
Extract from: Leontiev [Leontyev], A.N. (1979). The problem of activity in psychology (pp. 37-71). In J.V. Wertsch (Ed.). The concept of activity in Soviet psychology. Armonk, NY: Sharpe.

The Problem of Activity in Psychology

Editor's Introduction

In this paper Aleksei Nikolaevich Leont'ev .... touches on all the major features of the theory of activity.... At various points he deals with: (1) the levels of analysis in the theory of activity, (2) goal-directedness at the level of analysis conceived with actions, (3) mediation, (4) genetic [developmental] explanation, (5) social aspects of activity, and (6) internalization.... [p. 37] .... [p. 40] .... J.V.W.

Two Approaches to Psychology - Two Schemes of Analysis

.... [p.41] ....

The current intensive development of interdisciplinary research that connects psychology with neurophysiology, cybernetics, logicomathematical disciplines, sociology, and cultural history cannot, by itself, solve [the] fundamental methodological problems [of psychology]. It does not solve them, but only strengthens the tendency toward physiological, logical, or sociological reductionism, which threatens psychology with the loss of its subject.

It is no sign of theoretical progress that the conflict among various schools of psychology is no longer so sharp. Militant behaviorism has given way to a compromising neobehaviorism..., Gestalt psychology to Neogestalt psychology, and Freudianism to Neofreudianism or cultural anthropology. Although the term *eclectic* is accorded highest praise by American authors, eclectic positions have never led to success. The scientific synthesis of various complexes, psychological facts, and generalizations cannot be achieved by simply combining them in the same volume: it [p. 42] requires further

development of the conceptual level of psychology, a search for new scientific categories capable of mending the splitting seams in psychology.

What is common to all these diverse schools is the fact that they begin from a two-part scheme: an influence on the subject's receptor systems ---> (objective or subjective) response phenomena evoked by this influence.

This scheme already emerged in classic form in the psychophysics and physiological psychology of the past century. The main problem of that time was to study how the elements of consciousness depended on the stimuli that evoked them. Later, in behaviorism ... this two-part scheme found direct expression in the well-known formula S--->R.

The unsatisfactory nature of this scheme consists of the fact that it excludes the process that active subjects use to form real connections with the world of objects. It excludes their objective activity (in German, Tätigkeit, as opposed to Aktivitat [Activeness]). Such an abstraction from the subject's activity is justified only within the narrow confines of the laboratory experiment that tries to clarify elementary psychophysiological mechanisms. As soon as one goes beyond these narrow confines, however, its groundlessness becomes evident. This compelled earlier investigators to explain psychological facts on the basis of special powers such as active apperception, inner intentions, etc. - that is, they appealed to the subject's activity, but only in its mystical, idealized form.

The grave difficulties created in psychology by the two-part scheme of analysis and the "postulate of immediacy" behind it have produced constant attempts to replace this scheme. One of the lines of attack has emphasized the fact that the effects of the external influences depend on how the subject interprets them: they depend on the psychological "intervening variables" that characterize the subject's inner states ([E. C.] Tolman and others). S. L. Rubinshtein expressed this in the formula "External causes act through internal conditions." Of course, this formula is indisputable. If, however, we include [p. 43] the subject's states evoked by an influence as one of the internal conditions, this formula adds nothing new to the S--->R scheme. After all, by changing their states, we can see that even inanimate objects are influenced differently by various objects; footprints will be clearly imprinted in soft, wet ground, but not in dry, parched ground. This is all the more clear in animals and humans: a hungry animal and a satiated animal will react differently to a food stimulus, and a football fan will respond quite differently to a final score than will someone with no interest in the game.

One undoubtedly can enrich the analysis of behavior by introducing the concept of intervening variables, but this in no way eliminates the postulate of immediacy we mentioned. The fact is that although these variables are intervening, they are concerned only with the subject's internal states. What we have said also applies to "motivating factors" - to needs and inclinations. As we know, various schools of psychology, such as behaviorism, Lewin's school, and, especially, depth psychology, have viewed the role of

these factors in quite different ways. But with all the differences among these schools and in their understanding of motivation and its role, they have one main thing in common: they have all tried to develop an opposition between motivation and the objective conditions of activity or between motivation and the external world.

Attempts to solve this problem on the basis of so-called "culturology" are especially noteworthy. The acknowledged founder of this school [Leslie A.] White, has developed the idea of the "cultural determination" of phenomena in society and in the individual's behavior. The emergence of humans and human society leads to the organism's ties with the environment, which are initially direct and natural, becoming mediated by culture, which has developed on the basis of material production. Thus, for the individual, culture takes the form of meanings transmitted by speech sign-symbols. On this basis, White [1949] proposes a three-part formula for understanding human behavior: the human organism X cultural stimuli---> behavior.

This formula creates the illusion of having overcome the [p. 44] postulate of immediacy... However, the introduction of culture as a mediating link into this scheme, in which culture is communicated by sign systems, inevitably limits research in psychology to the sphere of conscious phenomena, be they societal or individual. A simple substitution has occurred: the world of real objects is replaced by the world of socially elaborated signs and meanings. Thus we once again have a two-part scheme, but now the stimuli are interpreted as "cultural stimuli."

A quite different analytic approach, based on the postulate of immediacy, emerged from the discovery of the regulation of behavior by means of feedback and from the concept of information and its transmission.

Even the first investigations of ... complex motor processes in humans revealed the role of the reflex loop with feedback links.... Since the time of this early work, control theory and information theory, encompassing processing in both living and nonliving systems, have become widely accepted.... It soon was discovered, however, that cybernetic approaches to psychology also had their limitations. It ... was possible to overcome them only at the price of replacing scientific cybernetics with a "cybernetic mythology" that dispensed with such psychological realities as mental images, consciousness, motivation, and goal-directedness. In this regard there was a familiar retreat from earlier work that had developed the principle of activation and the notion of levels of regulation, among which... objective actions and... higher cognition were clearly distinguished.

The concepts of modern theoretical cybernetics... describe the features of the structure and the flow of an extremely large class of processes.... Despite the obvious productivity of the research conducted at this new level of abstraction, ... the introduction into psychology of the concepts of control, information processing, and self-regulating systems still does not eliminate the postulate of immediacy.

... [A]pparently, no modification of an initial scheme based on this postulate can

eliminate these methodological difficulties... In order to overcome these... we must replace the two-part scheme of analysis with a fundamentally different one, but this is impossible without rejecting the postulate of immediacy.

The main thesis we shall now develop is that the proper way for psychology to overcome this "fatal" postulate, as Uznadze put it, is to introduce the category of objective activity (Gegenstendliche Tätigkeit) into psychology. We need to point out... here that we are dealing with activity - not behavior and not the neurophysiological processes through which activity is realized. The fact is that the language and the "units" isolated by the analysis and used to describe behavioral, cerebral, or logical processes, on the one hand, and objective activity, on the other, do not coincide.

Thus psychology was presented with the following alternatives: either to retain the two-part scheme of influence of the object--->change in the subject's present state (... S--->R ...), or to begin with a three-part scheme that includes a ... "middle term" to mediate... between the other two. This middle link is the subject's activity and its corresponding conditions, goals, and means. ....

The Category of Objective Activity

Activity is the nonadditive, molar unit of life for the material, corporeal subject. In a narrower sense (i.e., on the psychological level) it is the unit of life that is mediated by mental reflection. The real function of this unit is to orient the subject in the world of objects. In other words, activity is not a reaction or aggregate of reactions, but a system with its own structure, its own internal transformations, and its own development.

Introducing the category of activity changes the entire conceptual framework of psychology. But in order to do this, we must accept this category in its complete form, with all its implications with respect to (1) its structure, (2) its specific [p. 47] dynamics, and (3) its various forms. In other words, we are concerned with answering the question of precisely what form the category of activity will take in psychology....

Human psychology is concerned with the activity of concrete individuals, which takes place either in a collective - i.e., jointly with other people - or in a situation in which the subject deals directly with the surrounding world of objects - e.g., at the potter's wheel or the writer's desk....

With all its varied forms, the human individual's activity is a system in the system of social relations. It does not exist without these relations. The specific form in which it exists is determined by the forms and means of material and mental social interaction

(Verkehr) that are created by the development of production and that can not be realized in any way other than in the activity of concrete people. It turns out that the activity of separate individuals depends on their place in society, on the conditions that fall to their lot, and on idiosyncratic, individual factors.

We must make a special effort to warn against understanding human activity as the relationship that exists between individuals and the society confronting them. We must emphasize this since the positivist concepts that now are inundating psychology constantly stress the opposition [discord] between the individual and society. According to this view, society is just the external world to which the individual must adapt in order to survive and to avoid [becoming maladjusted], just as the animal must adapt to the external natural environment.... However, this misses the main point that in a society, humans do not simply find external conditions to which they must adapt their activity. Rather, these social conditions bear with them the motives and [p. 48] goals of their activity, its means and modes. In a word, society produces the activity of the individuals it forms. Of course, this does not mean that their activity simply personifies the relations of society and its culture. There are complex transformations and transitions that tie them together so that a simple reduction of one to another is impossible. To a psychology limited to the concept of the "socialization" of the individual mind, these transformations remain unrevealed. This psychological secret is discovered only by investigating the genesis of the human activity and its inner structure....

The prehistory of human activity begins with the life processes acquiring object-orientation. This also refers to the elementary forms of mental reflection - that is, we see the conversion of irritability .... to sensitivity... or the "capacity for sensing" [see Leontyev, 1981, Chapter 1].

The subsequent behavioral and mental evolution of animals can be adequately understood as the history of the development of the object content of activity....[see C. W. Tolman, 1987b for a contextualized summary of that outline]. The objective world is, so to speak, increasingly "drawn into" activity. Thus, an animal's movement along a barrier is subordinated to its "geometry" and incorporates it within itself. A leap is structured by the objective constraints of the environment, and the choice of detour route is structured by the interrelationships with an object....[see Leontyev, 1981, Chapter 2] .... [p. 49] ....

All activity has a looplike structure.... The looplike nature of ... the organism's interaction with the environment is now generally accepted and quite well described. However, the key point is not the looplike structure itself: what is crucial is that mental reflection of the... world is not produced directly by external influences... but by processes through which the subject enters into practical contact with the ... world. These processes are... necessarily subordinated to the world's independent properties, connections, and relations..... In other words, a twofold transition takes place: the transition from object to the process of activity, and the transition from activity to [a] subjective product of activity....

At first glance it seems that the notion of the objective nature of mind is concerned only with the sphere of cognitive processes, not with the domain of desires [needs] and emotions; but this is not so....

In the *psychology* of [needs], one must begin by making a very important distinction between [need] as an inner condition [p. 50] or one of the ... *preconditions* of activity and [need] as a factor that guides and regulated the agent's concrete activity... Only the latter function of a [need] is the object of psychology. In the first case the [need] is only a state of [depravation] for the organism. By itself, this state cannot evoke any specifically directed activity.... Only as the result of the "meeting" of the [need] and the corresponding object does it become capable of directing and regulating activity.

This meeting of [need] and object is [a remarkable] event. It is an act of objectifying the [need] - of "filling it" with content drawn from the surrounding world. It is this that transfers the [need] to the psychological level proper.

The [further] development of [needs] at this level takes the form of... [an expanding scope] of their objective content. One should note that it is only this circumstance that allows us to understand the appearance in humans of *new* desires [motives], including those that have no analogue in animals. These [human motives] are "severed" from the organism's biological [needs], and are in this sense "autonomous." Their formation is explained by the fact that in human society the objects of desire are *produced*, and the ... [motives to attain them] are therefore also produced.

Thus, [needs and motives] direct activity from the *subject's* perspective, but they are capable of fulfilling this function only if they are objecti[fied]... It is because of this that Lewin can speak of the excitatory force... of objects...

We can say the same thing about emotions or feelings. One must distinguish here between ..., on the one hand -true [human] emotions- and [accompanying] feelings generated by the correlation of [a] subject's objective activity with their needs and motives, on the other.... [p. 51]

.... [p. 58] ....

The General Structure of Activity

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As I have already mentioned, Vygotsky laid the foundations, in his early works, for analyzing activity as a method of scientific psychology. He introduced the concepts of the tool, tool ("instrumental") operations, the goal, and - later- the motive ("the motivational sphere of consciousness")..... Now, after a quarter-century has passed, this initial description is unsatisfactory and too abstract....

Up to this point we have been dealing with activity as a general concept. But in reality, we always deal with specific activities. Each of these activities answers to a specific need [or motive] of the active agent. It moves toward the object of this need, and it terminates when it satisfies it....

The basic "components" of various human activites are the *actions* that translate them into reality. We call a process an [p. 60] action when it is subordinated to the idea of achieving a result, i.e., a process that is subordinated to a conscious *goal*. Just as the notion of a motive is tied to an activity, so the notion of a goal is connected with the notion of an action. The emergence in activity of goal-directed processes or actions was historically the consequence of the transition of humans to life in society. The activity of the participants of collective labor is induced by its product, which initially met the needs of each participant directly. However, the emergence of even the simplest technical division of labor necessarily leads to isolation [in time or space] of the ... partial results, which are achieved by the [individual] participants in the collective labor activity, but do not *in and of themselves* satisfy their needs. Their needs are not satisfied by these "intermediate" results, but by the portions of the product of their aggregate activity that each participant receives on the bais of ... *social* relations.

.... The actions that constitute activity are energized by its [overlying] motive, but are directed toward a goal. Let us take the case of a human being's activity that is motivated by food. The food is the motive. However, in order to satisfy ... [this] ... need for food, he/she must carry out actions that are not immediately directed toward obtaining food. For example, his/her goal may be to make a tool for hunting. [It matters little whether the weapon is used by the maker or given to another in exchange for part of the total catch]. In both cases, that which energized his/her activity and that toward which it was directed do not coincide. [The energizing motive of a particular human activity and the goals of its constituent actions are typically "exarticulated" in this manner]. The case in which they coincide is [p. 61] unique and is the result of a special process, to be discussed below.

.... Human activity exists only in the form of an action or a chain of actions. For example, labor activity consist of labor actions, educational activity consists of educational actions, social interactions consist of actions (acts) of social interaction, etc. .... This may also be expressed as follows: when a concrete process - external or internal - unfolds before us, from the point of view of its motive, it is human activity, but in terms of subordination to a goal, it is an action or chain of actions.

At the same time, an activity and an action are genuinely different realities, which therefore do not coincide. One and the same action can be instrumental in realizing different activities. [The goal of such an action] can be transferred from one activity to another, thus revealing its relative independence.... Assume that I have the goal of getting to point N, and I carry it out. It is clear that this action can have completely different motives, i.e., it can realize completely different activities. The converse is also obvious: one and the same motive can give rise to different goals and, accordingly, can

produce different actions.

In connection with selecting the concept of action as the most important "component" of human activity, we must keep in mind that any kind of well-developed activity presupposes the attainment of a series of concrete goals, some of which are rigidly ordered. In other words, an activity is usually carried out by some aggregate of actions subordinated to *partial goals*, which can be distinguished from the *overall goal*. In this process it is characteristic that for higher levels of development, the overall goal functions to realize a conscious motive, which is [p. 62] converted into a motive-goal precisely because it is conscious.

.... The subjective selection of the goal (i.e., the conscious perception of the most immediate result to be attained if the subject is to perform the activity that will satisfy the motive) is a special process that is almost completely uninvestigated. Under laboratory conditions or in pedagogical experiments, we always give the subject a "prepared" goal; therefore, the process of goal formation usually escapes the investigator's attention.... Moreover, selection and conscious [awareness] of goals are by no means automatic or instantaneous acts. Rather, they are a relatively long process of *testing goals through action* and, so to speak, fleshing them out....

Another important aspect of the process of goal formation is making the goal concrete or selecting the conditions of its attainment. But .... [any goal exists within] some objective situation. .... [p. 63] .... Thus, apart from its intentional aspect (what must be done), the action has its operational aspect (how it can be done), which is defined not by the goal itself, but by the objective circumstances under which it is carried out. In other words, the performed action is .... [carried out under particular] *conditions*. Therefore, the action has special qualities, its own .... "components," especially the means by which it is carried out. I shall label these means by which an action is carried out its *operations*.

The terms *action* and *operation* often are not distinguished. In the context of the psychological analysis of activity, however, we must distinguish clearly between them. Actions, as we have already said, are concerned with goals, and operations, with conditions. If we imagine a case in which the goal remains the same and the conditions under which it is given change, then only the operational composition of the action changes.

The difference between actions and operations emerges especially clearly in the case of actions involving tools. After all, a tool is a material object in which methods or operations, rather than actions or goals, are crystallized [embedded]. For example, one can physically dismember a material object with the help of a variety of tools, each of which defines a method for carrying out the given action. In some cases the operation of slicing will be better, and in others, the operation of sawing. In both it is assumed that the person is able to master the appropriate tool, such as a knife, saw, etc. It is the same in more complex cases. For example, let us assume that the person is confronted with the goal of graphically depicting some sort of dependency relationship. In order to do this he/she must use some method of graphic construction. He/she must carry out

[particular] operations, and for this must know how to perform them.... [p. 64]

[In human beings] actions and operations have different origins, different dynamics, and different fates. The origin of an [individual's goal-directed] action is to be found in relationships among [his or her wider collective] activities, whereas every operation is the result of the [automation] of an [individual's formerly intentional] action. This [latter] transformation occurs as a result of the inclusion of one action in another and its ensuing "technicalization." A very simple illustration of this process is the formation of the operations required ... in driving an automobile. Initially, every [future] operation - for example, shifting gears - appears as an [attention demanding] action subordinated to a [particular conscious] goal.... Subsequently, this action is included in another [more] complex action, such as that of changing the speed of the automobile. At this point, shifting gears becomes one of the methods for carrying out this [new] action - that is, it becomes an operation necessary for performing the [new] action.... [Now,] so far as the driver's conscious processes are concerned, it is as if shifting gears under normal circumstances does not exist. He/she is doing something else:... driving the automobile from place to place, driving up steep inclines and across level expanses, bringing it to a stop in certain places, etc. Indeed, we know that this operation can "drop out" of the driver's [consciousness] entirely and can be performed automatically. It is [often] the fate of operations [too] that, sooner or later, they become a function of a machine.

Nonetheless, like the action vis-à-vis the activity, the operation vis-à-vis that action does not constitute a "separate entity." Even when [a formerly human] operation is carried out by a machine, it still realizes the action of the agent [who made that machine]. When one uses a calculator to solve a [mathematical] problem, the action is not broken by this extra-cerebral link: as with other links, it finds its realization in it. Only a machine "gone crazy" - a machine that is no longer under human control - can carry out operations that do not realize any kind of goal-directed action of a subject.

Thus, in the general flow of activity that makes up the higher, psychologically mediated aspects of human life, our analysis [p. 65] distinguishes, first, separate (particular) activities, using their energizing motives as the criterion. Second, we distinguish actions - the processes subordinated to conscious goals. Finally, we distinguish the operation, which depends directly on the conditions under which a concrete goal is attained [(see Tolman, 1988b for more on the basic vocabulary of Activity Theory)].

These "units" of human activity form its macrostructure.... For example, a tool viewed apart from a goal becomes just as much an abstraction as an operation viewed apart from the action that it implements.

It is precisely analysis of the inner, systematic connections that is needed in the investigation of activity. Without [them] we cannot resolve even the simplest problems, such as deciding in a given case whether we have an action or an operation. Moreover, an activity is a process characterized by constant transformations. An activity can lose the motive that inspired it, whereupon it is converted into an action that may have a

quite different relation to the world, i.e., implement a different activity. Conversely, an action can acquire an independent, energizing force and become an activity in its own right. Finally, an action can be transformed into a [mere] means of attaining a goal (i.e., into an operation...).

The mobility of the various "units" of the system of activity is expressed by the fact that each of them can become more fractional or, conversely, can embrace units that formerly were relatively independent. Thus, in the course of attaining a general, isolated goal, intermediate goals may also be identified, as a result of which the unitary action is split up into several ... successive actions. This is especially [p. 66] characteristic of cases in which the action is performed under conditions that make it difficult to carry it out with the help of operations ... formed earlier....

To the untutored eye, the processes of division and consolidation of the units of activity and mental reflection - both in external observation and in introspection - somehow do not emerge clearly. One can investigate this process only by using a special analysis and objective indicators.

There are various activities all of whose links are internal, for example, cognitive activity. More frequently, when given a cognitive motive, one sees internal activity that is implemented by processes essentially external in form. These can be either external actions or external motor operations.... The same applies to external activity... [i.e., one can infer related motives and goals by observing these]... The [key to this combined analysis] lies in [appreciating] the very nature of the processes of internalization and externalization.....

The identification of actions and operations in activity does not exhaust our analysis.... [p. 67] .... I shall limit myself here [, however,] to the question of the place of physiological functions in the structure of human objective activity....

.... We can no longer approach brain (psychophysiological) mechanisms in any way other than as a product of the development of objective activity. One must keep in mind, however, that these mechanisms are formed differently in phylogenetic and ontogenetic ... development and, accordingly, do not emerge in identical ways.

Activity and mental reflection presuppose phylogenetically developed mechanisms. It is somewhat different when the formation of brain mechanisms takes place under conditions of [ontogenetic] development. Under such conditions these mechanisms are formed before our very eyes as new "mobile physiological organs" ...

In human beings, the formation of uniquely human functional [neuropsychological] systems takes place as a result of mastering tools (means) and operations. These systems are nothing other than external motor operations and mental (for example, logical) operations that have been deposited and consolidated in the brain [(see Luria, 1970, and 1973 on such a functional systems approach)] ....

.... [p.68] .... The [history] of experimental psychology began with study of this aspect of reality. True, the first work was devoted to what were then labeled "mental functions" - sensory, memory, selective, and tonic functions. But in spite of its significant, concrete contributions, this work lacked theoretical perspective, because these functions were investigated by first abstracting them from the subject's objective activities of which they [are] a part - that is, they were studied as ... faculties of the mind, or ... brain. The essence of the matter is that in both cases they were viewed as generating activity rather than as being generated by it.

.... [p. 69] ....

Of course, both neuropsychology and psychophysiology must confront the problem of the transition from the extracerebral to the intracerebral sphere. As I have already noted, this problem cannot be solved by means of direct correlation [or reduction]. We must analyze the system of objective activity in general. This includes the corporeal subject - the brain and the perceptual and motor organs. The laws controlling these processes are useful only so long as we do not [confuse them with] the objective actions they perform. One can analyze these actions only at the psychological level of human activity. The situation is the same when we [confuse] the psychological [and] social level in research... the collective activity of specific individuals who have been shaped by a society.

Thus, *systematic* analysis of human activity is also, of necessity, *analysis by levels*. It is precisely such an analysis that allows us to overcome the opposition of social, psychological, and physiological phenomena, and the reduction of one to another.

Related Links:

Leontyev, [Leontiev], A.N. (1981). Problems of the Development of the Mind. (Trans. M. Kopylova). Moscow: Progress Publishers. [*see extracts from: "The problem of the origin of sensation", pp. 7-53; "An outline of the evolution of the psyche", pp. 156-326].

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