

Thinking as Communicating

Human Development, the Growth of
Discourses, and Mathematizing

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The project of disobjectification, even if implemented in this way, has its natural limitations. It would be unreasonable to hope that we can avoid linguistic pitfalls²⁶ and ensure uniformity of word uses once and for all. In the best case, our efforts to disambiguate will yield only small islands of coherence. Furthermore, if operationalization is to succeed, the interlocutors must all act according to the proposed definitions. However, even the most disciplined, well-meaning person will often slip back into old discursive habits. Finally, as Wittgenstein repeatedly emphasized, our language games are simply too complex and messy to yield themselves to deterministic definitions (only mathematicians, the intrepid chasers of infallible communication, never stop believing in the possibility of such definitions). And yet, rather than renounce the hope altogether, we may think about disobjectification as a never-ending effort to minimize breaches in communication and maximize the usefulness of the resulting conversations.

3. We Are Almost There: Participationism

The last few decades generated a considerable advance toward a discourse that does not dichotomize behavior and thinking and views the latter form

²⁶ A glimpse at the numerous samples from the current research literature gathered in chapter 2 suffices to indicate that Wittgenstein's skeptical comment about the possibility of avoiding "linguistic traps" (see earlier discussion) was right on the mark: In spite of philosophers' insistence, the objectifying, dualist discourses on thinking he was objecting to continue to thrive, and not just in the vernacular, but also in academia. One cannot help wondering about what seems to be researchers' concerted resistance to philosophers' caveats. This opposition can probably be best explained with the help of the very claim that is being rejected: that about the fallibility of language users, who are only too likely to mistake disagreements about uses of language for controversies about facts-in-the-world. The following passage from Daniel Dennett's current book seems a good example of rejection stemming from this kind of misinterpretation: "Both Ryle and Wittgenstein were quite hostile to the idea of a scientific investigation of the mind, and the standard wisdom in the 'cognitive revolution' is that we have seen through and beyond their ruthlessly unscientific analyses of the mental" (Dennett, 1996, p. 169).

On the basis of my reading of Wittgenstein and Ryle, it is my conjecture that the two philosophers, were they still alive, would react to Dennett's statement with something like "Well, we could not possibly speak against *scientific investigation of mind* because for us, the expression *investigation of mind*, scientific or otherwise, is meaningless and will remain so until the word *mind* is operationalized and disobjectified. As long as the term is nonoperational, we are unable to use it and, in particular, we cannot know what should be done in order to implement the kind of investigation you are talking about. Thus, as we said, it is not that we object to the *investigation of mind* – we simply don't know what it is." They might then add with a sigh: "We are disheartened by being misunderstood, but not surprised. After all, we are the ones to alert everybody else to the common phenomenon of category mistakes – and here is a perfect example of one of them!"

of human doing as belonging to the same category as all the others. It is only now, five decades after the first “cognitive revolution,” that the research community seems to be recovering from the trauma of behaviorism, while also making decisive steps in the direction of dialogical discourse envisioned by Wittgenstein. One of the earliest and most outspoken critics of behaviorism was the Russian psychologist Lev Vygotsky. His revolutionary ideas, conceived early in the 20th century but almost unknown in the West until the 1960s, played the key role in the recent antidualist turn. By the late 1980s, the disillusionment with all forms of cognitivism was widespread enough to make many ex-Piagetians a captive audience for Vygotsky’s basic tenet about the inherently social nature of all human processes.

More specifically, Vygotsky was explicitly contradicting the Piagetian thesis that human intellectual growth results from the direct interaction between the individual and the world. This is what he seems to have had in mind when stating that whatever name is given to what is being learned by an individual – *knowledge, concept, or higher mental function* – all these terms refer to culturally produced and constantly modified outcomes of collective human efforts. This tenet is epitomized in his famous statement about development of an individual as a process involving “carrying” higher mental functions from the social to the psychological plane:

Any function in the child’s cultural development appears twice, or on two planes. First it appears on the social plane, and then on the psychological plane. First it appears between people as an interpsychological category, and then within the child as an intrapsychological category.²⁷

In spite of reifying undertones of this metaphorical formulation, the general message was antidualist. Not unlike the American pragmatist philosophers,²⁸ Vygotsky seems to have promoted the vision of knowledge as “the conversation of mankind.” Indeed, the issue at stake was that of the ontological–epistemological status of knowledge, with the adjective *social* functioning as tantamount to human-made, and thus as the opposite of *natural, received, or biologically determined*.

The American anthropologist Jean Lave was one of the first to criticize the then-mainstream cognitivist discourse for all the weaknesses typical of all objectified discourses.²⁹ This was in the late 1980s. Some time later, she followed with the “therapeutic suggestion” to replace the metaphor of

²⁷ Vygotsky (1987, p. 11).

²⁸ Rorty (1979).

²⁹ Lave (1988). See also Brown et al. (1989).

learning-as-acquisition with the metaphor of *learning-as-participation*. More specifically, she and her coauthor Etienne Wenger asked their readers to eschew the objectifying terms *knowledge acquisition* and *learning transfer* and to think about learning as *legitimate peripheral participation*³⁰ in socially organized activities. Rather than being an acquirer of goods, the learner was now to be viewed as a beginning practitioner trying to gain access to a well-defined, historically established form of human doing. The term *socially organized* was not supposed to imply that the activities in question must always be performed in collaboration with others. It only meant that processes of learning, as other human activities, are part and parcel of a patterned collective effort.

Lave and Wenger's publication was just one among many similar events that helped in the formation of a *participationist* vision of humans and their development. As a confluence of ideas from areas as diverse as philosophy, sociology, psychology, anthropology, linguistics, and others,³¹ participationism is a *mélange* of approaches rather than a single research discourse. Its foundational tenet is that *patterned, collective forms of distinctly human forms of doing are developmentally prior to the activities of the individual*. Whereas acquisitionists view individual development as proceeding from personal acquisitions to participation in collective activities, participationists reverse the picture and claim that people go from participation in collectively implemented activities to similar forms of doing performed single-handedly. According to this vision, learning to speak, to solve mathematical problems, or to cook means a gradual transition from being able

³⁰ Lave and Wenger (1991).

³¹ Particularly relevant in this context is activity theory, which grew out of the work of Vygotsky and his associates, e.g., Engeström (1987); Leont'ev (1981); Nardi (1996). In addition, one should mention the significant influence of Wittgenstein, as well as that of two interrelated, but still distinct schools in sociology: the *symbolic interactionism* usually associated with Mead (1934), Goffman (1959, 1967), and Blumer (1969) and the *ethnomethodological* approach initiated by Garfinkel (1967). Also of relevance in this context is the *sociological phenomenology* that originated in the philosophical thought of Husserl and was founded in the first half of the 20th century by Schutz (1967). The direct influence of this latter school of thought on psychology and education can be seen in the work of German researchers, e.g., Bauersfeld (1995), Voigt (1985), and Krumheuer (1995). All these schools, as diverse as they are, share a number of basic assumptions that can also be found in most of the current versions of participationism. They all posit the inherently social nature of humans and agree that actions of the individual cannot be understood unless treated as part and parcel of collective doings and of collectively produced patterns. The patterned collective activities, in turn, are objects of sense-making efforts of their participants. The different schools begin to diverge only in their respective responses to the question of where the regularities originate and whether the observed patterns are in any sense "real," as opposed to their lying exclusively in the eyes of sense-making insiders.

to play a partial role in the implementation of the given types of tasks to becoming capable of implementing them in their entirety and of one's own accord. Eventually, a person can perform on her own and in her unique way entire sequences of steps, which, so far, she would only execute in collaboration with others.³² The tendency for *individualization* – for gradual overtaking of the roles of others, accompanied by an increase of one's agency over the given activity – seems to be one of the hallmarks of humanness.³³

The difference between the acquisitionist and the participationist versions of human development is thus not just a matter of “zoom of lens,” as it is sometimes presented.³⁴ Above all, it manifests itself in the way we understand the origins and the nature of human uniqueness. For the acquisitionist, this uniqueness lies in the biological makeup of the individual. Although participationism does not deny the need for special biological prerequisites – such as special vocal cords and sound-distinguishing ability, both of which are the basis for human communication, or the newly discovered “mirror neurons” that seem to underlie human ability to imitate other people – this approach views all the uniquely human capacities as resulting from the fundamental fact that humans are social beings, engaged in collective activities from the day they are born and throughout their lives. In other words, although human biological givens make this collective form of life possible, it is the collective life that brings about all the other uniquely human characteristics. Human society emerges from the participationist account as a huge fractal-like entity, every part of which is a society in itself, indistinguishable in its inner structure from the whole.

Another notable change that happens in the transition from acquisitionist to participationist discourse is in the unit of analysis. It is this new unit that I had in mind while speaking, somewhat ambiguously, about “patterned collective doings.” Other eligible candidates for the participationist unit of analysis are *form of life*, suggested by Wittgenstein,³⁵ and *activity*,

³² To put it in Barbara Rogoff's words, children's development “occurs through guided participation in social activity with companions who support and stretch children's understanding of and skill in using cultural tools” (Rogoff, 1990, p. vii).

³³ The term *individualization* may be viewed as participationist versions of what Vygotsky and activity theorists call *internalization*. Bakhtin and Leont'ev preferred *appropriation* to internalization, believing that the former word is more effective in capturing both the active nature and the bidirectionality of the process (Cazden 2001, p. 76.) The important advantage of the present terminology is that it is free of acquisitionist undertones of both internalization and appropriation.

³⁴ Rogoff (1995); Lerman (1998).

³⁵ Wittgenstein (1953).

the pivotal idea of the activity theory. The now popular term *practice* is yet another viable option.³⁶ Although all these terms appear in the current literature in numerous ways, with the differences between one use and another not always easy to tell, each is good enough for my present purpose. Indeed, all I want, for now, is to describe participationist innovation according to those central characteristics that remain basically the same across different renderings. Whatever name and definition are given to the participationist unit of analysis and whatever claims about humans are formulated with its help, the strength of this unit is in the fact that it has both collective and individual “editions.”

Armed with this flexible analytic focus, participationists have a chance to address the question of change that exceeds the boundaries of individual life. When speaking about human development, participationists do not mean a transformation in people, but rather in forms of human doing. This non-trivial discursive shift is highly consequential, as it removes the sharp acquisitionist distinction between development of an individual and the development of a collective. The developmental transformations are the result of two complementary processes, that of *individualization of the collective* and that of *communalization of the individual*. Individualization and communalization are reflexively interrelated: Individualization results in personally modified versions of collective activities, whereas some of the individual variations feed back into the collective forms of doing, acquire permanence, and are carried in space and time from one collective to another.

Although thinking appears to be an inherently individual form of human doing, there is no reason to assume that its origins are any different from those of other uniquely human capacities: As with all the others, this special form of human doing could only develop from a patterned collective activity. Our next task is to identify the patterned collaborative activity that can justifiably be regarded as the collective precursor of thinking.

4. Finally: Thinking as Communicating

4.1 *Defining Thinking*

To those who were “born into” acquisitionist discourses, the idea that thinking may be defined as an individualized form of a collective doing may sound somewhat implausible. After all, whatever we call thinking is usually done by each one of us alone and, by definition, is inaccessible to others in a direct manner. It is thus not readily evident which “visible” human activity

³⁶ E.g., Wenger (1998); Cobb (2002).