor-analyst points out evaluations where such terms are not explicitly

made. As she works through the following three lines, the analyst points out that there is an apparently confirming repetition of the preceding reply followed by the use of "else," which constitutes the preceding "cooking" as one of the activities that Kiana had indeed engaged in.

Fragment 14 (Transcription 11)

01	M	Kiana, what did you do today
02	K	Er ... cooking
03	M	Cooking! What else did you do? [65]

The particular structure in turn sequences has been described as typical of didactical situations (KOSHIK, 2002; ROTH & THOM, 2009), where the "what else ...?" phrase may actually be reduced to an "and" followed by a designedly open pause that provides students to expand or elaborate upon a preceding answer.

Fragment 15 (Transcription 2)

03	P	A little girl.
	LG	[holds fingers]
04	P	Does she look like a little girl? [66]

In the case of the above transcription, the analyst comments that "this question asks something that is recognizable for all the participants in this situation." That is, she treats the turn as something that can be confirmed because of evidence available in the situation. This is different from preformatted answer type questions where the recipient does not or cannot immediately know the response. It is not a simple picking out from the environment. It is different from the example from the outdoors center, where the query is about something that the recipients do not immediately pick out in the environment so that David (see above) offers a clue. [67]

But not all such sequences are to assess someone else; they may appear in contexts "where people actually learn to see certain things." When David and Heidi assist the three visitors in picking out specific landforms. The analyst uses analogies to elaborate types of situations in which questions are used to assist newcomers of some kind to learn to see relevant entities (e.g., "Do you see what I see?"). She treats a question as a document of a situation in which those who know teach others how to identify some perceptual feature. But in both situations, the asking for things to which the answer is recognizably known can then be treated as documentary evidence produced in *some kind of* didactical situation. This narrows the search for the type of situation, leaving open the specific kind of didactical situation that may actually have produced the protocol. [68]

The analyst identifies a staged question in the following example. The transcript reads:

Fragment 16 (Transcription 5)

03	I	And what is that behind you?
04	H	It's a SMART board. [69]

Once the question is identified as asking the obvious, the analyst takes it as a clue for identifying the situation that might have generated this talk. The question was for didactic purposes. She suggests that this was not a genuine question, that is, a question that is asking for something the interviewer does not already know the answer. But, in this situation because the respondents are standing next to the object asked about and are providing a quick response, the analyst states that I: "knows the answer? And knows that the students, the other people know the answer... . So it feels like a situation that's set up." When the interviewer asks, "Is this the first year you used the SMART board?," the analyst points out that the interviewer obviously knows that the respondents have used the SMART board at least during the (school?) year that the conversation took place. [70]

6.3.3 Institutional relations

During every observed and recorded session, the instructor points out the need to show the work done in and as relation that allows people to recognize institutional differences rather than using institutional differences to explain relations. In the preceding case of *IRE* sequences, the analyst tends to point out that these exhibit participants' orientations and production of knowledge/power differences. Such turn sequences both reify and produce institutional differences and differences with respect who knows or determines what constitutes appropriate knowledge. The analyst suggests that not knowing beforehand the institutional relations of the participants assists her in doing a more careful and symmetric analysis. Thus, for example, analysts might overlook the role students play in teacher development that occurs as part of a *zone of proximal development* because the analysis presupposes that the institutionally designated student is in fact the student (learner) and the institutionally designated teacher is in fact teacher (e.g., ROTH & RADFORD, 2010). One of the instances in which the reverse form of analysis is illustrated occurred in the context of a transcription that features three individuals (Sophie, Kevin, and Kent) apparently discussing a book. In the following excerpt, the analyst arrives at Turn 17 in the transcription, and then derives from it a special role that Sophie plays in the conversation.

Fragment 17 (Transcription 4)

17	Sophie	Yea maybe ... that kind of (pointing at Kevin) answered my question about you, ah, said about um, Charlotte that um ... well my question was how is Charlotte going to save Wilbur?

> The analysis
>
> And there's not sufficient evidence for me to suggest whether Sophie might be a teacher or a teacher aide or is another student. I don't have further evidence or further clues in here at the moment... . If it's a teacher then my question, then the role is very different from the other two, sort of guiding people. If it's another student, then in this interaction, this student has a very important role, namely generating questions. Here is a questioning going on that's not of the same kind as what they do. It seems to be more "what if?," asking for more possibilities, more generation of possibilities. [71]

The analyst first points out that up to this point there is insufficient evidence for deciding whether Sophie is a teacher, teacher's aid, or another student. But the analyst does point to the difference between Sophie and the two male participants. Sophie, in this analysis, appears to have the role of asking for possible continuations of the story that is being discussed so that her role is one of assisting the group in generating possibilities. [72]

7. Hypothesis Generation and Testing

The classical approach to hypothesis testing is based on falsifiability (POPPER, 1962), whereby the investigator states the null hypothesis and then, by means of experimental method, attempts to reject it. The logic assesses the probability $p(data|H_0)$. In this approach, efforts seeking to confirm of a hypothesis are taken to be a form of bias (confirmation bias). On the other hand, in the BAYESian approach the data play a different role. Data are used to update the probabilities of alternative hypotheses (e.g., DOSE, 2005). The BAYESian approach therefore establishes the probability of one or more hypotheses $p(H_i|data)$. Each time new data are available, the probabilities of the hypotheses under considerations are updated yielding what is called posterior probabilities. The instructor-analyst in this study can be understood in terms of the creation, maintenance, and updating of multiple hypotheses. The probability of any hypothesis therefore is a function of the history of the investigation as ever-new data are brought to bear on it. [73]

Any analysis starts "cold," which leads the analyst describe what she sees and reads. This "generates ideas," and, thereby, overcomes the situation of being blank: concerning what precisely it is she is looking for in the transcriptions that will provide clues as to the type of situation that could have generated the transcription. She describes because she "does not have a handle [on the situation] yet." However, she formulates not just describing but also to be "explain[ing] and link[ing] descriptions to other things." These are then used as starting points to produce a description of the type of situation as a whole: "So you see how even without having seen the video how I'm attempting to provide a description of the situation what's happening here." As she reads along, the analyst generates multiple hypotheses about global issues, such as what might be the underlying affair, and local issues, such as whether a locution will be treated as a (perfunctory, preformatted) question or whether it might have some other function. The instructor-analyst has already hypothesized that Heidi might

be a naturalist taking David and three younger visitors around a park when, upon reading Turn 18, she states among others that there are two possibilities for a statement that the transcriber has heard as a question.

> Fragment 18 (Transcription 1)
>
> | | | |
> |---|---|---|
> | 18 | David | Very good! Has Fred changed that much while you've been here Heidi? |
>
> The analysis
>
> There are two possibilities. The question is not the type of question that David truly doesn't know the answer [to], and then it would be a genuine question. And it could also be one a didactic one. He might want Heidi to explain something that she didn't think of in the situation, but he wants her to bring it in the end. Rather than him telling, she would. [74]

Here we see the use of constructions that generate possibilities. For example, the auxiliary verb "may," used four times in this quotation, expresses subjective possibilities of what may be the case. In the last case, the "may" introduces a whole situation of which the "we" might be a document. A further possibility is introduced by means of the past form "could" to express possibility, here, that the clue might point her in the direction of another hypothesis. [75]

Some of these hypotheses are disconfirmed, whereas others are not and, therefore, remain in operation. Generating hypotheses is a form of experimenting with understanding. In fact, even though she talks about testing hypotheses, it is also like making a prediction from the current understanding, which, when confirmed, tells her something about her own understanding of the situation.

> I generate hypotheses simply for the pleasure of generating hypotheses, which I can then test afterwards. So I'm almost conducting an experiment with my own understanding and then I can sort of weed out. Because if the hypothesis is confirmed—is not a very good research to confirm hypotheses; it's better to reject them. But if it is confirmed it shows me that that I have somewhat of understanding for what is going on. [76]

While emphasizing the need to experiment and generate hypotheses, the instructor-analyst is explicit and adamant about the weakness of simply confirming hypotheses. Instead, as she explains to her students, it is better to reject hypotheses ("now we have evidence, it's a disconfirmation, that it's Vicky explaining to an audience, it's Vicky in a class and we have a second commentator explaining"). Generating and testing hypotheses, the result of these experiments, allows the analyst to "weed out" viable from non-viable hypotheses, understanding from non-understanding. [77]

Throughout the sessions, she points out the need to stick with the data at hand, to take these as documentary evidence ("you are trying to document") in the process of "piecing together the story," "piecing together a plausible narrative," "a plausible explanation," to the degree that the available data allow. She

encourages students to use only what is present in the data and to avoid "invoking a concept that's really from far away." She invites students to "get back to the data and work upwards," "to come up with explanations and explications *only after* we have described what is going on." [78]

Part of stating and testing hypotheses is articulating variations in what could be alternative next turns. How a facial expression is to be taken—as a grimace or a coincidental reaction to an itch or as something else—depends on how others in the situation take it up, and do so in an accountable way, that is, exhibit to others that it is to the facial expression that the reaction occurs. The face might be the next turn to a teacher's "Do you want to play the house?," followed by the teacher's turning to another girl saying, "Do you want to play the house?" Or, the instructor offers, the speaker might say, "Come on, it's just playing a house."

Fragment 19 (Transcription 2)

08	P	Would you be the little house?

The analysis

So you have further evidence that it might be grudgingly. It may be something else. The kid might not feel well. It might be an indication of ... if the teacher said, "Aw come on, do it, play the house," and the girl says "Well I actually don't feel so well" or "my stomach aches" or something, then you would say, "Oh, it's not. The grimace or grudging, it would be uh, an indication that she doesn't feel well... . A grudging look may actually be an expression of not feeling well. And so I would look for more evidence that it was actually a grudging look rather than just expressing something else. [79]

In the following instance, the instructor is talking about a particular speaking turn:

Fragment 20 (Transcription 3)

01	Vicky	So you may be on red you may be on amber, like some of those questions you can answer ... You may be on green. Let's just look at first impression. Would everybody just show me ... [80]

She has already hypothesized that there might be a teacher demonstrating a particular teaching strategy to the camera, which she comments upon at a different level. She then offers an alternative hypothesis: "If it was a class situation she might have said, 'Okay students, I have here, I have three traffic lights and from now on when I ask questions, I ... don't want you to respond right away'." She then talks about having generated two hypotheses: "[This is] one situation where she actually talks to the students about what is going to happen and how they have to respond, and how they indicate that they are ready for a response, or she might explain it an audience of how she's teaching." At the moment, the analyst does not have information as to which one of these hypotheses is more probable, and she needs further information to make a decision. She later finds evidence that Turn 01 is part of a class situation, more a

science than a social studies or history lesson, and more probable a physics or chemistry than a biology lesson; and very likely a mathematics class. She uses such information as direct evidence to discount one of the hypotheses. [81]

8. Discussion

This study was designed to investigate how an experienced social scientist works with transcriptions of unknown origin to her to arrive at the description of a most likely situation that produced the transcription. The transcriptions were produced in introductory graduate classes on qualitative methods. This work was made available to the students in analyzing-aloud sessions that the instructor-analyst intended for instructional purposes: to exemplify rigorous data-driven analysis. In all lessons, the analyst, to the general surprise of her students, succeeded in reconstructing the type of situation that had produced the transcription (see Table 1). She did so by taking each transcription as a naturalistic protocol in which participants made available to each other the accountably rational properties of their respective societal situations. By attending to the transcription in its unfolding by means of a first-time-through attitude, she took the transcription as the result of a self-explicating societal process in its unfolding. For this analyst the transcription (verbal protocol) is the solution to the problem of the social actors to make their talk and actions naturally accountable and visible (ANDERSON & SHARROCK, 1984). The analyst then is in search of the problem that fits to the situation she already has at hand. [82]

The analyses were characterized by an attention to the indisputable, objective properties of the situation in the way the participants in the transcription made these available to each other—even when the participants were not characterized and denoted only by a single letter. But this attention, as previously suggested (GARFINKEL, 1967; MANNHEIM, 2004 [1921-1922]) and shown in the section on the objective sense, already presupposes a pre-theoretical and atheoretical, holistic apperception. The analysis works out the relations between the different forms of sense that can be made out. Moreover, rather than attributing intentions to the actors, the instructor-analyst focuses on relations exhibited in ordered and ordering turn pairs or sequences at talk. She thereby arrived at hypotheses concerning the expressive sense of *joint* actions, for example, identifying *IRE* sequences and, from these, denoted some statements as "preformatted answer questions" or as "querying the self-evident" (Table 1). Together, on the basis of the objective and expressive sense that she made out in a transcription, she arrived at hypotheses about the types of situations that might have generated the talk. That is, she had taken the protocols generally and the identified objective properties specifically as documents of types of situations that played themselves out in the concrete situation that led to the specific transcription at hand. In this process, she exhibited the three dimensions of an interpretive method that MANNHEIM (ibid.) denoted as the *documentary method of interpretation*. The concept was taken up by GARFINKEL (1967), who argued that it was a method used by lay and professional sociologists alike. However, in his examples, the situation tended to be known and investigators produced documents to constitute, for example, "a life history or a 'natural history'" (p.95). Discussing the suggestion

made by quantitatively working sociologists that the documentary method constituted a scientifically erroneous procedure, the scholar points out that the objective facts and the literal situation descriptions they yield alone never "make events sociological ones" (p.103). The present study shows how an analyst, working with the transcriptions in a rigorous way, arrives at hypothesizing, with a high degree of accuracy, the nature of the original situations—as judged by those who produced the transcriptions and, in many cases, provided the original video. To my knowledge, GARFINKEL never articulated in any concrete detail the kind of analyzing work underlying this method. Although the documentary method has become an important aspect in the toolbox of qualitative researchers in the German-speaking research community (e.g., BOHNSACK, 1983; BOHNSACK, PFAFF & WELLER, 2010), I have not found reflexive analyses exhibiting analysts at work—in the way conversation analysts investigate conversation analysis at work (e.g., ANTAKI et al., 2008). That German research community takes up and goes beyond GARFINKEL's use of the documentary method by developing more explicitly the relation between the literal objective sense of a situation to the expressive sense of actions and to the overarching situation type (BOHNSACK, 1983). [83]

MANNHEIM's documentary method has been related to PEIRCE's abductive reasoning and SCHUTZ's prospective-retrospective method of understanding (BOHNSACK, 2010; SCHEFF, 1990). In abductive reasoning, the analyst derives, beginning with some result (here the transcription of a situation), the type or types of situation that in the concrete cases transcribed by the graduate students leads to the data accountably at hand (Figure 2). She does so by picking out objective features that allow her to construct interactional (expressive) features, which she associates with particular social situations. The structure of abductive reasoning, therefore differs both from deduction and induction but has elements of both (Figure 2).

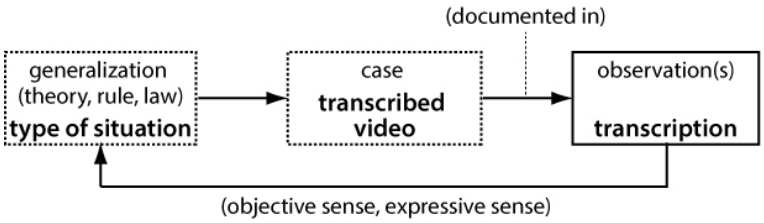

Figure 2: The analytic process (bold-face) mapped against the parts of abduction (regular face) [84]

The analyst's approach differs from abduction in the way it tends to be presented (e.g., ECO, 1984; REICHERTZ, 2007). In discussions of the abductive method, signs are taken to be salient and associated with one or more specific rules. Thus, the imperative "watch!" may be heard as an invitation to watch out or as a directive to look at/see a watch. In the case of multilingual situations, the same sound may be heard differently depending on which language is hypothesized as constituting the rule (e.g., Ger. *Moor* [moor, bog], *Moor* [Moor], or "more"). Such cases constitute *undercoded* abduction (ECO, 1984, p.42), where the rule

generating the result has to be selected among alternative hypotheses. As the present study shows, what is to be taken as a sign that points to the invariant that discloses the kind of situation is at stake. Abduction therefore has been described as the "tentative and hazard tracing of signification rules which will allow the sign to acquire its meaning" (p.40). In the present situation, the instructor-analyst does not know, however, which aspects of a given protocol point to whatever situation. In the beginning of an analysis, there would be a very large number of situations of a specific culture (given language). Moreover, discussions of sign interpretation in the literature take the existence of a specific sign (e.g., ECO, 1984). In the present case—as in the case of natural scientists interpreting unfamiliar graphs (ROTH & BOWEN, 2001)—the constitution of the signs that actually provides clues as to the source of the data is itself part of the process. That is, although the protocol is objective in the sense that the participants produced it to constitute the social situation that they were part of, the analyst's task is this: "systematically to interrogate the particular case by constituting it as a 'particular instance of the possible'" (BOURDIEU, 1992, p.233). The purpose of the analysis is to separate the contingent aspects from the invariant properties of a type (or types) of situation of which the transcription was a protocol. At the heart of this activity, therefore, is a data-driven model building process, where the model to be derived already presupposes a separation of contingencies from invariants. [85]

In the work of the instructor-analyst, we see a process of moving from the concrete, from which behavioral invariants are extracted (expressive sense), to the general (situation types). The specific verbal protocols are treated as documentary evidence of types of situations. The data do not merely exhibit singular features that point to one and only one specific situation. The data are related to types of situations; and, in this, the analytic practice exhibits the representativeness of these specific data for one or more sets of social situations in general. The analytic practice thereby exhibits generalizability in that the kind of practical sociological work (social reasoning) identified is typical of a class or classes of social situations. Generalizability is an important issue in social science research not only in research drawing on experimental and other quantitative methods but also in a variety of qualitative / ethnographic approaches (see contributions in ERCIKAN and ROTH, 2009). There is a debate in the social sciences concerning *generalizability*, which "constructivist" researchers reject and instead replace with transferability (GUBA & LINCOLN, 1989), and there are often contentions that application of research results in other situations is not the goal of qualitative studies (LINCOLN & GUBA, 1985). [86]

Great similarity can be observed between the instructor-analysts approach and the materialist-dialectical approach VYGOTSKY (1997 [1927]) recommended as the method of choice for establishing a concrete human psychology. VYGOTSKY, who derived the psychology of *all* art on the basis of one fable, one short story, and one tragedy, notes that is "a very special task to find *the precise factual boundaries* of a general principle in practice and the *degree* to which it can be applied to different species of the same genus" (p.319). To derive the psychology of art, he selected his data among the most difficult fables, short stories, and tragedies. The part-whole approach is necessary, for any one rule

expresses itself in very different ways to the point of exhibiting not a single shared property and therefore, exhibiting the forms of relations that we might find within a family (ERCIKAN & ROTH, 2014). Not unlike Mannheim's view of the literal as a document of a coherent whole, VYGOTSKY (1997 [1927]) suggests that "*what takes place in a part of some whole is determined by the internal structural laws of this whole*" (p.311). In the present situation, the transcriptions (protocols) are the parts of some whole, which needs to be derived by "perceiv[ing] the general in the particular" (p.318) and without knowing beforehand coincidental from invariant aspects. It is precisely in this point that we also observe an intersection with the methods of a rigorous approach in sociology, where generalization is to be achieved not by external application of formal and vacuous conceptions but through a "particular manner of thinking the particular case" (BOURDIEU, 1992, p.233), which requires researchers to think the particular as such. Analogical reasoning, as embodied in the conceptual variations enacted by the instructor-analyst, is part of a strategy that identifies alternative situations for one of two purposes. In the first, the analogical situation has instructional purposes, exhibiting the invariants; in the second, alternatives are stated for the purpose of ruling out or attributing their relative probabilities given the data at hand. [87]

In many ways, the analytic processes exhibited in the present study run counter to pervasive practices in social science research with the notable exception of scholars with ethnomethodological and conversation analytic training. Thus, many analysts of social situations generally and of educational settings specifically 1. presuppose categories and use these to explain their data and 2. reason backwards from an achieved result to identify in certain actions causes for those results already known (ROTH & RADFORD, 2010). First, beginning with assuming a power-over relation between institutional designated teachers and students, such analyses proceed to show how teaching outcomes or processes are determined by the presumed inequality. Such analyses do little more than "ratify preconstructions of common sense" (BOURDIEU, 1992, p.233). In contrast, the practice enacted by the instructor-analyst begins with a study of interactional patterns and derives asymmetrical relations of knowledge, power, etc. Second, the fact that a story actually has been told might be used to interpret a teacher's locution as introducing the telling of a story, even though at the time of the statement nobody could know whether it would *actually* lead to the successful telling of a story rather than to some other (form of) activity (ROTH, 2014). The documentary approach observed here does have some similarities with the grounded-theory method. In one of its versions, the grounded theory method is completely data driven and inductive, an approach that neglects the theory-laden nature of facts and, thereby, of being positivistic or as exhibiting positivistic styles of thought (ALVESSON & SKÖLDBERG, 2000). In the other version, the process at its heart has been described as abduction (REICHERTZ, 2007). Although data-driven, the documentary method differs from the grounded-theory approach in that the former characterizes the lay person, and the tacit understandings of the researcher as well, whereas the latter are explicitly expert accounts (BRYANT & CHARMAZ, 2007). [88]

The situation reported on here is interesting from the perspective of teaching the method of analysis and the possibility (or, rather, the impossibility) to articulate everything necessary to explicate a stretch of talk to its fullest, and to fully explicate the method by means of which this is done. The instructor had organized the sessions for instructional purposes, that is, to exhibit how an experienced analyst goes about her work. However, doubts have been raised, on very different theoretical grounds, whether experts *can* articulate for (and better than) others just in what their expertise exists (e.g., BOURDIEU, 1980; JOHANSSON, HALL, SIKSTROM & OLSSON, 2005; NISBETT & WILSON, 1977). Although the instructor-analyst formulated what she was doing for the purpose of instructing her students, the present study does not focus on what she says about the process of analysis but rather takes what she says as a protocol of this analysis itself. Thus, although we can see method at work, there are aspects that the analyst did not, and perhaps could not, articulate why in a particular situation the use of a definite versus an indefinite article (i.e., "the" versus "a") is a key document in the identification of the type of situation that produced it. The response to this question may lie in what MANNHEIM (2004 [1921-1922]) calls the "subterranean culture" (p.136), which contributes to the sense of a situation and therefore is not irrational, though it can no longer be objectified. That is, to paraphrase GARFINKEL (1967), the analyst always is doing and saying more than she can say in so many words. This is consistent with a conjecture that arriving at theories about what others say cannot be regularized and taught explicitly (DAVIDSON, 1986). This is so because a theory "is derived by wit, luck, and wisdom from a private vocabulary and grammar, knowledge of the ways people get their point across, and rules of thumb for figuring out what deviations from the dictionary are most likely" (p.446). In Davidson's pragmatic approach to understanding language, which is what the analyst exhibits, all differences between knowing a language and knowing one's way around the world have been erased. This also means that what the analyst can display is, at best, the totality of situations that she is familiar with. [89]

9. Implications for Teaching Qualitative Data Analysis

> "A person's ability to interpret or speak to another person consists [in] the ability that permits him to construct a correct, that is, convergent passing theory of speech transactions ... There is no more chance of regularizing, or teaching, this process than there is of regularizing or teaching the process of creating new theories to cope with new data in any field" (DAVIDSON, 1986, pp.445-446).

This study was designed to investigate the analytic processes of social scientists doing data analysis in the context of one social scientist’s teaching of methods. The data derive from analyzing-aloud sessions conducted for the purpose of teaching rigorous approaches to data analysis, where the data were in the form of transcriptions that graduate students had produced from videotapes unknown to the analyst. As the pragmatist philosopher DAVIDSON points out in the section-opening quotation, interpreting another person means creating a passing theory, which is similar to the process of creating a theory de novo. More importantly, he suggests that neither process can be taught. In the process, we observe the

analyst not only in the process of doing analysis but also formulating what she is doing. In some sense, therefore, by naming what she does, she points to her work in the midst of it. But this naming does not cover what is named, for "a map is not the territory (KORZYBSKI, 1994, p.750). That is, although the graduate students in this course witness the analyst at work, they still do not know, in a strong sense, what it means to do this work and, therefore, what it feels like. What is it that makes the analyst pick out the use of an indefinite article in one analysis, contrasting it with a definite article in the same transcription whereas in other transcription she does not do the same kind of analysis? This, she does not and, as she articulates herself for students, she cannot make available even though she is aware that this is happening.

> Why would I, who has not read the transcript before, who has not seen the video, who has not heard the intonation? Why might I have detected that here this is a preformatted question? What appears later on shows that she already has the answer, this, this answer in mind. Why would I have picked that out? What is my competence that points, that allows me to detect just in the question? That could be a research question in its own right. What is it that allows us to look at a question for a first time ... and make a suggestion this person already knows the answer to the question? And the question is only in fake, to test someone else. What is it in the question? And what is it in my cultural competence? Because once you have that you understand better what the kinds of question are that that teachers ask. [90]

These aspects of the tools by means of which analysts construct their objects are inherently inaccessible and inarticulable (namable); these, therefore, have to learned while doing them with an experienced researcher. This is so because "what is to be communicated consists essentially of a *modus operandi*, a mode of scientific production which presupposes a definite mode of perception, a set of principles of vision and division" (BOURDIEU, 1992, p.222). This mode cannot be learned but has to be experienced by doing the work of scientific analysis; and it is the sense associated with this experience that becomes the referent of the symbolic descriptions of method. It may therefore not be surprising that the instructor-analyst, after some demonstrations, does in fact invite all students in a class to analyze together with her the transcriptions of which the origin is known only to the owner. BOURDIEU suggests that one can truly supervise only a very small number of research projects. However, joint data sessions—familiar to those in scholarly circles doing ethnomethodology and conversation analysis or the practice of interaction analysis (JORDAN & HENDERSON, 1995)—might be an answer to this dilemma because they provide opportunities for collaborative analysis and critical reflections. Joint data sessions therefore may constitute appropriate contexts for developing the kinds of analytic approaches exhibited here even when a supervisor is not intimately familiar with a student's project. [91]

DAVIDSON (1986) suggests that knowing a language is indistinguishable from knowing one's way around the world, that is, from one's familiarity with the world. This means that what students can derive, given transcriptions of unknown origin, is limited by the totality of social situations that they are familiar with. This, however, also is the case for the analyst, who, in a concrete situation, has related

the transcription to some social situation that she was already familiar with. There was not one instance of an *ex novo* creation of a possible social situation. It might be interesting to observe, by means of recorded protocols, what analysts do when confronted with transcriptions from social situations that most of us are unfamiliar with, such as a conversation in a prison. But here, vicarious experience gained through movies, documentaries, or books may suffice for constructing the pertinent situation in its outlines. [92]

10. Reflexive Coda

This study makes use of the recognition that practical action involves the pairing of work and account of this work (GARFINKEL & SACKS, 1986). It is in and through such accounts that situations become self-explicating. Here, this structure is observable at three levels of text apparent in this study. First, the transcriptions that the graduate students provided are the (self-explicating) protocols of social situations that initially were unknown to the instructor-analyst. She uses these transcriptions to constitute, in outlines, possible scenarios that could have given rise to the accounts. The recorded talk, the analyzing aloud interpretation of data, is, at a second level, an account of her (self-explicating) analytic work (it is not the work itself). Finally, the text of this article is an account resulting from the analytic work that takes the analyzing-aloud sessions as its object. There is a difference, however, between the first two and the third level. Whereas in the former, there are clearly developmental aspects when read in a first-time-through fashion, this study, read as an account, is only the cleaned up result of a process of the same type as described here. All the contingencies of the analytic process have been erased because, as a genre, the scientific research article is of a different kind than an unfolding conversation or unfolding analysis. The reflexive nature of accounts and work makes protocols an integral and revealing aspect of the self-explicating nature of social activities. This makes it, in a strong sense, unnecessary to provide a separate methods section because any convincing form of analysis is *accountably* rational. [93]

A critical reader of an earlier version of this study, Jo REICHERTZ, asked whether this study had anything to say about the ontological state of the interpretation of data: is it an art (*Kunst*) or is it a craft/trade (*Handwerk*)? After initially struggling with the question, my hunch was that the question itself is problematic and that data interpretation has both artistic and craft dimensions. Upon searching the Internet, I found that the debate is very much alive, as documented in the online discussion that the TATE Galleries initiated about the historical contest of the difference between art and craft (BEAVEN, 2011). There is a lot of overlap between the two terms, because art requires craft; and, my observation of craftspeople at work supports the contention that dealing with the contingencies at work requires creativity characteristically attributed to artists. Interpreting data is an art in the sense that it requires a *creative* dimension to produce, from the materials at hand (i.e., the data sources), something that is more than the materials themselves. Simply selecting and arranging pieces from transcriptions does not constitute an interpretation. On the other hand, interpreting data has craftwork dimensions in the sense of a skill that can be

learned. The more one interprets data, the better one gets at it. We may therefore say that the instructor displays the *art and craft* of interpreting data, which thereby highlights both the skill and the creativity we can discern while observing her at work. [94]

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Appendix: Sample Transcription

01	I	And the girls are putting their hand up too.
02	P	We're tough out west. [girl tackling boy in background]
03	I	And those girls, more than hold their own.
04	I	Do you ever worry about getting hurt? [kids playing in background]
05	M1	No
06	I	Have you ever been hurt?
07	M2	Guys
08	M1	Ya
09	M2	Yeh you guys, we're supposed to be playing bullrush (yelled from behind)
10	M1	Ya, actually, really ... ya, I have really been hurt.
11	I	And what happened then?
12	M1	I think I got up and dealt with it.
13	P	I think we're wrapping kids up in cotton wool a little too much ... um ... years ago a good parent was somebody who just let kids play. Nowadays a good parent might be considered to be somebody [who] takes them to dancing lessons ... and rugby practice.
14	I	there may be some people, some parents who think, "hmm, I don't want my children, my little girls, playing bullrush!" What do you say to those people?
15	M1	Well, if you think you can't handle it, well then, don't play ... that's just pretty much it.
16	I	So what do the parents think?
17	P	Some parents have come and asked about it. They've wanted to be reassured ... but I think generally, I've had really good support from them. [kids yelling and waving there arms in front of the camera]. I think our understanding of what is safe really means, is changing. And actually, kids are safe doing things, that, maybe we have thought, weren't safe ... for quite a few years.

18 I For these educationalists, the risks involved with a bit of rough and tumble, are far less than the risks associated with an activity.

19 P If you get a kid to test themselves when he's 7 years old on a scooter or ... a tree ... climbing a tree. He is not going to have to test himself when he is 17 ... behind the wheel of a car.

20 I And they also say it makes for better students.

21 P The only time they get into trouble is when they're bored ... and they really don't get a chance to be ... [laughter]

22 I And yes, before you ask, the kids do go back in the class after playing bullrush, with a bit of mud ... but the full on mud sliding, well, that's before they head home ... to the washing machine I presume.

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