

Talk, silence and the study of situated action

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ABSTRACT

The paper discusses the theoretical and methodological relevance, potential benefits and limitations in applying discourse analysis based on ethnomethodology (EM) and conversation analysis (CA) in the study of situated interaction in CSCL environments. It is argued that EM and CA approaches provide relevant and fruitful research strategies and methodologies. Some theoretical and methodological limitations and weaknesses of the approach are identified and discussed. Finally, activity theory is briefly discussed and evaluated as a potential alternative methodological and theoretical approach.

Keywords

Situated action, discourse analysis, ethnomethodology, conversation analysis, computer supported group work

INTRODUCTION

The ideas discussed in this paper have been partly inspired by some concrete methodological challenges that I have met in my study of the interaction between computers and pupils in classrooms.

Inspired by Wittgenstein's later writings and Harold Garfinkel's ideas of ethnomethodology, my work has been based on an understanding of *language as action* and *talk as accountable action* reflecting the participant's own concern, orientations and intentions. According to this view, the researcher should not look for "hidden" representations and motivations or unobservable social structures, but concentrate on the accountable, observable, and detailed talk-in-interaction of people, in my case interaction between students doing computer assisted project work. I have been particularly attracted to CA, which has been presented "as a solution to EM's problem of the 'invisibility' of common sense" (Have, 1990)

The typical setting in my field work was a group of pupils (3-4 persons, 13 year old) working with specific projects for 4-5 days where uses of computers and multimedia software were essential and integrated parts of the pedagogical settings. A methodical focus on analysis of talk seemed as an appropriate and fruitful research approach, but there was also some complicating and to me quite intriguing experiences which seemed to question my methodological approach in a fundamental way. There were striking differences between the different groups concerning the role, function and also significance of the oral communication between the members of the group. In particular, one group represented quite a challenge for my methodological framework rooted in analysis of talk-in-interaction. This group of three 14 year old boys seemed to work very well according to the teacher's report and also according to my own observations as a researcher. The problem for me was that there was a peculiar lack of verbal communication and also observable coordination in this group. Actually, for longer periods they just sat around the computers (they had one each) working quite eagerly as we could observe, but talked only occasionally during their project work. Nevertheless, the educational product of their work - which was a multimedia presentation - was given the highest mark of all groups in the teacher's final evaluation of the project work of the different groups.

This example raises of course some specific methodical issues concerning application of the appropriate devices for mapping the interaction. Obviously, a mere recording of the talk is in this case not sufficient as a tool to map the actual interaction going in this group. We chose, probably appropriate, to use videocamera to tape the interaction between the boys and the computer in order to map not only the interaction with the computer, but also non-vocal communication, gestures, gaze, the character and function of hesitations and absences etc.

However, these more methodically and technically oriented issues are not my main concern in this paper. It seems to me obvious that it would be wrong to reduce my problem to merely a question of finding the appropriate methods and techniques for mapping the interaction.. Several broader methodological, epistemological and philosophical issues must be addressed. For example: Are the conceptual tools of CA appropriate for analysing silence and unspoken utterances? To what extent can pupil's learning processes be accounted for within this framework? What is the epistemological status of spoken utterances compared to the unspoken within the framework of CA? Is the

methodical strategy of CA focusing on moment-to-moment turn-taking in talk neglecting the importance of other significant, but less observable structures? Most fundamentally, to what extent can the possible constraints of CA as an empirical strategy reflect more fundamental challenges or problems in the philosophical and epistemological foundations of EM/CA?

I begin this paper with a presentation of the discursive analytic perspective which constitutes the general framework of my own approach. Then I present some key features of EM and CA which is followed by an evaluative appreciation of the virtues of EM and CA in the study of social interaction, and in analysing human-computer interaction. In the remainder of the paper several problematic and challenging aspects of CA as a research strategy within discourse analysis are discussed, focusing on basic theoretical concepts and premises. In connection with this discussion I also consider some of the critique which has been raised against discourse analysis and CA from activity theory.

A DISCURSIVE ANALYTIC PERSPECTIVE ON SOCIAL ACTION AND LEARNING

The discursive analytic perspective on social action and learning which constitutes the general framework for my understanding - focuses on studying discursive interaction and cognition in a situated context.

Discourse analysis has become a broad and multifaceted research tradition comprising a broad range of approaches and research strategies. In Margaret Wetherell formulation "the boundary lines are drawn between styles of work which affiliate with EM and CA and analysis which follow post-structuralist or Foucauldian lines." (Wetherell, 1998) In this paper I will focus on EM and CA as elements in a broader discursive analytic approach, albeit not the post-structuralist or Foucauldian versions. Foucauldian studies tend to view discourses as cultural totalities, and these are also the focus of analysis. This approach differs substantially from a view which focuses on examining the ways in which people use utterances in specific contexts. As Michael Billig formulates this: "Foucault's notion of 'discourse' is, to use Saussure's distinction, more *langue* than *parole* - concerned with the hypothetical total structure rather than particular usage." (Billig, 1996)

Following the ideas of discursive psychology (especially as formulated by Edwards, 1997, Potter and Edwards, 1992 and Parker, 1992), the focus is not on treating language as symptoms of inner processes, but rather assume that the traditional topics of psychology (e.g emotions, memory etc) refer to phenomena which are outwardly observable. For example, if one wishes to study how or to what extent students "learn" in the interaction with computers, the researcher should be paying attention to what students are actually doing and saying when they use computers in their daily work.

EM, CA and also important parts of the discursive analytic tradition take inspiration from the philosophical tradition of Wittgenstein's later philosophy. CA is "fundamentally an ethnomethodological enterprise." (Potter, 1996) and is to be understood as EM applied on conversations and especially mundane talk. Discursive psychology applies this to psychological phenomena and argues that phenomena, which traditional psychological theories have treated as "inner processes", are, in fact, constituted through social, discursive activity. Accordingly, discursive psychology argue that psychology should be based on the study of this outward activity rather than hypothetical, and essentially unobservable, inner states.

As Wittgenstein stated in *Philosophical Investigations*, "an 'inner process' stands in need for outward criteria (1953, remark 580). He claimed that "the characteristic mark of all 'feelings' is that there is expression of them, i.e. facial expression, gestures", (1967, remark 513). The implication is profound. Analysts should not search for the unobservable essences, which are presumed to lie behind the use of feeling-words. They should be examining in detail the ways people make claims about psychological states and what they are doing when they make, or dispute, such psychological claims: they should be asking "*what is the purpose of this language, how is it being used?*" (Wittgenstein, 1967, remark 716)

Basic concepts of conversation analysis

The techniques of CA and EM enable analysts to investigate the micro processes of speech acts in which language is used. Analysts can study how, for example, claims to have particular emotions or psychological states are seen to be socially constituted and accomplished (Edwards, 1995). For example, traditional psychologists assume that 'remembering' is something which takes place within the cognitive system of the isolated individual. By contrast,

discursive analysts treat remembering as a social and collective activity (Edwards and Potter, 1992). They examine in detail the speech acts involved in making claims about remembering and forgetting, and they ask what such claims are accomplishing socially. (Edwards and Middleton, 1994). Instead of treating remembering as an unobservable, internal process, it becomes a directly observable, social activity based upon speech acts. One central concept within conversation analysis is *the speaking turn*. This is the key concept in CA and constitutes the basis for the description of how sequences are organized and dealt with by speakers. The *adjacency pair* is another concept which says that turns come in pairs, e.g. question/answer, etc. and these pairs are supposed to be studied sequentially, indicating that the focus of the study should be the relation between turns and how the speakers display their understanding by responding to previous turns-

Virtues of conversation analysis

For my field of research, pedagogic interaction with computers, CA might be fruitful in several ways. The research field of computers and learning was from the 70s dominated by more traditional quantitative, experimental and quasi-experimental methodologies focusing on measurement of learning "output". The methodical focus on measurement of learning output often reflects a strongly cognitivist (and in the 60s and 70s also a behaviorist) approach to learning and pedagogic interaction with computers.

On the other hand, there has also been a strong tradition of rather unfocused qualitative studies of the interplay between technology and education, often with unclear or lacking empirical foundations. Although quite different in their approaches, neither of these traditions focus on detailed study of social interaction in situated practices.

CA insists on studying in detail the actual interaction taking place. The study of "talk-in-interaction" gives a detailed account of the actual interaction. Taking into consideration the complex interactional patterns that are unfolding when a technological artefact is "intervening" in the communication process, there will clearly be a need for methods mapping this complex interaction in the best possible way. As Slembrouck, formulates this: "The major strength of CA lies in the idea that conversational meaning is to be situated in the sequence. It's most powerful idea is undoubtedly that human interactants continually display to each other, in the course of interaction, their own understanding of what they are doing. This, among other things, creates room for a much more dynamic, interactional view on speech acts than is enabled by analytical philosophy and traditional "speech act" theorising" (Slembrouck, 1999)

It seems that CA can be especially valuable in the study of the role of the technological artefact as a part of social practices. This is often a very complex process involving interaction not only between humans, but also between humans and computers. Through focusing on actual interaction between for example the educational computer software and the students, the researcher will be able to trace not only how the students interact with one another, but also how they simultaneously interact with the computer. It is certainly very interesting if CA could be used to describe this interaction more accurately.

The traditional ethnographers use their own participation either actual or vicarious, as a basis for building understanding, and this is often supplemented with field notes. In contrast to this, the conversation analyst will be concerned with how the actor's account is established as *literal and objective*, and what it is being used to do. This means focus in the detail of interaction: the hesitations, repetitions, repairs and emphases. Conversation analysts have shown just how important these things are to interaction and I will agree with Potter when he says that "they are virtually impossible for an ethnographic observer without a tape recorder and high-quality transcript to capture adequately". (Potter 1996 p. 105)

A final virtue of taking a conversation focus is that the transcribed record of discourse gives the reader a unique opportunity to evaluate the researcher's interpretations. Conversation analyst Harvey Sacks had a goal of producing a form of analysis "where the reader has as much information as the author, and can reproduce the analysis" (1992, I, 27) This might be slightly unrealistic, but expresses at least a democratic approach towards academic research practices.

A CRITICAL DISCUSSION OF CONVERSATION ANALYSIS AS A RESEARCH STRATEGY AND METHODOLOGY IN DISCOURSE ANALYSIS.

In this critical discussion of EM and CA, I relate my arguments loosely to my initial methodological problem of applying EM/CA in a context where the participant evidently do communicate in their cooperative work, but where

this only to a very limited extent is reflected in ordinary conversation between the members of the group. I appreciate CA as a part of the methodical fundament of discourse analysis. But as I read the works of many conversation analysts and ponder the character of the research program, I am increasingly struck by the peculiar narrowness and disembodied character of some CA studies. I will concentrate my discussion on three fundamental concepts and premises of CA: the concept of rationality as accountability, the premise of the knowledgeable actor, and the premise of how social action is structured and sequenced in talk-in-interaction.

Rationality and accountability

It is probably correct as Anthony Giddens remarks that the philosophical basis of EM (and also CA as “an essentially ethnomethodological enterprise”, ”remains unelucidated” (Giddens, 1993, p 58). There is a relatively strong connection between theory and method in EM and CA and both the advantages and the limitations of this approach become more lucid through a brief reconstruction and discussion of the basic theoretical concepts.

According to Garfinkel there are irreconcilable differences of interest between what he calls “constructive analysis” or orthodox sociology, and EM, because the latter is confined to the descriptive study of indexical expressions in all their empirical variety. This attitude is proclaimed as one of ‘ethnomethodological indifference’. EM and CA is essentially an anti-Cartesian¹ and Wittgensteinian approach where “the activities whereby member produce and manage settings of organized everyday affairs are identical with members procedures for making those settings ‘accountable’.” Garfinkel claims that while “a model of rationality is necessary in social science for the task of deciding a definition of credible knowledge”, no such “model” is needed when “coming to terms with the affairs of everyday life”. Garfinkel, 1967, p 270). This means, basically, that action is to be treated as “rational” precisely only in so far as it is “accountable”.

Both Garfinkel, the conversation analysts and the discursive analysts of the 90s, underline the importance of situatedness and indexicality : “Ethnomethodological conversation analysis suggests that interaction is pervasively and inescapably indexical.” (Potter, 1996) *But*, if one is to take this seriously, this must also be the case for the CA itself as the genuine piece of utterance this represents. Should not also this analysis be understood as a situated, local, indexical and particularistic, and therefore only of interest for the actors “doing ethnomethodology”? Is perhaps CA just another meaning producing context and one just as strange as the constructive sociology which CA so aptly criticizes?² According to CA, analysts should not import their own categories, theories or claims into participants' discourse but should focus instead on participant orientations. But this does not entail, however, that no analytic concepts will be applied. The CA analyst actually applies concepts like “conditional relevance” and “accountability” in talk and to create an ordered sense of what is going on. It seems that the formation and application of these categories is not so different from more ordinary theory construction and application in “mainstream” social science.³

The problem of CA's own reflexivity towards its own contributions is illustrated in the recent debate between the conversational analyst Emanuel Schegloff and the discourse analyst Margaret Wetherell. Schegloff argues that :

“[Critical discourse analysis] allows students, investigators, or external observers to deploy the terms which preoccupy *them* in describing, explaining, critiquing, etc. the events and texts to which they turn their attention.(.....) – there is a kind of theoretical imperialism involved here, a kind of hegemony of the intellectuals, of the literati, of the academics, of the critics whose theoretical apparatus gets to stipulate the

¹ Although Garfinkel was undoubtedly inspired by the phenomenology of Schutz (and Husserl), EM and CA are different from the subjectivist and motive searching approaches of phenomenology .

² This is recognized also by CA theorists: "These arguments do, indeed, represent a serious problem for CA, the problem of how to account for its own reflexive contributions to its results". Paul ten Have, Methodological issues in conversatioin analysis

³ Anthony Giddens critique of Garfinkel and ethnomethodology is relevant here since CA “is an essentially ethnomethodological enterprise” (Potter, 1996). According to Garfinkel there are irreconcilable differences of interest between what he calls “constructive analysis” or orthodox sociology, and ethnomethodology, because the latter is confined to the descriptive study of indexical expressions in all their empirical variety. This attitude is proclaimed as one of ‘ethnomethodological indifference’. Nevertheless, Giddens is in my view correct when he says that Garfinkels writings are actually “replete with observations about “constructive sociology” that hardly shows any insouciance towards it.” (Giddens, 1993)

terms by reference to which the world is to be understood – when there has already *been* a set of terms by reference to which the world was understood – by those endogenously involved in its very coming to pass.” (Schegloff, 1997, p. 167)

Margaret Wetherell responded to the critique by pointing out that CA practices theoretical imperialism in its own way.

“(…) for Schegloff, participant orientation seems to mean only what is relevant for the participants in this particular conversational moment. Ironically, of course, it is the conversation analyst in selecting for analysis part of a conversation or continuing interaction who defines this relevance for the participant. In restricting the analyst’s gaze to this fragment, previous conversations, even previous turns in the same continuing conversation become irrelevant for the analyst but also, by dictat, for the participants. We don’t seem to have escaped, therefore, from the imposition of theorists’ categories and concerns.” (Wetherell, 1998, p. 403)

It could be argued that although Wetherell is correct that CA analysts have not managed to escape from the imposition of theorists' categories and "constructive sociology" approaches, Schegloff is also right in insisting on the importance of focusing on the perspective of the participants, their concern and orientations'. reflected through their talk-in-interaction. Nevertheless, the idea of the epistemological primacy of accountability seems to haunt CA when it tries to explicate its own premises. There is hardly any doubt that Schegloff's "purely technical" analysis is more than just that: he is applying theoretical concepts developed derived from a a kind of "constructive" and traditional research process rooted in many years of "doing conversation analysis." But in my view this can not be considered a serious problem in the evaluation of CA as a research strategy. As the CA analyst Paul ten Have puts it:

"Practitioners of CA are less given to philosophical reflection than to hard work....The solution of CA's basic problems, which stem from the way it has developed from its basic problematic by way of a strong empirical commitment, is to be found in those same practices."

This statement is perhaps not assuring from a strictly logical point of view, but this "philosophical indifference" can not be considered as an important problem for CA as a methodological strategy. These problems would occur if the (constructive!) idea of rationality as accountability are applied to practical research in a way which e.g excluded obviously important, but not easily accountable empirical material, e.g visible gestures, gaze and non-vocal communication.. Happily, practical CA does not exclude these other forms of communicational modes and some of the most interesting CA based studies are based on non-vocal phenomena. (Goodwin 1981, Heath 1986)

Although the basic concepts of rationality in EM and CA may appear unelucidated, there are also some other concepts which are considered more important by the CA theorists and I will discuss these in the following: the premise of the knowledgeable actor and the premise of the fundamental importance of analysis of turn-taking and sequential organisation of talk.

The premise of the knowledgeable actor

Conversation analysts, as well as ethnomethodologists, frequently claim that one of the strengths of their approach is that they focus on “how participants themselves produce and interpret each other’s actions” (Pomerantz, 1988, pp. 360-1) Conversation analysts do not seek to explain interaction in terms of sociological structures, which lie 'behind the backs of the participants' (Heritage, 1984; Boden, 1994). Instead, they observe how participants make sense of, and account for, the social world. In this respect, CA assumes that "human beings are knowledgeable agents in the production (and reproduction) of their lives and their history" (Boden, 1994, p. 13). This assumption of knowledgeability forms the core of the ethnomethodological enterprise: "By giving back to social agents their knowledgeability of their own social actions, it was then possible to sit back and observe the structuring quality of the world as it happens" (Boden, 1994, p. 74).

Bearing in mind my intial challenge from my classroom research, the question of the actor’s knowledgeability is of particular importance. As I have underlined in this paper, an extremely valuable virtue of CA is that analysts are bidden to take seriously what people actually say and do, rather than assume actors are simply re-enacting given roles within a hypothetical social structure. On the other hand, the assumption of the actor’s transparent

knowledgeability must in many cases be wrong and misleading. Obviously, as my initial example shows, one cannot get a good impression of the pupils' knowledgeability by only studying their talk. Considering the good result of their project work, it is clear that they "know" much more than they express in their talk⁴.

It is important for the analyst to look for instances of not only lack of knowledge, but also *how repression of knowledgeability* might be accomplished. It could be argued that it is possible to use the (albeit broadened) framework of CA in order to analyse such questions without applying more traditional speculative interpretations and "grand theorising" of what "might have happened" without any analysis of the actual discourse. Billig (1997) shows how such mechanisms as repression and absences can be observed and traced back to actual talk in interaction.

The turn-taking as the focus of social action research

Traditional CA's problem with how to cope with unspoken communication and its meaning is also illustrated even more vividly when looking more closely at another basic feature of CA, turn-taking and the sequenced structuring of action. The observable speaking turn constitutes the basic unit of analysis. It may seem that CA here demonstrates some almost empiricist ideas.⁵ Several ethnomethodologists have criticized CA in this point, see e.g. Lynch, 1993.

According to Boden (1994), "turn-taking and the sequenced structuring of action" lie "at the heart" of social interaction (p. 63). The organizational pattern is presumed to be discoverable through understanding the sequential constraints on speakers. Drew (1995) claims that 'turns' in conversation are treated "as the product of the sequential organization of talk" (p. 70). The organization is presumed to be present in the accounts which speakers themselves give. Thus, the analyst seeks to note conversational devices, which "are demonstrably or observably relevant to the participants themselves" (Drew, 1995, p. 76; emphasis in original). By so doing, analysts hope to discover the "stable and organized properties of conversational structures" (p. 76).

The central focus on turn-takings as "atoms" in the CA framework, raises several problems of methodological character which are directly relevant to my initial problem of how to account for absences and unspoken utterances.

First, the focus on the coherent and stable organisation of conversational structures actually exclude absences. The analyst's interest is directed towards the observable utterances and how these are structured in a coherent manner. As Michael Billig formulate it:

"What was, and what will be spoken, provide the means for understanding the function and meaning of what is said. In this respect, the analysts put themselves in the same position as the participants. What this means is that analysts search for the connections between utterances which are present in the conversation. What is absent from the conversation tends to be absent from the analysis." (Billig, 1997)

Second, a presumption of the actor's knowledgeability in turn-takings and focus on the presences of the utterances, may lead to serious flaws in the interpretation of the actual communication. As Derek Edwards demonstrates in a case study from a conversation in a classroom, the participants' "meaning" in a sequence of dialogue may be

⁴ It should be mentioned that my preliminary analysis (not published yet) of the videotaped interaction between the three boys shows that their work was from the very start characterized by a clear division of labour, a clear mutual understanding of the task and even more important a mutual understanding of the technology used to produce the multimedia presentations. The need for intensive negotiations during the project work was less important than in other groups. There was also a clear "asymmetry" in the group with one boy being the leader and "director" of the multimedia production and this asymmetry has significant impact on the participants' communicative pattern. Their knowledgeability is not clearly shown in their conversations, but is evident in their interactive work on the computers. So, actually, in my case "the silent discourses" can be accounted for. This conclusion is based on a detailed discursive analysis of the moment-to-moment interaction and in my view this shows the fruitfulness of this approach.

⁵ See Pierre Bourdieu, (1993) where he also underlines EM and CA's problem of reflexivity to its own project: "In their struggle against the statistical positivism they (i.e the ethnomethodologists) seem to accept some of the prerequisites of their opponents. Facts against facts, video recordings against statistics.... Those who are satisfied with doing recordings do not ask about the problems of editing/cutting, and accept what has been constructed in advance, and this does not necessarily comprise the principles of their own interpretation." (*my translation. I.S*)

misunderstood unless a broader argumentative context is taken into consideration. (Edwards, 1993) What some pupils say in one sequence should be understood in the context of previous discourses. This is actually no argument against the application of CA, because a detailed account of the communication is necessary in order to depict the actual misunderstandings. But it is an argument for the importance of a broader unit of analysis than the individual sets of speaking turns.

Third, the focus on speaking turns and sequential organisation is also said (e.g. by proponents of activity theory, see for example Nardi, 1996) to imply that analysis of more persistent social structures that span speaking turns (or sequences of these) are not relevant units of analysis for traditional CA and therefore illustrates the limited value of CA. To some extent this may be a relevant critique for some CA studies, but one could also argue that CA inspired analysis may be very valuable and perhaps a necessary tool in securing that understanding of these "structures" are built on empirical analysis of the actual interaction, situated in the practices of the people concerned.

ACTIVITY THEORY - AN ALTERNATIVE TO CONVERSATION ANALYSIS?

In a recent paper (Engeström, 1999), a leading proponent of activity theory, intervenes in the discussion between Schegloff and Wetherell and presents activity theory as a "third alternative" between more traditional CA and the broader (often Foucauldian) critical discourse analysis. The paper is interesting not primarily because it in my view substantiates some of my own critical evaluation of CA, but because the alternative proposed illustrates some of the problems of more traditional, abstract theorising in the social sciences that Schegloff and others have criticized.

Inspired by Soviet psychologists (Vygotsky and Leont'ev, in particular) and ideas from (marxist) dialectical materialism, activity theory argues that what organizes social life into meaningful units is practical object-oriented activity, which may also be called productive activity, understood in a broad sense (Leont'ev, 1978; Cole, 1996). As Engeström formulates this: "Practical activities have this strong organizing potential due to their objects. Objects should not be confused with goals. Goals are primarily conscious, relatively short-lived and finite aims of individual actions. The object is an enduring, constantly reproduced purpose of a collective activity system that motivates and defines the horizon of possible goals and actions." (Engeström, 1995b).

In Leont'ev's (1981) account, activity systems arise with division of labor. He uses the example of a tribal hunt. When the object of the hunt is demanding enough, members of the tribe divide the labor: some chase the game away, while others wait in ambush and kill it. Taken in isolation, the action of chasing away the game makes no sense. Seen against the background of the collective activity system and its division of labor, the action is perfectly sensible. (Engeström, 1999)

In the following I will briefly discuss some specific issues concerning activity theory's (in Engeström's interpretation in the present article) potential as an alternative methodological approach to EM and CA. I do not attempt to present an overall evaluation of activity theory, but focus on issues directly relevant to the discussion in my paper.

First, for activity theory, the basic unit of analysis is "the situated activity system" which is considered to be the reasonable middle ground between the "artificially isolated fragment of discourse and the global argumentative social fabric." (Engeström, 1999) Activity theory is therefore understandably critical towards what is called the "insistence on discourse as a privileged and more or less self-sufficient modality of social conduct and interaction. This insistence is largely taken for granted and shared by both conversation analysts and critical discourse analysts". (Engeström, 1999) It is argued that "organizations are not reducible to small fragments of discourse; they carry histories and operate as meeting grounds of multiple argumentative threads." In line with my previous discussion concerning CA, I agree that this critique seems relevant for several more "dogmatic" CA inspired studies, but it is not relevant for EM/CA as such. I would argue that it seems to be a sound methodological strategy to start with the most accessible aspects of what is done in conversations, the speaking of words, and pursue the analysis of less easily isolatable ones later, when one has learned more about the whole organisation through the first. Thus the start with verbal aspects is not a principled choice, but a practical one. As mentioned already, a growing collection of CA studies of non-vocal phenomena shows that these can be included in the CA framework very well.

Second, activity theory argues for not only asking retrospectively why an action or an utterance occurred, but also ask "What dynamics and possibilities of change and development are involved in the action.?" In applying

theoretical tools⁶ developed in this tradition, activity theory wants to present a supplementary perspective in focusing on the conditions and the development of more persistent social structures, not only focusing on the micro-sociological objects of speaking turns. It could be argued that this focus on conditions for change would also be possible to integrate in a broader discourse analytic framework, albeit not without underlining that such "conditions for change" should be observable or at least traceable in the actual discourse.

Third, an important virtue of activity theory and its broader perspective on social action, is the insistence on analysing action related to physical and mental activities, including the use of artefacts and technologies as tools. According to this perspective, different kinds tools, of intellectual/lingual as well as physical tools, are seen as *mediators* between the actor and the world. When studying the use of computers in classrooms, the focus will be on analysing these artefacts as parts of social practices, not as isolated technologies *per se*. This is a view which is underlined by activity theorists, and the view constitutes one of the most important differences towards the more traditional cognitivist view of thinking and rationality. (Säljö, 2000)

Fourth, Engeström argues for the importance of "intermediate theoretical tools between the specific data and the general model of an activity system." (p 10) This is a view that is very different from the EM/CA perspective. Because EM and CA rejects the whole idea of a "general model", there is no need for intermediating tools; it is just another form of "theoretical imperialism" which means to "turn lived experiences and embodied practices into general lexicons and associated models." (Suchman, 2000).

Engeström argues for the application of specific conceptual intermediate tools, derived from activity theory research. If CA may sometimes be "abstract empiricist", a problem with some of Engeström's concepts and complex models of activity systems seems to be that they tend to what Richard Merton (1957) called "grand theorizing" An example is the concept "contradiction" which is introduced by Engeström as an intermediate theoretical tools. Contradiction is described as "the idea of contradictions as the driving force of change and development in human organizations". (p 12) It is also said that "a contradiction is a historically accumulated dynamic tension between opposing forces in an activity system." (p 10)⁷ Any clearer or more detailed definition or operationalisation is not presented. The concept is not used in the analysis as an intermediate tool, only as a tentative hypothesis of what are the basic forces behind the actual interaction, actually expressing - in philosophical terms - a clearly realist (or essentialist) approach devoted to "find out about the hidden workings of social existence." (Smith, 1998, p 319) An ethnomethodologist would say that this means to construct theories "behind the back of the participants." One problem with this conceptualisation of "contradiction" is that it seems that to come close to what Merton called "*post factum* interpretations" which are frequently so flexible, vague, or open that they can "account" for almost any data. More importantly, instead of mediating between "discourse" and "social structure" and contribute to better understanding of situated practices, (for example in a classroom) this kind of abstract conceptualisation may actually be an hindrance in the research process, and lead to an unfortunate focus on "objective", hypothetical, unobservable, but law-like mechanisms, operating "behind the back" of the actors. Recent evaluations of activity theory also indicates that activity theory may seem attractive to many because it provides a general framework for the understanding of socio-cultural activities, but fails to offer significant insights into "the fine grained aspects of interaction between individuals within this setting." (Issroff and Scanlon, 2001)

CONCLUSION

In this paper I have argued that EM and especially CA should be considered as highly relevant and valuable research strategies and methodologies in the study of situated interaction and especially in CSCL environments. However, the traditional CA approach has also its limitations and I argue that some of these are rooted in certain theoretical weaknesses, e.g the idea of rationality as accountability, the premise of the knowledgeable actor and the exaggerated epistemological and methodological status of speaking turns and sequential organisation of utterances. I have also

⁶ A key concept is "the zone of proximal development" which may be understood as "spaces for potential radical transformation, achievable through resolving and transcending its contradictions" (Vygotsky 1978, Engeström, 1987)

⁷ This interpretation of the universality of "contradiction" stems from Friedrich Engels' conceptualization in his infamous "dialectical laws". According to Engels and the tradition of dialectical materialism, "contradictions" are universal law-like mechanisms, not intermediate concept between "laws" and "descriptions" (or between 'social structures' and 'discourse'.) Arguably, this way of applying Hegelian concepts was not central in Marx' own writings; it is also clear that Marx occasionally warned against it (Elster, 1985, p 43)

discussed other weaknesses in CA practice, e.g the focus on vocal phenomena, but these weaknesses are not seen as a consequence of the basic theory and methodology. Several studies have demonstrated that CA can be fruitfully applied on non-vocal phenomena.

The major strength of CA lies in the idea that conversational meaning is to be situated in the sequence. Its most powerful idea is undoubtedly that human interactants continually display to each other, in the course of interaction, their own understanding of what they are doing. This, among other things, creates room for a dynamic, interactional view on human-computer interaction. I have argued that EM and CA seem particularly relevant to the study of human-computer interaction since these processes are often complex to analyse because also the computer is involved as an interactant in its own right, albeit not human.

For the further development of CA within a discursive analytic framework it seems important to also include analysis and interpretation of "unspoken utterances" which are not directly observable, but which leaves traces. Theoretical concepts from e.g psychoanalysis and rhetorics may seem relevant for the methodological problem I presented in the beginning of this paper (for other phenomena, other theories may seem interesting). But a prerequisite for such application of theory should be that the inferences and theorizing are derived and traced from actual interaction in its situated context, non-vocal or vocal.

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