

# CONTENTS

Foreword by Georg Rückriem and Joachim Lompscher .....	7
Introduction: In search of Sampo .....	9

## PART I: THEORY AND METHODOLOGY

1 Activity theory and individual and social transformation .....	17
2 Development as breaking away and opening up: A challenge to Vygotsky and Piaget .....	37
3 Interobjectivity, ideality, and dialectics .....	49
4 Expansive learning at work: Toward an activity-theoretical reconceptualization .....	59
5 Object-oriented interagency: Toward understanding collective intentionality in distributed activity fields .....	89
6 Values, objects and rubbish .....	119
7 Communication, discourse and activity .....	139
8 Activity theory and the social construction of knowledge: A story of four umpires .....	159
9 From individual action to collective activity and back: Developmental work research as an interventionist methodology .....	171

## PART II: EMPIRICAL APPLICATIONS

10 Coordination, cooperation and communication in courts: Expansive transitions in legal work .....	199
11 Polycontextuality and boundary crossing in expert cognition: Learning and problem solving in complex work activities .....	217
12 Mundane tool or object of affection? The rise and fall of the Postal Buddy .....	241
13 Change Laboratory as a tool for transforming work .....	291
14 Learning actions and knowledge creation in industrial work teams .....	307
15 On the materiality of social capital: An activity-theoretical exploration ..	367
16 Can a school community learn to master its own future? An activity- theoretical study of expansive learning among middle school teachers ...	381
17 The discursive construction of collaborative care .....	399
18 New forms of learning in co-configuration work .....	437
References .....	449
Index .....	479



## FOREWORD

Yrjö Engeström is one of the most self-directed but certainly also most interesting representatives of contemporary activity theory.

In the development of activity theory, his publications, starting with his early work on learning theory<sup>1</sup>, 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 made an essential contribution to this with his creative development of the methodology which he – unlike the psychologically oriented classics of the theory, Vygotsky, Leont'ev, Luria – founded on an understanding of activity as *collective activity*. He constructed and developed further the methodology by using it in and confronting it with empirical studies.

After his first major publication Engeström has applied this concept in a variety of problems, primarily in the psychology of work. Clearly this work has been very successful. After his first academic affiliation at University of Helsinki, Engeström became in 1989 Professor of Communication at University of California, San Diego, where he has worked in close collaboration with Michael Cole. In 1994 he 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, Engeström works on the basis of activity theory and with the help of the methodology he developed, 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. In his own projects and in the numerous dissertations he

---

<sup>1</sup> Engeström, Y. (1987). *Learning by expanding: An activity-theoretical approach to developmental research*. Helsinki: Orienta-Konsultit. Deutsch: Falk Seeger (Hrsg.). *Yrjö Engeström. Lernen durch Expansion* (Internationale Studien zur Tätigkeitslehre, hrsg. von Bernd Fichtner, Martin Hildebrand-Nilsson, Arne Raeithel, Georg Rückriem und Falk Seeger, Bd. 5) Marburg/L.: BdWi-Verlag 1999.

supervises, Engeström produces continuously new creative findings which reach far beyond the particular application fields of the given projects.

Unfortunately Engeström's work is little known in Germany. His work has been difficult to access here, as he mainly publishes either in the United States or in Finnish. To help to overcome this gap, we publish a selection of his texts. The texts cover both the development of his research approach from 1987 to today and also the breadth of its applications.

It is only since Joachim Lompscher's work on his own book on learning culture and activity theory<sup>2</sup> that we have become fully aware of the breadth, diversity and impact of Engeström's use and further development of the activity concept on timely issues of practice. Moreover, we understood the extent to which this concept has also been turned into the program of the Center he founded, so that today one must say: 'Engeström, that is also the collective of the Center for Activity Theory and Developmental Work Research.'

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 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

---

<sup>2</sup> Joachim Lompscher. *Lernkultur Kompetenzentwicklung aus kulturhistorischer Sicht. Lernen Erwachsener im Arbeitsprozess.* (International Cultural-historical Human Sciences, hrsg. von Joachim Lompscher und Georg Rückriem, Bd. 7). Berlin: Lehmanns Media - LOB.de 2004

## INTRODUCTION: IN SEARCH OF THE SAMPO

Joachim Lompscher and Georg Rückriem suggested that they would publish two books that represent my own research and the products of the collective of the Center for Activity Theory and Developmental Work Research, respectively. I found the idea timely and inspiring for several reasons.

Developmental work research is an interventionist approach to the study of transformations and learning in work, technology and organizations. Developmental work research is firmly based on the tradition of cultural-historical activity theory, and aspires to contribute to the continuing development of the tradition. The approach was initiated in the early 1980s in Finland. Its main academic home is still at University of Helsinki, in the Center for Activity Theory and Developmental Work Research. The Center was founded in 1994, and in 2000 it was awarded by the Academy of Finland the status of a National Center of Excellence in research.

In spite of the growing international reputation and influence of the approach and the Center, until to date no representative collections of theory and research emanating from them have been available in English. This book and its companion volume will fill this gap.

The second reason for the timeliness of this book is the recent rapid growth of international interest in work-related learning. While the learning potentials of work are being rediscovered, it is also becoming clear that most learning theories offer little tools for the understanding of learning outside classrooms. The theory of expansive learning is a radical alternative to traditional learning theories. It forms a red thread through the chapters of this book.

Finally, the most important reason for publishing this book is the increasing powerlessness people experience as their work is transformed. The world of work is in turmoil. In giant private corporations, such as Enron and Parmalat, infectious greed and financial speculation, and ensuing destruction of resources, have reached an unprecedented scale. Management rhythms follow the fast pulse of stock markets and tend to eliminate long-term planning and development. Large numbers of workplaces disap-

pear overnight as capital moves globally in search for cheap labor and lucrative markets. Neoliberalist policies are privatizing and dismantling public services and social safety nets through the industrialized world.

Phenomena such as these may be called globalization, or financialization. In activity-theoretical terms, they signify the emergence of new types of 'runaway objects'. Global markets themselves are such massive objects out of control. So are information systems turned from tools into pervasive surveillance and command systems. Even benign and noble objects, for instance health, or justice, or learning, generate monstrous outgrowths such as new epidemics, incomprehensible labyrinths of legal rules and directives, and high-stakes testing in the name of learning outcomes.

Yet it is the object that motivates work and generates visions of better future. The use values of objects have not vanished, although they are more difficult to grasp than perhaps ever before. The mission of developmental work research might be characterized as rediscovery and expansion of use value in runaway objects.

In the Finnish folklore, the notion of Sampo has a central place. In Kalevala, the Finnish national epic, Sampo is described as a device, a material object, which is the source of all wealth and well-being. Sampo was forged by a mighty primeval smith. Yet its shape and exact characteristics are never described. Sampo became the cause of strife, it was smashed and lost overboard. But the fragments of Sampo washed ashore and brought prosperity to people. Ever since Kalevala was first published in 1835, theories of the exact nature of Sampo have flourished, and it has continued to inspire artists. A good example is Akseli Gallen-Kallela's famous painting *The Forging of the Sampo*, shown in Figure 1.

Sampo is the mother of all objects. The Sampo myth crystallizes much of what is significant about the object in activity theory. The object is more than a fixed material thing: it needs to be forged, it changes hands, it generates passions and struggles, it is fragmented and recollected. It is elusive, yet everywhere. It is a horizon of possibilities. In other words, Sampo is at the core of the object of any and every productive activity.

The research carried out in the Center for Activity Theory and Developmental Work Research is search for the Sampo. In workplace interventions we engage in expansive re-forging of the objects of work.



Figure 1. The Forging of the Sampo by Akseli Gallen-Kallela, 1893  
(200 x 151, oil, canvas)

This book is divided in two parts. The chapters of the first part deal primarily with theoretical and methodological issues. The second part is devoted to empirical applications.

The 18 chapters of the book have been originally prepared for various conferences and publications. The origins of the chapters are listed below.

I used a few guidelines in the selection and arrangement of the chapters. First of all, I included only papers published in the 1990s or later. All the chapters of the first part were written by me alone. Several of the chapters in the second part have multiple authors, but in each one I am the first author. The chapters of the first part are loosely arranged to flow from general principles of activity theory toward specific theoretical themes and methodological issues. The chapters of the second part were selected so that each one represents a different domain of work, ranging from courts of law and factory machinist teams to schools and health care organizations. The chapters in the second part are also arranged in chronological order. The very last chapter of the book is actually a formulation of the agenda for an ongoing research project.

Practically all my empirical and interventionist work is carried out in collaborative research teams. The names of my co-authors in chapters of the second part are but a sample of the colleagues to whom I owe much. In addition, I must point out the crucial contribution of the leaders of the other research groups of our Center: Ritva Engeström, Kirsti Launis, Reijo Miettinen, Terttu Tuomi-Gröhn, Jaakko Virkkunen. Also work in and collaboration with the Laboratory of Comparative Human Cognition at University of California, San Diego has been a very significant factor through all these years.

Joachim Lompscher and Georg Rückriem made this book possible. They are true friends, and their contributions to cultural-historical activity theory are invaluable. Georg worked hard with me to edit the chapters of this book to form a meaningful whole.

Annalisa helped me transform my own life, which made this book finally a reality.

1. Engeström, Y. (1999). Activity theory and individual and social transformation. In Y. Engeström, R. Miettinen & R-L. Punamäki (Eds.), *Perspectives on activity theory*. Cambridge: Cambridge University Press.
2. Engeström, Y. (1996). Development as breaking away and opening up: A challenge to Vygotsky and Piaget. *Swiss Journal of Psychology*, 55, 126-132.
3. Engeström, Y. (1996) Interobjectivity, ideality, and dialectics. *Mind, Culture and Activity*, 3 (4), 259-265.
4. Engeström, Y. (2001). Expansive learning at work: Toward an activity theoretical reconceptualization. *Journal of Education and Work*, 14 (1), 133-156.
5. Engeström, Y. (2004). *Object-oriented interagency: Toward understanding collective intentionality in distributed activity fields*. Paper presented at the Sixth International Conference on Collective Intentionality, Siena, October 10-13, 2004.
6. Engeström, Y. (2004). *Values, objects and rubbish*. Paper presented at University of Siena, Italy, November 2004.
7. Engeström, Y. (1999). Communication, discourse and activity. *The Communication Review*, 3, 165-185.
8. Engeström, Y. (2000). Activity theory and the social construction of knowledge: A story of four umpires. *Organization*, 7, 301-310.
9. Engeström, Y. (2000). From individual action to collective activity and back: Developmental work research as an interventionist methodology. In P. Luff, J. Hindmarsh & C. Heath (Eds.), *Workplace studies*. Cambridge: Cambridge University Press.
10. Engeström, Y., Brown, K. Christopher, C. & Gregory, J. (1991). Coordination, cooperation and communication in courts: Expansive transitions in legal work. *The Quarterly Newsletter of the Laboratory of Comparative Human Cognition*, 13, 88-97.
11. Engeström, Y., Engeström, R. & Kärkkäinen, M. (1995). Polycontextuality and boundary crossing in expert cognition: Learning and problem solving in complex work activities. *Learning and Instruction*, 5, 319-336.
12. Engeström, Y. & Escalante, V. (1996). Mundane tool or object of affection? The rise and fall of the Postal Buddy. In B. Nardi (Ed.), *Context and consciousness: Activity theory and human-computer interaction*. Cambridge: The MIT Press.
13. Engeström, Y., Virkkunen, J., Helle, M., Pihlaja, J. & Poikela, R. (1996). Change laboratory as a tool for transforming work. *Lifelong Learning in Europe* 1(2), 10-17.
14. Engeström, Y. (1996). *Learning actions and knowledge creation in industrial work teams*. Paper presented at the international conference 'Work and Learning in Transition: Toward a Research Agenda', sponsored by the Russell Sage Foundation, San Diego, CA, January 1996.
15. Engeström, Y. & Ahonen, H. (2001). On the materiality of social capital: An activity-theoretical exploration. In H. Hasan, E. Gould, P. Larkin & L. Vrazalic (Eds.), *Information systems and activity theory: Volume 2 Theory and practice*. Wollongong: University of Wollongong Press.
16. Engeström, Y., Engeström, R. & Suntio, A. (2002). Can a school community learn to master its own future? An activity-theoretical study of expansive learning among middle school teachers. In G. Wells & G. Claxton (Eds.) *Learning for life in the 21st century: Sociocultural perspectives on the future of education*. London: Blackwell.

17. Engeström, Y., Engeström, R. & Kerosuo, H. (2003). The discursive construction of collaborative care. *Applied Linguistics*, 24, 286-315.
18. Engeström, Y. (2004). New forms of learning in co-configuration work. *Journal of Workplace Learning*, 16, 11-21.

## PART I: THEORY AND METHODOLOGY



# 1 ACTIVITY THEORY AND INDIVIDUAL AND SOCIAL TRANSFORMATION

## INTRODUCTION

The internationalization of activity theory in the 1980s and 1990s has taken place in the midst of sweeping changes in the political and economic systems of our planet. During a few months, the Berlin Wall came down and Nelson Mandela was freed from prison. Those were only two among the visible symbols of the transformations that continue to amaze the most sophisticated observers.

Many of the current changes share two fundamental features. Firstly, they are manifestations of activities from below, not just outcomes of traditional maneuvering among the elite of political decision-makers. Secondly, they are unexpected or at least very sudden and rapidly escalating. These two features pose a serious challenge to behavioral and social sciences.

The behavioral and social sciences have cherished a division of labor which separates the study of socio-economic structures from the study of individual behavior and human agency. In this traditional framework, the socio-economic structures look stable, all-powerful and self-sufficient. The individual may be seen as an acting subject who learns and develops, but somehow the actions of the individual do not seem to have any impact on the surrounding structures.

This traditional dualistic framework does not help to understand today's deep social transformations. More than ever there is a need for an approach that can dialectically link the individual and the social structure. From its very beginnings, the cultural-historical theory of activity has been elaborated with this task in mind.

## ACTIVITY THEORY - WHAT KIND OF THEORY?

Activity theory has its threefold historical origins in classical German philosophy (from Kant to Hegel), in the writings of Marx and Engels, and in the Soviet-Russian cultural-historical psychology of Vygotsky, Leont'ev and Luria. Today activity theory is transcending its own origins: it is becoming truly international and multi-disciplinary. This process entails the discovery of new and old related approaches, discussion partners and allies, from American pragmatism and Wittgenstein to ethnomethodology and theories of self-organizing systems.

This expansion is not unproblematic. Some may fear that activity theory will turn into an eclectic combination of ideas before it has a chance to redefine its own core. While I realize that such a possibility exists, I anticipate that the current expansive reconstruction of activity theory will actually lead to a new type of theory. Essential to this emerging theory is multi-voicedness co-existing with monism. This may sound like a contradiction, and that is exactly what it is.

In dialectical philosophy, monism is understood as a principle according to which it is possible to develop any whole theory and its multiple concepts consistently on the basis of one initial idea or 'cell' (see Davydov, 1991). If such monism is combined with the standard realistic notion of 'theory', the whole endeavor will easily lead to single-minded elaboration of a closed, artificially static system of logically interlocking concepts (see Jensen, 1989).

If anything, the current societal transformations should teach us that closed systems of thought do not work. But monism does not have to be interpreted that way. Human activity is endlessly multi-faceted, mobile and rich in variations of content and form. It is perfectly understandable and probably necessary that the theory of activity should reflect that richness and mobility. Such a multi-voiced theory should not regard internal contradictions and debates as signs of weakness; rather, they are an essential feature of the theory. However, this requires that there is at least a shared understanding of the character of the initial 'cell' and a continuous collective attempt to elucidate that 'cell' as well as the multiple mediating steps from the 'cell' to specific concepts.

Can activity theory develop as such a self-organizing system of interacting subjects? Obviously we are here dealing with a tension between two forces, or directions of development. One force pulls researchers toward individual applications and separate variations of certain general, often vague ideas. The other force pulls researchers toward learning from each other, questioning and contesting each other's ideas and applications, making explicit claims about the theoretical core of the activity approach. The key issue seems to be: Can we have sufficient shared understanding of the idea of activity to make it the 'cell' of an evolving multi-voiced activity theory?

In the following, I shall discuss six themes which may help us narrow down and define key dimensions of the very idea of activity. These six themes emerged as I went through a number of recent publications containing critical debates on the concept of activity. The publications range from the materials of the First International Congress on Activity Theory (Hildebrand-Nilshon & Rückriem, 1988) and subsequent articles published in the *Multidisciplinary Newsletter for Activity Theory* and also as translations in the journal *Soviet Psychology* (now *Russian and East European Psychology*), to recent edited collections published in Denmark (Hedegaard, Hansen & Thyssen, 1989), West Germany (Holodynski & Jantzen, 1989) and Russia (Lektorsky, 1991), and to contributions that have appeared in an ongoing international electronic mail discussion on activity theory, coordinated by the Laboratory of Comparative Human Cognition in San Diego. I shall present each theme in the form of a dichotomy or two opposing standpoints. That is the form which often emerges in heated discussions.

After identifying the themes of debate, I will try to delineate ways to overcome and transcend those dichotomies - possible elements toward a dynamically evolving 'cell' concept of activity.

## DICHOTOMIES

### 1. Psychic process vs. object-related activity

One of the basic issues around activity theory is surely the relationship between 'activeness' (as opposed to 'passivity') as a general description of animal and human forms of life, and the more specific idea of activity as an object-oriented and cultural formation that has its own structure. It has been argued that the English term 'activity' is unable to carry the deeper philosophical meaning of the original German concept of 'Tätigkeit' (Schurig, 1988).

With due respect to original philosophical terms, I cannot see how insistence on a term could prevent conceptual blurring. Actually there seems to exist a widespread awareness of the fundamental difference between 'activeness' and 'activity'. But there is a theoretically much more interesting disagreement that concerns the relationship between object-related activity and 'psychic process'. This distinction stems from the theoretical tradition of S. L. Rubinstein and is championed today by A. V. Brushlinsky, among others.

Brushlinsky (1991; see also Brushlinsky, 1987) argues that the psyche acts objectively first and foremost as a process, always uninterrupted, live, extremely plastic and flexible, never fully predetermined. He goes on to claim that object-related activity of the subject is discontinuous while the psychic process is not, which makes only the latter a *process* in the strict sense. The implication is that object-related actions and activities are secondary formations that emerge as products or results of the continuous psychic process.

The problem here is that the origin of activity seems to be reduced to an individual and internal psychic source. This would eliminate the fundamentally cultural and societal nature of activity, so powerfully emphasized by the principle of object-relatedness of activity. On the other hand, the question of continuity and discontinuity in human activity has to be taken seriously. This question pertains directly to the second dichotomy.

## 2. Goal-directed action vs. object-related activity

In recent years, a large and varied psychological literature has emerged on the nature of goal-directed actions (see e.g. von Cranach & Harré, 1982; Frese & Sabini, 1985; Ginsburg, Brenner & von Cranach, 1985; Hacker, Volpert & von Cranach, 1982). In cognitive science, situated action has become an important alternative to purely mentalistic and computational notions of information processing (e.g., Suchman, 1987). In sociology, the notion of action has been used in attempts to overcome the dualism of imposed structure and individual experience (e.g., Alexander, 1988; Fielding, 1988; Giddens, 1984).

In most of these theories, individual action is regarded as the unit of analysis and as the key to understanding human functioning. The orienting function of goals and plans, the sequential structure and the levels of regulation of actions have received a lot of attention. But these theories seem to have difficulties in accounting for the socially distributed or collective as well as for the artifact-mediated or cultural aspects of purposeful human behavior. Also the notion of time tends to be reduced to relatively discrete slices, often described in algorithmic terms with clear-cut beginnings and ends, dictated by given goals or tasks. The continuous, self-reproducing, systemic and longitudinal-historical aspects of human functioning seem to escape most theories of action. As Oleg Tikhomirov (1988, p. 113) points out, focusing exclusively at the level of actions highlights goal-attainment and problem solving, but makes it very difficult to analyze the socio-cultural and motivational basis of goal-formation and problem finding.

In the First International Congress on Activity Theory, Hans Aebli, the well known theorist of action, expressed the importance of a level beyond actions as a personal discovery. He stated:

Also the child is a newcomer in a complex system, in a system of her world: she is born in a family, she then enters a school, later a workplace. She tries to understand the system: 'What makes it tick?' What moves the system? What are its mechanisms, its interconnections? (...) It is a question of solving this puzzle, of letting it gradually take shape, of understanding what are its structural features and the motives functioning within it. (Aebli, 1988, p. 151)

Leont'ev's (1978; 1981) famous three-level scheme of  
activity – action – operation

and correspondingly

motive – goal – instrumental conditions

extended the sphere of analysis and directed our attention to the transformations going on between the levels. However, merely proclaiming that activity is a superior level of analysis does not help. And it is not at all so clear that those who use the concept of activity are actually able to overcome the individualist and ahistorical biases inherent in theories of action. In the First Congress on Activity Theory, Mario von Cranach, another prominent action theorist, criticized the prevalent accounts of activity theory for these very same weaknesses.

History is a concrete process, and it is not enough that one philosophizes a bit about the early humans, how they ran after antelopes, and then takes a huge step right to the distinction between capitalism and socialism. (...) Concrete analyses are difficult, however, because institutions and people in power often dislike concrete analyses of their activities and their history. (von Cranach, 1988, p. 153-155)

### 3. Instrumental tool-mediated production vs. expressive sign-mediated communication

Especially Leont'ev's seminal works on activity theory have repeatedly been criticized for an allegedly rigid and restrictive emphasis on tool-mediated production of objects as the prototypical form of activity. It is said that communication and mediation by signs is neglected or suppressed in this version of activity theory. There are at least two versions of essentially the same criticism. One version (e.g., Kozulin, 1984; Valsiner, 1988) portrays Leont'ev's work as a suppression of the original Vygotskian idea of semiotic mediation. Another version (e.g., Lomov, 1980) accused activity theory for an attempt to subsume everything under one concept and presented 'communication' as the parallel or alternative fundamental idea of psychology.

These criticisms lead to a twofold opposition. Firstly, mediation by signs is opposed to mediation by tools. Secondly, subject-subject relations are opposed to subject-object relations. At a more general level, we may

identify a third opposition, namely that between expressive or communicative action and instrumental or productive activity. This latter opposition figures prominently in the work of Habermas (1984), for example.

A careful reading of Leont'ev's work reveals that both mediation by signs and subject-subject relations do play an important role in his theory. Proponents of the cultural-historical school repeatedly point out that communication is an inherent aspect of all object-related activities. Leont'ev's (1981, p. 219-220) account of the emergence of speech and language emphasizes the original unity of labor actions and social intercourse. And in his famous study of the emergence of consciousness in deaf and blind children, Meshcheryakov (1979) puts such an emphasis on this unity that he chooses to call his unit of analysis 'shared object action'.

It is somewhat ironic that at the same time as the concept of object-related activity is criticized by some psychologists and philosophers for neglect of sign-mediation, language and communication, some prominent linguists are finding the very same concept of activity increasingly attractive as means of conceptualizing the interface between the sociocultural and linguistic realms. The following quotation from Elinor Ochs is a case in point.

First, language activities are at the same time linguistic and sociocultural phenomena. They are structured by linguistic and sociocultural principles. Second, the sociocultural contexts that language activities engender or reflect become part of the pragmatic or social meaning of particular linguistic structures carrying out these tasks. This idea is rooted in the work of Vygotsky (1962; 1978), Leontyev (1981), and Wittgenstein (1958). Drawing on Marx, Leontyev used the notion of 'objectivization', that objects (and hence words) take their meanings from the variety of activities in which they participate. (Ochs, 1988, p. 17)

So there is a curious discrepancy between the ways Leont'ev is read by the critics and by those sympathetic to his ideas. Partly this discrepancy may be due to the fact that the systemic structure of activity was not very thoroughly analyzed and modeled by Leont'ev and his immediate collaborators. Leont'ev postulated the three levels of activity mentioned above. But what are the interacting fundamental 'components' of an activity system? Often they are reduced to the subject, the object, and the mediating artifact (which may refer to either tools or signs). This triangle was, however, pre-

sented by Vygotsky (1978, p. 40) as a simplified model of mediated *action*; the conceptual distinction between activity and action was not yet worked out at the time Vygotsky presented his model. To my knowledge, Leont'ev did not elaborate on how the triangular model of action should be developed or extended in order to depict the structure of a collective activity system.

#### 4. Relativism vs. historicity

Activity theory evolved from the cultural-historical school of psychology. A key principle of this approach is historicity. The concrete implications of this principle have been surprisingly little discussed, a notable exception being Sylvia Scribner's (1985) impressive article on Vygotsky's uses of history. When Asmolov (1987) recently presented a list of the principles of activity approach, historicism was mentioned at the end with half a sentence: "the principle of historicism, which pervades all investigations using the activity approach" (p. 99). – Such assertions cannot hide the fact that the principle of historicity, understood as concrete historical analysis of the activities under investigation, has mostly been neglected in empirical research based on or inspired by activity theory.

There is one obvious and another, less obvious reason for this neglect. The obvious one stems from problems with rigid interpretations of the Marxist-Leninist view of history. Any conceptual framework which postulates a predetermined sequence of stages of sociohistorical development will easily entail suspicious notions of what is 'primitive' and what is 'advanced', what is backward and what is good. Such notions reduce the rich diversity of sociocultural forms of life to a one-dimensional scale. This problem was already evident in Luria's classic studies in Central Asia (Luria, 1976), carefully and sympathetically criticized by Cole and Griffin (1980; see also Cole, 1988).

It is surely appropriate to avoid rigid, one-dimensional sequences being imposed on social reality. But especially among Anglosaxon researchers adhering to the ideas of Vygotsky, the standard alternative seems to be to avoid history altogether. Differences in cognition across cultures, social

groups and domains of practice are thus commonly explained without seriously analyzing the historical development that has led to those differences. The underlying relativistic notion says that we should not make value judgments concerning whose cognition is 'better' or 'more advanced' – that all kinds of thinking and practice are equally valuable. While this liberal stance may be a comfortable basis for academic discourse, it ignores the reality that in all domains of societal practice those very value judgments and decisions have to be made every day. People have to decide where they want to go, which ways is 'up'. If behavioral and social science wants to avoid that issue, it will be unable to work out useful, yet theoretically ambitious intellectual tools for practitioners making those crucial decisions.

The less obvious reason for the neglect of history has to do with the point I mentioned above, namely the underdevelopment of models of the structure of an activity system. Historical analyses must be focused on units of manageable size. If the unit is the individual or the individually constructed situation, history is reduced to ontogeny or biography. If the unit is the culture or the society, history becomes very general or endlessly complex. If a collective activity system is taken as the unit, history may become manageable and yet it steps beyond the confines of individual biography.

## 5. Internalization vs. creation and externalization

Both in the east and in the west, it has been almost a truism that internalization is the key psychological mechanism discovered by the cultural-historical school. When internalization is in turn reduced to children's learning of skills and knowledge in interaction with adults and more experienced peers, we get a version of 'Vygotskian' research which looks very much like social learning theory flavored with fashionable terminology. Symptomatically, Vygotsky's writings that deal with creation and externalization, especially *The Psychology of Art* (1971), have received very little attention. And it seems to be all but forgotten that the early studies led by Vygotsky, Leont'ev and Luria not only examined the role of *given* artifacts as

mediators of cognition but were also interested in how children *created* artifacts of their own in order to facilitate their performance (see Luria, 1979).

In the new Soviet collection on the concept of activity, edited by Lektorsky (1991), this emphasis is suddenly almost turned around. Nearly all authors emphasize that the most important aspect of human activity is its creativity and ability to exceed or transcend the given constraints and instructions. Perhaps this reflects the impact of perestroika in philosophy and psychology<sup>1</sup>.

Be that as it may, concrete research and experimentation inspired by activity theory has been strongly dominated by the paradigm of internalization. There is very little concrete research on creation of artifacts, production of novel social patterns, and expansive transformation of activity contexts. Vera John-Steiner's (1985) work on creativity and the 'developmental work research' approach originated in Finland (e.g., Engeström, 1987; Engeström, 1990) may be mentioned as openings in this direction.

## 6. Principle of explanation vs. object of study

In the 1970s, the Soviet philosopher E. G. Yudin (1978) pointed out that the concept of activity may be understood either as a principle of explanation or as an object of study. Ever since that distinction was made, it has been used in various discussions for various purposes. Although Yudin's idea was probably not to create another dichotomy, in the ensuing discussions this distinction has often frozen into such a fixed opposition.

Reading through recent theoretical discussions and debates concerning the concept of activity forced me to observe that when activity is taken *only* as a principle of explanation, it seems that the outcome is often an endless conceptual exercise with meager empirical grounding. I suppose that V. A. Lektorsky had this in mind when he wrote:

If the discussion proceeds only at the level of formulating general positions and is not accompanied by attempts to apply them constructively or to realize them in a more or less elaborate conceptual system applied to explain a

---

<sup>1</sup> For different views on this impact, see the round table discussion 'Restructuring Psychology' in Soviet Psychology, Vol. 27, No. 6 [1989] and Vol. 28, No. 1 [1990].

specific objective area, the discussion proves relatively ineffective since to any principle formulated in abstract terms it is always possible to oppose another.

(...) I believe that we can never have a truly fruitful activity approach if we simply superimpose the concept of activity on known facts (...). In this latter case, the concept and principle of activity essentially turn into empty terms and, no matter how we manipulate them, we shall not advance in a substantive analysis at all. Indeed, do we begin to understand such phenomena as association, dialogue, self-awareness, reflection, etc., better by simply calling them different 'forms and types of activity' (...)? (Lektorsky, 1991, p. xx)

Here we are dealing with the heavy ballast of the 'grand theories' type of thinking and writing, often attributed to activity theory by its critics. However, a look at the works of Vygotsky, Leont'ev and Luria reveals that these scholars were primarily and consistently interested in real human activities, concretely present in space and time. Even Il'enkov, perhaps the most important and also theoretically most demanding philosopher influential in the Soviet activity approach, grounded his conceptual work in a painstaking analysis of the methodological procedure that gave rise to a specific text, namely the *Capital* of Karl Marx (Ilyenkov, 1982). In other words, the core conceptual works of activity theory are very much grounded in concrete-historical materials and cases. Indeed, the ensuing openness and 'incompleteness' of the conceptual systems may be aggravating for a researcher who would like to simply 'apply in practice' a well defined theoretical frame.

On the other hand, especially in the domains of learning and play, there is a fair amount of empirical, practice-oriented research which takes concrete activities as its objects of study. Quite commonly in such studies, the concept and structure of activity are treated as if something rather self-explanatory. In such cases, the specific methods and findings may not enrich and 'push forward' the elaboration of the conceptual and methodological basis.

## MEDIATION AS A KEY

The six dichotomies outlined above may be condensed into three crucial questions.

First, how can we depict the 'cell' of activity theory, or more specifically, what would be a viable way of modeling the structure and dynamic relations of an activity system?

Second, how can we incorporate historicity and developmental judgement into activity-theoretical analyses, yet take fully into account the diversity and multiplicity inherent in human activities?

And third, what kind of a methodology is appropriate for activity-theoretical research – a methodology that could bridge the gaps between the basic and the applied, between conceptualization and intervention?

Before I present some personal views on these three questions, I want to emphasize what I see as the first prerequisite for any fruitful elaboration of these issues. This is the idea of mediation.

It is somewhat amazing that in the recent theoretical discussion concerning the concept of activity, very little attention is paid to the idea of mediation. Yet it is this idea that runs as the unifying and connecting life-line through the works of Vygotsky, Leont'ev, Luria, and the other important representatives of the Soviet cultural-historical school, making attempts to prove 'theoretical oppositions' between these scholars look more like trickery than serious and original analysis.

Mediation by tools and signs is not merely a psychological idea. It is an idea that breaks down the Cartesian walls that isolate the individual mind from the culture and the society.

This expansive potential is evident if we look at the notion of control. The traditional division between social sciences and psychology has created the still prevalent dichotomous notion, according to which humans are either controlled from the outside by the society, or controlled from the inside by themselves. In the former case, the possibility of human agency and transformation of social structures from below becomes an unexplained mystery. In the latter case, the origins of individual self-determination are attributed to the equally mysterious sources of biological urges or inherent 'free will'. When Vygotsky formulated his idea of media-

tion, he was very conscious of the revolutionary implications concerning control. Calling the mediating artifact 'auxiliary stimulus', he wrote:

Because this auxiliary stimulus possesses the specific function of reverse action, it transfers the psychological operation to higher and qualitatively new forms and permits the humans, by the aid of extrinsic stimuli, *to control their behavior from the outside*. (Vygotsky, 1978, p. 40; italics in the original)

The idea is that humans can control their own behavior - not 'from the inside', on the basis of biological urges, but 'from the outside', using and creating artifacts. This perspective is not only optimistic concerning human self-determination. It is an invitation to serious study of artifacts as integral and inseparable components of human functioning. As Marx Wartofsky (1979, p. 205) put it, "the *artifact* is to cultural evolution what the *gene* is to biological evolution." It is no accident that some of the most creative researchers in cognitive science – Donald Norman and Ed Hutchins, for example – are today focusing their research on the role of artifacts in cognition (see Norman, 1988; Hutchins, 1990). Activity theory has the conceptual and methodological potential to be a pathbreaker in studies that help humans gain control over their own artifacts and thus over their future.

## MODELING THE ACTIVITY SYSTEM

I am convinced that in order to transcend the oppositions between activity and process, activity and action, and activity and communication, and to take full advantage of the concept of activity in concrete research, we need to create and test models which explicate the components and internal relations of an activity system.

My actions of preparing and presenting speech on which this paper is based could be represented using the classical triadic model as follows (Figure 1.1).

The first triangle represents my actions of preparing and writing the speech with the help of available literature. The second triangle represents my subsequent actions of presenting the speech in the congress, using the written text and spoken words as my most important mediating artifacts.

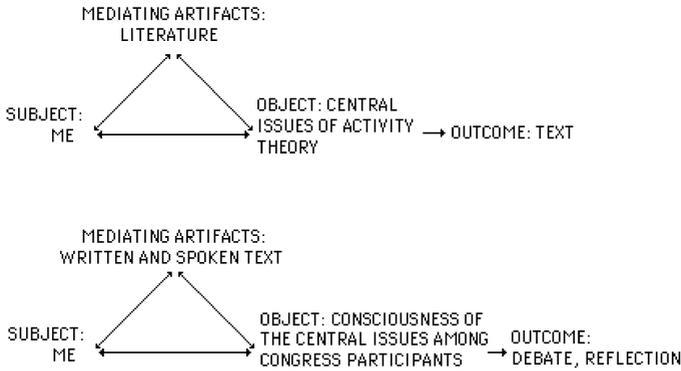


Figure 1.1. A triadic representation of actions

The problem with this classical representation is that it does not fully explicate the societal and collaborative nature of my actions. In other words, it does not depict my actions as events in a collective activity system. The outcomes of my actions appear to be very limited and situation-bound: a particular text, a momentary impact on the listeners. If this is all there is to gain, why did I bother and prepare this speech in the first place? Somehow, this level of representation hides or obscures the motive behind the actions.

To overcome these limitation, the model may be expanded in the following way (Figure 1.2).

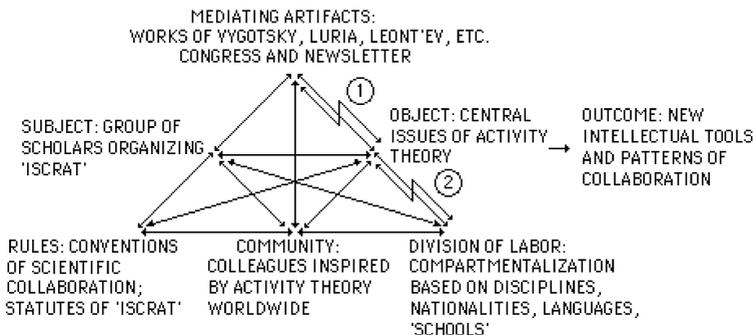


Figure 1.2. A complex model of activity system

In Figure 1.2, I depict the structure of an emerging activity system that might be called 'international activity-theoretical collaboration'. The subject has been changed. It is not anymore 'me' as an individual. Rather, I place myself into a diverse international group of scholars who initiated this organization. The central issues of activity theory remain the object - that is what connects my individual actions to the collective activity. However, the projected outcome is not anymore momentary and situational; rather, the projected outcome consists of societally important new objectified meanings and relatively lasting new patterns of interaction. It is this projection from the object to the outcome that, no matter how vaguely envisioned, functions as the motive of this activity and gives broader meaning to my actions. In addition to the legacy of the cultural-historical school objectified in texts, the most important mediating artifacts in this activity system are the international meetings and publications.

The social basis of this activity is the rather loose worldwide community of scholars interested in activity theory. The rules are equally loose: largely tacit conventions of international scientific collaboration, and the purposefully very flexible statutes of the organizer of international congresses on activity theory, ISCRAT. Finally, the division of labor within the loose community seems to consist of multiple layers of fragmentation and compartmentalization.

In Figure 1.2, I have put lightning-shaped arrows between the object and the mediating artifacts on one hand (number 1), and between the object and the division of labor on the other hand (number 2). These indicate contradictions between central components of the activity system. In my analysis, the first contradiction exists currently between the very challenging issues activity theory is facing *and* the rather weak instruments of collaboration and discussion at our disposal. The second contradiction exists between those challenging issues *and* the fragmented division of labor that keeps pulling different disciplines, national groups and schools of thought apart from joint discussion.

This necessarily brief attempt at modeling the activity system of activity theorists will surely evoke objections and criticism, hopefully also further elaborations and alternatives. If so, the model is serving its purpose.

The models presented above indicate that it may be very fruitful to move from the analysis of individual actions to the analysis of their broader activity context, and back again. Actions are not fully predictable, rational and 'machine-like'. The most well-planned and streamlined actions involve failures, disruptions and unexpected innovations. These are very difficult to explain if one stays at the level of actions. The analysis of the activity system may illuminate the underlying contradictions which give rise to those failures and innovations as if 'behind the backs' of the conscious actors.

The suggested model of activity system also highlights the subject-community relations – communicative relations – as an integral aspect in activity systems. There are other kinds of communicative relations, typically those where representatives of different activity systems interact. Those relations need further elaborations of the model, perhaps entirely new models. But I am quite confident that serious research using and developing these kinds of integrated models will enable us to overcome the opposition between activity and communication.

## HISTORICITY AND DIVERSITY

A key task in historical analysis is periodization. One must divide the stream of historical events into larger patterns which have meaningful characteristics of their own. What would be an appropriate period or pattern at the level of the historical evolution of an activity system, such as the one in my example?

Zerubavel's (1979; 1981) analyses of time in organizations yield multiple layers of repetitive cyclic time structures. However, cycles do not have to be repetitive; they can also lead to the emergence of new structures. G. P. Shchedrovitskii, one of the few Soviet activity theorists who has for a long time been concerned with the development of collective activity systems, points out that "it is quite natural to endeavor to represent reproduction as *cycles* resulting in the formation of a new social structure on the basis of some preceding one" (Shchedrovitskii, 1988, p. 7; italics in the original). Such an irreversible time structure may be called an expansive cycle (Engeström, 1987).

Whether we are talking of repetitive or expansive cycles, it is important to note that activity time is qualitatively different from action time. Action time is basically linear and anticipates a finite termination. Activity time is recurrent and cyclic. Action time corresponds to 'time's arrow' and activity time to 'time's cycle', in the terminology of Stephen Jay Gould (1987).

For the historical understanding of activity systems, expansive cycles are of crucial importance. We know little of the dynamics and phases of such developmental cycles. It seems promising to analyze these cycles in terms of stepwise formation and resolution of internal contradictions in activity systems. The trajectory of an activity system moving through such an expansive cycle seems to go through phases of 'far from equilibrium' conditions (Prigogine & Stengers, 1984).

These observations have important consequences for some of the dichotomies discussed above. First of all, the opposition between continuous psychic process and discontinuous activity begins to look questionable. Perhaps this opposition is at least partially based on an insufficient differentiation between the time structures of action and activity. Secondly, the opposition between internalization and creative externalization may be put in a new light. Obviously an expansive cycle is a developmental process that contains both internalization and externalization. The new activity structure does not emerge 'out of the blue'. It requires reflective analysis of the existing activity structure – one must learn to know and understand what one wants to transcend. And it requires reflective appropriation of existing culturally advanced models and tools that offer ways out of the internal contradictions. However, these forms of internalization or appropriation are not enough for the emergence of a new structure. As the cycle advances, the actual design and implementation of a new model for the activity gain momentum: externalization begins to dominate. This is schematically depicted in Figure 1.3.

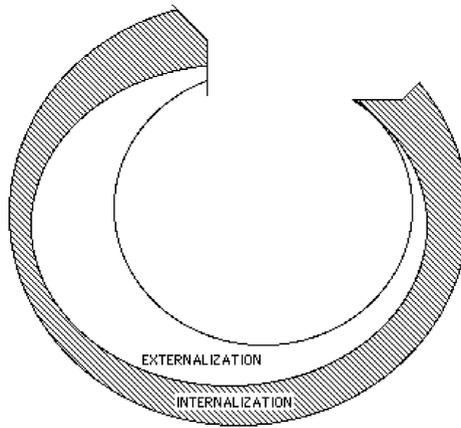


Figure 1.3. The expansive cycle

In Figure 1.3, the expansive cycle of an activity system begins with almost exclusive emphasis on internalization, on socializing and training the novices to become competent members of the activity as it is routinely carried out. Creative externalization occurs first in the form of discrete individual innovations. As the disruptions and contradictions of the activity become more demanding, internalization takes increasingly the form of critical self-reflection - and externalization, search for solutions, increases. Externalization reaches its peak when a new model for the activity is designed and implemented. As the new model stabilizes itself, internalization of its inherent ways and means becomes again the dominant form of learning and development.

At the level of collective activity systems, such an expansive cycle may be seen as the equivalent of the zone of proximal development, discussed by Vygotsky (1978) at the level of individual learning. From the viewpoint of historicity, the key feature of expansive cycles is that they are definitely not predetermined courses of one-dimensional development. What is more advanced, 'which way is up', cannot be decided using externally given fixed yardsticks. Those decisions are made locally, within the expansive cycles themselves, under conditions of uncertainty and intensive search. Yet they are not arbitrary decisions. The internal contradictions of the given activity system in a given phase of its evolution can be more or less ade-

quately identified, and any model for future which does not address and solve those contradictions will eventually turn out to be non-expansive.

An activity system is by definition a multi-voiced formation. An expansive cycle is a re-orchestration of those voices, of the different viewpoints and approaches of the various participants. Historicity in this perspective means identifying the past cycles of the activity system. The re-orchestration of the multiple voices is dramatically facilitated when the different voices are seen against their historical background, as layers in a pool of complementary competencies within the activity system.

### BACK TO TRANSFORMATIONS: THE DEVELOPMENTAL METHOD

It is often said that the formative or developmental experiment is the research method most adequate and characteristic to activity theory. Sylvia Scribner (1985) has carefully demonstrated that Vygotsky's idea of the appropriate method was not reducible to any single technique. Scribner traces four moments or steps in the methodology sketched by Vygotsky:

1. observation of contemporary everyday behavior, or 'rudimentary behavior',
2. reconstruction of the historical phases of the cultural evolution of the behavior under investigation,
3. experimental production of change from rudimentary to higher forms of behavior,
4. observation of actual development in naturally occurring behavior.

This is actually a cyclic methodology for understanding transformations at the individual level, emphasizing the internalization of culturally given higher psychological functions. Today it is increasingly evident that these are not the only kinds of transformations that must be understood and mastered. People face not only the challenge of acquiring established culture; they also face situations where they must engage in formulating what shall be desirable culture. In order to understand such transformations going on in human activity systems, we need a methodology for studying expansive cycles. Such a methodology does not easily fit into the boundaries of psychology or sociology or any other particular discipline.

I want to suggest that such a methodology is best developed when researchers enter actual activity systems undergoing such transformations. I am not suggesting a return to naive forms of 'action research', idealizing so called spontaneous ideas and efforts coming from practitioners. To the contrary, the type of methodology I have in mind requires that general ideas of activity theory are put into the acid test of practical validity and relevance in interventions which aim at the construction of new models of activity jointly with the local participants. Such construction can only be successful when based on careful historical and empirical analyses of the activity in question.

This approach gives new contents to the notion of formative experiments. Instead of only forming experimentally skills and mental functions in the students, the researchers will be engaged in forming societally new artifacts and forms of practice, jointly with their subjects. The validity and generalizability of the results will be decided by the viability, diffusion and multiplication of those new models in similar activity systems.

Key findings and outcomes of such research are novel activity-specific intermediate-level theoretical concepts and methods - intellectual tools for reflective mastery of practice. Such intermediate theoretical concepts provide a two-way bridge between general theory and specific practice. This way, the concept of activity as principle of explanation may be continuously re-examined and reconstructed by making concrete activities the objects of study.

This approach implies a radical localism. The idea is that the fundamental societal relations and contradictions of the given socio-economic formation – and thus potentials for qualitative change – are present in each and every local activity of that society. And vice versa, the mightiest, most impersonal societal structures can be seen as consisting of local activities, carried out by concrete human beings with the help of mediating artifacts, even if they may take place in high political offices and corporate board rooms instead of factory floors and street corners. In this sense, it might be useful to try and look at the society more as a multi-layered network of interconnected activity systems, and less as a pyramid of rigid structures dependent on a single center of power.

## 2 DEVELOPMENT AS BREAKING AWAY AND OPENING UP: A CHALLENGE TO VYGOTSKY AND PIAGET

Understanding is something one does best when one is on the borderline.  
Peter Høeg (1994), *Borderliners*, p. 37

### INTRODUCTION

Recent work based on dialectics and the cultural-historical theory of activity points toward three major challenges to the developmental theories of both Vygotsky and Piaget: (1) instead of just benign achievement of mastery, development may be viewed as partially destructive rejection of the old; (2) instead of just individual transformation, development may be viewed as collective transformation; (3) instead of just vertical movement across levels, development may be viewed as horizontal movement across borders.

In this paper, I will examine each of the three challenges, using Peter Høeg's autobiographical novel *Borderliners* (Høeg, 1994) as an appropriate case to concretize and illuminate the challenges. I will suggest three theoretical concepts – contradiction, zone, and mediation – as potential tools for mastering the three challenges. I will discuss the place and meaning of these concepts as resources embedded in Vygotsky's and Piaget's theories.

I will conclude by questioning the explanatory potential of developmental theory in the face of transformations such as the ones described by Høeg. The question is, indeed: Does *development* explain anything significant happening outside the developmental psychologist's carefully chosen and constrained "natural" settings?

### A NARRATIVE OF PETER HØEG'S NARRATIVE

Peter is a 14-year old boy who has no parents and has grown up through severe troubles in institutions. He is transferred to Biehl's Academy, an elite private school in Copenhagen. The question is: Why? He is drawn to two other outsiders in the school, Katarina and August. Katarina has recently lost her parents through illness and suicide. August has murdered

his parents after years of abuse. Why was August taken into Biehl's Academy?

But that they took August was inexplicable. When they had the waiting lists and had no need to keep anyone. Why did they take someone like him? It was this question that made me sure there had to be a plan. (p. 31)

In the closed, controlled and tightly scheduled school environment, the three start a laboratory experiment to find out what is the plan behind their placement in the school and behind the school's functioning. It is truly an experiment in that it involves changing or disturbing the stable state in order to figure out its logic. At an experiential level, the stable state appears as follows.

Well, one had no language of one's own when one came to Crusty House [a previous institution in Peter's career; *Y.E.*]. At Himmelsbjerg House [another such institution] and the other homes before that, one had got by with very few words.

During the first six months, one didn't say a word in class. At the end of that time one had learned the basics. At Biehl's they were well and truly driven home.

One adopted their language, that of the teachers and the schools, one had none of one's own. At first it was like a release, like a key, like a road. The only road in.

Much later one discovers that what one was let into, back then, was a tunnel. From which one can never again escape. Not entirely. Not in this life. (p. 15)

It was very difficult to be alone. The only time when it was hard for them to avoid disintegration was when you were going from one place to another. Like just after the bell had gone. (p. 24)

It was not just the classes and assembly that began on the dot. There was also a study period and the meals and the chores and voluntary sports and lights-out and when you had to get up if you were to manage a proper wash, and what time every third week the green vitamin pills for the next three weeks were dished out, and what time on Sunday evenings you had to report back to Flakkedam after weekends at home. I had all been allotted a stroke on the clock that was most scrupulously observed. The inaccuracy amounted to less than plus or minus two minutes.

No explanation of time was ever given. But one knew that it was enormous, bigger than anything mortal or earthly. That one had to be on time was not just out of consideration for one's schoolmates and oneself and the school. It was also for the sake of time itself. For God. (p. 39-40)

They came without warning – a handful of curt questions – and then it was very important that one could answer. When he asked a question it was as though, together with him, one closed in upon something crucial.

The questions always concerned an event and a date. Those on the inside could often remember them, those on the outside put their hands up out of

fear, without remembering anything, and sank deeper into the darkness. (p. 51-52)

If you can manage to stay on at the school – if you have committed no violations or acts of gross negligence – then you're here for ten years. During those ten years your time will be strictly regulated, there will be very few occasions when you are in doubt as to where you should be or what you should be doing, very few hours altogether where you have to decide anything for yourself. The rest of the time will be strictly regulated. The bell rings – you go up to the classroom; it rings – you come down; it rings – you eat; rings – work; rings – eat; rings – study period; rings – three free hours; rings – bedtime. It's as if there are these very narrow tunnels that have been laid out and you walk along them and nowhere else. They're invisible, like glass that has just been polished. You don't see it if you don't fly into it. But if you become blind or nearsighted, then you have to try to understand the system. (p. 78)

Peter, Katarina and August begin their research with unnoticeable individual experiments. Katarina is purposefully late five times so she is sent to the headmaster: in the waiting room she makes a copy of the teachers' timetable. August makes a drawing and doesn't get praise from the art teacher; next time he makes the same drawing but colors in the background – and gets a star and praise.

„It's something to do with time,“ she said. „You got a star because you had spent more time on the second drawing. And spent the time in a particular way. We think they have a plan, and that it has to do with time.“

„So the second one wasn't any better?“ Now he was looking straight into her face, she was careful not to meet his gaze.

„There's no such thing as 'better,‘“ she said. „The second one just fitted in better with their plan.“ (p. 87-88)

Communication between the three is prevented and they are isolated from each other. When communication attempts continue, the school administration decides to expel Peter and send him to a reform school, while August is put under special control and heavy medication. This triggers an escalation of the experiment.

Peter manages to make a copy of the school's master key, and the three enter the school offices to search for documents and files that would explain the plan behind accepting such pupils as Peter and August. They lure the city's director of education into entering the school. Posing as assistants to the school psychologist, Katarina and Peter make the director face the heavily sedated August. Shaken by the encounter, the director

talks about the plan behind the school's policy. As the final part of the experiment, Peter turns the school's central clock ten minutes back, causing a momentary chaos.

The three escape into a shed on the school grounds. They review the documents they've obtained and summarize their findings.

„Integrated,“ said Katarina. „They want to take children from the reform schools and reformatories and put them back into ordinary schools. Integration. That's the plan.“ (...)

„He writes that the experiment is ahead of its time,“ she said. „That it belongs to the future. That it is ahead of public opinion. Therefore it would be better to carry it out discretely. And not unveil it until you could produce some convincing results.“ (...)

„But it all went wrong for them,“ she said. „They must have thought they could help, turn the school into a the 'Workshop of the Sun,' like he said. Into a laboratory where the differences between those who were damaged and those who were normal would be eliminated. That's why you two were accepted.“ (p. 196-197)

When Peter and Katarina are asleep, August leaves the shed, enters the school building and captures headmaster Biehl by force, breaking several of his fingers. Peter and Katarina follow August, but he does not respond and takes Biehl to the shed. August lights the gasoline containers in the shed and burns himself to death, but lets Biehl out just before his fatal action.

After these incidents, Peter and Katarina are isolated in institutions and see each other only once more, at a hearing several months later. Peter's institutionalization in a reform school almost destroys him. The only way out is adoption, but to be adopted he needs a good recommendation from Biehl's Academy. One night he escapes, hitchhikes to Copenhagen, breaks into Biehl's Academy and confronts Biehl. Peter shows a document, written by Biehl, which he stole from the headmaster's office. It is a detailed record of all the occasions when Biehl personally administered beatings and milder physical punishments to the pupils. Peter asks for a good recommendation for the adoption officials.

## THE FIRST CHALLENGE: BENIGN ACHIEVEMENT OF MASTERY VS. PARTIALLY DESTRUCTIVE REJECTION OF THE OLD

Both Piaget and Vygotsky, as most other theories of development, depict development essentially as progression from a limited toward a broader and more inclusive mastery over the environment and the self. As such, development is a positive process. It may entail problems and contradictions, but overall it is a benign process of achievement. While this affirmative aspect is surely important, exclusive focus on it makes developmental theory unable to deal with destruction of the old as an equally important aspect of development.

The process recounted by Høeg was not at all benign. One young person was destroyed, another institutionalized with little hope, and a third one barely escaped institutionalization. A large-scale societal experiment of integrating problem children into normal school was severely damaged, as were the reputation of a prominent school and the self-confidence of its staff. Could such a process deserve to be characterized as 'development'?

If development is significant and relatively long-term qualitative change in the way we relate to the world, the process described by Høeg cannot be dismissed. The very idea of conducting an experiment to make sense of the surrounding institution is a striking case of awakening to self-awareness.

„So why this thing about a laboratory?“ asked August. (...)

„You have to have a place where you can gather your thoughts. Like people who pray. That is what is difficult here at the school. Peter says it is like glass tunnels. There is no chance to think for yourself. A laboratory is a place that is shut off, so you have peace and can think and carry out your experiment.“ She had risen and started walking back and forth. „It is already under way. It is in the middle of a period, we are not where the plan says we should be, we have stepped out of the glass tunnel. The experiment is already under way. Something is happening to us, can you feel it? What is it? What's happening is that you are starting to become restless, you want to get back, you can feel time passing. That feeling is your chance. You can feel your way and learn something you would otherwise never have seen. Like when I came late on purpose. I stepped out of the tunnel I was used to walking along, I saw Biehl, and I noticed something.“ August was sitting bolt upright. He did not say a word, but his body was listening. „He's scared, too,“ she said. „Why me?“ said August. (...)

„We have to find out why they took you. There is no understanding it.“ (p. 92-93)

Here development would mean literally changing one's course of life. Obviously such a self-conscious change is rare. But what about less articulated cases of rebellion and deviation? Are they non-development, or development gone astray, or natural periods of teenage turmoil?

The challenge to developmental theory is to account for the negative, destructive and explosive elements in developmental processes without patronizing and reducing them to safe formulas at the outset.

## THE SECOND CHALLENGE: INDIVIDUAL TRANSFORMATION VS. COLLECTIVE TRANSFORMATION

Developmental theories are about individuals. Even Vygotsky, a champion of the social and cultural in developmental psychology, did not conceptualize development as transformation of human collectives. For him, development required social interaction and collaboration, but it was the individual child who actually developed in the collaboration.

The process described by Peter Høeg cannot be meaningfully understood by breaking it down into three individual processes of development. Such an approach would be formal analysis by elements rather than genetic analysis by integral units, to paraphrase Vygotsky (1986).

„August,“ I said. Never, ever, can you abandon a child without tumbling into perdition yourself. It is a rule against which one personally can do nothing.

She had known this, before I said it she had known. It had never been just us two, never just Katarina and me. There had always been three of us, even before he came and I saw him for the first time. (...) And we sat on, saying nothing. I tried to find a solution, to find out how to get August out, so that we could be together, all three of us. The locks were there, before my eyes – first those between him and us – on the main door and the doors to the corridor and the sickroom, and the lock of the closet where they kept his outdoor clothes and shoes at night.” (p. 155-156)

In what way did the small collective of Peter, Katarina and August *develop as a collective*? A contrast between Peter's past and present is instructive.

At Crusty House we had three kroner a month dished out and three saved; even so, you paid what you owed, it was an absolute rule (...). The few times it happened that someone tried to get out of it, they were made to jump from the willow tree down into the lake. It was thirty feet down, but only three feet of water. You did not break anything, but you sank into

mud up to your chest and then you were sucked down slowly and only pulled out after your whole head had been under for a while. So you always gave something in return and paid what you owed. Everybody did. It was an absolute rule. (p. 17) But we ascended the stairs. I did it for August. I sensed that the law of reciprocation could not be a law of nature after all. When people were weak and helpless, like August, for example, then it might be necessary to do something for them without getting anything in return. To do anything, no matter what. And yet you did get something in return. I had descended and then ascended to help and protect him. Now it was as though he was helping me. As though you could set yourself free by helping others. I cannot put it any better. (p. 132) August and Katarina were sitting looking at me, it was all okay. They did not assess me. Nor did they want me to achieve anything further. (p. 199)

Here development means changing one's course of life, including the destructive rejection of the old – but changing it together with significant others, in a process of constructing a collective. The challenge to developmental theory is to account for such processes of formation of new collectives.

#### THE THIRD CHALLENGE: VERTICAL MOVEMENT ACROSS LEVELS VS. HORIZONTAL MOVEMENT ACROSS BORDERS

Traditional developmental theories are about progress, about climbing upward on some developmental ladders. In some theories, the ladders are very well known and fixed; in others they are more locally constructed and culturally contingent. But developmental movement happens along a vertical dimension, from immaturity and incompetence toward maturity and competency. Peter, too, realizes this.

The school is an instrument dedicated to elevation. It works like this. If you achieve in the way you're supposed to, time raises you up. That's why the classrooms are arranged as they are. From Primary One to Three you're on the ground floor, then you move to the second floor, then the third, then to Secondary on the fourth, until at last – at the very top, in the assembly hall – you receive your certificate from Biehl. And then you can fly into the world. (p. 79) I've been wondering why it is so hard for them, why there are so many rules. And it occurred to me that it is because they have to keep the outside world out. Because it's not everywhere out there that it raises up. (p. 79)

In other words, the exclusive concentration on the vertical dimension of development requires closed boundaries, elimination of horizontal movement across social worlds.

Høeg's story indicates that horizontal movement across boundaries is developmentally at least as important as the vertical movement. Peter, Katarina and August are all borderliners. Peter and August were transplanted from the world of deviant outsiders into the world of normals – but they refuse to adapt without questioning. Katarina was kept in the world of normals as if nothing had happened when her parents died – but she refused, too. The refusal and questioning lead them across the border and out.

So now one could sit there, looking around at everybody else. One could think about how, if one had respected the school rules and not abused the trust placed in one, one could have been singing away like them right now. Then one could still have been on the borderline instead of, as now, being lost. (p. 117)

Here development means changing one's course of life, including the destructive rejection of the old, together with significant others – and by means of crossing boundaries between worlds, not just by means of ascending on ladders of competence and maturity. The challenge to developmental theory is to account for such processes of boundary crossing.

#### CONTRADICTION, ZONE AND MEDIATION

Høeg's narrative is about facing and struggling with contradictions. These contradictions are simultaneously practical double binds (Bateson, 1972) and intellectual dilemmas (Billig & al., 1988).

Contradictions have an important role in Piaget's work (see Piaget, 1980). For Piaget, contradictions were essentially mismatches between the cognitive competency of the individual child and demands of coordinating in a complex environment. Contradictions could thus be resolved by means of cognitive reorganization. In the environment, nothing had to be changed because objects and systems in the world were not contradictory in themselves.

In Høeg's novel, crucial objects and systems in the world are internally contradictory. Time and clocks are a case in point.

In the life of every person, on any conceivable plane, an uninterrupted chain of both cyclic and linear traits can be found; identical reenactments and unique, one-time occurrences. There you have a contradiction in terms. (p. 224)

Time at Biehl's Academy was absolutely linear. It's almost impossible to explain. Because at the same time, every day was the same. Every school day was like all the rest. Looking back at them, memory cannot distinguish between them. (p. 225)

In the dialectical theory of the Russian philosopher Evald Il'enkov (1977; see also Bakhurst, 1991), contradiction is not merely a cognitive mismatch. Systems in the world are internally contradictory. To develop means to tackle and resolve those real contradictions in the world, both intellectually and practically. If processes such as the one described in Høeg's novel are to be accounted for by developmental psychology, we need a concept of contradiction that resembles the concept put forward by Il'enkov.

Peter, Katarina and August did not develop along a well charted vertical path. They traveled in an ill charted zone, and their development included horizontal movement across boundaries.

The zone of proximal development has a central place in Vygotsky's (1978) work. It is depicted as the distance between the actual developmental level and the level of potential development reachable under adult guidance or in collaboration with more capable peers. 'Level' and 'more capable' are vertical notions. Thus, while Vygotsky acknowledged the ill charted and locally accomplished nature of development, he stuck to the idea of vertical improvement.

Høeg's story includes examples that resemble Vygotsky's formulation, typically situations where Peter helps August to survive or Katarina helps Peter to understand. But it is not just the more competent pulling up the less competent. It is always also a question of entirely different worlds meeting.

I was sure that Katarina had been thinking the same. That, in that moment, we were thinking the same thought, without having to discuss it. I was convinced of that. Then she stood up and went over to the window, and just by the way she walked I could see that I had been wrong. „If there were no clocks in the school,“ she said, „what would you know about time?“ Her

voice had changed, she was in another world, she was another person. Inside her, at the same time, there was another person – but a different person – who had now taken over. (...) The two people were connected, they were both there at the same time, but this one, the one that had now taken over, I would never understand. (p. 157)

It is this inability to ever understand another world that has great developmental significance. Carol Kramsch (1993) has recently proposed the concept of 'contact zone' to describe important learning and development that takes place as people and ideas from different cultures meet, collide and merge. Kris Gutierrez and her co-authors (Gutierrez, Rymes & Larson, 1995) suggest the concept of 'third space' to account for similar events in classroom discourse where the seemingly self-sufficient worlds of the teacher and the students occasionally meet and interact to form new meanings that go beyond the evident limits of both.

Again, if developmental psychology is to account for processes such as those described by Høeg, we need to expand our theoretical vocabulary beyond the vertical idea embedded in Vygotsky's zone of proximal development and incorporate the horizontal dimension in such zones. 'Contact zone' and 'third space' are promising beginnings in this direction.

Høeg's subjects did not accomplish their developmental journey single-handedly. Through the novel, a number of mediating artifacts – keys, private written notes, and official records, in particular – play important roles. Here I will discuss only keys.

The school key was lying awkwardly, but I just waited. There came a moment when he shifted position and it was brought into full view. I concentrated on the depth of the cuts – nothing else. Afterward I closed my eyes. And sort of tested myself on the key. As though I had been up at the blackboard.

At last I had it. (p. 122) I had found a place for myself beside a vise at the very back [of the woodwork classroom]. Then I had cut out Fredhøj's key in sheet metal as best I could from memory. Over the next few days I had tried it out and made some adjustments to it. (p. 124)

In all its brevity, this is a beautiful and rather complete description of re-mediation of action by means of internalization and externalization of an artifact. On the surface, it looks like straight reproduction of a given cultural tool (key) in order to amplify one's powers of action (opening doors). Yet there is much more to this episode. As Cole and Griffin (1980) and

Latour (1994) point out, re-mediation leads to the composition of new tasks and goals. The mediating artifact not only amplifies, it opens up new possibilities that lead to surprises. This happens when Peter and August use the key to enter into the headmaster's office.

I put the file back. I switched on the light, just for a second (...). Then I saw that one of the desk drawers was fitted with a mortise lock. This was absolutely normal. Biehl was the head of the school, there had to be a locked drawer in his desk for stamps and maybe small sums of money. There was no good reason for taking a look, and besides, we were in a hurry. But I did it anyway. I took a paper clip from the desk and used the sheet-metal key as a wrench. I do not know why I did it, I suppose it was out of habit. And yet maybe it had not been habit. Maybe it was an attempt to see inside Biehl. (p. 138)

The use of the key is no more understandable as a mere technical extension of available means to perform a predetermined task. Opening up doors leads to new doors, and it is no accident that at the crucial point the key only serves as wrench. The object is no more doors, it is headmaster Biehl's mind. To use Leont'ev's (1978) terminology, such re-mediational shifts are important for the understanding of the relationship between actions and activity, between goals and motive.

Mediation and re-mediation by artifacts are central concepts in Vygotsky's (1978) work. The process described by Høeg calls for a conceptualization of mediation as more than technical amplification. It calls for studies of artifact mediation in the construction of new tasks, in the formation of motives, and in related developmental shifts.

## DOES DEVELOPMENT EXPLAIN ANYTHING SIGNIFICANT HAPPENING OUT THERE IN THE WORLD?

So is the solution a combination of the positive and the destructive, individual and collective, vertical and horizontal aspects of development? Such additive theorizing won't take us far.

More likely the outcome is: not either one, not both combined, but both alone, connected and transcended. Development emerges as everyday creation or construction of the new in zones of uncertainty riddled with contradictions and surprises and heavily dependent on re-mediation by

cultural artifacts. Developmental theory that takes these challenges seriously will be able to explain significant transformations in human life courses, at least partially.