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Beyond the Individual-Social Antinomy in Discussions of Piaget and Vygotsky

Michael Cole[a], *James V. Wertsch*[b]

[a]University of California San Diego, Calif., and [b]Washington University, St. Louis, Mo., USA

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Abstract

Many discussions of the difference between Vygotsky and Piaget focus on the proximal locus of development. For Piaget it is said to be in individual children, who construct knowledge through their actions on the world; for Vygotsky it is said to be in social processes. A more appropriate way to distinguish between them has to do with the role attributed to cultural mediation. Mediation of human action by cultural artifacts played a central role in Vygotsky's account of human development, but was much less important for Piaget. Claims regarding the social origins of individual mental processes in Vygotsky's account need to be understood in light of his claims regarding how artifacts mediate social and individual functioning.

Ever since the publication of the first translation of Vygotsky's *Thought and Language* (reborn as *Thinking and Speech* 25 years later), there has been an ongoing debate concerning the relationship between the ideas of Vygotsky and Piaget. In the brief space here, we have no interest in arguing the virtues of one man's ideas over the other. Instead, we will suggest that, by and large, commentators on the differences between these two thinkers have placed too narrow an emphasis on their ideas regarding the primacy of individual psychogenesis versus sociogenesis of mind, while neglecting what we believe is a cardinal difference between them: their views concerning the importance of culture – in particular, the mediation of action through artifacts – in the development of mind. This issue seems especially appropriate to the question of where the mind is located.

Standard discussions comparing the ideas of Vygotsky and Piaget identify a crucial difference in their views concerning the proximal locus of cognitive development. According to the canonical story, for Piaget, individual children construct knowledge through their actions on the world: 'To understand is to invent.' By contrast, the Vygotskian claim is said to be that understanding is social in origin.

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Michael Cole
Laboratory of Comparative Human Cognition
University of California San Diego
La Jolla, CA 92093 (USA)

There are (at least) two difficulties with this story. First, in principle, Piaget did not deny the co-equal role of the social world in the construction of knowledge. One can find many places where he says that both the individual and the social are important [Smith, 1995].

> There are no more such things as societies qua beings than there are isolated individuals. There are only relations ... and the combinations formed by them, always incomplete, cannot be taken as permanent substances [Piaget, 1932, p. 360].
>
> [T]here is no longer any need to choose between the primacy of the social or that of the intellect: collective intellect is the social equilibrium resulting from the interplay of the operations that enter into all cooperation [Piaget, 1970, p. 114].

Second, Vygotsky, contrary to another stereotype, insisted on the centrality of active construction of knowledge. This insistence is reflected in passages such as the following, which, ironically, Vygotsky [1987] wrote as part of a review and critique of Piaget's account of egocentric speech:

> Activity and practice – these are the new concepts that have allowed us to consider the function of egocentric speech from a new perspective, to consider it in its completeness ... But we have seen that where the child's egocentric speech is linked to his practical activity, where it is linked to his thinking, things really do operate on his mind and influence it. By the word 'things', we mean reality. However, what we have in mind is not reality as it is passively reflected in perception or abstractly cognized. We mean reality as it is encountered in practice [pp. 78–79].

Vygotsky's strong assumptions concerning the active individual are reflected in his emphasis on practices such as speaking and thinking and are the focus of an extended treatment by Zinchenko [1985].

One reaction to the realization of this complementarity of active individual and active environment is to make co-constructionism the basis of theorizing – both an active child *and* an active environment exist [Valsiner, 1993; Wozniak, 1993]. We certainly subscribe to this view. However, left out of such discussions, and the element we want to emphasize, is the essential presence of a 'third factor' in the process of co-construction – the accumulated products of prior generations, culture. This is the medium within which the two active parties to development interact.

The Primacy of Cultural Mediation

Cultural-historical psychology as formulated by scholars representing many national traditions begins with the assumption of an intimate connection between the special environment that human beings inhabit and the fundamental, distinguishing, qualities of human psychological processes. The special quality of the human environment is that it is suffused with the achievements of prior generations in reified (and to this extent materialized) form. This notion can be traced back to at least Hegel [1961] and Marx [1845/1967] and is found in the writings of cultural-historical psychologists from many national traditions [Dewey, 1938/1963; Durkheim, 1912/1947; Leontiev, 1932; Luria, 1928; Stern, 1916/1990; Vygotsky, 1929]. For example, Dewey [1938/1963] wrote:

> [W]e live from birth to death in a world of persons and things which is in large measure what it is because of what has been done and transmitted from previous human activities. When this fact is ignored, experience is treated as if it were something which goes on exclusively inside an individual's

body and mind. It ought not to be necessary to say that experience does not occur in a vacuum. There are sources outside an individual which give rise to experience [p. 39].

In their early writing on this subject, the Russian cultural-historical psychologists coupled a focus on the cultural medium with the assumption that the special mental quality of human beings is their need and ability to mediate their actions through artifacts and to arrange for the rediscovery and appropriation of these forms of mediation by subsequent generations. This view was always present in Vygotsky's writings, but it became increasingly important and well formulated in the last decade of his life [Minick, 1987]. Indeed, in the year before his death Vygotsky [1982] went so far as to write that 'the central fact about our psychology is the fact of mediation' [p. 166]. Language was the form of mediation that preoccupied Vygotsky above all others, but when speaking of 'signs', or 'psychological tools', he had a more extensive set of mediational means in mind, a set that included 'various systems for counting; mnemonic techniques; algebraic symbol systems; works of art; writing; schemes, diagrams, maps, and mechanical drawings; all sorts of conventional signs, and so on' [1981, p. 137].

According to this view, then, the development of mind is the interweaving of the biological development of the human body and the appropriation of the cultural/ideal/material heritage that exists in the present to coordinate people with each other and the physical world [Cole, 1996; Wertsch, 1991]. Higher mental functions are, *by definition*, culturally mediated. They involve not a direct action on the world, but an indirect action, one that takes a bit of material matter used previously and incorporates it as an aspect of action. Insofar as that matter itself has been shaped by prior human practice (e.g., it is an artifact), current action incorporates the mental work that produced the particular form of that matter.

When one adopts this position, several implications come with it. First, artifacts are recognized as transforming mental functioning in fundamental ways. According to Vygotsky [1981]:

> The inclusion of a tool in the process of behavior (a) introduces several new functions connected with the use of the given tool and with its control; (b) abolishes and makes unnecessary several natural processes, whose work is accomplished by the tool; and alters the course and individual features (the intensity, duration, sequence, etc.) of all the mental processes that enter into the composition of the instrumental act, replacing some functions with others (i.e., it re-creates and reorganizes the whole structure of behavior just as a technical tool re-creates the whole structure of labor operations) [pp. 139–140].

According to such a view, artifacts clearly do not serve simply to facilitate mental processes that would otherwise exist. Instead, they fundamentally shape and transform them.

A second implication of this general position is that all psychological functions begin, and to a large extent remain, culturally, historically, and institutionally situated and context-specific. This follows from the fact that the artifacts that enter into human psychological functions are themselves culturally, historically, and institutionally situated. In a sense, then, there is no way *not* to be socioculturally situated when carrying out an action. Conversely, there is no tool that is adequate to all tasks, and there is no universally appropriate form of cultural mediation. Even language, the 'tool of tools', is no exception to this rule. There are times, our grandparents told us, when silence is golden, and there are times, we all know, when words fail us.

A third implication of making cultural mediation central to mind and mental development is that the meanings of action and context are not specifiable independent of each other. Taking 'mediated action in context' as the unit of psychological analysis requires a relational interpretation of mind; objects and contexts arise together as part of a single bio-social-cultural process of development.

Fourth, and especially germane to the present collection of papers, is the implication that mind is no longer to be located entirely inside the head. Higher psychological functions are transactions that include the biological individual, the cultural mediational artifacts, and the culturally structured social and natural environments of which persons are a part. (In this anti-atomistic stance, we are always subject to what Taylor [1985] has called 'outside interference'. Or, put more positively in Vygotskian terms, a specific characteristic of human thought is the ability and need to control oneself from the outside [Luria, 1979].)

Bateson [1972] highlighted this aspect of culturally mediated action as involving cycles of transformations between 'inside' and 'outside': 'Obviously', Bateson wrote, 'there are lots of message pathways outside the skin, and these and the messages which they carry must be included as a part of the mental system whenever they are relevant' [p. 458]. He then proposed the following thought experiment:

> Suppose I am a blind man, and I use a stick. I go tap, tap, tap. Where do I start? Is my mental system bounded at the hand of the stick? Is it bounded by my skin? Does it start halfway up the stick? Does it start at the tip of the stick [p. 459]?

In short, because what we call mind works through artifacts it cannot be unconditionally bounded by the head or even by the body. Rather, it must be seen as distributed in the artifacts that are woven together and that weave together individual human actions in concert with and as a part of the permeable, changing events of life.

The earlier quote from Vygotsky on the inclusion of a tool in the process of behavior entails a similar view. Specifically, Vygotsky [1981] argued that by incorporating new artifacts into our action, we transform the distribution of what is done within and beyond the skin. Hence the process might be 'one that abolishes and makes unnecessary several natural processes, whose work is accomplished by the tool' [p. 139].

Social Origins

With these considerations as background, we can now return to the question of social origins and the relation of Vygotsky's approach to Piaget's, in the hope of clarifying somewhat the issues involved. For Vygotsky, like Piaget, the relationship between the individual and the social is necessarily relational. However, because cultural mediation is placed at the center of adult cognition and the process of cognitive development, social origins take on a special importance in Vygotsky's theories. The relation of the individual and the social is less symmetrical than Piaget's [1970] notion of social equilibration as 'resulting from the interplay of the operations that enter into all cooperation' [p. 114]. For Vygotsky and cultural-historical theorists more generally, the social world does have primacy over the individual in a very special sense. Society is the bearer of the cultural heritage without which the development of mind is impossible. When parents and other members of the community create what Super and Harkness [1986] have aptly referred to as a 'developmental niche' for the newcomer, the nature of that niche (in-

cluding the forms of social relationships it requires and affords) embodies not only the adult's cultural past but presuppositions concerning the child's future as well. The niche is simultaneously a sociophysical location, a cultural medium, and an interpretive frame. Children in human developmental niches are both natural *and* cultural entities at the start of postnatal development.

Newborns are, of course, ignorant of the meanings of the artifacts they encounter and the ways in which those artifacts (including words of the language, as well as diapers, mobiles, and pacifiers) are to be incorporated into action. At birth, the cultural past and present are literally thrust upon them. This is not to say that the process of becoming socialized can be reduced to simple learning or that no room is left for active construction. It is to say, however, that social processes give rise to individual processes and that both are essentially mediated by artifacts. Vygotsky explicated the first of these two claims in his 'general genetic law of cultural development', according to which interpersonal/intermental processes are the precursors and necessary condition for the emergence of individual/intramental (psychological) processes.

In Vygotsky's [1987] view, processes on both the intermental and the intramental planes are necessarily mediated by cultural artifacts. His comment that word meaning is 'both [speech and thinking] at one and the same time; it is a unit of verbal thinking' [p. 47] is quite telling in this connection. Because the same basic mediational means is used on the social and individual planes, transition from the former to the latter, as well as vice versa, is possible. In fact, the very boundary between social and individual, a boundary that has defined much of our thinking in psychology, comes into question in Vygotsky's writings. Just as the mind does not stop with the skin in Vygotsky's view, the relation between individual and social environment is much more dynamic than the overly simple division we so often tacitly assume. Of course this is not to say that useful boundaries cannot be drawn as we pursue our inquiry, but it is to question some of the implicit assumptions we usually make regarding where mind is located and what its nature is.

This same set of considerations explains why the idea of a zone of proximal development plays a central role in Vygotsky's account of development. In Vygotsky's now familiar account, this zone is defined as the distance between the level of actual development and the more advanced level of potential development that comes into existence in interaction between more and less capable participants. An essential aspect of this interaction is that less capable participants can participate in forms of interaction that are beyond their competence when acting alone. (This point is emphasized by Cazden [1981], who writes of 'performance before competence' in referring to mechanisms of language and cognitive development.) Of course, tutees operate within constraints provided in part by the more capable participants, but an essential aspect of this process is that they must be able to use words and other artifacts in ways that extend beyond their current understanding of them, thereby coordinating with possible future forms of action.

If we ask what makes such intermental functioning possible, we must certainly speak about issues such as context and the existing level of intramental functioning. However, there is an essential sense in which intermental functioning and the benefits it offers a tutee in the zone of proximal development would not be available if one could not perform, or at least participate in performances, that go beyond one's current level of competence. In this sense, social interaction is not a direct, transparent, or unmediated process. Instead, it takes place in an artifact-saturated medium that includes language. This is a point that Vygotsky took into account in a thoroughgoing manner.

It is interesting to note that Vygotsky's argument on these issues bears a striking similarity to the recent movement in cognitive science associated with the notion of 'distributed cognition' and 'situated learning' [Bechtel, 1993; Clark, 1996; Cole and Engeström, 1993; Hutchins, 1995; Lave and Wenger, 1991, et passim]. Central to this line of thought is the effort to create an 'external symbol system' approach that 'moves formal symbols ... out of the head and locates them in the environment of the system', [Clark, 1996, p. 16]. Clark has argued for a position that recognizes the need to give 'more attention, and credit, to the many ways in which networks can learn to exploit external environmental structures so as to simplify and transform the nature of internal processing' [p. 16]. Related arguments have been put forth by Rumelhart et al. [1986], Clark [1993], Dennett [1991], and Hutchins [1995]. In short, Vygotsky's position on the centrality of artifacts, including external artifacts, in human mental processes has great resonance in contemporary cognitive science, as well as the human sciences more broadly.

There is little doubt in our view that there is still much to be learned from both Piaget and Vygotsky. In many cases the strengths of one theorist complement the weakness of the other. However, we believe that discussions of these two figures' accounts of mind and its boundaries are not well served by overly rehearsed debates concerning the primacy of the individual or the social. Instead, the more interesting contrast between them concerns the role of cultural artifacts in constituting the two poles of the individual-social antinomy. For Vygotsky, such artifacts play a central role in elaborating an account of what and where mind is. In pursuing this line of inquiry, he focused on a set of issues and phenomena that do not appear to have any clear counterpart in Piaget's thinking. Consequently, they may be more appropriately characterized as being different from, rather than directly in conflict with, those at the center of Piaget's project.

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