

culturists do not like using the most widely used sedative, MS-222, because of possible carcinogenic effects on both fish and humans, who grab the fish from their container. As the veterinarian explained, stress is cumulative at both the individual and collective levels of a fish population. Each time a fish is handled, its chance of survival is lowered and, with it, the survival of the population as a whole. This knowledge mediated Erica's emotions during this work. On the one hand, she continuously improved her practical understanding of the fish and fish culture, as well as her model of the fish population, with each sampling episode and each population she raised. On the other hand, she felt bad about having to stress the fish.

Throughout the sampling episode, during which Erica handled 100 fish, she looked at groups of about 20 collectively and inspected each fish individually (e.g., for cataracts) in addition to measuring its length and weight. Leanna, a member of my research team, joined the sampling process, taking on the jobs of reading the weights off the digital scale of the electronic balance and entering the data (length, weight, abrasion to left [L], right [R], or both eyes [LR]) on the spreadsheet. The spreadsheet was already set up to calculate average values in the course of data entry.

Erica frequently glanced at subsamples of fish collectively (Fig. 4.4); watching in this way and looking at the distributions of weights and lengths of a sample enabled her to develop highly evolved interpretive skills. She could now look at a distribution and understand what a particular sample looked like on average (e.g., "There are long skinny ones and short fat ones, but few in the middle"). Thinking aloud while observing the current subsample (Fig. 4.5), she reminded herself and the others present that the veterinarian had recently described the population as "looking good." Erica generally expressed sadness and disappointment when a subsample seemed below target, and expressed joy and excitement when the sample met or exceeded expectations. She expressed emotions as she measured the length of each fish, inspecting it closely (Fig. 4.4), and placed it in the water-filled dish on the scale. For example, when she had measured a particularly short specimen of low weight, Erica (E) commented, with low voice intensity, much lower than normal, "Way low" (Fig. 4.2), and then added almost inaudibly, "Darned" (Episode 1).<sup>1</sup> This

<sup>1</sup> In the transcriptions, I use the following conventions:

[ beginning of overlapping talk or gesture;

] end of overlapping talk or gesture;

= equal sign at the end of one turn and at the beginning of the next indicates latching turns; that is, there is no gap between the two speakers;

(1.32) elapsed time in hundredth of a second;



Figure 4.5. Erica articulating the veterinarian's positive assessment of the coho salmon.

was an expression of her anxiety that the fish population might be short of the target weight:

#### EPISODE 1

01. E: <<p>↓^way ^low>. (1.08) <<pp>darned>.

Throughout the sampling episode, pitch and speech intensity are consistently down when any fish are below the target value but are in the normal

:: lengthening of the preceding phoneme, approximately one-tenth of a second for each colon used;

.,;? punctuation marks that indicate characteristics of speech production, such as intonation, rather than grammatical units of language;

↑↓ shifts to higher or lower pitch in the immediately following utterance part;

^ movement of pitch (F0) in subsequent word downward, up-down, down-up, and upward;

<<p> >, <<pp> > changes in speech parameters: piano (low volume) and pianissimo (very low volume).

WELL upper case is used to indicate sounds louder than the surrounding talk;

.hhh inbreath; without the dot, hhh indicates outbreath;

(stay?) word(s) within parentheses followed by a question mark indicate uncertain but possible hearings;

(( )) comments and descriptions;

84 dB speech intensity in decibels (dB);

320 Hz pitch (F0) in Hertz.

range for other fish. On the other hand, there are expressions of joy – indicated by such parameters as descending pitch contour, increased mean pitch, wider pitch range, increase in high-frequency energy, and greater speech intensity (New, Foo, & De Silva, 2003). The changes in emotion expressions are exemplified in Episode 2, which begins when Erica comments on one fish looking “okay” (turn 01), which can be heard as “okay, but not great” (see lower than normal pitch), and then continues when she bursts out with an expression of joy when she sees the measurement results of a specimen meeting expectations (turn 05). Other participants are the researcher-helpers Leanna (L) and I (M).

#### EPISODE 2

01. E: this size looks okay. ((188–172 Hz))  
 02. (0.91)  
 03. one <sup>˘</sup>twenty nine ((72–77 dB, 187–268 Hz))  
 04. (4.68) ((E inspects fish, puts it on scale; L enters data))  
 05. HEHA::: ((85.8 dB, 465–277 Hz)) (0.25) WHOO:: ((86 dB, 600 Hz))  
 06. (0.94)  
 07. L: heha  
 08. (1.22)  
 09. M: is this what you want? twenty grams?  
 10. E: <sup>ˆ</sup>i=want ((196–229 Hz)) twenty ((211–229 Hz)) grams ((220–194 Hz)).

The changes in pitch level are dramatic between turn 03, which represents normal range, to turn 05, in which the joy is expressed. Here, the pitch level doubles and even triples, curbing downward toward the end, and the speech intensity increases more than eightfold, all of which are indications of joy, which any culturally competent person can hear in Erica’s voice. The power-in-the-air produced during the utterance of turn 03 ( $2.41 \times 10^5$ – $W/m^2$ ) increases to about sixfold ( $14.0 \times 10^5$ – $W/m^2$ ) and sevenfold ( $17.9 \times 10^5$ – $Watt/m^2$ ) in turn 05 for the “HEHA:::” and “WHOO::,” respectively.

In Episode 3 Erica and Leanna had finished a batch of about 20 coho and were waiting for a second batch to be tranquilized in the carbon dioxide bath. Erica was eager to know the average weight and asked Leanna, who had been entering the data on the spreadsheet, to read off the requested value. Leanna cackled and then turned toward the monitor to seek the value. Erica read a value, 18.75 cm, and then produced a loud and high-pitched “No,” which expressed her disappointment and fear (turn 05); she then addressed the computer, database, and values, asking them to “go over [the 20 g target value].”

## EPISODE 3

01. E: 'whts the average. ((80 dB))  
 02. (0.97)  
 03. L: uh HA ha HA .h  
 04. (0.81)  
 06. u:::[::~::~:]  
 05. E: [eighteen point seven five]? ((84 dB, 320–400 Hz)) u ^NO[::~::~:] ((85 dB, 560 Hz))  
 06. L: [<<p>some][what less<>]  
 07. M: [no that's ] because of the outlier, fifteen  
 08. (0.16)  
 09. E: go:: (bi:s?) O::Ve::R.  
 10. (0.79)  
 11. L: <<p>ya know> lots to go. he ha he.

The disappointment and fear are detectable to the other two individuals present, who attempt to mediate the impact this fact had on Erica. Thus, both Leanna and I attempt to mediate the “bad” intermediate value that is considerably below the desired target value, thought to provide the best survival conditions for the coho on their journey through the river and estuary and into the ocean. In my utterance, there is one explanation for the low value – one fish in particular, weighing only 15 g, pulls the average down (turn 07). Leanna, too, suggested that there are many more specimens to come (“lots to go” [turn 11]), implying that the larger number of specimens will mediate the overall effect the one measurement will have on the average. Both utterances are spoken at the lower ends of normal pitch ranges and with subdued intensity, both speech features that have a calming effect on individual and collective emotion and express empathy and solidarity.

#### AN INCLUSIVE WAY OF THINKING ABOUT ACTIVITY THEORY

In the two preceding sections, I provided some case material on the sensuous nature of activity generally and on the emotions that arise at work particularly. Yet the emotional aspects of work are seldom captured in activity-theoretical studies. Whereas some scholars have developed A. N. Leont'ev's work toward an understanding of individual subjectivity and consciousness (Holzkamp, 1983), most Western researchers have not concerned themselves with Engeström's discussion of this aspect of work and have largely studied the structural dimensions of activity. I do

think of human activities in terms of the mediational triangle Engeström proposed, but think about it *together with* the sensuous nature, emotive, identity-related, and ethico-moral dimensions of human actions and activities that currently are not highlighted in this representation. If we do not think about these dimensions together with the triangle, then we lose the link between emotion and emotional valence and participation in activity, concretely realized in and through specific goals. That is, neither the collective dimensions of motive setting nor the individual dimensions of goal setting and conditioning of operations are linked to emotional valence, the ultimate mediating moment of an activity system.

### Clarifications

To use cultural-historical activity theory to analyze the productive work in the fish hatchery, different levels have to be distinguished: activity (e.g., “enhancing salmon stocks”), action (e.g., “feeding fish”), and operation (e.g., “flicking hand to get the feed to spread”). Following Leont’ev (1978), activity theorists explicitly have written about the dual existence of the object. But it is not only the object that exists in two ways : the activity system as a whole both embodies material aspects and exists in consciousness. The subject, the conscious means of production, community, division of labor, rules, and object, exist as objectively experienced societal and material structures in the world that other actors can use as resources in their actions. But all of these also are moments of consciousness. Thus, the activity system represented in Figure 4.6 not only refers to the

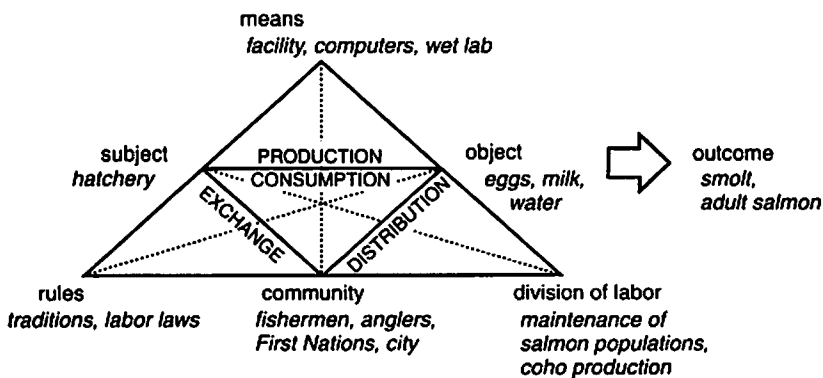


Figure 4.6. Representation of one concrete realization of the activity of salmon enhancement.

material aspects of the different moments but also, on a second level, refers to consciousness – the subject is the subject of consciousness just as the object is the object of consciousness.

The generalized structure of the activity of fish hatching is represented by the standard mediational triangle (Engeström, 1987, p.178). This activity (Fig. 4.6) can be realized in various ways – in fact, my research shows that there are different species raised in federally funded fish hatcheries in British Columbia. The practices differ among hatcheries, too; and so do the means of production and even the community. At a collective level, the products of the labor in the hatchery are *exchanged* with others in the community, where the products of labor come to be accumulated and *distributed* differentially as a function of the division of labor.

In my study of the fish hatchery, I specifically investigated one concrete activity system, that is, one concrete realization of a general possibility of contributing to the maintenance of society and its relations to the natural world. To get the work done in this activity system, specific individuals formulate and accomplish goals such as feeding; the action *feeding* realizes this goal, and the realization depends on a choice Erica makes between using the scoop and using the mechanical sprayer (Fig. 4.7). Observing the person in Figure 4.3b even from afar, everyone in the hatchery – in fact, every fish culturist and anyone else knowledgeable about fish culture – knows not only what is happening but also what goals are realized in the process. That is, the action observable is a patterned behavior specific to the community; it is a practice. The mediational triangle for concrete actions exhibits both mediations: the means (scoop, sprayer) are characteristic of the community in which everyone recognizes an action as something he or she might be doing as well. “Thus the action has double significance not only because

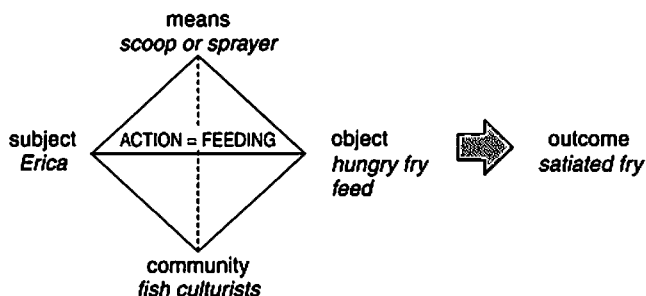


Figure 4.7. Erica's action of feeding depending on a choice between the use of a scoop and the use of a sprayer.

it is directed against itself as well as against the other, but also because it is indivisibly the action of one as well of the other” (Hegel, 1977, p. 112).

Actions are important for further theorizing in cultural-historical activity theory. The level of actions is precisely the one at which other moments of activity, including emotions, identity, and the ethico-moral dimensions of work, can be linked to the existing framework.

### Emotions

Something unique about human agents is that they do not exist merely as bodies among bodies: as phenomenological philosophers have shown, human beings exist in sensuous flesh and blood. Only because human bodies are endowed with senses do they have the capacity to make sense. Thus, conscious goals are set because of the payoffs they promise; positive outcomes – successes, expansions of action possibilities and control, and goal realization – have positive emotional valence; failures – decreasing action possibilities and loss of control – have negative emotional valence that human agents consciously avoid. Thus, we can understand why the fish culturist resigned himself to doing an eight-hour job and sought out tasks that decreased the possibility of interactions with the managers, something associated with negative valence. Every face-to-face meeting between him and the managers in fact further lowered his emotional state.

Both levels of emotion also mediate Erica’s intermediate and long-term goals. For example, she frequently chooses to feed with the sprayer, a device she had traded for fish feed with another hatchery. She does so because of health considerations: using the device decreases stress and strain on the throwing arm and therefore the risk of injury, which, as a prospective by-product of her work, has a negative valence. Others in her hatchery look at the machine with suspicion; rather than use it, they continue to throw feed; they consciously choose the scoop as their tool.

The object of *this* activity system is the production of a healthy population without losses; a measure of health is the average condition coefficient, a variable that is calculated using the size and weight of the fish. A healthy population at release time is associated with positive emotional valence, whereas an unhealthy, underweight, or fat population is undesirable and has negative emotional valence. Erica frets when she takes the last sample, because she considers the outcome a measure of her success in having met the target. Other aspects of the activity that have negative valence are forms of waste (money, feed) or injury, disease, and other stresses on the fish population. Sometimes multiple goals compete: Knowing more about the fish

population has a positive valence, but sampling the coho population has a negative valence, because it constitutes a stress factor that decreases health and survival. Here, the former goal wins out because in the long run it is expected to lead to better understanding and ultimately greater success.

Sense mediates the long-term payoffs that might be expected from the conscious evaluation of goals. But human beings also are subject to a complex mix of bodily states – physical, biochemical, and physiological – that mediate and condition goal setting and goal realization in operations. These bodily states are experienced, in part, as emotions (Damasio, 2000). Being in a serene setting, having a positive relationship with nature, and working outdoors have positive valence, which mediated the choice of all full-time and part-time staff members to work at the fish hatchery; and working there mediated the emotive states in a positive way.

At the lowest level of analysis, unconscious or nonconscious operations, emotions also mediate what a person does. That is, the same bodily states that a person experiences as emotions also, by their very nature, constitute the context that determines the form of the operations that the body produces. On days when a person feels elated and “emotionally charged,” what she does in the hatchery and how she does it are different than when a person feels emotionally drained. These emotional states also, and importantly, mediate face-to-face interpersonal transactions; and these transactions mediate current emotional states (Turner, 2002).

During my stay in the hatchery, Erica was laid off. Erica’s layoff and the effect it had on her mediated the transactions during breaks and over lunch; as a result, the general mood among the fish culturists generally declined. The face-to-face meetings between Erica and her managers became more difficult as a result of the way she felt; and each time she met with one of them, her emotions were negatively affected. More and more so, meetings with the managers had come to have negative emotional valence, as Erica “knew” beforehand that she would feel worse.

### Identity

We are what we do. Or rather, in and at work, human beings concretely realize their goals in outcomes or products, which therefore come to embody an aspect of the person – the agents *exteriorize* and *estrangle* themselves in the products of their labor. Watching Erica from afar, other fish culturists know that this is an accomplished and knowledgeable person feeding the fish. On the other hand, time and again, knowledgeable fish culturists have pointed out to me that this or that temporary worker



does not knowledgeably feed the fish, a fact for which they can give specific evidence upon inspecting the pond – for example, unused feed on the bottom. Therefore, just from the way a person feeds, established fish culturists can identify the person as either a knowledgeable or not so knowledgeable fish culturist. Here, aspects of identity are constructed on the basis of the actions of feeding and outcomes – feed on the bottom of the pond, too much or too little feed used. Thus, Erica is known beyond the immediate boundaries of the hatchery as a very knowledgeable fish culturist. Moreover, every knowledgeable fish culturist can see in her actions a “300% committed” and “motivated” fish culturist. That is, from the material relationship between the subject and object in Figure 4.7, others in the fish culturist community can make attributions about the identity of Erica.

Erica was laid off because she had filled a position temporarily vacated by a person with tenure. When budget cuts forced the tenured person to return to his original workplace in the hatchery, he displaced Erica. This had a tremendous impact on her emotions, as the workers in her husband’s company had simultaneously gone on strike. Erica and her husband were considering selling their house because of the lack of income. These threats influenced what Erica was doing and how she was doing it. Thus, whereas she normally was a highly conscientious fish culturist who apparently attended to everything, there were repeated instances when she forgot to feed the fish or to take care of other aspects of her work. Others could see how distraught she was in the way she did her job. Erica frequently was on the edge, expressed in sudden shifts in pitch levels, and she spoke in a higher key, expressed in the overall shift of her base pitch by nearly 40 Hz (Roth, 2007a). Others in the hatchery attributed these changes to Erica’s identity, allowing them to make statements about who she is and how she feels. That is, actions and outcomes make apparent to others both their goals and emotional states; and these actions and the outcomes in which the acting subject concretizes an aspect of herself are used in turn to construct aspects of the agent’s identity.

### Ethico-Moral Dimensions of Actions

The model represented in Figure 4.7 also allows us to think about and theorize ethico-moral dimensions of work that generally remain unarticulated and undertheorized because researchers focus on the epistemic and technical aspects of actions and not on their effects (Roth, 2007b). This restriction to the epistemic and technical dimensions of actions detaches

answerability from the richness of life attested to in praxis: "I cannot include my actual self and my life (*qua* movement) in the world constituted by the constructions of theoretical consciousness in abstraction from the answerable and individual historical act" (Bakhtin, 1993, pp. 8–9). A theoretical world of conceptual knowledge and technical skills thereby comes to exist separate from my unique being and from the ethico-moral sense of acting. As a result, people generally become indifferent and fundamentally predetermined and determinate beings.

If, however, actions are theorized together with their effects, such as in speech act theory (Austin, 1962), then the ethico-moral dimensions of work can be theorized within third-generation cultural-historical activity theory. The intentions a fish culturist expresses in and through her actions can be compared with stated or unstated ethico-moral principles, such as the principles of stewardship and care. Thus, Erica's peers recognize her as a morally principled person, because she has not slacked off, despite having received a layoff notice and despite her strained relations with the managers, who apparently favored less experienced and knowledgeable persons. Others, too, recognized the ethical principle of care and stewardship concerning the fish population that had been assigned to her. That is, every competent fish culturist could see that she "did the best for the fish" and "gave 300%," and this even after she had received the layoff notice.

#### TOWARD AN INCLUSIVE UNIT OF ANALYSIS

In this chapter, I have presented an extensive case study that shows the emotional, identity-related, and ethico-moral aspects of human activities that often are not addressed in activity-theoretical studies. Needs, emotions, and feelings – which exist at both the individual and collective level and, in fact, stand in a constitutive relation – mediate the goals and frame the operation-determining conditions. That is, in a strong sense, without articulating and theorizing needs, emotions, and feelings, we are hard pressed to arrive at more than a reductionist image of activity generally, and concrete activity systems such as the hatchery I studied particularly. Only by including these needs, emotions, and feelings do we capture the activity system as a whole, that is, as intended by cultural-historical activity theory since its inception. In writing this chapter, I hope to encourage others to include emotional, identity-related, and ethico-moral aspects of activity in their studies. The clear distinction between the activity and action levels allows us to link collective needs and emotions to the former,

and individual needs, emotions, and feelings to the latter. The two levels of study are articulated in Figures 4.6 and 4.7, respectively. The study of goals, actions, and concretely achieved outcomes provides us with the resources for articulating and theorizing emotions, identity, and the ethico-moral moment of human praxis. In some activities, such as environmentalism or “charitable work,” the ethico-moral dimensions are already available at the collective level, because the explicit motives and goals of the activities have to do with assisting others and humanity as a whole.

**PART TWO**

**MEDIATION AND DISCOURSE**

## Mediation as a Means of Collective Activity

VLADISLAV A. LEKTORSKY

Yrjö Engeström has elaborated a very interesting and fruitful variant of cultural-historical activity theory, which he and his collaborators successfully use in analyzing and solving concrete problems in developmental work research. The activity approach and activity theory in different forms have been very popular among Russian psychologists and philosophers for many decades. Although in Russia a lot of research in different human sciences has been carried out in the framework of cultural-historical activity theory, many of its key ideas continue to be insufficiently elaborated, it is given different interpretations, and there are discussions about the meaning of its basic tenets.

In recent times some scholars in Russia and other countries have begun to criticize the activity approach and its results. I think that the results of Engeström's research are important in the context of contemporary discussions about the possibilities of activity theory. In this chapter, I will try to analyze the place of Engeström's variant of activity theory among other variants. In this connection, I will try to elucidate some key notions of the activity approach, first of all those of mediation and subject. Specifically, I will analyze reflective mediation as a means of changing collective activity.

### ACTIVITY

It is important to stress that the idea of activity was first introduced in philosophy and subsequently in the human sciences as a means of overcoming the Cartesian opposition between the subject and the object, between the "inner" world of consciousness and the "outer" world. This became possible in the context of the projective-constructive attitude, which has been specific to European civilization since the 17th century. In the ancient Greek

picture of the world, technical activity, producing artificial objects, did not have any relationship to the cognition of natural objects, because natural and artificial processes were considered to be different. The rise of modern science eliminated the principal difference between these processes. The idea that human beings could have genuine knowledge of only those objects that they themselves had made became popular. The German idealist philosophy of the early 19th century (Fichte, Hegel) espoused the idea of activity as creation of the world of objects by the Transcendental Subject, Absolute Ego, or Absolute Spirit. These philosophers accepted Kant's idea about the construction of the world of experience by the Transcendental Subject and at same time rejected his idea concerning the existence of an outer reality as the "thing in itself." According to Fichte and Hegel, there is nothing immediately "given," not only in the sphere of "outer" objects, but also in the sphere of empirical consciousness. All phenomena, objective and subjective, are constructed, mediated by spiritual (cognitive or mental) activity. It is senseless to speak about reality beyond the system of such activity.

Marx, who was a genuine heir of this tradition, managed to overcome its subjectivism. The starting point in understanding a human being for Marx was not the activity of consciousness – empirical or transcendental, individual or absolute – but real empirical activity, practice, transforming real natural and social surroundings. It is not individual, but collective social activity. The activity of an individual and individual consciousness derive from collective activity. The latter presupposes interindividual relations, interaction, and communication – hence the very important role of human-made things, which mediate all human relations and, in this process of mediation, participate in creating specific human features.

Nevertheless, the opposition between the "inner" and the "outer" worlds, between "immediately given" and mediated phenomena, remains a problem for many philosophers and scholars. The understanding of the phenomena of consciousness as something immediately given in the acts of introspection is shared not only by phenomenologists but also by some representatives of contemporary philosophy of mind and cognitive science (Searle, 1990). Different philosophers and scholars (pragmatists, operationalists, epistemological constructivists, social constructionists, etc.) used the activity approach as a means of overcoming this opposition, but it was given different interpretations, and at the same time it could not resolve some problems and created other ones.

It was Lev Vygotsky (1978) who elaborated the theory of the cultural mediation of higher psychic functions, using some principal ideas of Marx.

Communication between the child and the adult, using such human-made things as language signs and creating intrapsychic processes, was at the center of his studies. Many scholars think that it is possible to consider Vygotsky's conception as the first variant of cultural-historical activity theory. But Vygotsky himself did not speak about activity theory. Moreover, some of his pupils (A. N. Leont'ev, P. I. Zinchenko, and P. J. Gal'perin) and other psychologists (S. L. Rubinstein) criticized him for not taking into account the role of practical activity in the process of mediation. Nevertheless, there is no doubt that Vygotsky's ideas are at the base of all contemporary variants of activity theory.

The first variant of psychological activity theory was elaborated by the famous Soviet psychologist A. N. Leont'ev, who was a pupil of Vygotsky. According to Leont'ev (1978), activity consists of actions, the latter of operations. Activity presupposes a corresponding motive, which coincides with an object of activity; actions are aimed at concrete goals; and operations are connected to certain tasks. These relations are flexible: An action can become an activity, a goal can transform into a motive, a task can become an operation, and so on. According to Leont'ev, it is important to understand actions as deriving from the whole process of activity, because a meaning of an action is dependent on its role in activity. A lot of research was carried out within this framework by Leont'ev himself and by his pupils. Leont'ev stressed that activity should be understood as a collective formation. But at the same time the problems of activity as a collective process, presupposing interactions and communication between different participants with different positions, were not investigated in a practical way in the framework of Leont'ev's theory. In reality, the activity of an individual and individual actions and operations were at the center of this research. Vygotsky understood the importance of the problems of collective activity and stressed the collective character of the primary forms of psychological processes. But he studied mainly the process of communication between adults and children.

The group of Russian psychologists who were disciples of A. N. Leont'ev, headed by V. V. Davydov, began to study collective activity in different forms (Davydov, 1988, 1996). They have showed that to understand collective activity in terms of actions, operations, motives, goals, and tasks is not enough. It is also necessary to take into account the values and norms of activity. According to Davydov, internalization can be understood as a mode of individual appropriation of forms of collective activity. Davydov and his followers, notably V. V. Rubtsov (1991), have discovered several types of collective subjects of learning activity on the basis of their

psychological and pedagogical experiments. But collective activity can also presuppose constant communication between participants as a necessary condition. This case is especially interesting. In a series of experiments it was shown that the abilities of self-control and self-reflection in the process of learning activity can arise only if children extract themselves from the situation of interaction with an adult (in this case with a teacher) and begin to cooperate with each other. The latter presupposes the distribution of different positions, an agreement among them, the discovery of their differences, and by such means the discovery by a pupil of the existence of a position for him- or herself.

Another variant of activity theory was formulated by the Soviet philosopher and methodologist G. P. Shchedrovitsky (1995). It is distinct from Leont'ev's theory and from the work of Davydov and his followers. For Leont'ev and Davydov, activity was a means of understanding psychic phenomena and creating some of them, for understanding a personality. For Shchedrovitsky, activity was to be understood as a collective process, and an individual subject was interesting only as a function of collective activity. According to Shchedrovitsky, collective activity is a definite system that in particular includes a goal, tasks, methods, procedures, initial material, and outcomes. He was not interested in what processes are going on in the "inner world" of consciousness, what personality is, or what an individual subject is. In other words, his theory is not psychological. Its aim is to understand collective processes and to project new kinds of activity. The General Theory of Activity (the name Shchedrovitsky gave to his theory) has been adopted by a number of specialists in the spheres of projective organizational games and design, and has created a whole movement that continues to develop in Russia and is connected to the solution of concrete problems (Rotkirch, 1996).

Yrjö Engeström says that he himself uses Vygotsky's principal ideas and proceeds from the theory of Leont'ev. I agree with him on that point. At the same time I would stress that Engeström's ideas are essentially original. They contain a new conception of activity, a new understanding of its structure, and they are used to solve new problems (Engeström, 2005a). For Engeström, activity is a collective process. Building on collectivity as the main feature of activity, Engeström offers a new model of activity. The important components of the structure of activity are division of labor, community, rules, subject, and object. Mediating artifacts are also an important component – their role is emphasized not only by Leont'ev but also in the work of Davydov and in Shchedrovitsky's scheme of collective activity. Engeström interprets collective activity as a system, as does



Shchedrovitsky. But for Engeström this system should be seen in relation to other activity systems and interpreted as multivoiced, including a community of multiple points of view, traditions, interests, and interactions between participants. Engeström's idea of the central role of contradictions as sources of change and development of activity systems is very important and fruitful. I find also that the idea of the possibility of expansive transformations in activity systems is very stimulating. Engeström has been elaborating his theory in connection with its application to concrete problems in the field of developmental work research. I think that this indicates that the theory is promising.

In this context I will take up two notions that are important for the elaboration of activity theory, used by Engeström and discussed by philosophers and psychologists in Russia and other countries. I refer to the notions of subject and mediation.

#### SUBJECT

It has been argued that the notion of subject is not necessary for activity theory. This was, for example, the opinion of Shchedrovitsky, who wrote about activity without a subject. I cannot agree with this idea. Activity has its bearer. If it is a collective activity, there is a collective subject. If it is activity of an individual, there is an individual subject. In both cases, a subject is not something that generates activity from the outside. The subject is activity itself, considered from a certain point of view.

Without the activity of individuals, a collective activity is impossible. Activity is a specific kind of entity that can be understood with the help of an analogy. If we study, for example, a water wave, we should take into account that its movement is possible only owing to the movements of separate particles interacting with each other and transferring movement from some particles to others. But the interactions of these particles are not the same as the wave movement. Similarly, collective activity cannot exist without individuals participating in it. An individual can influence collective activity, but only by connecting with it and participating in it. Individual actions are not completely determined by collective activity. An individual is a free being, pursues his or her own goals, forms his or her life projects, can cease to follow existing norms and rules and suggest some other ones. To predict the behavior of an individual is more difficult than to predict the behavior of a social group; indeed, sometimes individuals cannot predict their own behavior. But they cannot have norms and rules of activity that are only theirs. These norms and rules will always be shared by a number of people.

Collective activity and mediation are crucial for understanding an individual subject. Mediational means exist in a field that is, on the one hand, external to each individual and, on the other hand, presupposes the activity of individuals. It is beyond the border of mine and not-mine. There is a lot of interesting research in Russia on how conscious individual processes are generated in the processes of activity. Nevertheless, I think that many problems in this field have not been solved. An individual subject cannot be dissolved into the system of collective activity. The individual is a specific system of its own. The problems of the relationship between conscious and unconscious processes, of the existence of free will, and of the nature of the ego continue to be discussed in philosophy, psychology, and cognitive science. Activity theory suggests an interesting way to approach these problems. But it does not have a ready and easy solution.

For classical philosophy and the human sciences, the existence of the subject and "the inner world" is an immediate and indubitable fact. The existence of the outer world and another subject is a problem. How is the outer world possible? How are other minds possible? How can we know the outer world? How can we know other minds? How can one's inner ideas be known by another? These questions have been discussed for several centuries. From the point of view of activity theory, consciousness and "the inner" are social and cultural constructions and exist first of all in forms of collective activity. For activity theory there is another question: How is the subject possible?

The classical philosophical opposition of "the inner" and "the outer" has been overcome from the point of view of activity approach. Nevertheless, the idea of "the inner world" is very important in cultural and social contexts. The subject as the unity of consciousness, the unity of an individual biography, and the center of making decisions can exist only as the center of "the inner world." But the appearance of "the inner world" is possible only when the idea of "the inner" arises in culture, in other words, when it is realized in forms of collective activity. This means that there may exist cultures and forms of activity, including forms of communication, where the subjects have no feelings of the ego and "the inner world."

The ego of an individual subject may be understood to be a complicated, changing, and somewhat problematic formation. It has different layers, which sometimes are interpreted as different egos, engaged in communication with each other and formed in different kinds of activity and in different relations with other people. Ego identity can be confused and fragmented. Thus, an individual subject can be understood to be a collective entity, as a kind of collective subject. A specific feature of such a