# THE "MAGIC OF SIGNS": EXPANDING VYGOTSKY'S ACCOUNT OF CULTURAL MEDIATION

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**ABSTRACT**

Inspired by Vygotsky's insights, much progress has been recently made in studying the processes of cultural mediation. However, the key studies in sociocultural research took the route of advancing the notion about distributed processes (beyond the individual level) as the major and even exclusive realm of human development. With all importance of going beyond the individual in explaining the human mind, these sociocultural studies have left the dualism of external versus internal processes unresolved. This paper attempts to offer a more encompassing account that includes the processes traditionally termed as 'mental' or 'internal' and integrates them into a non-dualist developmental theory. In particular, we consider the *early history of cultural mediation* to explain how the mind gradually develops from its roots in embodied collaborative activity within a social context beginning from the earliest forms of this activity in infancy. Expanding the notion of *cultural mediation beyond its traditional semiotic interpretations* paves the way to understanding the development of mind as a seamless, fully continuous process without ontological breaks between initial forms of culturally mediated activity and its more elaborated forms that are traditionally seen as taking place "in the mind".

**Keywords**: Mind. Development. Cultural mediation. Semiotic means. Cognitive tools. Internalization.

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## INTRODUCTION

Despite the diversity of perspectives, issues of interest, and research methods, psychology and anthropology are intricately connected in their complementary pursuits of understanding how human beings develop within their cultural worlds and how human subjectivity and culture relate to each other. This fundamental linkage connecting the two disciplines makes it highly desirable and even imperative that their respective key notions – that of mind in psychology and of culture in anthropology – are conceptualized in mutually compatible ways that allow for commensurability and coordination of research findings. However, bringing mind and culture together through theoretical accounts that encompass these phenomena yet do not reduce them to one another has proven to be difficult through much of the history in these two disciplines. For example, there have been many attempts to collapse culture onto psychological phenomena or, alternatively, to treat cultural and social issues as extraneous variables acting upon some basic and for the most part pre-determined forms of mental functioning. In either case the resulting perspectives have not been able to offer explanations of how culture and mind might be commensurable and interrelated processes while simultaneously retaining their. Such approaches make it next to impossible for each discipline to mutually benefit from the findings of the other.

Cultural psychology can be said to have emerged as a response to the challenge of closing the gap between culture and mind and of bringing psychological and anthropological perspectives closer together. In addressing this challenge, cultural psychology has made important advances, for example, by demonstrating that human mentalities are not uniform but instead, are contingent on cultural practices of communities

and groups. Cultural psychology in Vygotsky's tradition, in addition, has brought to the fore the importance of cultural mediation through collectively developed artifacts as the core pathway in human development. Both perspectives play an important role in debunking the myth of a universal human mind and of an isolated and solitary individual and in moving away from the view that culture is a mere 'black box' variable. These accounts thus contribute to acknowledging and celebrating human diversity and promote ideals of multiculturalism and intercultural dialogue.

All these significant developments notwithstanding, many questions pertaining to the status and nature of human subjectivity and its relations, including genetic (i.e., developmental) ones, to culture remain unresolved, perhaps culminating most clearly in the continuing pendulum swings in the span of recent decades from positions that attribute the key role in producing cultural phenomena to subjectivity, all the way to the opposite view where human subjectivity is seen as mechanically and uni-directionally produced by cultural influences or even neglected at the expense of omnipotent cultural practices, and back to the opposite position again.

One telling sign of this continuing conundrum regarding the status of human subjectivity in cultural psychology and anthropology is the apparent difficulty in dealing with the notion of internalization of cultural practices as the possible pathway in the development of the mind. In recent years, vigorous attempts to retreat from the notions and issues related to internalization have taken the center stage – it has become common for scholars in socio-cultural and cultural traditions to stay away from this notion and to even condemn it because of it being seen as putatively tainted with individualist and narrowly cognitivist premises. Moreover, the notion of

internalization has tacitly become associated with a "fax model of culture," according to which a tabula rasa mind internalizes cultural forms (see STRAUSS; QUINN, 1997; MATTINGLY, LUTKEHAUS; THROOP, 2008, p. 1-28). A related development has been a lack of emphasis on the importance and efficacy of human subjectivity (i.e., 'mental'processes such as thinking, feeling etc.), with researchers eschewing investigations into how these processes might derive, or issue, from external material activities of humans participating in and creating their cultural worlds. This omission in theorizing human subjectivity for the purposes of cultural understandings is conspicuous even in research conducted in Vygotsky's tradition.

As a result, there is a peculiar tension both in cultural psychology and cultural anthropology between the intense interest in the effects of culture on psychological processes on the one hand, and the lack of theorizing about what makes such effects possible and through which particular processes and mechanisms they might come about, on the other. This tensions is communicated by Jerome Bruner (2008, p. 29-45), one the pioneers of cultural psychology, in his recent article in *Ethos*. While delineating the question about "how *mind* comes under the sway of *culture*" (or how the "outside" gets "inside") as "a single cardinal issue" that had preoccupied cultural psychology throughout its history, Bruner observes that the "inner- outer" distinctions have come increasingly under attack as relics of 19th-century dualism that resuscitate futile philosophical speculations. Nonetheless, he finds it necessary to return to this distinction once again in hopes to achieve a better understanding of how mind and culture interrelate and interact.

In this paper, we offer steps that we believe are needed to address precisely this challenge and to offer an account that directly aligns culture and mind in ways that do justice to psychological processes as culturally situated and mediated, while at the same time not losing sight of their unique qualities and phenomenology. To achieve this goal, we go to the roots and restore the initial meaning of Vygotsky's ideas, somewhat neglected in recent scholarship, that psychological processes emerge *out of* cultural practices, not just *within* these practices, and *for* these practice, thus representing their unique dimension, their emergent quality constructed from the same "fabric" as all human cultural practices – that is, from the "fabric" of collaborative (shared) purposeful activities. These activities undergo complex process of development associated with the growing sophistication of meditational means employed in activity that culminate in highly complex forms of human subjectivity – all within a seamless process of activity development. That is, we conceptualize development of human mind as the gradual transformation of socially shared, culturally mediated and fully contextualized activities into psychological ("internalized" or mental) processes *without positing any ontological breaks* between internal and external, social and individual, practical and mental – understanding these putatively dichotomous constructs as interrelated (extreme but not disjunctive) poles on a continuum of one *unified* reality of human collaborative and inevitably cultural practice.

In other words, we address how a non-mentalist and non-dualist account of the mind can be developed within a dynamical relational worldview and as premised on the idea that the mind is an instantiation of this-worldly activities by embodied intentional agents acting together in accordance with

cultural conventions rather than a separate shadowy realm of mental representations in some mysterious inner theater 'under the skull.' In this account, while the myth of mind as a separate reality of internal representations is debunked, a developmental approach reveals how the continuously evolving forms of cultural mediation and respective seamless transitions across activity levels engender increasingly sophisticated processes that have been traditionally associated with the notion of human subjectivity or the mind.

## ACCOUNTS OF CULTURAL MEDIATION AND THE "MAGIC OF SIGNS"

Perhaps the greatest contribution of Vygotsky to theories of human development, at least among those that are widely acknowledged in Western scholarship, is the idea that human mind is mediated by cultural tools – signs and symbols – and these tools shape and restructure human mental functioning in fundamental ways. Although Vygotsky's views on cultural mediation have been widely debated and variously interpreted in recent literature, much remains to be explicated and addressed to understand how these views play a role in his overall theory of human development including conceptualizing the links between mind and culture. The difficulty (as has been stated by various authors before) is that Vygotsky's views were constantly developing and shifting through his career and it is hardly the case that he had an opportunity (given the circumstances of his life, especially the brisk pace of tumultuous events and personal hardships brought about by the revolution coupled with the dark cloud of chronic illness hovering over his head) to bring them together in a unified and allencompassing account. One particular

expression of this difficulty is that Vygotsky left many gaps in his conception such as between his ideas about the fundamental role of language in the development of human consciousness on the one hand, and the ideas of internalization and the linkage between mind and culture, one the other. In addition, he was not always able to update and revise the concepts he operated with to adequately reflect revolutionary changes in his thinking that took place over time, for example, retaining old-fashioned notions such as "behavior" and "stimulus" while presenting a de facto revolutionary view on development that had nothing to do with the then dominant perspectives of reflexology and behaviorism. These and other complexities as well as the sheer range and sweep of topics and perspectives Vygotsky pursued, warrant further study and interpretation of his ideas and notions.

There are many gaps in existing interpretations of these topics, with one of them – particularly relevant in the context of the present paper – being that the notions of cultural tools and mediation are taken in isolation from the issues concerning the links between cultural practices and the mind, especially in the sense of how the mind might be seen as developmentally ensuing from these practices, with internalization playing the role of a key mechanism in this process. For example, Wertsch (1985) links the idea of mediation to other basic themes of Vygotsky's writings, namely (a) a reliance on genetic or developmental analysis and (b) a claim that higher mental functioning in the individual derives from social life – both with the emphasis of overcoming the dualism of individual and social planes ofdevelopment. In another publication on the topic, Cole and Wertsch (1996, p. 250-256) state that

> because what we call mind works through artifacts it cannot be unconditionally bounded by the head nor even

> by the body, but must be seen as *distributed in the artifacts* which are woven together and which weave together individual human actions in concert with and as a part of the permeable, changing, events of life. It is because the same basic mediational means is used on the *social and individual planes* that transition from the former to the latter, as well as vice versa, are 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.

The focus in this rendition of cultural mediation has been on an indeed important role of meditational means in connecting the social and individual planes and in revealing their commensurability. However, the notion of cultural mediation is not regarded in connection with Vygotsky's overall project of developing a *non-mentalist* account of psychological processes as ensuing from cultural activities wherein the gap between the internal processes (the mind) and the external ones (cultural practices) is bridged.

Indeed, the key development in socio-cultural research took the route of advancing the notion about *distributed* processes – those beyond the individual level – as the major and exclusive realm of human development in opposition to the notion of development encompassing processes traditionally understood as 'mental.' This research development, due to its overarching reliance on the centrality of social processes at the exclusion of individual ones (as presumably being a-social), entails a lack of emphasis on *how the human mind originates out of distributed processes.* That is, this approach tends to assign cognition and mind (including processes such as thinking, attention, emotion, self-regulation, and memory) to groups *rather* than individuals (i.e., exclusively to groups). Other sociocultural scholars have noticed and commented upon

recent upsurge in research on distributed cognition at the expense of individual mind. For example, Wertsch (1999, p. 20) pointedly, though very briefly and without taking an evaluative position, has commented that "[...] some of these recent studies go beyond Vygotsky's claim in their emphasis on intermental functioning as *a stable end point* rather than a way station to the intramental plane" (emphasis added).

Importantly, even when both collective and individual phenomena are taken into account, this is done without a sufficient revision of traditional cognitivist understandings of human subjectivity. For example, in the influential perspectives developed by Pea, Salomon, and Hutchins, it is the functional system consisting of the individual, the tools, and the social contexts that is taken as the appropriate unit of analysis. Yet the individual who figures in this system, even though equipped with cultural tools, is understood chiefly as a creator of internal representations concerned with processing information – precisely in line with the notions of cognitive psychology (COBB, 1998).

As a further example, Hollan, Hutchins and Kirsh (2000, p. 174-196) emphasize that cognitive activity is constructed from both internal and external resources, and that the meanings of actions are grounded in the context of activity. However, they imply that in order to understand situated human cognition, it is necessary to know how the mind *processes information* and how the information to be processed is arranged in the material and social world. In other words, the mind, again, is taken to be a processor of information albeit understood together with functional relationships among the elements that participate in information processing – an interaction, for example, between internal processes, the manipulation of objects, and the traffic in representations.

An alternative notion advanced by Cobb (1998: 187-204), drawing on the enactivist perspective (VARELA; THOMPSON; ROSCH, 1991), stresses that the mind is not just an internal device that processes information but instead, is embodied and located in *activity*.

That is, rather than representing the world, people individually and collectively enact a takenas-shared world of signification. The goal in Cobb's approach is therefore

> not to specify internal cognitive behaviors located in the head... Instead, it is to infer the quality of individuals' experience in the world and to account for developments in their ways of experiencing in terms of the reorganization of activity and of the world acted in (COBB, 1998, p. 196).

Thus, Cobb's and his colleagues' laudable intention is to resolve the rigid dichotomy of individual versus social planes of activity in more flexible ways than this has been done in distributed approaches – not through eschewing the individual level or merely adding tools to the otherwise traditionally understood individual but instead, by re-conceptualizing the individual as an actor who participates in activities thus allowing for complementarity across individual and collective levels. Cobb pays explicit attention to individual students' interpretations and meanings and, for this purposes, involves a psychological constructivist perspective that focuses squarely on individual students' reasonings (STEFFE; COBB; VON GLASERSFELD, 1988). This is done with a realization that individual activity takes place "inside" the communal practices, as individuals participate in and contribute to them; yet these practices fade into the background when researchers observe and interact with individual students and attempt to understand their personal meanings. Thus, the strategy is to

explicitly *coordinate* psychological analyses of individual students' acts of participation with an analysis of the evolving practices in which they participate.

However, in this approach, there is no discussion of cognitive processes, or of the role of cultural mediation in producing and sustaining them, and even less emphasis on developmental transitions from external to internal processes through the mechanism of internalization. In the end, in neither of these accounts the transformative role of cultural mediation in cognitive processes and in turning material, inter-psychological phenomena into mental, intra-psychological ones is considered in any significant detail.

Given the recent departure of many scholars in the sociocultural framework away from conceptualizing the workings of the mind, it is no coincidence that the most elaborate accounts of mind as semiotically mediated are coming from outside this framework. One of the most consistent attempts to study the 'extended,' distributed nature of cognition while drawing on the role of semiotic mediation have been made by Andy Clark. While arguing that cognitive processes are partially realized beyond the physical boundaries of the individual and that meanings 'are not in the head,' Clark (2005, p. 8) at the same time seeks to retain the notion of active cognition enhanced by external 'mind-tools' understood as 'cognitive amplifiers' that play a transformative role in distinctively human thought. By treating words and symbols as cognitive-transforming elements of *external scaffolding*, with the resources of public language understood as most singularly potent such mind-tool, Clark (2005, p. 13) opens up new and productive ways of accommodating symbolic resources "in a broadly embodied, dynamical framework".

As Clark (2002, p. 200) states, while comparing his potion to that of Daniel Dennett:

> Brains equipped with such resources, and populated by a rich culturally accumulated stock of concepts and labels, become able... to make a crucial cognitive leap. Dennett tends to stress the transformative effects of the cultural, linguistic, an artefactual surround on the brain.... I have tended, by contrast, to stress the new dove-tailed wholes comprising brains, bodies, and complexes of external props and scaffolding [...].

This focus on "cognitive amplifiers" resonates with Vygotskian views about the role of signs in development of higher mental functions. However, a closer look reveals the striking difference. Namely, Clark and Dennett both imply that "the mind-tools" mediate the workings of the brain – not the meaningful activity of the individual and the latter category is absent from their accounts. They operate with the notion of *brain-tool union*, in which tools are used by the brain itself as it alters to fit the tools created by previous human brains (CLARK, 2002, p. 200). Without the integrative concept of human purposeful activity, however, culture and mind-tools (including language) inevitably get reduced to just another set of external stimuli that are added as "extra layers" to what is seen as human basic evolutionary heritage:

> Experience with external tags and labels thus enables the brain itself by representing those tags and labels, to solve the problem whose level of complexity and abstraction would otherwise leave us baffled... the provision of concrete labels can indeed "turbo-charge" biologically basic modes of learning and comprehension (CLARK, 2002, p. 193).

These accounts make noticeable steps forward in understanding cognitive processes by acknowledging and

explicating the power of signs (mind-tools) in cognition. However, the reach of their solution is limited due to two starkly *naturalistic* assumptions – relating language directly to the brain and viewing language as just the system of tags and labels. In fact, the two major functions of mind-tools, and language in particular, are neglected – the functions of communication and generalization not to mention their relationship and coevolution in development. The social, historical, and cultural (that is, uniquely human) nature of signs and the "magic" that they exhibit in human interaction in this case remains hidden. Relating signs directly to the brain ignores the realm of human activity, within which exclusively a sign can take on its meaning. Relating signs directly to objects (by viewing them just as tags and labels of objects) ignores the social origin of signs. In other words, the two functions of signs, especially language, are neglected – the communicative function of signs (speech), originating from the cooperative character of human activity, and the generalizing, cognitive function (aspect) of signs, originating from the primary, communicative function of speech.

To summarize, the important developments and advances notwithstanding, these perspectives suffer from a relative lack of specifically theorizing the nature of psychological processes and human mind, especially the notions of how psychological (internal) processes can be understood as ensuing from social (external) practices. As a result, the indeed unwarranted and dead-ended dichotomizing of mind and the world, the subject and the object, the psychological and the cultural, is not efficiently resolved in these perspectives. In particular, little attention is paid to the possibility of them being genetically linked and therefore unified on the same ontological ground

yet distinct in terms of their particular qualities and phenomenologies.

In particular, strong versions of distributed approaches dismiss the very notion of human subjectivity and instead, focus exclusively on collective phenomena. Less radical versions of this approach take individuals acting with tools in their environment as the unit of analysis but operate with the old notions of information processing and mental representations or directly link cultural tools to the functioning of the brain. A third-way approach, attempting to combine analyses of individual and collective levels (COBB, 1998) while placing due emphasis on dynamics of activity, suffers from a lack of emphasis on *developmental progression* from social to the individual and from practical to psychological – which results in viewing these levels as being merely correlated. Perhaps most critically, while striving to overcome old dualisms endemic in traditional positivist science, socio-cultural theories often unwittingly uphold other unwarranted dualisms such as between cognition and practice, conscious content and embodied action.

These developments stand in stark contrast with Vygotsky's interest in studying how the *intramental* plane – the human subjectivity including individual mind (though understood in a radically new way) – derives from the inter-mental one. Therefore, we believe that it is important to link the idea of cultural mediation to Vygotsky's larger programmatic attempt to develop a non-dualist account of human subjectivity in which it is not walled off from the real-life, worldly processes of human beings relating to their world through the "practical mastery" of it. Or, in Vygotsky's words, such an account does not "isolate consciousness from reality" (1997a, p. 284) but

instead, traces the origins of individual (but never a-social) cognition in collaborative, shared activities.

## NON-MENTAILST VIEW OF MIND AND INTERNALIZATION IN VYGOTSKY'S PROJECT

The central and ultimate goal of Vygotsky's project, in our view, was to resolve the dichotomy between the mind and the world, psychological and cultural, intermental and intramental, external and internal not by eliminating one pole in each of these dichotomies at the expense of the other but instead, by drawing distinctions between these poles while fully acknowledging their principled unity. That is, the programmatic attempt was to see these putative polarities as unified on the same ontological ground and genetically linked yet not identical due to dramatic developmental changes that take place in the transformation of one into the other. In other words, Vygotsky has endeavored to trace the genetic links between external activities (in cultural practices) and internal ones (in the mind) without erecting an insurmountable wall that severs them from one another, that is, without getting into the pitfalls of either mentalism (individualistic explanations of mind), or physiological reductionism (brain-based explanations), or sociological reductionism (dissolving the individual mind in social processes). That Vygotsky struggled, for the most part, to understand and explain how 'internal' processes developmentally derive – or issue – from the social fabric of life and activities in the world is evident in his so called "genetic law:"

> 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. We may consider this position as a law in the full sense of the world, but it goes without saying that internalization transforms the process itself and changes its structure and functions. Social relations or relations among people genetically underlie all higher functions and their relationships (1981b, p. 163).

It is hardly the case that this genetic law has been overlooked. On the contrary, it has become quite normative to cite it in recent Vygotsky's scholarship. Yet the emphasis on this law describing a *developmental progression* from external (social) to internal (individual) processes through the mechanism of internalization – arguably its main thrust -- is often overlooked or dismissed. One reason is that for many researchers, an account of internalization from the social realm to the internal cognitive one is unfathomable because the interpersonal relations are understood as located somehow outside the child. From this point of view, explaining how relations that are "outside" the child become part of the individual experiential world appears intractable.

To make sense of internalization, it is important to first consider the relational dynamical worldview at the core of Vygotsky's theory that stands in opposition to a mechanical and dualist worldview. This relational and dynamical worldview challenges mechanistic notions derived from the orthodox cognitivism (itself mired in the centuries old views on how human beings come to be and to know) in which the mind is understood as a symbol manipulation and representation of information that take place 'in the head' (stored and retrieved upon demand), in isolation from the real world and human cultural engagements in it. The alternative dynamical position is based on the notion that psychological phenomena represent processes that exist in *the realm of*

*relations and interactions* between individuals (persons) and their world and therefore are embedded, situated, distributed, and co-constructed within contexts.

The relational ontology rejects the naive positivist view of objects and actors as existing separately from each other – prior to their mutual engagement and participation in networks of interactions. Instead, in this ontology development is seen as existing in the flux of individuals relating to their world and engaging it, as driven by relations and their unfolding logic, and therefore as not being constrained by any rigidly imposed, pre-programmed scripts or rules. This perspective adds a critical piece to the interdisciplinary study of human development by stressing that human subjectivity, in all of its incarnations and expressions (including cognition, mind, and the self) is constructed in and through the back-and-forth exchanges between individual and the world (cf. Stetsenko 2008). This is the reason why Vygotsky (1997b) rejected viewing culture *per se* (if understood as existing in isolatior from the acting person) as prime determinant of development.

It is *after* conceptualizing the mind as a form of activity that Vygotsky turned to the mediating role of signs in producing human subjectivity. Vygotsky sought to find a process (or a mechanism) that accounts for transitions from social interactions out in the world, or shared activities, to individual activity (intra-psychological processes) without positing any ontological gap between the two. The psychological tools and their mediating role were seen by Vygotsky as the means that allow for a linkage and, in even stronger terms, for a genetic continuity between psychological and non-psychological, material and mental, practical and ideal.

Generally, in analyzing sign mediation Vygotsky took a developmental approach. He outlined the general path of semiotic mediation and its function in the development of higher mental functions. The birth of specifically human mental functions (deliberate attention, voluntary memory, verbal thinking, etc.) has been conceptualized as the gradual "growing in" of the initially external *use* of signs (not just of the extraneous signs or tools existing separately from activity) in the socially shared activities into individually carried out portions of these activities where now internalized signs become the tools of the mind, turning these activities into psychological processes (VYGOTSKY, 1999).

In particular, Vygotsky (1999, p. 284) singled out transformations of speech from its social form into egocentric speech and then into internal speech as the core pathway for psychological development. In his assessment, only "an historical theory of inner speech has the capacity to lead us to a correct understanding". Furthermore, Vygotsky's (1982) acknowledged communication as the primary function of signs (in particular, speech) and derived their cognitive function from the role they play in social interaction showing that communicative function of speech is indeed primary while the sign-based cognitive function evolves on its basis. At further stages, the cognitive function of signs evolves towards increasing relative autonomy from the communicative function.

Because signs are social and external, the idea of sign mediation as the core attribute of psychological processes serves as an important step in closing the gap between external and internal, material and psychological. This set of ideas has its primary import in dispelling the myth of an isolated individual who is in a possession of an internal mental realm

withdrawn from collaborative activities – et at the same time, while giving credit to the singularity of human subjectivity and to complexities of how it is engendered by social activities. This was a revolutionary attempt to understand and theorize the individual mind *non-individualistically and non-mentalistically* – that is, as a dynamically distributed process that represents activity in the world rather than a mirror reflection of it (the point well captured by Dewey and Piaget too). Most critically, however, this was a step forward in theorizing *the mind as a shared activity* that, even when carried out by individuals seemingly acting alone (for example, while self-reflecting, solving problems, and contemplating one's future actions) does not cease to be profoundly socio-cultural and distributed. It is this emphasis on the individual mind – yetwithout all the usual connotations of it being constrained to some 'mental theater' inside the person (or the skull) and withdrawn from collective processes – that is the true hallmark, in our view, of Vygotsky's school.

Furthermore, Vygotsky attributed the mediating and transformative power in transitions from external to internal processes to signs, especially language, and specifically focused on meaning underlying every sign as allowing for such transitions. However, the phenomena of language and speech, including meanings, were posited as playing such a powerful role in development only in light of them representing integral parts of larger sociocultural activities. That is, words play a crucial (almost magical) role *in so far* as they help, first, to orchestrate the communicative activity shared between people and then, to facilitate developmental transformation of this shared activity into forms that an individual can carry out alone (while not ceasing to be acting socially).

In other words, signs and symbols help reconstruct the *natural structure of activity* on the path to the gradual mastery of this activity. Here, internalization conveys that human mental functions themselves are born (co-constructed) as shared activities, in social interaction, to then gradually become a psychological asset of the individual child or learner: "We come to the conclusion that every higher mental function initially has the form of an *external activity*" (VYGOTSKY 1997a, p. 72; emphasis added).

Importantly, the birth of the cognitive mediating function of language out of interaction with others implies that mind-tools are related to and mediate not the functioning of the brain but the collective activities and are themselves activities, though performed in a special form. The mediating role of "mind-tools" and "cognitive amplifies" is conceptualized differently than in Clark's account, which is reflected in the term used by Vygotsky – *psychological cultural* tools. Those tools are used not by brains but by people in their meaningful activities.

It is easy to overlook that Vygotsky in fact talks about the gradual transformations of activity as the path of psychological development because he stresses the mediating role of language signs and speech and often evokes old-fashioned notions such as behavior, reaction, and stimuli while presenting his de facto novel and revolutionary views. Yet he makes his point clear while stating the novelty of his approach as compared to other approaches and in particular contrasting his approach with that of Jean Piaget:

> Activity, practice – these are the new moments that allow us to reveal the functions of egocentric speech from a new perspective, in all their full scope, and to outline a completely new side in the development of child thinking – the side

> which, like the other side of the moon, typically remains out of sight of observers (VYGOTSKY, 1997a, p. 62).
>
> The absence of reality and of child's relation to this reality, that is, the absence of child's practical activity – this is the fundamental point in this case [of Piaget's theory]. The socialization itself of child thinking is considered by Piaget outside of practice, in isolation from reality [...] (VYGOTSKY, 1997a, p. 74).

To summarize, three steps made by Vygotsky are especially relevant. First, he explicitly took a developmental approach and conceptualized human subjectivity in light of its origins in external social activities that subsequently undergo radical changes through mediation. Second, he asserted that the cognitive (generalizing) function of psychological tools (signs, mind-tools) evolves out of their primary social (communicative) function, with tools always playing the role of *constituents* within the overall activity flow. Third, he discovered that the unique power of human thought is achieved through "the word's transformative inner activity" (VYGOTSKY, 1997b, p. 89).

## EXPANDED ACCOUNT OF CULTURAL MEDIATION

These steps made by Vygotsky were significant in narrowing the conceptual gap between communicative and cognitive activities and therefore between social ("external") and individual ("mental") realms. However, the gap had not been completely eliminated. In particular, the idea of mediation of all human mental processes by signs and tools provided a fascinating insight into the unique character of human mental functioning; yet how external tools are "employed" by internal psychological processes to their benefit has not been specified. In particular, Vygotsky attributed some "magic power" to

signs, especially language, with little explanation of that magic, except for the insightful but vague analogy with the role of physical tools. The consequent narrow focus on the role of speech as the sole means of cultural mediation had brought out important insights but at the same time mired the broader developmental construal of cultural mediation.

Developments in Vygotsky's school accomplished by his followers and students can be seen as continuing this overall programmatic agenda and filling the gaps left in his initial account. Vygotsky's closest co-workers, especially Leontiev (e.g., 1978), made further contributions to this theory by capitalizing on the genetic and structural interrelation between the external material (object-related, in their terminology) activity and the mental processes. Leontiev maintained that "the process of internalization is not the transfer of an external activity to a pre-existing, internal 'plane of consciousness:' it is the process in which this internal plane is formed" (LEONTIEV, 1981, p. 163). Therefore, more explicitly than in the Vygotsky's account of internalization, the very existence of something "internal" before the acquisition of social and cultural experiences was questioned. Leontiev and his colleagues' studies resulted in rich experimental evidence that there was no absolute barrier between external and mental activity and that the two were genetically and structurally interrelated. For example, it has been demonstrated that unintentional (non-deliberate) memorization of items was dependent on the specific place of these items in the structure of the individual external activity.

An important contribution has been made also by Galperin – another member of Vygotsky's school. In furthering cultural-historical conception, Galperin (1967, 1989a) defined psychological processes as specific forms of activity that

become necessary due to the growing complexity of environmental demands for which automatic forms of behavior do not suffice. He argued that the mind gradually arises in development (both phylogenetically and ontogenetically) out of material activity because it serves the need to thoroughly examine emerging, new situations, and to anticipate the consequences of acting in these situations prior to their physical execution. To analyze and de-mystify processes of mental activity issuing from material action, Galperin (1989b) developed a stepwise (spiral) procedure framed as a teaching-learning experiment which entailed carrying out *one and the same* activity first at the material level, and then, through its transformations in the symbolic medium of speech (i.e., through internalization) – in an abstract and generalized form based on *meanings* (understood as templates of action in which past actions are coordinated with the demands of present conditions and future goals). At the final stage, this activity appeared as the "pure" thought whereby individuals operated with meanings *per se*, rather than with words. Thus, material external action was shown to be transformed into psychological processes in a sequence of rather comprehensible steps, involving gradual metamorphoses of action from its external into 'internal' (abstracted, generalized, symbolized etc.) modes of existence. The term "internalization" here was evoked to explicitly describe the formation of a specifically human activity that allows individuals to operate with non-sensory properties of objects, that is, to act without being tied up to the visually displayed situations.

Importantly, the focus on internal plane of action, in this approach, does not imply 'mental representation' in the traditional connotation which appeals to static images that somehow "parade" information in front of the individual.

Rather, acting on the internal plane fully retains all characteristics of a real-life, practical activity. That is, this acting is but one of the ways in which individuals solve problems and search for 'what is to be done next' – while taking into account present conditions along with aspired goals. In this interpretation, these actions, performed in abstraction from the immediately given physical situation, although termed "mental," are not some mysterious inward faculties, nor are they a reflection of brain processes. They are object-related actions, as all other human actions are, the only difference being that mental actions are carried out in the medium of meanings, that is, without overt physical execution. Conceptualizing mental activity as object-related activity – something that human beings do in pursuing their worldly life goals with the help of collaboratively created tools – implies that it occurs in the objective, outer world and, as such, is always profoundly situated and distributed yet fully individual at the same time. Perhaps most importantly, mental activity is carried out not according to any internal, mysterious "mental" laws of mind but according to "the stubborn facts" of the world itself (for further details, see Arievitch & van der Veer, 1995).

In our previous works, we have also endeavored to expand on Vygotsky's genetic view of how the mind ensues from material activity through cultural mediation. First, in these works, the notion of cultural mediation has been linked more directly to the overall specifics of human development as a transformative collaborative practice (see ARIEVITCH; STETSENKO, 2000, STETSENKO; ARIEVITCH, 2002). The emphasis we have added is that hidden 'behind' cultural tools, embodied, and reified in them are methods of participating in historically evolving meaningful practices. That is, mediational means, in all the diversity of their forms including signs and

symbols such as language, should be understood prototypically as carriers of (i.e., simulacra or stand-ins for) *the specifically cultural ways of acting and Being* in the world. Cultural tools represent (or embody, in reified forms) and make available templates of such acting and Being. These tools thus function in such a way as to steer activities in culturally conventional ways and towards culturally determined ends, thus engendering psychological processes. That these various ways of acting are sometimes crystallized in seemingly static artifacts (such as words and music, roads and maps, books and statues) does not turn them into entities separate from activities in any ontological sense. Rather, in their human relevance, these artifacts remain dynamic and fluid even in their seemingly reified incarnations in the sense that they embody patterns of activity and exist only through being again involved and re-enacted in the ever-expanding cycles of human transformative activities (STETSENKO, 2005). While employing cultural tools, individuals engage in, re-enact and ultimately contribute to these practices through their own meaningful activities – with this process representing the sole and unified grounding (or "the fabric") of human development, including the development of the mind.

Second, in putting emphasis on tools as embodiments of the *templates of cultural action*, the door is opened to relieve the narrow restriction of cultural mediation to the effects of semiotic tools conceived of as something that exists separately from activities. This idea has been supported by investigations into meaning making at pre-verbal stages of development in the first years of life (see STETSENKO, 1981, 1983, 1989). In these works, it has been argued that mediation by signs does not begin from the blank slate when the child starts to master speech at around two years of age. Instead, there is a relatively

long pre-history of cultural mediation that encompasses already the earliest, initial forms of shared activity in the first months (and even days) of child's life, with different forms of such mediation preceding and making possible later forms of sign mediation.

In particular, in this set of works, it has been proposed that a collaborative (shared) activity – in which all human beings partake from the very first moment of life – is the initial 'fabric' that provides the necessary and sufficient resources for meaning-making and cultural mediation of the nascent mind. These early forms of mediation in ontogenesis are represented in the development of coordinated actions shared by the child and adults – first in the very fabric of shared action (in the form of "action meanings" based in shared understandings of what is being done in mundane events such as feeding or bathing) and then in the form of action with particular objects according to their culturally accepted function ("object meanings" such as eating with a spoon or rolling a ball). The pre-verbal forms of meanings constitute the foundation for word meanings at later stages of development. This, in turn, presupposes the notion of meaning not as some independently available set of codes associated with linguistic signs (as in notions rooted in epistemological idealism), separate from action and layered over it but instead, as an *inherent dimension of collaborative, shared human activity*. The mind develops through a progression of steps from initial forms of participation in shared activities orchestrated by care-givers (in which the world is known by the child through the lens of such participation) to forms of actions that involve mediation by objects (that embody cultural ways of dealing with them), and then to actions mediated by signs which themselves represent

transformed and abbreviated enactments of a previously fully-fledged co-operation with an adult.

This set of works can be interpreted as eliminating the dichotomy between the lower and higher psychological functions in human development, and concurrently, between mediated and non-mediated processes – by conceiving *already the earliest forms of activity in infancy as mediated (although pre-verbal) meaning-making*. In this sense, our approach builds on Vygotsky's insight that cultural mediation is the key feature of human development yet expands it by including the *early history of cultural mediation*.

In particular, we show that the transition from the external to internal plane can be understood as dynamics and expansive growth of collaborative activity related to ontogenetic transformations in the forms of activity mediation, with this mediation itself undergoing significant and substantive developments that culminate in (but are not exhausted by) semiotic forms of mediation. This viewpoint entails that cultural mediation is relieved from a rigid and exclusive association with the notions of signs and tools understood as some independently existing, extraneous devices or sets of semantico-referential meanings that affect activities from outside as extraneous add-ons. Instead, in our rendition of Vygotsky's project, cultural mediation represents an inherent dimension of a collaborative, shared human activity, with cultural tools representing just one – elaborate and ontogenetically relatively late – type of means that serve as carriers of culture.

Thus, the notion of cultural mediation is shown to go beyond reliance solely on semiotic means (all their importance notwithstanding). Instead, cultural mediation is understood

more broadly – as conveying what is characteristic of the *specifically human way of acting and Being in the world*, namely, as a process that always takes place in the social space of collaborative practices, is bound by the rules and norms of these practices while also benefiting from their collective achievements, inventions and means, necessarily building on, incorporating, and continuing experiences of other people.

## CONCLUSIONS

The approach developed within Vygotsky's school is based in and itself helps to advance a radically novel view of the link between human subjectivity and culture. First, this is an ontologically unitary vision of human development where the gulf is bridged between the social, explicitly shared activities collaboratively carried out by individuals out in the world (and in this sense, practical) and activities by an individual that, while not anymore being carried out collaboratively (wherein another person is physical present), are nonetheless profoundly social and essentially collaborative, and therefore dialogical, due to their reliance on and adherence to cultural norms, conventions, and rules – that is, a reliance on other people and their collaborative cultural achievements.

In this account, a seemingly impassible barrier between the external world and internal mental phenomena is eliminated. Human mind is conceived of as originating not from the functioning of the brain and not as ontologically different from human productive activities, cultural practices, and social interactions but instead, as a direct product and ingredient (or dimension) of these very forms of human life. The "spatial" metaphor of internalization is replaced with the conception about different stages and forms of activity that the subject is carrying

out while relying on the ever more sophisticated means of cultural meditational. The development of higher mental functions essentially is the development of a collaborative activity – a process in which activity transforms in the course of development from distributed, shared activity carried out by the child and adult together (first as orchestrated by adult) and fully cultural already from the child's birth, into this *same activity* now carried by the child alone yet in fully social and dialogical ways. At this ontogenetically late stage, the child takes over the conventional methods of acting in a given context and now carries out initially shared activities on his or her own but in ways that build on these. This is a developmental progression in the forms of acting in the world, and moreover, a progression that entails human subjectivity yet now understood in a radically different way – as itself representing a form of acing in the world. The human subjectivity and mind then appear as natural attributes of human beings, their specific mode of acting and Being rather than an unaccountable element of a mysterious origins, to be explained away either in terms of brain processes or disregarded as epiphenomenon incompatible with the realm of practice.

Finally, in this approach, there is no barrier between the world of culture and the human subjectivity and no need for anything alien to cross over this barrier from outside into inside. Instead of seeing culture as representing something that is imposed from the outside on the child (as the fax model would assume), culture can be viewed as a process that people perform, enact, participate in, and ultimately contribute to – through their own activities with other people, in an active pursuit of a collective Becoming.

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