

Vygotsky's philosophy: Constructivism and its criticisms examined

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Criticisms have recently been voiced of constructivism, the leading metaphor of human learning since the 1970s. Inspired by inconsistencies in interpretations of constructivism in current literature, we examine the underlying epistemological beliefs of popular constructivist theories and their criticisms. We find that popular constructivist claims and criticisms, instead of being based on contrasting philosophical ideas, are similarly grounded on the dualist separatism of the human mind and the external world. We then present our interpretation of Vygotsky's historical-dialectical-monist philosophy, through discussions of Vygotskian concepts including social environment of learning, the role of language, and individual consciousness. The paper concludes that confusions about Vygotsky's theory often arise from concepts taken literally and from the lack of appreciation of the general philosophical orientation underpinning his works.

Constructivism, criticisms, Vygotsky's philosophy, historical-dialectical-monism, paradigmatic philosophy

INTRODUCTION

Setting out to overcome the Cartesian mind-body dualism and the well-rehearsed debates between empiricism and rationalism, the constructivist metaphor of cognitive psychology emerged in the 1970s (Gergen, 1985); and since then, has been the buzzword in school education and teacher training in the western part of the world. It has been recognised as both a 'paradigm' as well as a 'theory' (Fosnot, 1996). With the increased attention, many variants emerged and nowadays one may talk of constructivism as a church of theoretical accounts. Most recently, however, criticisms have appeared in the literature challenging constructivism across its church of views (see, for example, Fox, 2001, and Phillips, 1995).

In his article *The Good, The Bad, And The Ugly – The Many Faces Of Constructivism*, Phillips (1995) challenged this dominant church of thinking. As we note criticisms are often of similar or connected natures, our examination will focus on, in Phillips' words, 'the bad and the ugly' aspects of constructivism. In short, Phillips praised constructivism for its emphasis on learners' active participation and the heightened recognition given to the social nature of learning. The bad side of constructivism lies in its tendency towards epistemological relativism (including individual and social community relativism), which seems to be the major challenge that constructivists face (See also Fox, 2001; and Cobb, 1996 for similar criticism). Lastly, the 'quasi-religious or ideological aspect' is identified as the ugly face of constructivism. The irony now appears to be that from the divergence of constructivist views has emerged a dualist position – the very position constructivism came into being to avoid. By arguing for individual or social

construction of knowledge a Cartesian parallelism between individual and social idiosyncrasy has arisen. This is most clearly seen in popular accounts of constructivists and their recent critics.

This paper starts with a brief summary of constructivism and its two main variants as found in the literature – the cognitive/radical and social/realist traditions, followed by an introduction of recent critiques. Then, we question the accuracy of popular secondary presentations of original authors' thoughts, pointing out inconsistencies between interpretations. We attempt to tease out the internal-external separatism as the common ground that popular constructivism and its criticisms are based on. This is followed by an analysis of some key concepts in Vygotsky's theory. Based on that, this paper argues that the philosophical rigour underpinning Vygotsky's works has not been widely recognised in popular literature. We suggest that the **historical-dialectical-monist philosophy** characterising Vygotsky's theory is at odds with the dualist approaches inherent in many popular accounts of constructivism and their criticisms (Robbins, 2001). The paper concludes that confusions about Vygotsky's theory often arise from concepts taken literally and from the lack of appreciation of the general philosophical orientation underpinning his works.

CONSTRUCTIVISM AND CRITICISMS IN CONTEMPORARY LITERATURE

Constructivism emerged as the leading metaphor of human learning by the 1980s and 1990s as interest waned in behaviourist and information-processing perspectives (Mayer, 1996). Vygotsky (1962), among others, criticised the behaviourist approach as being too narrow, specialised, isolated and intrapersonal in standpoint. Likewise, the information-processing approach of the 1960s and 1970s was criticised as being overly reductionist in its analogy of computer and mind (Mayer, 1996). Both approaches failed to reflect either the active role of the learning agent or the influence of the social interactive contexts in everyday educational settings. Their mechanistic underpinning by an orderly, predictable, and controllable view of the universe proved inadequate to capture the active and social characteristics of learners (Phillips, 1995).

The fact that constructivists, of whatever ilk, consensually hold that knowledge is not mechanically acquired, but actively constructed within the constraints and offerings of the learning environment, was commonly regarded as a shift in paradigm in educational psychology. The mechanistic positivist accounts of learners as recipients of hard-wired knowledge were supplanted by accounts of learners as situated, active knowledge constructors. We note that with this shift, human subjectivity, which was excluded by behaviourist and information-processing accounts, has through constructivism returned to the discussion. But what is of great interest is the relation expressed by popular constructivist accounts between the objective and subjective aspects, between the world and mind. For it is upon this point that we examine whether constructivism can fulfil the promise that it once seemed to hold, to overcome the objective and the subjective parallelism; and it is here, we argue, that we will find an important insight of Vygotsky that appears to have been largely overlooked in the literature.

Today, among the espoused variants of constructivism, two are said to figure most prominently: cognitive constructivism, or personal constructivism, or, sometimes, radical constructivism; and social constructivism, or, at times, realist constructivism.

The cognitive/radical constructivism is believed to stem largely from Piaget's work, with followers such as Bruner, Ausubel, and von Glasersfeld. According to current literature, including teacher education textbooks (see, for example, Eggen and Kauchak, 1999; and McInerney and McInerney, 2002), theorists affiliated with this line of thinking focus on the intrapersonal process of individual knowledge construction. They argue that knowledge is not a self-sufficient entity; that knowledge is not directly transmittable from person to person, but rather is individually and idiosyncratically constructed or discovered. Cognitive or radical constructivists consequently

emphasise learner-centred and discovery-oriented learning processes. In the process, social environment and social interaction work merely as stimulus for individual cognitive conflict.

The social or realist constructivist tradition is often said to derive from the work of Vygotsky. Others classified in this category include Kuhn, Greeno, Lave, Simon, and Brown. Varied as these theorists' ideas are, they are popularly held to be proponents of the central role of the social environment in learning. Learners are believed to be enculturated into their learning community and appropriate knowledge, based on their existent understanding, through their interaction with the immediate learning environment. Learning is thus considered to be a largely situation-specific and context-bound activity (Eggen and Kauchak, 1999; McInerney and McInerney, 2002; Woolfolk, 2001).

As mentioned earlier in relation to Phillips' bad side of constructivism, recent critical responses to constructivist learning theories have mostly observed that by emphasising individual or social community construction of learning, the conclusion of individual or community idiosyncrasy is drawn. Personal constructivism argues that the universe is no longer a mind-independent existence and all individuals cannot be expected to have given or uniform cognition. Social constructivism proposes that cross-community transfer of learning cannot and should not be counted on. These claims are suspected to lead to epistemological relativism, where there exists no absolute truth and any truth is as good as other. In recent criticisms of constructivism, Piaget and Von Glasersfeld are commented as advocating for individual epistemological idiosyncrasy, and Kuhn and Vygotsky social epistemological relativism.

The other main criticism of constructivism, the ugly face of it as Phillips put it, is its quasi-religious or ideological aspect:

Across the broad fields of educational theory and research, constructivism has become something akin to a secular religion. ... constructivism, which is, whatever else it may be, a "powerful folktale" about the origins of human knowledge. As in all living religions, constructivism has many sects – each of which harbours some distrust of its rivals. This descent into sectarianism, and the accompanying growth in distrust of nonbelievers, is probably the fate of all large-scale movements inspired by interesting ideas; and it is the ideological or ugly side of the present scene, which is reflected in my article's title. (Phillips 1995, p.5)

This is a very speculative challenge. Nevertheless, elsewhere in the article, Phillips (1995, p.11) commented "Constructivism also deserves praise for bringing epistemological issues to the fore in the discussion of learning and the curriculum". In our view this quasi-religious or ideological aspect of constructivism is closely linked to the ambition of prescribing it as **the** human epistemology. It is exactly because of the ambition of constructivism to prescribe the so-called 'truth' about human epistemology and about the universe as the object of knowing, that it has become an exclusive church of thinking.

The ugliness of constructivism in becoming an exclusive religion of human epistemology does not lie solely within its claim of becoming a paradigm; many constructivists harbour important socio-political and educational concerns (Phillips, 1995):

... all of them [constructivist theorists] also have important educational or social concerns, each of which has a degree of credibility that is independent of the fate of the respective epistemologies.

... One result of all this is to highlight the need for individual attention to students, and the need to give guidance about how bodies of understanding are built up. *It could be*

argued here that a weak or at least a controversial epistemology has become the basis for a strong pedagogic policy. (Phillips, 1995, pp.10-11, italics original)

Terhart (2003) contends, and we agree, that constructivism does not present a new didactic paradigm different from traditional educational theories. Although successful in practical teaching recommendations in some educational areas, constructivism does not introduce a shift from the traditional dualist framework of thinking. A paradigm shift requires a deeper level of correction.

Fox (2001) observed that in its emphasis on learners' active participation, it is often seen that constructivism too easily dismisses the roles of passive perception, memorisation, and all the mechanical learning methods in traditional didactic lecturing. Other researchers (Biggs, 1998; Jin and Cortazzi, 1998) have noted that while constructivist teaching approaches, including one-to-one or small group classroom interaction, do not always guarantee teaching effectiveness, traditional didactic lecturing in large classes of 50 to 70 students in China has not always meant the doom of teaching efforts. In summary, in the behaviourist and constructivist oscillating emphases on the objective and the subjective, the world and the mind, we find not two but one singular theoretical paradigm, that of dualism. Popular literature on constructivism and its critical comments has tended to apply a dualist framework incongruent to the monist philosophy guiding Vygotsky's writings.

CARTESIAN DUALISM: COMMON GROUND OF CONSTRUCTIVISM AND ITS CRITICISMS

In the recent criticisms of constructivism, although some were voiced with greater depth of understanding than others, all took the step of categorising the plethora of constructivist variants. As is always the danger when categorising, one risks an oversimplification and loss of meaning. In *Constructivism Examined*, Fox (2001) applied his analysis through seven short statements, which he argued typified the range of constructivist positions. These statements may form a useful practical synopsis but are hardly a fair target for critique compared to the body of work from which they were derived (see Kivinen and Ristelä, 2003 for a similar assessment). Likewise, Phillips (1995), after a perceptive introduction to the variants of constructivism, locates numerous thinkers within the school of thinking by the standard of 'human the inventor' against 'nature the creator'. But again this orientation device is unfortunately used to evaluate the veracity of differently located thinkers. Such generalisation of complex bodies of work must suffer significant loss of meaning when categorised and so compromise their use for comparative analysis.

Evidence for the consequences of such generalisation may be found in the spate of recent articles, which now find the need to revise the strong distinction so many had drawn between Piaget and Vygotsky. For example in *Beyond the Individual-Social Antimony in Discussions of Piaget and Vygotsky*, Cole and Wertsch (2004) point to Piaget's equal valuing of the individual and the social:

... there 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; cited in Cole and Wertsch, 2004)

We argue that the polarisation of Piaget and Vygotsky along the individual and social is at least in part due to the dualist thought that lies implicit within so much of constructivist writing.

Kuhn too was often similarly polarised as a social community relativist. In his defence he rejected the school of radical sociology of knowledge, where intellectual and social systems are distinguished from each other and the former is regarded as an effect of the latter. He declared that

"I am among those who have found the claims of the strong program absurd: an example of deconstruction gone mad" (Kuhn, 1992, p.9; cited in Phillips, 1995, p.10).

It is curious that some critics, despite their awareness of others being overly reductionist, seem to have repeated this error themselves. Fox, for example, articulated dissatisfaction about constructivists' attack on the so-called 'straw-man' version of behaviourism and yet created his own 'straw-man' of constructivism. The cause of this phenomenon, we again suggest, is that popular constructivism and its criticisms, despite their seeming disagreement, are similarly grounded in a dualist philosophy and consequent separatism of human mind and external world. When constructivists identified behaviourism's failure in addressing the relationship between mind and body, they set out to overcome the difficulty in thinking by postulating the interactivity of human mind and the world. However, when they attempted to extend a cognitive psychological idea into the whole area of human epistemology, they were inclined to go to another extreme, that of relativism. When critics of constructivism spotted such extreme tendency in constructivist theories, and yet could not avoid making the same mistake themselves, they were in fact looking at the issue of the relationship between mind and body, between human beings and the world through the same lens of separatism.

It is useful to discuss Kuhn's (1970) notion of paradigm for clarification of this concept will illuminate our position that dualism, and not constructivism or behaviourism, is the true paradigmatic framework behind so much of the popular constructivist accounts. As mentioned above, Kuhn's discovery of the role of scientific communities in the advancement of natural sciences has brought home to him ceaseless disputes and accusation of being epistemologically relativist. A paradigm is "a theoretical framework, a set of assumptions, an orientation toward specific problem solving practices, and a rule for how these problems should be approached and proposed solutions appraised" (Horner and Westacott, 2000, p. 113). Paradigms do not involve descriptions and explanations of specific phenomena; they only involve the organisation of the descriptive and explanatory principles. A paradigm is not the equivalent of the total sum of concrete laws of problem solving; it is a general orientation for human reflection and hence a *sui generis* logical existence. A paradigm is a general hypothesis about 'the truth', but not the complete truth as such. In passing, it is of relevance that Russel (1998) distinguishes two levels of truth – intentional and extensional truth; and Kant differentiates knowledge of the *a priori* and the *a posteriori* natures. Paradigms are comparable to intentional truth and *a priori* knowledge, which cannot be objectively or empirically asserted, only individually represented and internally experienced. On the other hand, practical laws in normal science, as well as extensional truth and *a posteriori* knowledge can be objectively evidenced and asserted.

Kuhn's observation of paradigm shifts in scientific advancement does not point to epistemological relativism because revolutionary science and paradigm shifts occur on the basis of normal science. A paradigm shift, or 'gestalt shift', does not involve the complete and total change in more detailed and particular problem solving methods. Hence, paradigm shifts do not entail epistemological relativity or epistemological meaninglessness, for the choices of communities of scientists of theoretical orientations in the history of scientific development were not accidental or irrational decisions. This is evidenced by the continuity of some basic beliefs from Newtonian physics to Einstein's relativity theory. The process of paradigm shifts reflects the progress of human epistemology evolving around human wisdom and rationality as the centre stage. But again this is not to place subjectivity in a superior position to objectivity, for concrete laws of problem solving within a general paradigmatic framework must be established on the basis of empirical evidence (Liu, 1989).

Phillips realised that in detangling constructivist arguments it is beneficial to look deeper into their epistemological and philosophical concerns. This gave his understanding a good starting

point. But his eventual resort to “human the inventor vs. nature the creator” as a defining standard of constructivist theorists is a return to the mind and world parallelism and the inherent problems of dualism. We suggest that misunderstanding of Kuhn’s notion of paradigm and mistaking paradigm shifts as the complete overturning of specific scientific practices have given rise to many accusations of epistemological relativism.

Based on a clarified definition of paradigm, we contend that constructivism and behaviourism represent variants of theoretical and ideological emphases **within the same paradigm of dualism**. Until we understand that, we will not be able to comprehend the real causes of the shortcomings in both pedagogic approaches and to start looking for solutions to our problems elsewhere – outside of the dualist paradigm.

In the following section, we discuss some key concepts in Vygotsky’s educational philosophy and argue that the philosophy underlying his writings is closer in nature to Kuhn’s notion of paradigm than to detailed predictive and prescriptive laws of human cognition. We show that Vygotsky’s concepts and ideas arise from adoption of historical-dialectical-monist philosophy and are incompatible with a dualist approach; indeed the application of a dualist lens to interpret Vygotsky’s theory has resulted in the superficial interpretations found in the popular accounts of social constructivism.

VYGOTSKY’S PERSPECTIVE REVIEWED: SOME KEY CONCEPTS

Recent challenges to the social constructivist ideology of education have placed Vygotsky’s theory in a curious position. While Vygotsky’s theory is assumed, by many, to be the origin of social constructivism, especially by those non-affiliated with social constructivism, other scholars claim that he cannot be said to be ‘social’ enough. Lave and Wenger (1991), for example, in postulating their situated learning theory, disapprove of Vygotsky’s concepts of learning internalisation, generalisation, and scientific concepts, for they contain only “a small ‘aura’ of socialness that provides input for the process of internalisation, viewed as individualistic acquisition of the cultural given” (p. 47).

In their call for going beyond the individual-social antimony in discussions of Piaget and Vygotsky, Cole and Wertsch (2004) state that the standard vision of Vygotskian theory as social in nature is a simplified stereotype of the man’s original works. Also, whether Vygotsky ever considered himself as a social constructivist is not clear to us. What Vygotsky **was** happy to call himself was a Marxist, a historical materialist (Davydov, 1995).

In the following section, we review some of the key concepts, frequently quoted, misused, and criticised. We base our discussions mainly on Vygotsky’s original works and his students’ writings.

The Role of the Social and the Collective in Learning

A central concept in Vygotsky’s theoretical system is the role of social collectivity in individual learning and development. Three popular comments on this concept are: (a) it emphasises the role of the social and the collective, but ignores the role of the individual (Resnick, 1996); (b) it fails to address how the external world is bridged across to the internal mind (Fox, 2001 and Cobb, 1996); and (3) it implies a “blinker social consensualism” (Fox, 2001), and therefore epistemological social relativism.

Implied in these comments is a dualist polarising of the individual and the social, as only when the individual and the social group are viewed as fundamentally separate from each other, can one be

emphasised, whilst the other is overlooked. This is the main reason for the inability to explain individual development from social interaction and social change found at large.

To Vygotsky, the relationship between the social and the individual in the historical processes of social and individual development is one of dialectical interaction and functional unification. First, about individuals in society, the mind is not seen as autonomous from the social cultural group. The process of individual development could perhaps be summarised as 'the social – internalisation through sign mediation – restructuring conceptual system – new understanding/consciousness'. In this sense, individual mastery and development must be based on history and culture; moreover, the individual should be enabled to stand above the social collective because of the ability of the mind to generate personal understandings. This has different implications for educational practices from the common perception that Vygotsky "argued that knowing is relative to the situations in which knowers find themselves" (Cobb, 1996, p. 339). By contrast, the statement that "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. It appears between people as an interpsychological category, and then within the child as an intrapsychological category" (Vygotsky in Wertsch, 1985, p. 60) points to the belief that education must not only be content with children's enculturation, but must also promote individual consciousness as a consequence of enculturation. This stands in direct contrast with situated learning theory, which "suggests that learning is bound to the specific concrete situation in which it occurs, and transfer is difficult, if not impossible" (Eggen and Kauchak, 1999, p. 285). The philosophy underpinning situativity theory is that individuals as non-initiative beings receive one-sided external forces from the social. In Vygotsky's theory, the development of intellect and rationality beyond situations is the central aim of education.

Secondly, the conceptualisation of the social and the collective is not to be viewed as a mere total sum of separate, independent individuals. The philosophical establishment of **the collective being always larger than the total sum of individual persons** underpins a major part of Vygotsky's theoretical system. Because every individual member always brings to the group a personal contribution at their own levels, and between individuals their unique contributions interchange, the collective forever amounts larger than the total number of separate individuals.

For Vygotsky, the connection between the collective and the individual consciousness exists through the **collective subjectivity**, which is produced historically by joint-collective enactment. The social external world is not seen as a super-structure, fixed and self-sufficient, but is given shape historically by collective participation and collaboration. The collective subjectivity with participation and contributions from its members as authentic beings now becomes not just larger than the total sum of individual beings, but also **a qualitatively different existence**. On the other hand, the assimilation by the individual of collective cultural practices and values can only occur in collaboration with other people, within social settings' offerings and constraints. In a school setting, Vygotsky underlines that three elements are thus always active: the environment, the student, and the teacher (Davydov, 1995).

This conception of the social and the individual being closely interconnected, functionally unified, constantly interacting, and the change and development in one relentlessly influencing the other provides a valid explanation for both social and individual change.

The Role of Language

The role of language in learning and development is another most quoted and confoundingly represented notion in current literature. Fox (2001, p. 21) questioned how language, "built out of

brute physical sounds or visual marks, or similar alternatives”, can become “the material out of which most constructivists seem to want to build knowledge”. In addition, Fox argued:

Another variant of this extreme socialisation theory is to argue that all knowledge is based on language and on linguistic representation, or perhaps on semiotic systems more generally. Human minds are said to be ‘shaped’ by language, although it is not clear why this one form of experience is held to exclude others (viz. perceptual experience, practical trial and error and non-verbal emotion). If held literally, this view denies any knowledge to infants in their pre-linguistic phase (all of Piaget’s sensori-motor intelligence) and tends to imply that animals cannot know anything. It also ignores all the implicit knowledge we have of the world which we have never put into words. (Fox, 2001, p. 29-30)

Vygotsky’s focus in his psycholinguistic studies is on language use or word meaning, which he compared metaphorically to the living cells in a biological organism. His linguistic study was more like what we call today semantics, pragmatics and study of discourse (Robbins, 2001). Vygotsky stresses carefully that one cannot reduce beyond word meaning without great loss in understanding. He gives an analogy to water molecules whose properties cannot be understood by looking at the properties of separate hydrogen and oxygen. For if hydrogen burns and oxygen sustains combustion, why should water be liquid (Vygotsky, 1987, Vol. 1, p. 45-6)? He explains the socio-psychological nature of word meaning and its function in intellectual development as follows:

The word does not relate to a single object, but to an *entire group or class of objects*. Therefore, every word is a concealed *generalisation*. From a psychological perspective, word meaning is first and foremost a generalisation. It is not difficult to see that generalisation is a *verbal act of thought*; its reflection of reality differs radically from that of immediate sensation or perception.

It has been said that the dialectical leap is not only a transition from matter that is incapable of sensation to matter that is capable of sensation, but a transition from sensation to thought. This implies that reality is reflected in consciousness in a qualitatively different way in thinking than it is in immediate sensation. This qualitative difference is primarily a function of a *generalised reflection of reality*. ... At the same time, however, meaning is an inseparable part of the word; it belongs not only to the domain of thought but to the domain of speech. It is obvious, then, that our method must be that of semantic analysis. (*ibid.*, p. 47; italics original)

The key to understanding the role of language in mental development lies in the dual nature of word meaning or language in use, otherwise called discourse. Contained in each word are two levels of meanings: one is the object or phenomenon the word refers to in the objective reality; the other is the relationship of the word with other words. Both levels combine to give the word its social semiotic significance. Encapsulated in language use, discourse, or speech behaviour in general are on the one hand the historical and cultural establishment of human speech system, and on the other hand the speaker’s situation-specific, subjective verbal (re)action. The mastery of language use always entails not just producing grammatically correct texts, but also producing appropriate speech as required by situational and communicative demands. The acquisition of language of such dual nature is the foundation of all our verbal and higher mental thinking. This is because, in this sense, mastery of language use represents the acquisition of individual subjectivity and the external social reality. The ability to produce situation-wise perlocutions involves the individual’s appropriation of history and culture as well as individual subjectivity standing above history and culture as a consequence of intellectual development.

Furthermore, language should not be seen as merely the accidental assembly of purely physical sounds and forms because any language system is at the same time the result of the whole developmental history of the language. To study a language is to study a meaning system as a consequence of historical development. Due to the historical aspect of semantics, the interaction between individuals and society is now placed not within constant parameters of stability but on a continuum of time and historical development.

In his conceptualisation of language and its role in mental development, Vygotsky acknowledges immediate sensations and perceptions, but he does not dwell on them. His is a development-oriented approach and philosophy (Davydov, 1995). At the same time, Vygotsky acknowledges sensation and perception, it is this language-mediated thinking that he calls the higher mental ability, for the transition from the immediate sensation to thinking is what differs man from animals. His object of investigation – not sounds, not syllables nor marks, but speech units with meanings – reflects an awareness of the living, holistic feature of human as social beings with our social lives.

Consciousness

Two interconnected points are focal in understanding this concept in Vygotsky's theoretical and philosophical edifice. First, for Vygotsky, consciousness is defined as an individual's general perceptual orientation. Mastery of language, development of conceptual system, and consciousness are all but different aspects of the same process – that of intellectualisation. Second, in the development of consciousness, the sequence is from the social to the individual.

In a discussion of the genesis of higher mental functions, Vygotsky and Luria (1994) note that there are often intellectual and intuitive points of view. The intellectual point of view holds that the development of higher mental functions is a process of the individual's invention or discovery through the form of the so-called 'aha' reaction, and such discovery will later, once and for all, allow the individual to become consciously aware and to conduct his or her reasoning in a purely logical and deductive way. The latter point of view believes that higher mental functions, (e.g., consciousness), are *a priori* spiritual structures developed intuitively. The basic dualistic tenets underlying these views are still prevalent today, reflected to various extents in different conceptions of the role of language, consciousness and creativity.

For Vygotsky, **consciousness is not the ability of an individual to know all the ontological answers to the universe, rather, it is the ability to perceive meaningfully.** The development from lack of consciousness in the child to consciousness coincides with the transition "from nonverbal and therefore nonmeaningful perception to meaningful and verbal object perception" (Vygotsky, 1987, p. 190). "Meaningful perception is generalised or abstracted perception"; and to perceive something from a meaningful different way enables the individual to "acquire the potential for new relationships with it" and "to acquire new potentials for acting with respect with it" (*ibid.*, p. 191, p. 190). Therefore, as consciousness emerges, biological mechanisms and spontaneous concepts start to recede and generalised concepts attained with signs as tools start to orientate mental activities. Next, confronting the enigmas of consciousness in psychology, Vygotsky explains the genesis of consciousness in the child, emphasising how its development is a process of functional unity of mental operations.

[T]he child's mental development consists not so much in the development or maturation of separate functions as in changes in the connections and relationships among these functions. Indeed, the development of each mental function depends on these changes in interfunctional relationships. Consciousness develops as a whole. With each new stage in its development, its internal structure – the system of

connections among its parts – changes. Development is not a sum of the changes occurring in each of the separate functions. Rather, the fate of each functional part of consciousness depends on changes in the whole.

...These interfunctional connections and relationships are neither constant nor inessential. They cannot be placed outside the analytic frame within which psychological investigations are carried out. Change in these interfunctional connections, -- *change in the functional structure of consciousness – is the main and central content of the entire process of mental development.* ... If we fail to resolve this problem, we will not be able to understand the changes we observe in the isolated functions. (Vygotsky, 1987, pp.187-188, italics in original)

Vygotsky distinguishes consciousness, the ability to perceive meaningfully, from conscious awareness, and defines the latter as “an act of consciousness whose object is the activity of consciousness itself” (Vygotsky, 1987, p. 190). Conscious awareness is developed in the same way consciousness is – when consciousness means being able to generate meaningful generalisation and connecting relationships between objects and concepts, conscious awareness involves the ability to interconnect processes of mental activities.

This definition of ‘the consciousness of consciousness’ does not entail any intuitive mystification of the mental capacity as “[c]onsciousness always represents some piece of reality” (*ibid.*). “[C]onscious awareness and mastery characterise only the higher stages of the development of a given function. ... conscious awareness and mastery are two aspects of the same process. ... conscious awareness enters through the gate opened up by the scientific concept” (Vygotsky, 1987, pp. 190-191).

We find it comparable here that while Kuhn uses the term ‘paradigm’ to refer to a general reflective orientation shared by members of a scientific community, on the individual level, consciousness represents a similar generalisation of experience based on which one conducts rational thinking. As paradigms can shift, so can consciousness. Consciousness is not formed once and for all, as “Consciousness is prone to splintering. Consciousness is prone to merging. (They are essential for consciousness.)” (Vygotsky’s notes in Rieber and Wollock, 1997, pp. 136-137; cited in Robbins, 2001, p. 23). When consciousness shifts, or in other words, when the individual reorganises his or her conceptual system, he or she acquires potentials of perceiving new connections and of new possibilities of action. Consciousness, therefore, does not involve the complete knowledge of the absolute truth. It is a neutral concept referring to the general organisation of one’s conceptual system, which orientates one’s perception and sense-making. It emerges first on the social plane and then on the internal plane as generalised relationships are formed.

About the social origin of consciousness, Robbins (2001, pp. 21-22) has the following insight:

It is important to remember that the social precedes the individual in Vygotsky’s understanding of consciousness, and that it is created and expanded through interaction with the world, and “like Marx, Vygotsky ... argued that ‘the social dimension of consciousness is primary in time and fact. The individual dimension of consciousness is derivative and secondary, based on the social’” (Wertsch, 1983, p. 22). Vygotsky stated that “this also means that consciousness cannot focus on itself, that it is a secondary and derivative activity”. (Vygotsky, 1979, p. 27)

Thus, for Vygotsky, consciousness is derived from the prevalent meaning systems in one’s social environment. In his essay on the socialist alteration of man, Vygotsky (1994) agrees with Marx and Engels in recognising how social division of labour and class cripples the individual

personality by denying the opportunity of all-rounded development of physical and spiritual faculties. In this sense, **perhaps for Vygotsky the central aim of education is not so much to develop consciousness, but to develop the all-rounded personality and freedom of consciousness from social divisions.**

The primacy of the social in consciousness development should not, however, be read as the one-sided effects society have on the mental functioning of individuals as passive recipients of external forces. In fact, that the individual personality is shaped by the social environment points to the fact that the individual draws from society the resource for growth. So, the paradox here is, if society, as the birthplace for individual development, can constrain and distort human personality, it can also expand and free it. The change and growth of the society and individuals are closely interconnected.

FUNDAMENTAL TENETS IN VYGOTSKY'S PHILOSOPHY

History

Robbins (2001) points out that “[a] basic understanding of Vygotsky’s concept of history is important, because it represents a centrepiece of his psychology-philosophy” (p. 41). Vygotsky adopts the view of Marx and Engels that the laws of nature are the laws of history, studying the human psychology not within stable parameters of time, but in its developing dynamics. This is so because “the essence of a dialectical approach ... is to study something historically” (Scribner, 1985, p. 122; cited in Robbins, 2001, p. 41). This could perhaps be best illustrated in Vygotsky’s conceptualisation of the role of language in mental development, since the mastery of language is believed to be the central mediator of the emergence of all higher mental functions. Language itself is a product of history; the internalisation of linguistic generalisations, therefore, makes the individual’s mental functioning the product of human history as well (Bruner, 1987).

From the fact that history and culture is the birthplace of language and individual thinking, however, we need not conclude the necessary uniformity of individual language use and mental activities. For the mastering of speech does not mean the mere reproduction of the linguistic tool developed historically; it also requires the ability to “textualise one’s intent and to situate a locution appropriately in a personal context” (ibid, p. 6). From here, we see the true intention of Vygotsky: from history and culture to internalisation, to personalised generalisation, and to the possibility for the individual to stand above and go beyond history and culture.

Dialectics

Together with history, dialectics is another element that incorporates the sense of the dynamic in Vygotsky’s conceptualisation of individual development. Robbins envisages the transcendental and heuristic nature of dialectics:

Much of Vygotsky’s works are based on dialectical principles and it is important to realise that the dialectic is not a scientific, inductive approach used to arrive at a finished product (i.e., *ergon*). Indeed Engels stated that there are no hard and fast rules in dialectics (cf. Engels, 1925, p. 153).

The dialectic contains no exact element where proof can be obtained and it possesses only a small element of deduction. (Robbins, 2001, pp.65-66)

In fact, as we argued before, all hypothetical heuristics contained in a paradigm cannot be empirically asserted. As logical *sui generis* existence, they are built on the basis of rationality and rationality alone. On the individual level, “[w]ithin this system of dialectics the individual does not experience social relations as something completely external, and although the individual as a

particular derives consciousness, that aspect remains a generalisation or idealisation of experience” (Robbins, 2001, p. 67).

Monism

Vygotsky’s monist position should not be confused with traditional monist philosophy, which held that the universe consisted of a singular substance. His is a functional monism where all living factors exist in interdependency and form a dialectic organic whole. This philosophical stand is reflected, for example, in Vygotsky’s depiction of the functional relationship between the social and the individual, in his units of analysis in language (not words, grammars, sounds, but word meaning and speech), in his comparison of living cells and organic systems, and in his conceptualisation of the emergence of consciousness as a result of interfunctional development of mental capacities as a unified whole. The monist view enables one to go beyond the boundaries set by dualism, and to see how man and world, mind and reality can become the source of growth and change for each other.

Paradigmatic Philosophy

In philosophy of science, reflections upon the relationship between the mind and nature are bounded by two extreme views: one is the complete correspondence of the two, a view held by many natural scientists; the other is a complete incommensurability of the two, a view held by many social and humanity scientists. While the former is associated with the positivist and fundamentalist attitude in the pursuit of truth, the latter necessarily points to a relativist epistemology and to a meaninglessness of life as expressed in existentialism. In the philosophy of science and human psychology, if causality and the dualism of man and nature and of mind and body (not behaviourism or constructivism) are the real paradigms governing people’s visions, the benefit of Kuhn’s scientific historical discovery is that it provides a way out of the dualistic dead end, namely, the way of historical-dialectical-monism.

Reflected in the general, historically developed, and hypothetical nature of paradigms are three implications: (a) the connection of nature and the human mind, for the existence and establishment of all human hypothetical paradigms *per se* prove the **understandability** of nature to the human kind; (b) the pursuit of truth is going to be an endless effort, for the representation of the universe by the human mind can only be true to the human mind, and cannot be objectively asserted as true to the universe as such; and (c) the human cause of the pursuit of truth is not meaningless, for although we cannot and should not require from science the absolute whole truth about nature, nevertheless, the historical advancement of human rationality is bringing us to an ever closer representation of what truth is (Liu, 1989).

In Vygotsky’s whole career in human psychology, he was searching for and verifying the rationality of such a paradigm-like principle:

... Vygotsky believed that explanatory principles that are relevant for psychology are philosophical conceptions that have been further developed. They are borrowed from philosophy by psychologists ... Thus, according to Vygotsky, methodological analysis in psychology involves a twofold process: First, it begins with an existing theoretical apparatus ... Then it develops an explanatory principle and defines its place in a philosophical tradition. Then, conversely, Vygotsky envisioned the verification from the perspective of the logic of this philosophical tradition, a verification of the application of philosophical concept as an explanatory principle in psychological theory and its development on the basis of the given explanatory principle. Vygotsky (1982, p. 55) himself called this the “logical-historical” method, in contrast to the

“formal-logical-semantic” method. (Davydov and Radzikhovskii, 1985, pp. 50-51; cited in Robbins, 2001, pp. 22-23)

In his search for a way out of dualism, Vygotsky found in Marx, Spinoza (See Robbins, (2001) for detailed analysis), and others the philosophical inspirations of the alternative of historical, dialectical and functional unity of the mind and the body, and of the subjective and the objective. We hope this was clearly illustrated in our analysis of Vygotsky's key concepts in Section 4 above – that in Vygotsky's educational philosophy, the connection and interaction of human rationality and the external world is reflected in at least three aspects: (a) the social collectivity is a qualitatively different entity from the total sum of isolated individuals; (b) language functions both as indicator of the objective reality and as the mental generalisations and activities; and (c) that consciousness is conceptualised as human rationality and the endless potential of the development of rationality rooted in the ceaseless dialects of mind and world.

Contemporary mis-readings of Vygotsky originate from two causes: (a) from taking paradigmatic philosophy literally, and (b) confusing the transcendent with the directly experienced and applicable. Such is the difference between the intentional and extensional truths, and between *a priori* and *a posteriori* knowledges. Once we establish the difference between paradigms and specific empirical rules, we may be able to see that constructivism is not offering us a new paradigm of thinking. Its claims display many traits of the dualist tradition. Being able to see things outside the mind versus world framework will lead to clearer understandings of Vygotsky.

CONCLUSIONS

There has been a move from behaviourism to constructivism in educational psychology, but philosophically there has not been a shift from dualism. On the other hand, we argue that Vygotsky's educational theory is guided by an alternative epistemological paradigm – that of historical-dialectical-monism. This philosophical rigour has not been widely recognised in popular literature. Paradigms, such as causality and dualism, and historical-dialectical-monism, can never be objectively asserted, and many ideas in Vygotsky's educational theory are yet to be verified and evidenced. While we can never be able to validate ideas like the social collective differs qualitatively from the total sum of separate individuals, we may expect to find in them stronger explanatory power for our empirical research and reflections. In fact, perhaps the deepest insight one can draw from Vygotsky, Kuhn, and other thinkers is that human beings' search for 'the truth' will be an eternal cause. In the meantime, we must have faith in the unknown and progress will evolve with the development of human rationality. This should apply equally to natural and social and humanity scientific explorations.

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