Edited by Yrjö Engeström, Joachim Lompscher † and Georg Rückriem

Putting Activity Theory to Work

Contributions from Developmental Work Research

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Yrjö Engeström; Joachim Lompscher †, Georg Rückriem

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Yrjö Engeström
Joachim Lompscher †
Georg Rückriem
(Editors)

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Berlin 2005

ICHS
International Cultural-historical Human Sciences
is a series committed to the tradition of the cultural historical theory, which was developed by Lev S. Vygotsky, Alexei N. Leontiev and Alexandr R. Luria in order to analyze man and his development within the context of culture and social historical determination. They consider activity as the fundamental form of man-world-interaction and as a basic precondition of the theoretical, methodological and empirical study of problems of scientific disciplines and social practice. This series is meant to publish classic texts of the founders of this approach as well as new studies concerning current scientific or practical problems.

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Putting Activity Theory to Work
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This volume is dedicated to the living memory of
Professor Joachim Lompscher
(1932-2005)

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FOREWORD

In the development of activity theory, the publications of Yrjö Engeström and his colleagues, starting with early works on learning theory, signify the beginning of a new phase in which activity theory steps out of its mainly academic discourse and becomes an interdisciplinary approach increasingly engaged in the resolution of practical societal problems. This is happening internationally, in Europe, Latin America, North America, Japan, and elsewhere.

Engeström and his colleagues made an essential contribution to this with the creative development of a methodology which they – unlike the psychologically oriented classics of the theory, Vygotsky, Leont'ev, Luria – founded on an understanding of activity as *collective activity*. They constructed and developed further the methodology by using it in and confronting it with empirical studies.

In 1994 Engeström founded the Center for Activity Theory and Developmental Work Research in Helsinki, which he leads together with Reijo Miettinen and Jaakko Virkkunen.

In the Center, researchers work on the basis of activity theory and with the help of the methodology of developmental work research, in partnerships with large companies and public sector institutions (such as health care organizations, schools, and courts of law). This work has achieved a high reputation and impressive results in the resolution of conflicts in concrete activity domains. The Center produces continuously new creative findings which reach far beyond the particular application fields of the given projects.

Because the publications of the researchers of the Center have so far been dispersed and often hard to obtain, we want to offer the interested readers the possibility to read the concrete research papers as a coherent collection, a companion volume to the one that contains Engeström's own papers. This justifies the republication of some papers that have already appeared elsewhere. Naturally this means also some overlap, as each article has to explicate its theoretical and methodological frame of reference. We have at least tried to reduce the overlaps to a tolerable level, although it has

not been possible to eliminate them completely. On the other hand, it is an advantage at least for a reader of individual articles that each contribution makes available some aspects of the theoretical context.

Georg Rückriem Joachim Lompscher

Originally Joachim Lompscher wanted to edit the present volume himself. When preparing for his last book on learning cultures, he had already visited the Center for Activity Theory and Developmental Work Research in Helsinki. He was very impressed by the diversity of the domains studied, the methodology used, and the engagement of the members of the Center. His unexpected severe illness in October last year changed this plan as well as all other joint projects we had planned for this year. Joachim Lompscher passed away on February 5, 2005. The gap he left behind will remain for a long time.

Berlin, April 2005 Georg Rückriem

Being Utopian And Practical: Developmental Work Research As Methodology

An Introduction

The issues of relevance and practical impact of research on society have re-emerged in recent social science literature. Bent Flyvbjerg's book *Making Social Science Matter* (2001) is a good example. Flyvbjerg proposes that social sciences redefine themselves as *phronetic* science.

He summarizes the point of departure for phronetic research in the following four questions:

1. Where are we going?
2. Who gains, and who loses, by which mechanisms of power?
3. Is this desirable?
4. What should be done? (Flyvbjerg, 2001, 162)

Flyvbjerg puts forward nine methodological guidelines for phronetic social science: focusing on values; placing power at the core of analysis; getting close to reality; emphasizing little things; looking at practice before discourse; studying cases and contexts; asking 'how' and doing narrative; joining agency and structure; and dialoguing with a polyphony of voices. Many of these guidelines are similar to those adhered to by researchers who apply cultural-historical activity theory in various fields of practice and within different academic disciplines. Their general thrust is close to the activity-theoretical idea of 'utopian science' (Luria, 1979) or 'utopian methodology' (Cole, 1996).

But there are also important differences. Focusing on the differences makes it easier to identify what is unique and powerful in developmental work research as a methodology based on activity theory.

The first question of Flyvbjerg's phronetic social science is 'Where are we going?' It seems like a straightforward invitation to question the direction to which things are moving. In Flyvbjerg's own example, he questioned the direction taken by a city planning project in Aalborg, Denmark

– and found that a powerful private interest group, the Chamber of Industry and Commerce, was pushing the project to a direction which was at odds with the declared aims of the project itself. Such critical questioning of the current taken-for-granted rationality of the practice is a crucial first step in developmental work research, too. But this questioning does not often reveal such a clearcut 'wrong direction' as in Flyvbjerg's case. Commonly the questioning reveals that there are multiple conflicting directions, much ambivalence or even a state of general uncertainty and confusion concerning the direction. When the answer to Flyvbjerg's question is 'We don't really know', another question is needed. In developmental work research, this crucial question is: *'Where do we come from?'* In other words, the roots of confusion and uncertainty need to be discovered and traced step-by-step by means of historical analysis.

Flyvbjerg's second question is 'Who gains, and who loses, by which mechanisms of power?' This question, inspired by Foucault, aims at uncovering "the interplay between rationality and power in defining winners and losers" (Flyvbjerg, 2001, 148). For the author, power is the lens through which the inner workings of social practices are illuminated and analyzed. Drawing on Foucault, Flyvbjerg emphasizes that power is productive. Developmental work researchers tend to look at the same phenomenon from the other end: productivity is power. In other words, the inner workings of social practices are made visible by focusing on the objects and instruments (tools and signs) of productive activities. For Foucault (1991), a key notion is governmentality. For developmental work research, a key notion is instrumentality. Thus, my alternative to Flyvbjerg's second question would be: *'What are the tools and signs available for different participants and how are they used to construct the object of the activity?'*

Flyvbjerg's third question is 'Is this desirable?'. When there is ambivalence, conflict, uncertainty and confusion about the direction of development, the question about desirability is somewhat useless, or at least premature. In developmental work research, the crucial third question is instead: *'What are the inner contradictions of our activity?'* This means that before debating the desirability of the direction of development, we try to identify the pressing systemic contradictions that need to be resolved for develop-

ment to happen. Focusing on contradictions means that it is not anymore so easy to determine who is right and who is wrong.

The fourth question of Flyvbjerg's phronetic social science is 'What should be done?' Again, this seems straightforward: let us identify the actions needed to redirect the development. But there is a fine line between 'should' on the one hand and 'can' or 'will' on the other hand. Flyvbjerg suggests that researchers deliberately and actively feed the results of their research back into the political, administrative, and social processes they study, using "public dialogue, including communication via everyday media" (2001, 156). In the Aalborg city planning project, the author made seven specific recommendations for changing the process. This is the 'should' mode. In developmental work research, the question is *'What can and will be done?'* It can only be answered by working with the practitioners to actually redesign the practice and by following up and interfering in the implementation of the redesigned model of activity. This includes Flyvbjerg's insistence on dialogue as "the vehicle by means of which research can best hope to inform the democratic process" (2001, 159). But dialogue and informing are not enough for developmental work research. From the early experimental work of Vygotsky, Leont'ev and Luria, activity theory has been involved in the actual formation of new material patterns of life and practice. This is not a step of dissemination and dialogue after the research, it is at the very core of research itself.

So the four initial questions of developmental work research might look like this:

1. Where do we come from?
2. What are the tools and signs available for different participants and how are they used to construct the object of the activity?
3. What are the inner contradictions of our activity?
4. What can and will be done?

To answer these questions developmental work research employs a longitudinal framework. Essentially, researchers aim at generating, supporting, following and analyzing cycles of expansive learning in the activity systems they study. An ideal-typical image of an expansive cycle is presented in

Figure 0.1. It includes seven key learning actions and the corresponding steps in the working out of the inner contradictions of the activity system. The criterion of expansion is that the process opens up qualitatively new possibilities and potentials for creating use values and thus also for developing the capabilities and agency of the practitioners and their clients (for further discussions of the methodological uses of the expansive cycle, see chapters 9, 13 and 14 of Engeström, 2005, the companion volume of this book).

Flyvbjerg's methodology contains the first three expansive actions of Figure 0.1 – questioning, analysis, and modeling (Flyvbjerg, 2001, 160-161). It seems to consider the researcher's job done after that. In developmental work research, the job is only half done after modeling a new solution.

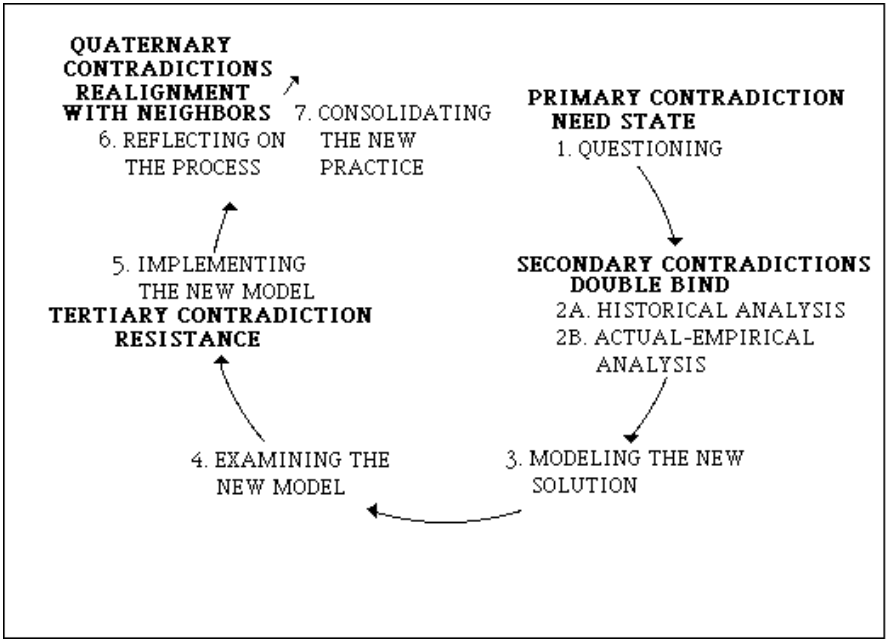

Figure 0.1. The expansive learning cycle

The longitudinal and interventionist methodology of developmental work research requires relatively durable partnerships between the researchers and the organizations they study. Such partnerships are based on mutual benefit: researchers get data and findings, the organization gets new tools and critical impulses to examine and change its practices. Such a partnership is not a consulting agreement. The researchers are not hired by the management to generate recommendations and solutions. The partnership is based on mutual autonomy. Researchers have the obligation and right to produce critical analyses for eventual publication, and their work is typically funded by third, public sources. Practitioners from the shopfloor and commonly also employees' trade union representatives are included in the steering groups that supervise the project within an organization.

The studies reported in the chapters of this book represent a wide range of projects in developmental work research. None of them is a complete description of a full-scale expansive process explicitly based on the questions formulated above and proceeding through the steps of the cycle schematically presented in Figure 0.1. Each chapter opens up a specific, partial window into the framework and the process of this research approach. Together, the chapters should be read as a puzzle or a mosaic. The questions and the cycle discussed above may offer keys to finding meaningful connecting threads and patterns in the puzzle.

The chapters represent work done in numerous projects within the five research groups of the Center for Activity Theory and Developmental Work Reserarch over a period of ten years. The Center was founded at University of Helsinki in 1994. In 2000, the Academy of Finland granted the Center the status of a National Centre of Excellence in research. The five research groups and their leaders during the past ten years have been (1) New forms or work and learning (led by Yrjö Engeström), (2) Workplace communities and work-related wellbeing in transition (led by Kirsti Launis), (3) Innovations and organization of research work (led by Reijo Miettinen), (4) Learning in the boundary zone between school, work and everyday life (led by Terttu Tuomi-Gröhn and, from 2004, by Ritva Engeström), and (5) Change management, intervention and learning (led by Jaakko Virkkunen).

The selection of the chapters for this book was done in simple way. In the fall of 2004, I approached all colleagues working at the Center who had a PhD, and all those who had completed their PhDs at the Center but had subsequently left for other jobs. I asked each one of them to select a recent paper or chapter of theirs for this book. The paper could be previously published elsewhere, or it could be an original contribution. The authors were asked to select a paper that represents some core themes and insights of their work. Some submitted chapters co-authored with other colleagues at the Center.

The papers I received could fairly comfortably be divided in two categories, namely theory and methodology (Part I of this book) and empirical applications (Part II of this book). However, the nature of developmental work research is such that theoretical papers tend to contain also empirical material and empirical papers are often quite saturated with theoretical discussions. I decided not to group the chapters according to the five research groups in which they have been incubated. The main reason is that the themes of the theoretical and methodological chapters cut across the interests of the research groups.

It also seemed more meaningful to arrange the empirical chapters of Part II in the temporal order of the appearance of the PhD dissertations within which they were originally produced. The last chapter, by Jaakko Virkkunen and Heli Ahonen, is something of an exception, the first author being a senior faculty member of the Center. But as the second author is currently finishing her PhD, even this last chapter is in the right place in the temporal order.

Each chapter of this book necessarily represents only a fragment of the work of its author. Most of the authors have personal web pages within the Center's web site (http://www.edu.helsinki.fi/activity/), and the reader is advised to expand on the fragments also by contacting the authors directly. Activity theory and developmental work research are living movements. Contacts, comments and critiques are most welcome.

Agnone and Helsinki, April 2005 Yrjö Engeström

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PART I: THEORY AND METHODOLOGY

Terttu Tuomi-Gröhn

1 STUDYING LEARNING, TRANSFER AND CONTEXT: A COMPARISON OF CURRENT APPROACHES TO LEARNING

ABSTRACT
This article continues issues raised in a book "New perspectives on transfer and boundary crossing" (Tuomi-Gröhn & Engeström, 2003). The book deals with different conceptualizations on transfer and their applications in school and work situations. While editing this book I noticed that, in addition to the concept of transfer, also the concept of context is used in many different meanings. Discussion between scholars representing different paradigms is sometimes confusing because the same terms are used referring to different things. This is also the case with the concepts of transfer and context. How these concepts are conceptualized is related to the approach of learning. The aim of this article is to present an overview to current approaches to learning, and to the concepts of transfer and context related to them.
In addition, a new conceptualization on transfer, based on activity theory, is presented. In order to understand this concept, called developmental transfer, and learning and context concepts related to it, also other current approaches to learning are discussed. In addition to activity theory, cognitive views, phenomenography, and situated views are presented and analyzed here.

COGNITIVE APPROACHES

Constructivism and cognitive science are very popular among some scholars and scientists of today (Bereiter & Scardamalia, 1985, Gardner, 1987, Anderson et al., 1995, Salomon, 1997) *Learning* is, in contrast to behavioristic notions, a construction of the knowledge and world. Cognition is the activity of knowing: the acquisition, organization and use of knowledge. In this process, the meaning of mental representations is of primary importance. Gardner (1987, 383) depicts it as follows:

> The major accomplishment of cognitive science has been the clear demonstration of the validity of positing a level of mental representation: a set of constructs that can be invoked for the explanation of cognitive phenomena, ranging from visual perception to story comprehension. When, at the height of behaviorist era, few scientists dared to speak of schemas, images, rules, transformations, and other mental structures and operations, these representational assumptions and concepts are now taken for granted and permeate the cognitive sciences.

Cognitive conceptualizations of learning, such as Piaget (1970), include the notion of "stages" of cognitive development, and content-free structures, assumed to underly the stages. Children can be taught general cognitive skills (e.g. mathematics, logic, critical thinking, reading, writing) if these skills are disembedded from the contexts of their use. Extraction of knowledge from the particulars of experience, of activities from its context, is the condition for making knowledge available for general application in all situations.

Cognitive notions on *transfer* are based on the idea that knowledge is transferred from the solution of one task to the solution of another task, "the effect of knowledge that was learned in a previous situation (task A) on learning or performance in a new situation (task B)" (Mayer & Wittrock, 1996, 48). Reed (1993, 35-37) describes the way transfer is studied in his experiments:

> Students in the laboratory settings are given two river-crossing problems to solve, the missionary-cannibals problem and the jealous-husbands problem. The first problem requires moving three missionaries and the three cannibals across a river under the constraint that cannibals can not outnumber missionaries in the boat or on either side of the river. The second problem requires moving three husbands and their wives across the river under the constraint that a wife can not be kept in the presence of another man unless her husband is present.

A formal mapping exists between the two problems in which husbands correspond to missionaries and wives correspond to cannibals. The similarities between tasks at a surface (story content) and formal (search space) level are the assumed basis of transfer between tasks. In other studies (e.g. Hayes & Simon, 1977) the tasks have been more complicated and the story of transfer situation/solution procedure have been varied. However, similar in all these tasks is that the problem solver is seen as an active participant of the problem-solving process, as one who must manage the way the prior knowledge is used to solve a new problem (Mayer & Wittrock, 1996, 50).

Vosniadou characterizes this view of transfer (1989, 423) as follows:

> The richer and more tightly structured one's representation of a system is, the easier it becomes to see structural similarities between it and other systems and the greater the possibility of identifying analogies [in tasks]. The

> development of the knowledge base makes it possible to access more and more remote analogies, to see the structural relationships between superficially unrelated systems, and to map increasingly complex structures.

One version of the symbolic schema notion is used by Reed (1993) for problems presenting numerical values of quantities that are solved using formulas. In the symbolic schema theory model of solving word problems in arithmetic, use of a solution method depends on recognizing a pattern of relations among the quantities that are described in the problem. Transfer will occur if the pattern of quantities in the transfer problem is recognized to fit the same schema that was used in initial learning. Transfer, therefore, requires a process of interpreting the learned symbolic schema in the transfer situation.

Salomon and Perkins (1989) distinguish between low-road and high-road transfer. Low-road transfer refers to that type of transfer that automatically emerges when two tasks are closely similar to each other. High-road transfer refers to the intentional application of previously acquired knowledge in new situations. This kind of transfer is called (Soini, 1999) active transfer in order to emphasize that it is a question of dealing with a person's active attempts to not only utilize previous knowledge in new situations, but also consciously aim at high-road transfer during learning processes.

The problem of transfer, according to cognitive theorists, is that knowledge acquired in one task setting is conveyed to other task settings; knowledge is applied in situations that are different from learning *context*. When they use the notion of context they refer to the *tasks* presented to students together with the relevant features of the experimental setting (Simon & Reed, 1976, Gick & Holyoak, 1980). Lave (1988, 39-40) has analyzed how Gick & Holyoak use the term context. Gick & Holyoak (1980, 349) write:

> 1. The issue of how analogies are noticed is a very general one. A potential analogy may often be encoded in very different *conte*xt from that in which the target problem appears. …
> 2. Indeed, the basic problem in using an analogy between remote domains is to connect two bodies of information from different *semantic contexts*…
> 3. More generally, successful transfer of learning generally involves overcoming *contextual barriers*. This may not be easy; for example, it is all too common for a student to fail to notice the relevance of knowledge

> common for a student to fail to notice the relevance of knowledge acquired in one class to a problem encountered in another (Numbering and italics added).

The context in the first quotation refers to problem-isomorphs from knowledge domain to a social situation. In the second, cultural systems of meaning are equated with knowledge domains. The third quotation mentions a "contextual barrier", a gap between two school classes that prevents transfer. Even though there is reference in the first citation to a social situation, in all experiments on transfer the context of activity is confined within the boundaries of task instructions and problem content.

Evaluation of the cognitive approach

Lave (1988, 43) criticizes cognitively oriented transfer research:

> Its central characteristics include separation of cognition from social world, the separation of form and content implied in the practice of investigating isomorphic problem solving, and a strictly cognitive explanation for continuity in activity across situations. All these *dissociate* cognition from its contexts, and help to account for the absence of theorizing about experiments as social situations and cognition as socially situated activity.

Cognitive experiments are based on the idea that transfer should take place between two versions of the same story or problem. The cognitive view represents the static quality of transfer in experimental practice: it is treated as a process of taking a given item and applying it somewhere else.

The problem with this kind of approach is that education prepares to perform well in texts and examinations but has little relevance in out-of-school contexts and working life. Several cognitively oriented educational psychologists, for example Ausubel, Novak & Hanesian (1978), advocate the use of explicit structural schemas - or advance organizers - by instructors during the presentation of new information to enhance its organization and to illustrate its relationships to other areas of the knowledge domain. While this may indeed facilitate better performance in text-based school tasks, it remains unclear just what relevance such in-school improvement may have for the transfer of school knowledge to life situations and activities outside school.

PHENOMENOGRAPHIC APPROACH

Phenomenographic approach (Marton 1981) has refrained from posting a cognitivistic explanation or mental model of cognition. According to it, the investigations of *learning* must take into account how learning content is understood and how situations which involved learning are perceived by learners. Marton questions the notion of context-free, formal stages by Piaget and argues that the mastery of the very same concepts is dependent both on content and on contextual factors. Phenomenography is a study of "human-world relationships" rather than simply a reflection of some kind of general cognitive functioning system possessed by the individual. Phenomenography has insisted on a 'purely descriptive knowledge interest' in investigating the qualitatively different ways in which people experience certain phenomena or certain aspects of the world. These ways of understanding, or these conceptions, are then revealed in the form of categories that capture the critical differences in understandings from the point of view of a certain interest. They are not seen as the qualities of the individuals but as concrete cases of human functioning (Marton 1981, 77).

In the following, is presented an example how phenomenography is applied for the study of learning: (Marton & Wing-yan Pong, manuscript, 5-6).

> High school students were individually interviewed at the school on conceptualizing some economic concepts. Themes studied were determined by the researcher. To motivate the students they were told that they were to help with a research project that aimed to understand young people's ideas about some economic matters.
> A set of pre-designed questions was used as conversation openers. Each of these presented a concrete scenario and the student was invited to comment on it. As the conversation developed, the students were allowed to move freely to any topic of their interest. Two conversation openers on the theme price- were:
>
> 1. Mary is a friend of mine. She bought a condominium unit two years ago at the price of $ 250 000. She lived there since and now she's got to move in order to live elsewhere. However, the best price she can find for her condo unit was $180 000. Why do you think that happens?
> 2. Tom works as a sales representative in a Disney store. There is a doll in the store which always gets strange remarks from his customers. The doll costs $400. Why is it so expensive?

Authors found four different kind of conceptualizations of price based on these openers:

A. Price as reflecting the *value* of the object
B. Price is related to the *demand* conditions of the market
C. Price is related to the *supply* conditions of the market in which the object is situated
D. Price is related to the *opposing forces of demand and supply* conditions of the market in which the object is situated.

According to Marton, there is impressive amount of evidence that whether or not the individual solves a certain task is not so much a function of the logical structure of the task but of its content and of the context in which it is presented. Above all the individual's performance is influenced by the extent to which the experimenter's questions are interpreted by the individual on the same premises as those on which the experimenter based his questions (see also Hundeide 1977, 41-42). Learning, structures and conceptions as psychological entities are not epistemologically unattainable independently of context and content.

Smedslund (1953, 157-158) gives an account on the *transfer* of this approach. According to him the concept of transfer is unnecessary. The procedure of determining what is learned in a series of situations and the procedure of determining transfer from situations are identical. They consist of varying the situation, and of recording what changes in behavior, and what new learning have taken place as a function of the learning in situations. Therefore the concept of transfer becomes unnecessary. The problem of predicting transfer is the problem of predicting what will be learned. How then to predict if, how fast, and what a given individual will learn in a given series of situations? Smedslund answers: "Every prediction of learning must, explicitly or implicitly, be based on a diagnosis of relevant parts of what the organism has learned before." Smedslund gives an example how the learning process is a function of the previous learning. Suppose that a group of Communists and a group of anti-Communists memorize the content of a speech given by Stalin. It is highly probable that their stories are different. The attitude towards Communism is the relevant prior structure that determines what is memorized and learned in a new situation. This is also the basis to understand and anticipate what is learned

in the forthcoming situations. Thus, the transfer concept is ignored and learning in new situations is equated with the concept of transfer.

How is then *context* conceptualized by the phenomenographic approach? Marton and Wing-yan Pong (manuscript) describe in their study on economical concepts individual inter-contextual and intra-contextual shifts in the conceptions of their interviewees. Inter-contextual shift implies that students manifest more than one conception for a *particular phenomenon*. For instance, when answering to two previously described conversation openers representing the same phenomenon – price, they manifest different conception to each one. In that case, two cases described were taken as separate and particular contexts. Intra-contextual shifts occurs when students express more than one conception when attending to a *particular opening question* during the interview. In the next is one example of intra-contextual variation during the interview process (Marton & Wing-yan Pong, manuscript, 15).

> I:
> Why is the same can of Coke costs more in some places than in others? You know, if you go into a hotel lounge, you pay more.
>
> S:
> Yes, but you are not just paying for the Coke when you go to a hotel lounge, you are paying for the service, right? They usually out it in a cup or ice cubes, and you are paying that extra bit to have ice cubes (Conception A: *Price* reflects the *value* of the object concerned). More like you buy beer in a liquor store and in a bar. OK. In terms of the liquor store, if you go to any liquor store, you can pick which is cheaper and then go for that one, so that the store is forced to lower the price of beer to be competitive. I don't want to talk about beer more. In case of a pizza, if you go to Canada's Wonderland you are in a park and you can't get out and you have only that one choice that you have to buy like that kind of pizza, so that they can raise the price, because they are not letting people go outside to a nearby convenience store that other people can by from. That isn't fair, is it? I guess people can sneak them into Wonderland and drink their own pop instead. But you are not supposed to do so (Conception B, *Price* is related to the *supply* conditions of the market in which the object is situated)

In this case student manifests two different conceptions when answering or describing their experience of the same phenomenon. This way of interpreting intra-contextual and inter-contextual shifts implies that the context is understood as a space created by questions of the interviewee. Context is defined as social situations, as spaces of interactive experience. Al-

though contexts are seen as interpersonal constructions, they are commonly treated as purely linguistic, symbolic, and experiential entities. This makes context look like something that can be created at will by two persons in interaction, as if independently of the deep-seated material practices (Engeström, 1993, 67; Lave, 1988, 150).

Evaluation of the phenomenographic approach

The way phenomenography conceptualizes transfer is advanced because the different situations are not assumed to be static and learning is assumed to occure in different situations. However, Säljö (1996, 21-26) criticizes the phenomenographic approach of decontextualisation of thinking from what occasions it. It is some kind of strange meta-talk about issues which they have never talked about before, where a "neutral" interviewer supposedly lets people "talk freely" about how they construe the world, even though one sometimes is uncertain if the interviewee has any interest in the encounter at all. What is a reasonable way of constructing and solving problem will depend on whether you encounter it as an exercise in school or if you have to deal with it everyday practices. What role conceptions play in ordinary daily activities? Do people carry conceptions with them as cultural baggage and as latent forms of thought that can be mobilized as they find it?

SITUATED APPROACHES

The static notion of portable knowledge and decontextualized conceptions has been challenged by theories of situated *learning*, notably by Lave (1988), Lave and Wenger (1991), Greeno, Smith & Moore (1993), arguing that knowledge is not an abstract entity independent of situations. To the contrary, for these authors knowledge is fundamentally bound to situations. It is not possible to fully understand how people learn or work if the unit of study is the unaided individual with no access to other people or to artifacts for accomplishing task at hand. Situated approaches emphasize the emergent, contingent nature of human activity, the way activity groups directly out of the particularities of a given situation. The focus of study is situated practice, as opposed to the study of the formal cognitive properties or decontextualized conceptions of individuals. The following example

illustrates the way the situated actions are studied. It is the study on arithmetic reasoning while grocery shopping (Lave 1988, 153).

> The researchers follows the shopper while she is doing her everyday shopping:
>
> SHOPPER:[speaking hesitantly, eyes searching the shelves to find enchiladas]
> Now these enchiladas, they are around 55 cents. They were the last time I bought them, but now every time I come ... a higher price.
>
> OBSERVER:
> Is there a particular kind of enchilada you like?
>
> SHOPPER:
> Well, they come in a, I don't know, I don't remember who puts them out. They move things around too. I don't know.
>
> OBSERVER:
> What is the kind you're looking for?
>
> SHOPPER:
> Well, I don't know what brand it is. They're just enchiladas. They're put out by I don't know [discovers the display of frozen Mexican dinners]. Here they are! [Speaking vigorously and firmly.]
> They were 65 the last time I bought them. Now they're 69. Isn't that awful?

According to the situated approach knowing is manifested in specific communities and situations as an ability to interact with things and other people in various useful ways. Learning and knowing are processes of participation in communities of practice.

For proponents of situated cognition, the issue of *transfer* is not to determine the influence of a prior task to an unchanging subsequent task, but to understand the continuity of activity and learning from one changing everyday situation to another. Practice replaces knowledge as the central concept.

Greeno, Moore and Smith (1993, 100) conceptualize transfer according to the situated approach as follows.

> Knowing is ability to interact with things and other people in a situation, and learning is improvement in that ability – that is, getting better at participating in a situated activity. The question of transfer, then, is to understand how learning to participate in one situation can influence (positively or negatively) one´s ability to participate in another activity in a different situation. The answer must lie in the nature of the situations, in the way

> that the persons learn to interact in one situation, and in the kind of interaction in the second situation that would make activity there successful.

James Greeno (1997) proposes a more detailed view of the tools of transfer according to situated view. He draws on Gibson´s (1986) notion of affordances to explain the mechanisms underlying situated cognition: "we call the support for particular activities created by relevant properties of things and materials in the situation affordances" (Greeno, Smith & Moore, 1993, 102). For a practice learned in one situation to transfer to another situation, the second situation has to afford that practice and the agent has to perceive the affordance. If a learned practice is to transfer, it has to be learned in a form that is invariant across changes in the situation or that can be transformed as needed, and transfer depends on an ability to perceive the affordances for the practice that are present in a changed situation (Greeno, Smith, & Moore, 1993, 102).

For Greeno, symbolic cognitive representations as affordances can play an important role in transfer, but they are considered as instrumental parts of the activities that occur in the initial learning and in transfer situations, rather than being fundamental and ubiquitous. Greeno believes that transfer that depends primarily on symbolic cognitive representations that are learned in one situation and applied in another is not the only kind of transfer there is. Indeed, Greeno believes that transfer mediated in that way by abstract, symbolic representations probably is atypical. The focus of Greeno is on activities or practices rather than on representations. Transfer, in this view, is enabled by structural invariance in the interactions of agents in situations. These interactions can be described as action schemata, referring to the organizing principle of the activity rather than to symbolic cognitive representations (Greeno, Moore & Smith, 1993, 146).

In the situated perspective the notion of *context* refers to a social context defined in terms of participation in a social practice. People are studied in their activities in everyday settings. The unit of analysis is "the activity of persons-acting in setting". The unit of analysis is thus not the individual, not the environment, but a relation between the two. A setting is defined as a relation between acting persons and the arenas in relation with which they act. An arena is a stable institutional framework. For example, a supermarket is an arena within which activity takes place. For the individ-

ual who shops in the supermarket, the supermarket is experienced as a setting because it is a "personally ordered, edited version" of the institution of the supermarket. In other worlds, each shopper shops only for certain items in certain aisles, depending on her needs and habits. She has thus "edited" the institution to match her personal preferences (Lave, 1988, 150).

Context (Lave, 1988, 151), according to the situated approach is the relationship between arena and setting. On the one hand, context connotes an identifiable, durable framework for activity, with properties that transcend the experience of individuals, exist prior to them, and are entirely beyond their control. On the other hand, context is experienced differently by each individual. Context refers to the relations between arena and setting rather than to a single entity.

An important aspect of the "activity of persons-acting in setting" as a unit of analysis is that it forces the analyst to pay attention to the flux of ongoing activity, to focus on the unfolding of real activity in a real setting. Situated action emphasizes responsiveness to the environment and the improvisatory nature of human activities. The analyses offer detailed observations of the temporal sequencing of a particular train of events rather than being descriptive of enduring patterns of behavior across situations (Nardi, 1997, 72-73).

Evaluation of the situated approach

Greeno's view of transfer is promising in that it switches the locus of learning from an isolated Cartesian individual to a novice participating in a community of practice. In so doing, it also expands the structures of knowledge to include not just mental and symbolic representations but also physical artifacts and recurring patterns of social practice. On the other hand, learning is still ultimately depicted as an individual achievement, albeit as that of an individual situated in a communal setting. Furthermore, the learning trajectory of the individual is curiously unidirectional, moving in a rather traditional fashion from the periphery of not-knowing to the center of knowing. The theory depicts communities of practice as stable formations; it does not address outward movement, radical innovation, and change in communities of practice (Tuomi-Gröhn & Engeström, 2003).

ACTIVITY THEORY

According to the activity theory significant *learning* processes are achieved by collective activities. Learning of the collective activity system and learning of the individual are intertwined, and the individual´s learning is comprehensible only if we understand the learning of the activity system. An activity-theoretical view (Leont'ev, 1978: Engeström, 1987; Engeström, Miettinen & Punamäki, 1999) defines unit of analysis for cognition and learning as a collective activity system mediated by cultural artifacts (tools and signs). Learning is distributed in an object-oriented activity system, mediated by instruments, rules and division of labor (Figure 1.1).

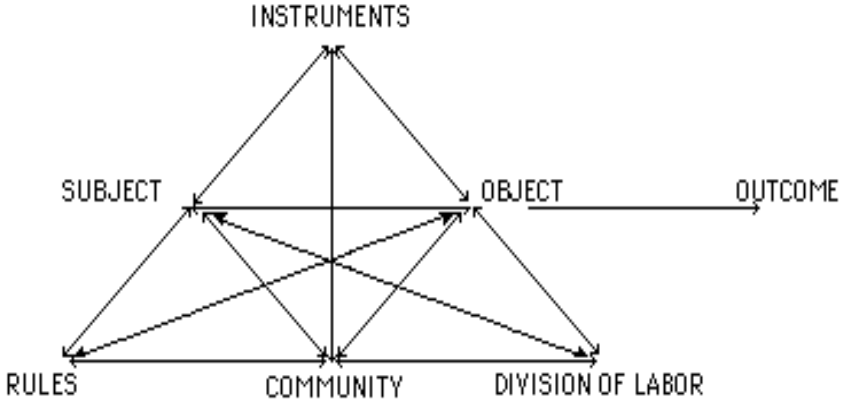

Figure 1.1. General structure of an activity system (Engeström, 1987, 78)

Expansive learning (Engeström, 1987) is initiated when some individuals involved in a collective activity take the action of *questioning the existing practice*. This can lead to an escalating process of debate and collaborative *analysis of contradictions* in the current state of affairs, which may lead to a projective *modeling* of a developmentally new form of the activity in which the contradictions are resolved. The model and its implications are examined, and it is *implemented* step by step in practice. This leads to *consolidation and proliferation of the new practice*, and to *reflective evaluation* of the process. This is the cycle of *expansive learning*. Expansion happens substantively, by con-

structing a more encompassing object and motive for the activity, and socially, by recruiting a growing number of participants in the transformation effort.

From the methodological point of view activity theory presupposes (Nardi, 1997, 95):

1. A research time frame long enough to understand users' objects, including, where appropriate, changes in objects over time and their relation to the objects of others in the setting studied.
2. Attention to broad patterns of activity rather than narrow episodic fragments that fail to reveal the overall direction and import of an activity.
3. The use of a varied set of data collection techniques including interviews, observations, video and historical materials, without undue reliance on any one method.
4. A commitment to understand things from user's points of view.

In the activity theoretical view (Tuomi-Gröhn & Engeström, 2003), meaningful *transfer* of learning takes place through interaction between collective activity systems. For example, the school and the workplace may engage in collaborative interaction in which both activity systems learn something from each other. Such transfer takes the form of negotiation and exchange between different cultures. What is transferred is not packages of knowledge and skills that remain intact; instead, the very process of such transfer involves active interpreting and reconstructing the skills and knowledge to be transferred. Solutions for novel problems are created by using the expertise of both activity systems. The collaborative way of constructing knowledge and solving problems is transferred from one situation to another. This process is multidirectional and multifaceted, involving transitions from school to workplace and from workplace to school. On account of its dynamic nature, this transfer is called *developmental transfer*.

From the student's point of view, one's future workplace will inevitably be caught in developmental turmoil. Thus, the best way to learn is to get engaged in real change processes already when one is in school. Relative novices and outsiders can be tremendously valuable in change efforts because they see things from a fresh angle, they have time to reflect and take initiatives, and they are not caught in the routines and turf battles of the workplace. During their internships and work practice periods, students in collaboration with their teachers can work as change agents in various

transformation and redesign projects of local work organizations. The collective capabilities and resources of the schools are brought into these change efforts. Thus, the students and teachers act as mediators and boundary crossers between educational institutions and workplaces (Tuomi-Gröhn & Engeström, 2001; Tuomi-Gröhn & Engeström, 2003, see also Wenger, 1998).

The internship is a natural site for the new role of schools as change agents. In development projects, collaborative teams of students, practitioners and teachers will have to develop knowledge and skills (cognitive tools) that meet the challenges of the projects. This is done by constructing and combining heterogeneous networks. This is the essence of developmental transfer. The internship can be a zone where two activity systems, the school and the workplace, can jointly find and create mutually relevant boundary practices (Wenger, 1998). The collaborative way of promoting developmental transfer can illustrated with the following figure (Tuomi-Gröhn, 2003).

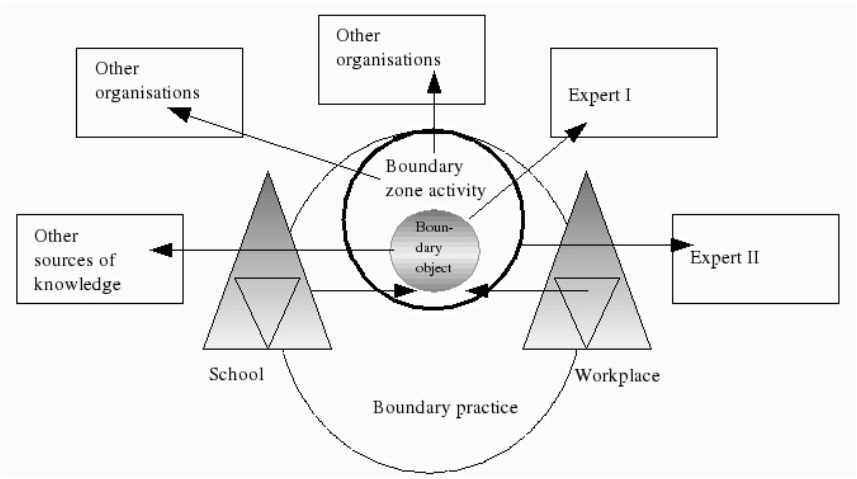

Figure 1.2. Boundary zone activity between school and workplace and network related to it

The aim of the collaboration between the school and the work is to create a new boundary practice, development project at the workplace, which is at the boundary zone between them, not belonging to each of them. The prerequisite of the boundary practice is the creation of new meaning, re-shaped object of the work, which further produces an entirely new activity system: boundary zone activity. The subject of this activity is a collaborative team of boundary crossers: student, mentor at the workplace and teacher.

To construct new knowledge and develop practices a network outside team is often needed. Every participant has his/her own personal, strong or weak ties which are exploited, that is the way the network is formed. Also the meaning of literature and previous research is of importance when constructing new knowledge and concepts. The network can also be used to proliferate feasible new knowledge and innovations created in the project. In the figure, squares describe the participants of the network and arcs ties between participants.

The study by Tuomi-Gröhn (2003) describes a case of trying to promote developmental transfer. The following is an excerpt of an situation where a team, formed as described above, in a meeting at the daycare center makes an important insight:

> STUDENT 1:
> Only yesterday we noticed that this child, who has some difficulties with his speech, cannot crawl either. We were wondering whether he had been able to crawl when he was a baby. I wonder if he has been moving about on his behind only.
>
> MENTOR:
> I once asked the mother whether it was true that he did not crawl when he was a baby. Just recently someone has published research on this matter.
>
> TEACHER:
> I haven't heard about that study, but NN is doing a licentiate thesis on such children. She is one of our teachers. If you are interested in this problem, please let me know how to reach you.
>
> STUDENT 2:
> I want that information too. It was I who tried to locate the study.
>
> TEACHER:
> OK, give me your phone number, I will call you [about the study]

HEAD OF THE CENTER:
Well, what does the whole daycare center get out of this? Definitely we are getting information that helps us make observations. This is very important for all of us. This is the way these projects should bring us new information that can help us do our job. I just began to think about this child and his problems more thoroughly, you can really see the same thing in the group of the very youngest children. To help us make better observations, this is a really good project, indeed.

HEAD OF THE CENTER:
If we can develop our work through these projects and have enough interest in them, and if these new ideas add to our ways of doing the work - then we have come a long way.

This discussion and consultation of the expert led to the finding of the theoretical insight of the connection between motor development and the development of speech. This insight, in turn, changed the practices of the daycare center: the physical exercises were increased and children's physical abilities were tested as routine practice. This insight expanded also to the neighbouring daycare centers

In such projects of expansive learning and developmental transfer, three parties learn in collaboration and dialogue: the school, the student, and the workplace. They are all engaged in constructing their partially interdependent zones of proximal development.

Engeström (1993, 66) criticizes the cognitive and situated notions of *context* that the individual experience is described and analyzed as if consisting of relatively discrete and situational actions. On the other hand, the system, or the given objective context, is described as something beyond individual influence – if described at all. Activity theory contends that such a notion of context beyond our influence is fiction. Arenas of our everyday life are constructed by human agents. If we take a closer and prolonged look at any institution, we get a picture of a continuously constructed collective activity systems that is not reducible to series or sums of individual discrete actions, although the human agency is necessarily realized in the form of actions.

The very pressing theoretical problem is the very indirectness of institution building, that is, the indirect or even hidden influence of individual actions on the creation and reproduction of activity systems. Engeström (1993, 67) quotes Engel (1976, 366):

> The ends of the actions are intended, but the results which actually follow from these actions are not intended; or when they do seem to correspond to the end intended, they ultimately have consequences quite other than those intended. Historical events thus appear on the whole to be […] governed by chance. But where on the surface accident holds sway, there actually it is always governed by inner, hidden laws and it is only a matter of discovering these laws.

For activity theory, contexts are neither containers nor situationally created experiential spaces. Contexts are activity systems (Engeström, 1993, 67). Activity theory, then, proposes a very specific notion of context: the activity itself is the context. What takes place in an activity system composed of object, actions, and operation is the context. Context is constituted through the enactment of an activity involving people and artifacts. People consciously and deliberate generate contexts (activities) in part through their objects; hence context is not just "out there". Context is both internal to people – involving specific objects and goals – and, at the same time, external to people, involving artifacts, other people, specific settings. The crucial point is that in activity theory, external and internal are fused, unified (Nardi, 1997, 76).

COMPARISON OF DIFFERENT APPROACHES

Different approaches to learning, and their conceptualizations on transfer and context are summarized in the Table 1. The unit of analysis of research in each of the approaches is also described in the table.

The cognitive conceptualizations on learning include notion of content-free structures, assumed to underly the stages of cognitive development. In the notion of transfer, the problem solver is seen as an active participant of the problem-solving process with active attempts to utilize previous knowledge in new situations. Successful transfer occurs when the problem solver is able to recognize the requirements of the new problem, select previously learned specific and general symbolic schemas that apply to the new problem. The context of learning refers to the task instructions and problem content presented to students in experimental settings. The cognitive approach has been criticized from separation of cognition from social world, the separation of form and content and a strictly cognitive

explanation for continuity across situations. One problem deals with the relevance of applying the results to out-of-school contexts and working life.

	Learning	Transfer	Context	Unit of analysis
Cognitive approach	*Mental models *Structural features of knowledge	*Identification of familiar schemas when solving a new problem *Meaning of symbolic cognitive representation	Task instructions and problem content	Individual Cognition in experimental settings
Phenomenographic approach	Content-based mental conceptualizations, ways of experiencing	Learning in different situations	*Space aroused by different questions of the interviewer *Spaces of interactive experience	Individual cognition in school settings
Situated approach	*Knowledge bound to situations *(Individual) participation in (static) social practices	*Transfer questioned *Mental, material and social affordances = action schemata	Social and material context of everyday practice	The everyday activity of persons-acting in setting
Activity theory	Collective activity in changing activity systems	Developmental transfer, tension-laden evolution of concepts and practices	Activity itself, activity system composed of object, actions and operations	Activity system embedded in a contradictory social, cultural and historical process

Table 1.1. Comparison of different approaches to learning

Marton questions the notion of context-free, formal stages by Piaget and argues that the mastery of the very same concepts is dependent both on content and on contextual factors. Learning is studied in school environment and is conceptualized as content-based mental conceptualizations or

changed awareness of phenomena. The variation of conceptualizations indicate that conceptions are not qualities of the individuals but concrete cases of human functioning. It is basically impossible to ascribe a certain conception to a particular individual. Differences in the conceptions can be found not only between individuals but also within individuals. The transfer concept is equalized with the concept of learning. To predict transfer equals with predicting what is learned in a series of situations. From the viewpoint of learning, previous learning experiences, what is learned is of importance. Marton emphasizes learning as dependent on contextual factors, however, the context is conceptualized as spaces of interactive experience, fields of discourse ignoring the material environment. Therefore, also the phenomenographic approach has been criticized of reducing the human activities to mental context only, excluding the material context, and the communicative situation.

Situated view of learning focuses on turning peripheral novices into central experts, and therefore targets the characteristics of established expert practice as what should be learned. In a community of practice, learning takes place without much teaching, as an incidental byproduct of productive activity and often with tremendous efficiency, due to the strong motivational basis and richly supportive environment. Practice replaces knowledge as the central concept of transfer. Affordances are the skeleton of transfer. Transfer, in this view, is enabled by structural invariance in the interactions of agents in situations. These interactions can be described as action schemata, referring to the organizing principle of the activity rather than to symbolic cognitive representations. Context refers to a social context defined in terms of participation in a social practice. People are studied in their actitivities in everyday settings. The situated approach can be criticized of restricting to an individual achievement, even though an individual is situated in a communal setting. Communities of practice are conceptualized as relatively stable formations; innovations, and changes in communities of practice do not belong to the theoretical underpinnings.

According to the activity theory significant learning processes are achieved by collective activities. Learning of the activity system and the learning of an individual are intertwined and the individual's learning is understandable only if we understand the learning of the activity system.

The aim of the expansive learning is to produce change in work practices, learning is studied in changing situations, including also the analysis of the history of activity in question. Meaningful transfer of learning takes place through interaction between collective activity systems. What is transferred is not packages of knowledge and skills that remain intact; instead, the very process of such transfer involves active interpreting and reconstructing the skills and knowledge to be transferred. The collaborative way of constructing and solving problems is transferred from one situation to another. Activity theory proposes a very specific notion of context: the activity itself is the context. What takes place in an activity system composed of object, actions, and operation is the context. Context is constituted through the enactment of an activity involving people and artifacts.

CONCLUSIONS

The previous comparison indicates that, based on the unit of analysis, there are two central features that differentiate approaches. These two distinguishing (Figure 1.3) features are: learning studied in experimental/school settings or as a part of everyday practices. The other distinghuising feature is learning as an individual or collective activity. Based on these features, study of learning is considered as transitions from experimental/school situations (cognitive views and phenomenography) to the everyday practices (situated approach), and then as a transition from individual learning to the collective contradictory processes (activity theory).

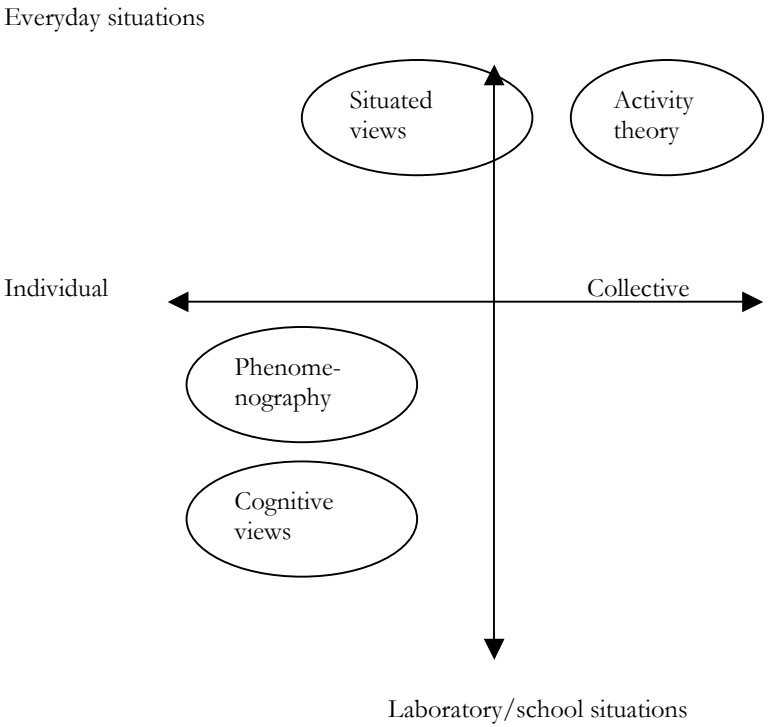

Figure 1.3. Distinguishing dimensions between approaches to learning

From the ecological or everyday viewpoint, we can criticize both cognitive and phenomenographic approaches for concentrating on the mental context only. Marton criticizes the cognitive approach of concentrating on context-free structures but also his own conceptualization of context is restricted. Säljö (1996, 32) depicts it as follows:

> The particular understanding how people conceptualize the world, that characterizes phenomenography, decontextualizes human actions (and talk) from the concrete practices, and in some fundamental sense does not study what it proclaims to study; learning and thinking as situated practices. The content of human activities cannot be meaningfully reduced to mental context in the way suggested by phenomenography. The material context, the communicative situation and the current commitments are just as much content as is 'mental' content.

We can ask: What kind of a role do schemas or conceptions play in ordinary daily activities? These questions have been aroused by difficulties in exporting laboratory experimental paradigms to cross-cultural research situations (e.g. Cole, Gay, Glick and Sharp 1971; Scribner 1977, Lave 1988). The researches based on the cognitive notions on learning and transfer have claimed that laboratory experimentation is a sufficient basis for generalizing about cognitive attributes of individuals. Already Bartlett (1932) and, later, Cole, Hood & McDermott (1978) argued that generalizing about "how people think" on the basis of what is found in laboratory experiments is a contradiction in terms. For if experimental situations are sufficiently similar to each other, and consistently different from the situations the cognitive activities of which they attempt to model, then the validity of generalization of experimental results must surely be questioned. He proposed that observations of everyday activities in their context should form the basis of experimental designs. Experimental findings should, in turn, inform further observation. According to Lave (1988, 42), a major factor missing from the experimental or school investigations of problem solving and transfer is an account of what motivates people to recognize the problems and undertake their resolution.

The situated approach has provided a corrective to the cognitive accounts of human learning from traditional cognitive science and phenomenography. It exhorts us not to base our accounts on learning on individual mental, cognitive models and invites us to take careful notice of what people are actually doing in the flux of everyday activity. Nardi (1997, 89), however, questions a "situation" as the primary determinant of activity. How do we account for variable responses to the same environment or "situation" without recourse to notions of object, asks Nardi. Activity theory instructs to begin with the object of the activity system as the point of analytical departure and, thus, will lead not simply to the moments of improvisatory actions but to a more global view that encompasses the totality of an activity. A fundamental question dictated by an activity-theory analysis is: What are the goals of the learner, and how are they related to the goals of other people and to the objects of the activity system?

The following table illustrates how the learning activity is conceptualized in three groups of approaches.

	Cognitive and phenomenographic approaches	Situated approaches	Activity theory
Object/aim	To help with a research project	To cope with everyday situations	Object of the activity system
Subject	Researcher, presents questions to the learner	Learner, whose questions are formulated and changed by the individual herself	Collaborative team
Tools	Previous knowledge	Material and social support	Material and social tools, conceptual evolution
Collaboration	None	Collaboration within community of practice	Collaboration between activity systems, networks

Table 1.2. Learning activity according to different approaches to learning

A key idea in activity theory is the notion of mediation by artifacts. Artifacts, broadly defined to include instruments, signs, language, and machines, mediate activity and are created by people to control their own behavior. Artifacts carry with them a particular culture and history and are a persistent structure that stretches across activities through time and space (Vygotsky, 1978). The basic unit of analysis, thus, overcomes the split between Cartesian individual and the untouchable societal structure. The individual can no longer be understood without his cultural means; and the society can no longer be understood without the agency of individuals who use and produce artifacts. This means that the objects cease to be just raw material for the formation of the subject, as they were to Piaget. Objects become cultural entities, and the object-orientedness of action becomes the key to understanding human action (Engeström, 1996, 132).

What distinguishes one activity from another is its object. Under the conditions of division of labor, the individual participates in activities

mostly without being fully conscious of their objects and motives. Activities are realized by goal-directed actions, subordinated by conscious purposes. These are typical objects of the cognitive psychology of skills and performances (Engeström, 1987, 66). Thus, from the viewpoint of activity theory, the cognitive and situated approaches restrict their view of learning to the individual level representing goal-directed actions. The problem with these approaches is that when excluding the collective activity the "real" object of the learning or work activity remains obscure, and thus the actions of the individual might not be fully comprehensible.

The unit of analysis of the first generation of activity theory, centered around Vygotsky, was individually focused. The second generation, centered around Leont´ev (1981), explicated the crucial difference between an individual action and a collective activity. It turned the focus to the he collaboration between participants of the activity system. Developmental work research projects focus on transformations in collective activity systems, beyond the individual. The third generation of activity theory needs to develop conceptual tools in order to understand multiple perspectives and networks of interacting activity systems. The basic mode is expanded to include minimally two interacting activity systems. The reason for this expansion is in the change of work. In the changing work, old hierarchical structures have turned to be inefficient, and new kind of flexibility and innovations are needed to survive in competition. Teams, networks and learning organizations are organizational realities. Compared to these developments, the collaboration in the conceptualizations of the situated approach are either within one community of practice activity (Lave, 1988) or, later, in collaboration between several communities of practice (Wenger, 1988). To the contrary, the cognitive and phenomenographical approaches concentrate entirely on the individual without any kind of collaboration, except with the researcher.

The concept of developmental transfer is in the line of the third generation of activity theory. Students leaving an educational institution and entering a workplace are not carrying with them any 'transferable' packages or structures of general knowledge and skills which can simply be activated in the new setting. From the viewpoint of activity theory, transfer is reconceptualized as collaborative and conflicting encounters and negotiations

between culturally different activity contexts – schools and workplaces. The most interesting are those cases where collitions between the newcomers and the established practice, or between the school and the workplace, lead to novel ideas and solutions (see Tuomi-Gröhn, 2003). Novel conceptual developments like boundary object (Star, 1987; Lambert, 1999), boundary zone and boundary zone activity (Konkola, 2001) are needed. In this case, transfer may be regarded as a tension-laden evolution of concepts and practices. Insight into such processes have been gained by following trainees in their communities from education to work, and in work, over extended periods of time .

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Ritva Engeström

2 POLYPHONY OF ACTIVITY

ABSTRACT
The activity-theoretical microanalysis of mindfulness focuses on the dynamics of socio-historical relations constituting sense making. As Markova (2000) maintains, social change in language is extremely difficult to conceptualize. The mainstream conception of cognition and language is based largely on various kinds of individualistic or collectivist, but static, epistemologies. I will lean on the notion of instrumentality arguing, first, that mental phenomena are to be explained with reference to artefactually mediated activities. This means also conceptualizations of the complex relationship between social processes and pragmatic activity. Secondly, I will argue for an activity structure where artifactually mediated actions are part of a cultural and historical process, and the same process is produced and displayed through and with these actions. Linell (1998) has expressed the complicated reflexive relations by using the aspect of "re" as central idea of dialogism. With these aims, I have combined the two lines of thinking, namely, activity theory and voice theory in the framework of speech (communication) put forward by M. M. Bakhtin. My interest is based on the position that both theories are methodologically oriented to understand the ongoing dialectic between what is taken to be stable and dynamic, repeatable and unrepeatable, representational and discursive forms of practice. They deal with the complicated reflexive relations between structural and processual applied to the "reality" where the mind does not reside inside the heads of individuals but is distributed between individuals and between humans and their artifacts. In the article, I will discuss the method using the data on conversations between a patient and a doctor at primary health care consultations. I have published a part of the present text in the journal of *Outlines* (1999), a part is rewritten.

INTRODUCTION

The communicative turn in social studies (Knorr-Cetina 1981; Campbell 1996) is reflected in developments in a number of microanalytical research perspectives. These perspectives emphasize local interactions and reflexivity. Likewise, situated studies of work and comtemporary studies on organizational communication have started to focus on communicative, interpretative and collaborative processes (Luff, Hindmarsh & Heath, 2000; Taylor & van Every, 2000) and reconceptualizations of the complex relationship between social processes and pragmatic activity (Blackler and McDonald, 2000; Engeström, Engeström & Vähäaho, 1999; Iedema &

Degeling, 1999). In the activity theory tradition, discourse-based studies have taken up the issue of human agency embedded in the everyday actions and interactions of people. Taking human agency into account requires a consideration of the "mindfulness" of human action, that is, reasoning, seeing, intepreting, learning, inventing and remembering (Engeström & Middleton, 1996).

In this article, I shall consider the discourse-analytical method applicable to the microanalysis of the phenomena constituting the mindfulness. The theoretical component of the study aims at intertwining activity theoretical (Leont'ev, 1978; Vygotsky, 1978) and Bakhtinian (Bakhtin 1981, 1986; Volosinov, 1973) insights in order to make the mind analyzable as distributed between individuals and between humans and their artifacts (see Cole, 1996). The key focus is *instrumentality* in the study of sense making. The argument is that mental phenomena are to be explained with reference to artefactually mediated activities.

In the article, I will discuss the method using the data regarding conversations between a patient and a doctor at a primary health care consultation. The referenced study is based on 32 consultations conducted by eight doctors. The consultations were videotaped and transcribed. In addition, the data included stimulated recall interviews. Every patient was asked to stay after the consultation in order to view the tape and discuss issues with the researchers. The doctor also viewed the tape after her/his office hours during the same day or, in some cases during the following days. In the stimulated recall interview, the respondent and the investigator were both active in producing the interview. The interviews were audiotaped and transcribed.

In order to study ongoing conversations from the view of pragmatic activity, that is, from the view of what is said *for the purpose of caring for* the patient (mindfulness of the activity), the analyst has to enter into the social world that is constructed through medicine. That signifies the world where disease is cognitively conceived and interpreted for the purpose of healing and taking care of the patient. Compared to the clinical point of view, the study considers medical knowledge less as a substance than as a historically-produced instrumentality of the clinical problem solving.

INSTRUMENTALITY

The communicative turn pointed to a key deficit in traditional social sciences when they are used to analyze social action. As many scholars have shown, social sciences have not paid attention to the actor (see Garfinkel, 1967; Cicourel, 1973, Heritage, 1984). Rather, "action was to be analyzed as the product of causal processes which, although operating 'in the minds' of the actors, were all but inaccessible to them and, hence, uncontrollable by them" (Heritage, 1984, 22). By the turn, the attention was directed to the importance of meaning and the accounts people give of their actions. To put the point phenomenologically and ethnomethodologically, the studied reality constitutes of many realities where the world is dependent of our ways of naming it and talking about it. The symbolic expressions make sense only in the context of indexicality and through local interpretations by people. The outstanding question for social sciences, as Lucy Suchman (1987, 57-58) has pointed out, is, how objective grounding is accomplished. Objectivity is a product of systematic practices, or of members' methods for rendering our unique experience and relative circumstances mutually intelligible.

In discourse analysis, Ian Parker (1992, 32) refers to a realist position which takes account of different senses of reality, and of reality outside sense. Thus, it is necessary to attend to the objectivity as a layered and complicated issue and "allow analysis to move beyond, outside, versions of intersubjective reality". Among the others, cultural-historical activity theory challenges the traditional notion of social action, and human conduct, particularly in psychology (Vygotsky, 1978; Luria, 1979; Leont'ev, 1978). Crossing disciplines, the theory appropriates a unit of analysis that intertwines psychological, social and cultural particulars. In such an approach, human conduct is defined as a productive process where the subject is connected to the object by culturally-constituted mediational means. Language is viewed as a specific means, an instrument for other instruments, due to its potentials and resources for sense making.

As an activity-theoretically-oriented analyst approaches a discursive situation, she takes advantage of the unit of analysis. A conversation in a medical encounter is presented in terms of *subject* (a sick person and doc-

tor), *object* (related to the person's health), and mediational *means* (medical knowledge, clinical interview, instruments of physical examination, patient's medical records, etc.). The unit can be extended to other people (community), social rules and the division of labor (see the model of activity system, Engeström, 1987). The unit of analysis implies the point of instrumentality to ensure the inseparability of the language use and the concrete purpose for which it is used. In addition, all the components of a situation have, in time and space, their historically changing appearances. Stephen Crites (1997) has suggested that in every experienced event there are three tenses of time within the present: a present of things past, a present of things present, and a present of things future. In the momentary present, the past is fixed, a chronicle that can be radically reinterpreted but cannot be reversed or displaced. Within the same present, on the contrary, the future is still fluid, awaiting determination, subject to alternative scenarios.

Activity theory serves to explore human conduct as a process which carries out the subject's connections to an "objective" world that has a historical and future continuity in praxis (Leont'ev, 1978). The outcome of this process is a continuous transformation of this "objective" world. This means that the object itself is a "transitional being" (Engeström, Y., 1995). The question of essence in the microanalysis of mindfulness is how can the dynamics of socio-historical relations, which shape objective grounding, be scrutinized? As Markova (2000, 433) maintains, social change in language is extremely difficult to conceptualize not only because the mainstream conception of cognition and language is based largely on various kinds of individualistic or collectivist, but static, epistemologies. I have addressed the issue of change in the activity-theoretical framework by, instead, introducing the question of "what is new?". In responding to that, one must explore ongoing activities by means of microanalysis and a search for the "new" through the meanings something gets in a particular context of traditions within activity.

While given up a stable world of meanings, I have found the works by M. M. Bakhtin and the collaborators focal. Their insights are opposed to the concept of unhistorical speech with an intrinsic meaning. Language is treated in its heteroglot developments in society. Dialogue expresses, re-

flects and determines social relations and culture-specific rationalities, represented as social languages, that "intersect one another in a multitude ways, some fail to develop, some die off, but others blossom into authentic languages" (Bakhtin, 1981, 356). In addition, language use and the concrete purpose for which it is being used comprise the core focus. The Bakhtinian approach does not deny linguistic forms, or language as a system of forms, but wants to put them into the context of "carried out by the speaker" as well as carried out "for the immediate purposes of speaking" (Volosinov, 1973, 67).

Bakhtin defined an utterance as being a unit of speech communication.[1] Holquist (1990, 60) states that Bakhtinian utterance is

> dialogic precisely in the degree to which every aspect of it is a give-and-take between the local need of a particular speaker to communicate a specific meaning, and the global requirements of language as a generalizing system.

While the utterance itself is individual and carried out by the speaker, it is achieved in the face of pre-existing restraints. Some of these restraints, as Holquist remarks, have always been recognized by linguists, and some of them Bakhtin was the first to recognize. Instead of the two aspects in which the word exists for the speaker, Bakhtin proposed three of them.

> [One] can say that any word exists for the speaker in three aspects: as a neutral word of a language, belonging to nobody; as an *other's* word, which belongs to another person and is filled with echoes of the other's utterance; and finally, as *my* word, for, since I am dealing with it in a particular situation, with a particular speech plan, it is already imbued with my expression (Bakhtin 1986, 88).

The use of words in live speech communication was seen by Bakhtin as having an individual as well as contextual nature. Within *my word*, the sign is expressive and related to the speaker's consciousness. The *other's word* attaches the meaning to others' utterances. In all areas of life and activity, there are particular traditions within communities that are expressed and retained in verbal vestments: in written works, in utterances, in sayings, and so forth. There are also authoritative utterances that set the tone on which one relies, to which one refers, which are cited, imitated, and fol-

1 Elsewhere (Engeström, R., 1995) I have used the model of activity system to examine an utterance as a micro-unit of dialogicality.

lowed. The unique speech experience of each individual, therefore, is shaped and developed in the continuous and constant process of *assimilation* – more or less creative – of others' words and not the *words of a language* (ibid. 89).

Since Bakhtin, a number of scholars have commented on the way that communities develop unique social and cognitive repertoires which guide their interpretations of the world. Bakhtin, nevertheless, draws on repertoires that form historically changing practice-specific rationalities. In terms of activity theory, the idea of objectification implies a mutual interdependency between language and practical experience, but takes into account of the counter-process which is called for by the subjective-objective-relation. The process originates at the object, being the world outside, that we are working on, while never fully known to the actors (Raeithel, 1992). The counter-process relies on the dynamics of the physical and social properties of the object of experience, but will adjust to the activity as well as lead to unexpected circumstances – possibilities of a new kind of reality (Engeström, 1990). What is relevant and makes sense will expand and receive new objects with new rationalities.

SENSE MAKING AS A MEDIATED ACTIVITY

In order to build a polyphony into an activity that serves as a source of social change in mindfulness, I shall take advantage of the distinction, introduced by Bakhtin, between *social languages*, *voices* and *speech genres*. I shall consider them in the framework of activity theory, particularly of the three-fold schema of human activity by Leont'ev (1978; see also Engeström, R., 1995). The schema is based on internal relations that distinguishes between *activity*, *action*, and *operation* (Leont'ev, 1978). An activity is a collective, object-driven complex which is transformed over a considerable span of time. Actions are local and carried out by individuals. Operations bear certain typified, repeated features of actions and are launched in response to ongoing conditions of activity. Table 2.1 combines Leont'ev's schema with Bakhtin's distinctions.

LEONT'EV	BAKHTIN	BAKHTIN
Activity	Social Languages	Social Context of Meaning (others's word)
Actions	Voices	Subjectivity of the Speaker (my word)
Operations	Speech Genres	Typical Forms of Utterances (collective memory in linguistic forms)

Table 2.1. Conceptual schema of analysis

In Table 2.1 a social language is represented as an activity which reveals itself as an external collective activity rather than as individual consciousness. With expressions and evaluative tones bringing along by social languages, the world is objectified and becomes transformed into a real world for us to act on. Referential objects and their potentialities emerge within and by communities of practice during a longer period of time. One can say that social languages represent more "other-directed" and "objectification" processes compared to speech genres which obtain their nature more from processes of "anchoring" the activity (see Markova, 2000).

Action depicts the speaker's perspective within the limits of the speaker's communities and references carried by them. Voice as an action of the speaker displays a subjective perspective, through which her perception of the world is accomplished and her agency is construed. A key proposition of Bakhtin's is that a speaker always invokes a social language (along with a natural language) in producing utterances. By assimilating and reworking the words of "others", the speaker produces an utterance voiced by herself. By invoking and bringing up referential potentialities of social languages, voices carry out the activity of which they are a constitutive part.

Operation corresponds to relatively stable types of utterances. These cultural traditions are preserved and continue to live in the objective forms of culture itself. With regards to speech genres, Todorov (1984, 85) provides an outline of collective memory whose "content may even remain

unknown to the individual; but this content is described in the formal properties of the genre". In this kind of relation to activity, genres emerge and develop as historically constituted methods for gainig a collective orientation to reality. Locally, they act as circumstances, constraints or rules of activity.

The three units in Table 2.1 constitute a unity of activity that implies, in turn, the distinction between individual and collective. The internal relations of this framework generate a structure where artifactually mediated actions are part of a cultural and historical process, and the same process is produced and displayed through and with these actions. Linell (1998, 63) has expressed the complicated reflexive relations by using the aspect of "re" as the central idea of dialogism. This means that the construction, conceptualization, negotiation and contextualization of understandings of the world take place in situated interactions. These interactions, on their part, build upon constructions, concepts, negotiated contracts and contextual frames that are, in a sense, taken as given, and used as resources for re-construction, re-conceptualization, re-negotiation and re-contextualization. The aspect of "re" captures the socio-historical component in human action and communication. In activity theory, the key to understanding the dialectic interrelations of "re" is the object-orientedness or objectiveness of activity. Leont'ev (1978, 62) maintains that "according to the terminology I have proposed, the object of an activity is its true motive." The object is not reducible to individual goals or objectives, neither corresponds to things out there without meeting the purposes of actors.

I shall illustrate and discuss the microanalytical method appropriating the structure in Table 2.1 in order to study clinical problem solving with the data from conversations between a patient and a doctor.

POLYPHONY IN MEDICAL ENCOUNTERS

Addressing a stand of human agency allows me to draw on a current epistemology of qualitative research. In order to interconnect objective grounding and interaction with pragmatic activity, however, the method needs to integrate language use and object-related activity. The study produced a matrix of social languages that would help to bridge interaction

and practices of clinical problem solving. The matrix must be activated by the speakers through their interpretations for own purposes within the situation. The matrix crystallizes the meanings existing in verbal vestments of previous utterances prior to actual interactions.

The starting point of the matrix is the object of language use. Rather than discoveries of reality, medicine displays realities that are rational fabrications of scientific and clinical practice (Bury, 1986; Good, 1994). The problem perceived by the person as requiring consultation has to be objectified through modern medicine in order to become a conceivable and solvable object of clinical practice. The analysis focuses on the interactive process of transforming a problem into a solvable problem. A problem is solvable when a doctor proposes a disposal: a limited set of actions which she perceives to be a sufficient answer at this time and place to a specific patient problem (see Berg, 1992, 155-156). This does not imply that the patient's problem is relieved. Solutions such as a referral to tests, a medical prescription, or the advice to wait and see, are all meaningful actions on the object.

The matrix of social languages is based on two dimensions: one represents the variety of realities in objectifying the problem (three realities) and the other one represents the variety of activity systems forming the social institution of medical encounter (three systems). Drawing on the literature of medical anthropology, sociology, biografies and also interviews with the practitioners, the realities can be clearly defined. 'Reality 1' is constructed biomedically. In this practice, the patient's problem is turned into an anatomical and physiological entity dealt with through somatic terms (Anspach, 1988; Mishler, 1984; von Raffler-Engel, 1989). Historically, this reality has been challenged, and holistic or psychosomatic medicine has been offered as a way to overcome conceptual limitations of the biomedical model (Engel, 1977; see also Lock & Gordon, 1988; Stewart et al., 1995). 'Reality 2' is constructed through this "biopsychosocial" model by accepting *psychological* issues as factors associated with the causation of disease (see Helman, 1988). 'Reality' 3 shares the biopsychosocial model with reality 2 but takes up *social* issues as key factors associated with disease.

The other dimension was also mostly informed by the literature. In the medical encounter, the speakers use community-based interpretative re-

sources, such as those of a "lay" referral system and those of the medical profession (Williams & Calnan, 1996). In the public health care system, the doctor and the patient also play parts that are derived from the bureaucratic activity – the patient as a customer and the doctor as an employee of the primary health care clinic. In this dimension, the meanings can be seen through three activity systems or community-specific resources that are the everyday (lay) life, the medical profession, and the bureaucracy (see also Cicourel, 1981).

The matrix of social languages was constructed by cross-tabulating the dimensions (see Table 2.2).

	Activity of language use		
'Reality'	Medicine	Bureaucracy	Everyday
Somatic	1. Language	4. Language	7. Language
Psychological	2. Language	5. Language	8. Language
Social	3. Language	6. Language	9. Language

Table 2.2. The matrix of social languages

The nine social languages were named as follows: (1) medical language on the somatic, (2) medical language on the psychological, (3) medical language on the social, (4) bureaucratic language on the somatic, (5) bureaucratic language on the psychological, (6) bureaucratic language on the social, (7) everyday language on the somatic, (8) everyday language on the psychological, and (9) everyday language on the social.

VOICE ANALYSIS

Each verbatim transcript of conversation between the doctor and the patient was divided into smaller parts, called episodes. The episodes were formed by identifying the topics of conversation. In the analysis, the investigator had to deal with a dynamic nature of topic progression (Brown

& Yule, 1983) and semantic moves introduced by the speakers (Markova, 1990). Every episode included turns by both speakers. In each episode, the voice of the patient and the voice of the doctor were analyzed by means of the matrix of social languages depicted in Table 2.2.

The analysis of transcript was supported with data obtained from the stimulated recall interviews of the patient and the doctor in question. On the one hand, the stimulated recall interviews expanded the video data on sense making by bringing up connections of issues and possibilities of interpretations, often otherwise unknown to the investigator. On the other hand, the interviews worked to neutralize preconceived notions on the part of the investigator. As a collaborative viewing session between the investigator and the patient or the doctor, the interview provided a corrective for the tendency to perceive what one is conditioned, or, even, wants to see and hear (Jordan & Henderson, 1995).

The method does not imply that every voice should be fixed with a given language. A dialogic approach calls for open structures of social languages where their intersections, conflicting structures, and horizons of new potentialities are considered as a constitutive part of the activity. Voices which did not fit the social languages presented in Table 2.2 were analyzed in the framework of this open and co-constitutive structure of activity.

The 32 consultation transcripts were analyzed into 525 episodes in which 1047 voices were identified. Three of the episodes contained only the doctor's voice. In these exceptional cases, the doctors were speaking aloud as they were writing, more in interaction with their own text than with the patient. The number of episodes in a consultation ranged from 7 to 33.

OVERVIEW OF THE VOICES

The study resulted in eight developmental tensions of doctor-patient relationship (Engeström, 1999b). For the purpose of this article, I shall show two of them as examples of the analysis. Before focusing on the internal dynamics of the social languages, I present a semantic overview and microcosmos of meanings of the studied medical encounters with the help of

the numeric table in Table 2.3. The table depicts the voices of the doctors and the patients according to the social languages named above.

In line with other studies, biomedical rationale was dominant in the majority of the episodes. The medical language on the somatic was also supported with doctor's authority in bureaucracy, and expressed, respectively, through bureaucratic language on the somatic. These two languages occurred most commonly in the data, comprising 62% of the voices. Psychosocial talk, on the other hand, was quite rarely used by the speakers. Of all the voices, only 4% represented languages on the psychological and 13% languages on the social. Other studies have also indicated marginalization and fragmentation of psychological and social issues in doctor-patient conversations (Aronson et al., 1997; Mishler, 1984; Johanson et al., 1987; Waitzkin, 1991). In addition, previous studies have shown a low rate of recognition of psychological distress and psychiatric disorders by primary-care physicians (Kirmayer et al., 1993; Robinson & Roter, 1999).

Language	Doctor		Patient		Total	
	n	%	n	%	n	%
1. Med/Som	307	58	221	42	528	50
2. Med/Psy	19	4	13	2	32	3
3. Med/Soc	25	5	18	3	43	4
4. Bur/Som	70	13	58	11	128	12
5. Bur/Psy	2	0.4	3	0.6	5	0.5
6. Bur/Soc	15	3	15	3	30	3
7. Eve/Som	21	4	88	17	109	10
8. Eve/Psy	2	0.4	6	1	8	0.8
9. Eve/Soc	22	4	37	8	59	6
10. Unnamed	42	8	63	12	105	10
TOTAL	525	100	522	100	1047	100

Table 2.3. Distribution of voices of the doctor and the patient according to social languages

The open structure of dialogue was accomplished by means of collecting the voices that did not match any of the given social languages. The number of these unnamed voices was 105, comprising 10% of all the voices. Five sub-groups were identified among these voices. The sub-groups were: 1. Ordinary talk (10 voices), 2. Everyday talk on the bureaucracy (8 voices), 3. Collaborative talk on the somatic (17 voices), 4. Talk on risk experiencing (21 voices), and 5. Health-oriented talk on the somatic (49 voices). The findings presented in the table (Table 2.3) were examined using an analysis method that focused on intersections of social languages and internal tensions of sense making. Empirically, the core of voice analysis is composed of desicions on the part of the analyst as to where the line is drawn between the social languages. The lines do not pre-exist to be found by the analyst, but are, rather, fabricated through work with the relational processes of meanings.

INTERNAL TENSIONS OF SOCIAL LANGUAGES

In the next two sections, I analyse an internal structure of a social language in the context of polyphony across signified social languages. The first example deals with a subjective and personal meaning across everyday and medical languages. The second deals with the variety of constructions regarding psychological 'reality'.

LAY BELIEF VS. EVERYDAY LANGUAGE

In social sciences, a common way to understand the patient's everyday life experience is to see the "lifeworld" as an opposite to the "scientific attitude" and technical interest. Mishler (1984) has made a distinction between two voices, that of "medicine" and that of "the lifeworld". Medicine constructs meaning through abstract rules that serve to decontextualize events, to remove them from particular personal and social contexts. Lifeworld refers to the patient's contextually grounded experiences of events and problems in her life. Although some overlap between the patient's view and the view of medicine has been recognized (Good, 1994; Helman,

1985), few studies have conceptually and empirically focused on how they interact in the actual process of sense making (Hunt et al., 1989; Peters et al., 1998). The present study also found that the patients make sense of their illnesses not only in terms of everyday experiences and use of social networks, but also in terms of medicine. Thus, empirically the investigator had to decide where to draw the line between medical and everyday language in the analysis of patients' voices.

Excerpt 1 shows an example of a patient's speech in which the speaker constructs her own interpretation of what is wrong with her.

EXCERPT 1 (consultation 4: 2/17) :

> P:
> Last Wednesday it really exploded. I've been wondering that if *I go biking* I have a terrific headache immediately afterwards back home. But this time I screamed straight out. *I still cannot read* or *watch TV*. There is some problem in focusing.

In excerpt 1, the patient's terms regarding the headache do not originate from the pathology of the body but refer to the patient's experiences of how she is accustomed to act through and with her body, and what kind of problems she has found in accomplishing her everyday life in biking, reading, or watching tv. She, among other patients, constructed herself as an active person who is in-the-world through an embodied relation to that world (see Pollio et al., 1997).

In excerpts 2 and 3, the patients' talk is voiced through medicine.

EXCERPT 2 (consultation 15: 1/11):

> D:
> What is it that brings you to see me?
>
> P:
> I have this time the problem that I had last night a terrible pain in the throat, just like I thought I had a *strep throat* or something. Once it happened to me that I had a *strep throat* for a week and I did not know anything about it. I don't necessarily get fever.

EXCERPT 3 (consultation 24: 5/17) :

> P:
> and the last time I was here, I was prescribed this *Nuelia, Nuelan*

D:
Nuelan depo, yes.

P:
So that, it is that *two hundred and fifty*, but I couldn't take a whole one so I took a half three times a day. But it does not work that well, then, as such so I've been thinking whether it would be possible to consider that *milder one Teodul*. Would it be better if I tried that one?

The medical terminology used by the patients in the excerpts 2 and 3 (the parts in *italics*) might be seen as medicalized discourse that reflects the penetration of medicine into the everyday life of patients (Zola, 1972; Arney & Bergen, 1984). On the other hand, in the tradition of modern medicine, the body reveals its disease through means only doctors can interpret and which are available only to them (Foucault, 1976). In this tradition, the patient's self interpretation is excluded from the discourse between the doctor and patient (Kirmayer 1988, 59). The doctor-patient relationship is based on a dualism between the physician as an active knower and the patient as a passive known. From this point of view, the patients' speech in the excerpts means a deviation from the script of medical encounter. Instead of being locked in predicated differences between the medical and everyday languages, it seems more promising to focus on ruptures and emerging new possibilities of languages. For that purpose, I shall take a closer look at the role medicine played in patients' own interpretations.

The analysis revealed that medicine, being a constituent of patients' expressions, was always incorporated in patients' prior illness experiences and in their contacts with other health care providers. Patients made sense out of their current problems within the framework of prior understandings of their bodily experiences as articulated through medicine. Also, the patient in the excerpt 1 took up later in the conversation a medically construed interpretation of the headache based on her previous illness history. Diagnoses and medical interpretations were not simply borrowed by the patients as explanations for their symptoms. Rather, they were reworked with experiences of the significance of these judgements in biographical context and situation, and these interpretations were accommodated to the circumstances of daily life of the patients. Illness constructions emerged as a continuing process in which tentative ideas were built upon and elaborated (see also Hunt et al., 1989). The patient in excerpt 2 used her prior

experience of being diagnosed as having *strep throat* ("once it happened to me that I had a strep throat for a week and I did not know anything about it") in forming her decision to see a doctor immediately after having perceived the first symptoms (the reported symptoms started the previous night). In excerpt 3, the patient accounted how she built her ideas upon a medical treatment that fit her own bodily experiences and familiarity with medications.

In these findings, "the patient's view" refers to the patient as an active interpreter of his or her own complaints and a joint sense maker in the encounter. This view is in opposition to the one constructing the patient as a layperson. In literature, "lay" implies a special social context in which illnesses are culturally constructed and named (Herzlich & Pierret, 1987; Kleinman, 1980). In the present analysis, being a layperson in a medical encounter emerged as an interactionally constructed role that complements the doctor's role as an expert. The patients' turns were usually restricted to minimal responses or responses in which the patients collaborated with the doctor to produce "the differential status between their own understanding of the complaint and its professional assessment of the expert" (Heath 1992, 261). Instead of constructing everyday language, this type of patient voice was interpreted as medical language on the somatic and represented the 'patient' from the perspective of medicine.

Voices, such as those in excerpts 2 and 3, drew attention to patients' method of sharing of ideas (see Charles et al., 1999; Elwyn et al., 1999; Guadagnoli & Ward, 1998). To construct the patient's current experience of illness, the voices carried linkages from past illness events. As a result of these observations, we can recognize two different medical histories related to a patient; the patient's were based on the lived history of the person (bearing biomedically constructed interpretations on illnesses), as compared to the history transcribed into medical files (collected by and for the system of expertise). In the data, particular tensions and disturbances in the doctor-patient relationship surfaced due to the distinction between the real self (the concrete person with a history) and filed self (medical file collected by and for the system of expertise) (see Harré, 1983; Jensen, 1987, 160-161).