

Outlining a Symbolic Approach to Human Mind

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ABSTRACT: *The From the shared perspectives of cultural psychology (e.g. Vygotsky, Bruner, Rogoff), symbolic anthropology (e.g. Turner, Geertz), and semiotic, I sketch a preliminary framework for understanding the role that symbols play in the genesis and development of human mind.*

Instead of considering computer models—widely used by cognitive anthropologists and human processing information approaches—I define mind, as Vygotsky did, as sign operations that are the product of specific cultural conditions.

KEYWORDS: *Human mind; symbols; cognition; culture.*

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I. INTRODUCTION

In the proposing and development of a new psychological field, that is, a cognitive science, many scholars began to formulate different definitions of what should be understood by *cognitive* or *mind*. During the second half of the 60s, many scientists have been trying to define the nature and scope of the new cognitive agenda. Not only psychologists but also linguists, electronic engineers, philosophers, communicologists, and pedagogists were involved in paving the path to a new subject matter: mind. Many of the features associated with mind or cognitive processes, however, were considered somehow as private or individual aspects. That is, mental or cognitive activities are determine by their own rules, social or cultural influences are considered irrelevant or insignificant.

During the last four decades, it has become acceptable to consider human cognition as social and cultural in their nature. Often this position is simply stated briefly more as a recognition of the idea than the commitment to a research project. In this paper, I am interested in charting out the implications of defending the idea that mind has a social and cultural origin. Naturally, the specific way in which culture operates is still a matter of dissent. In previous works (Medina Liberty, 1994, 2017), I tried to sketch a symbolic approach to mind, and I will recapture some of those ideas. This paper is an attempt to say, what a semiotic notion of mind might or ought to be. More specifically, I tried to combine the perspectives of sociocultural psychology and symbolic anthropology. I sustain that mind is both constituted and realized in the use of symbols. The fact that brain, mind, and culture coevolved, mutually dependent the one upon the other for their very realization, has made unsustainable the conception of mind as something intrinsically determined or as a set of self-organized processes.

My argument is presented in two main parts. In the first part, I briefly describe some major approaches to mind. In the second part, I describe the conceptual basis for a symbolic approach to mind and culture. Instead of considering computer models—widely used by cognitive psychologists—I define mind, as Vygotsky did, as sign operations that are the product of specific cultural conditions. Next, I examine some conceptual ambiguities surrounding the notions of “social” and “culture” as well as the ways in which human beings and other animals construct their environments. This leads, finally, to the examination of Vygotsky, Bruner, and Geertz, among others, in terms of a cultural perspective where meaning is the main subject matter. I argue that cultural meaning is essential because it guides and controls our individual actions.

II. APPROACHING MIND

The Greek word *psyche* somehow describes what we now know as the self or mind and, in fact, psychology got his name from this ancient root. From the Greek era through our modern times, the concept mind has acquired innumerable meanings. Greeks themselves understood *psyche* in a much wider sense as the power of a living thing to grow and move and have a consequence upon its surroundings, as well as other experiences of what we would call mental processes. Thus, Aristotle believed that plants had *psyche*. This philosopher thought that all living things had souls and that the *psyche* was a principle of life, which distinguishes the living from the inanimate. Within the spectrum of creatures having souls, there was a subset, namely those who were capable of rational thought. Thus, the rational mind is part of but not identical with the

psyche.

Aristotle disagreed with Plato's view of the psyche as a nonmaterial substance. In his work *On the soul* (*De anima*) sustain that a body can be divided into its component parts, but they are parts of its matter, not parts of its 'form' or 'essence'. In Aristotle view, everything has a form or an essence, which is shown in its primary activity. Thus, the soul is what makes a thing what it is. Aristotelian thought was kept alive for centuries, but after Renaissance and, more importantly, after the technological impact from the Industrial Revolution, when major changes in agriculture, manufacturing, production, and transportation had a profound effect on the socioeconomic and cultural conditions of the whole world, the idea of mind changed significantly.

Although the French philosopher René Descartes consented to many Aristotelian notions, he rejected the analysis of corporeal substance into matter and form and introduced a mind-body dualism. That is, the body works like a machine, it has the material properties of extension and motion (*res extensa*), and that it follows the laws of physics. Descartes described mind (or soul), on the other hand, as a nonmaterial entity (*res cogitans*) that lacks extension and motion and does not follow the laws of physics. Descartes argued that only humans have minds, and that the mind interacts with the body at the pineal gland. This form of dualism or duality proposes that the mind controls the body, but that the body can also influence the otherwise rational mind, such as when people act out of passion.

The main idea is that, for Descartes, 'mental reality' is not part of the physical or material world and therefore doesn't belong to the realm of space. The mind is not to be found in the brain, or any other part of the body. Descartes considered that mind was in immaterial substance, distinct from the empirical substance of the body. Mental activity was therefore related to this unseen thing. This way of approaching mind has long since gone out of fashion, even among dualists. Thomas Hobbes, John Locke, and David Hume, among other British Empiricists, opposed Descartes dualism to a materialistic position.

According to their view, a materialistic approach need not deny that there is mental states, it simply sustains that to have a mental state is simply what happen when a particular brain state is taking place. In general, empiricism adopted a reductionist approach to mental activity. That is, a person is seen mainly as an active brain attached to a body; mind is nervous system activity.

The Greek interest in knowledge and such thinkers as Descartes and the British Empiricists provided many fascinating ideas concerning knowledge and reason, or soul, or psyche. After the onset of the Industrial Revolution, a major turning point in human society, almost every aspect of daily life was eventually influenced in some way. There have been many new sciences (i.e., psychology, anthropology, neurosciences) oriented to the study of mind armed with a new set of resources unimaginable even a century ago.

Today, psychologists, again as did the Greeks, reflect on memory, mental images, dreams, problem solving, and concept formation, and how these mental processes are related to one another. In fact, some behavioral psychologist such as Howard Rachlin, has stated that Plato invented the idea of mind and the consequences have not been positive for modern psychology.

Let's take a brief look at behaviorism since, even now, its impact is still visible. Indeed, some might be surprised about considering behaviorism within the approaches to mind, but Skinner never denied the existence of 'mental states', he only translated them into stimulus-response relations. The behavioral approach is a physicalist theory, in that it reduces mental processes to physical activity. Skinner, as well as Pavlov and Watson before him, was not interested in human thoughts, dreams, or feelings. Rather, he wanted to collect the 'facts' by observing what people do. They study human behavior in much the same way that other scientists studied physical or chemical processes. Behavioral psychologists carefully define and control the stimuli present in the experimental environment and then observe and record their subjects' behavioral response to these stimuli. For instance, if an individual must make an important decision the ongoing process has nothing to do with a mental state, instead, "the individual manipulates relevant variables in making a decision because the behavior of doing so has certain reinforcing consequences." (Skinner, 1953/1975, p. 244).

Whatever happens 'inside' the subjects' head is nothing more than speculations originated from observing behavior. One should keep in mind, however, that the goal of behaviorism was to produce a science of mind—that is, behavior—with results that could be objectively measured and evaluated. "Cognitive psychologists, Skinner claims, study the relations between organism and environment, but they seldom deal with them directly. Instead, they invent internal surrogates which become the subject matter of their science" (1978, p. 97). Thinking, for instance, might be nothing more than 'covert verbal behavior' or having a pain is crying out or rubbing the damaged part of the body. For a behaviorist that is exactly what 'being in pain' is about. As Skinner states it,

The practice of looking inside the organism for an explanation of behavior has tended to obscure the variables which are immediately available for a scientific analysis. These variables lie outside the organism, in its immediate environment and in its environment history (Skinner, 1953/1975, p. 31).

According to this view, children do not go around 'forming concepts'—a particular research area of cognitive psychology—of, let's say, their sexual identity and consequently behaving in special ways; they slowly change their behavior as people change the ways in which they treat them because of their sex. Behavior changes because the contingencies change, not because a mental entity develops. Since many of the events,

which must be considered in explaining behavior, are associated with mental or bodily states that can be felt, what is felt may serve as a clue to the contingencies. But, Skinner argues, the feelings or the mental states are not the contingencies and cannot replace them as causes.

In sum, mind is considered as an unnecessary invention that goes back to Plato. According to Rachlin (2014), Plato was the first to conceive mind as something separated from the body and the world. A person's mind and the world, and the minds of other people, were originally bound up together, each inconceivable without the other. But in the course of history, they became separated. In the name of ethics and religion, great thinkers, represented here by Saint Augustine and Descartes, teased apart the mind and the world and began to conceive of the mind as wholly contained within the body. In their conception, the mind, isolated from the world in the brain and served by millions of nerves (like a general, safe in his headquarters) continuously receives messages from the sense organs and sends messages to the muscles, but is never in direct contact with the world (Rachlin, 2014).

If we consider the perspectives described below, the behavioral approach appears very limited, because behavior should be seen as the key for finding out 'what was happening in the mind.' In general, Skinner's behaviorism saw the task of psychology as predicting and controlling behavior, based on the assumption that the physical milieu shaped that behavior. Our acts are not the result of some private activity going on in the mind, but by our conditioned responses to the environment.

After the ubiquitous presence of computers since the mid-seventies, many theorists tried to find an analogue between human mind and artificial machines. Of great importance was the beginning of cognitive science at Harvard. The so-called Cognitive Revolution was initiated by Jerome Bruner and George Miller during the mid-fifties. This psychological movement involved the introduction of a way of thinking about human beings that rejected the whole approach of the experimental strategy of behaviorism.

This approach relies extensively on computer models. Information-processing psychologists are concerned with human's capacity to perceive, interpret, categorize, encode, store, organize, and manipulate information according to certain rules. The main research areas, for example, are perception, memory, concept formation, problem solving, imagery, and reasoning (McBride, Cutting & Zimmerman, 2022).

The computer must process input, perform certain operations on the information, store it, and generate and output. For information-processing psychologists, the mind is very much the same. People must selectively attend and perceive, associate, compute, or otherwise operate on the information. Routinely, information must be stored in the memory and later retrieved. Finally, 'output' in the form of responses—spoken language or actions—must be generated. The main question here is: "Can computers think?" Alan Turing raised this, who did much important development work on computing. His approach was to set a computer basic task, namely that it should be able to respond to questions in such a way that a person would not be able to know whether those answers were coming from a computer or another person; in other words, that it responded intelligently. This became known as the "Turing Test" and it raises a whole range of questions not just about Artificial Intelligence (AI), but also about the nature of human mind.

In general, the processing-information approach sees mind as being like the software that is running on the computer, while the brain itself is the hardware. According to computational view, when people are involved in problem solving tasks, they are motivated by their own basic competence, not by mere stimulus-response reinforcement, as behaviorists sustain. Mental processes, thus, begin with our being stimulated with inputs that are received through our senses. Because we are interested in some happenings more than others, we select that which is of value to us. However, the information is not just photocopied in our mind; it is interpreted and evaluated according to our perception of it, which, depends partly on our experience. If the information seems of value, it is then stored in our memory for future use. When needed, the information is retrieved from memory stores. We think about it, seek to relate it to our own present situation, and use it as a basis for solving our problems. Of course, for this to work, it is necessary to program the computer in such a way that appropriate answers would be formulated in response to questions. This is precisely what makes the computer model imperfect. In my opinion, one essential difference between the response of a computer and a human being is that the inputs and outputs of the human being have meaning or significance—this is a vital point for the semiotic approach. Human beings are not impersonal; they have reasons for doing what they do. In other words, human thought is a semiotic organization that operates logically but also expresses meaning. Let me argue a little more about this.

The American philosopher John Searle made an important consideration about Artificial Intelligence that can be extended to computational psychologists Searle (Searle, 1986). Searle considers the hypothetical situation of a person who knows absolutely no Chinese. He is locked in a room and given a set of Chinese writing. None of the characters means anything to him. Then he is given a second set, along with a several instructions in English. These instructions help him to relate the second set of characters to the first one.

The first set represents a story in Chinese, and the second a set of potential questions and answers about it. The English instructions effectively link one set to another, so that the person can match up one character with another without needing to understand anything of what they mean. A batch of questions in Chinese is then fed into the room. Following the instructions, the person inside matches up the appropriate Chinese

characters and post out the required answer. If the instructions are followed correctly, a Chinese speaker on the outside will be receiving answers which would suggest that the person inside the room is able to read Chinese, understand the story and respond appropriately. But, of course, he understands not a word.

Searle's argument is that the same thing is happening in the computer, in the situation that, according to the Turing Test, would suggest that a computer is 'thinking'. The computer understands nothing. Searle concludes that, just as the person inside the room can manipulate Chinese characters without understanding them, so a computer can manipulate a set of formal symbols without knowing anything at all of what they stand for. Whether we agree or not with Searle, the 'Chinese Room' argument represents a serious challenge to AI and information-processing approaches to mind. Of course, they have never sustained that human mind functioning is identical to that of a computer, but, nevertheless, the computational model has inevitable drawbacks (i.e. Rust, 2006; Tsahatzidis, 2007)

This perspective of mind has been widely applied to education. It has been particularly useful in helping educators plan instruction to fit children's capabilities within school's syllabus. Also, information-processing models suggest ways to determine which strategies are most useful to accomplish specific tasks and propose new routines to organize information. But information-processing psychologists are mainly concerned with information management, and thus far they have been unable to explain areas such as social, cultural, or emotional development. Cognitive theorists look essentially at the development of perceptual abilities, problem solving, memory, and complex reasoning, but they have not yet explored the people's cultural and social potentialities, nurturance, aggression, or emotional bonding. Of course, these issues are not in their academic agenda, but they are important and unavoidable.

III. A GENETIC PERSPECTIVE OF MIND

Piaget's central thesis is that the acquisition of knowledge is an active and constructive process. For Piaget, knowledge is assumed to have a specific goal or purpose: to help the person in adapting to the environment. The child or the adult does not receive information passively, and thoughts are not simply the products of direct teaching by or imitation of others. Nor is intellectual progress seen as primarily a product of maturation of the brain. Knowledge is constructed and become more complex and efficient because of the child's interactions with the world.

Piaget postulates that intelligence is gradually organize in four major structures. These structures are not biologically determined, there are built in a step-by-step process. The stages of intellectual development need to integrate two necessary conditions: a) they must be defined to guarantee a constant order of succession, and b) the definition must allow for progressive construction without entailing total preformation. For Piaget, these two conditions are necessary because knowledge obviously involves learning by experience, which means an external contribution in addition to that involving internal structures, and the structures seem to evolve in a way that is not entirely predetermined (Piaget, 1975).

Piaget criticized the common view of the world as something separated from the subject. Any objective knowledge, he claims, appears to be simply the result of a set of perceptive recordings, motor associations, verbal descriptions, and the like, which all participate in producing a sort of figurative copy of objects and the connections between them. In this empiricist view, function of intelligence is to systematically file, correct, etc., these various sets of information. The content of intelligence, then, comes from outside, and the co ordinations that organize it are only the consequences of language and symbolic instruments.

Piaget found this kind of interpretations of knowledge acquisition as passive and is contradicted at all levels of development, even at the sensor motor and prelinguistic stages. To know objects, argues Piaget, the subject must act upon the objects, and therefore transform them: he/she must displace, connect, combine, take apart, and reassemble them.

For Piaget, from the most elementary sensorimotor actions (such as pushing or pulling) to the most complex mental operations, which are interiorized actions carried out mentally (e. g., joining together, ordering, putting in one-to-one correspondence), knowledge is constantly linked with actions or operations, that is, with transformations. Thus, the relationship between subject— let's say, a child examining a puzzle—and object—the puzzle itself— is in any way determined in advance, and it is not stable. That is, in every action the subject and the object are fused.

Although this is just a very short sketch of Piaget's epistemology, it is sufficient to note how different are Piaget's ideas from behaviorism and information-processing approaches. The former is a genetic, diachronic, or developmental perspective while the last two are non-developmental or synchronic. Piaget's psychology has grounds on biology and use methods more naturalistic oriented. Behaviorism and computational approaches rely heavily on the experimental method and restricted research settings. They all, however, have something in common; they consider individual actions as isolated from the social and cultural milieu. This point is crucial for a semiotic or cultural perspective that I describe in the next section.

IV. SYMBOLS AND MIND

In the perspectives sketched above, mind is seen as an enclosed system that possessed intrinsic or inherent mechanisms. On the one hand, for the behavioral approach all that matters is the relationship between behavior and its current setting. Psychological invariants are expressed in terms of functional relationships. If a stimulus increases the future frequency of responses, then it is a positive reinforcement if this does not happen then it is not a positive reinforcement. The environment is not defined in terms of social or cultural dimensions; only the physical variables are pertinent. Skinner's dream—not a bad dream, of course—was to convert psychology into a science with law like predictions and measurable outcomes.

On the other hand, for Piaget and the computational psychologists, the task of psychologists should be to 'discover' the invariant cognitive processes that make thought possible. The main idea with this cognitive solipsism orientation is that mind can be conceived as a self-contained system. Human thought is seen as a closed entity with a predetermined cognitive and/or neurological organization. If thought possess a built-in organization, culture, then, is just an accessory factor that influences this or that mental processes without affecting their invariant nature. Since the thirties, however, Vygotsky defended the idea that all mental processes are culturally mediate:

Every [mental] function in the child's cultural development appears twice: first, on the social level, and later, on individual level; first, between people (*interpsychological*), and then inside the child (*intrapsychological*). This applied equally to voluntary attention, to logical memory, and to the formation of concepts. All the higher functions originate as actual relations between human individuals (Vygotsky, 1978, p. 37).

Even Piaget, who has been accused of adopting an individualist approach to consciousness, clearly stated that: "There are no more such things as societies qua beings that there are isolated individuals. There are only relations... and the combinations formed by them, always incomplete, cannot be taken as permanent substances." (Piaget, 1932, p. 360). Even though both Piaget and Vygotsky recognized the important role that sociocultural milieus play on mind development, their approaches putted a different emphasis on semiotic functions. From a Piagetian point of view, semiotic functions were a transitional stage that emerges when pre-operational children interact with objects and begin to attribute meaning to them. Later, symbolic behavior is subordinated to major logical-mathematical structures. In Vygotsky's view, symbols constitute the essential psychological tool of consciousness (Medina-Liberty, 2007). Vygotsky vigorously emphasized the relationship between psychological processes and the cultural and historical forms of human activity: "the true direction of the development of thinking is not from the individual to the socialized, but from the social to the individual (1934/1962, p. 20). The transition of cultural forms or patterns of behavior to inner processes involves the reconstruction of psychological activity based on signs operations. It is the use of cultural or symbolic tools, mainly speech, what makes possible mental functioning.

Symbol use, thus, re-creates and re-organizes the whole structure of behavior just as a physical tool re-creates the whole structure of labor operations. A symbol is a thing that represents something else. A drawing of a cat, the written word "cat", or cat as a spoken word comes to be understood as representing a real cat. The use of language is, of course, the prime example of sign-use but another good example is creative play, when checkers are cookies, papers are dishes, broom sticks are horses, a box is the table, and so on. By manipulating symbols, we are essentially thinking in a way the infant could not in the absence of the actual objects involved. As Vygotsky said: "Thought is not merely expressed in words, it comes into existence through them" (Vygotsky, 1981, p. 125).

It is because the conventional-cultural-character of the relationship between symbol and referent that we must consider the inevitable cultural-conventional-milieu of human actions. But what is culture? Since the concept of culture is evasive and ambiguous (see Kuper, 1999, for a complete discussion), how, then, is culture conceived inside a semiotic approach? Does culture and society mean the same thing? Since "culture" and "society" are among the most litigious concepts in psychology and social sciences, we will devote the following section to this polemic issue.

Society and culture are sometimes treated as synonymous, and sometimes they are radically distinguished (Greewood, 1997). I sustain that “social” is a notion that can be appropriately applied to animals when referring to interactions among members of the same species or even to advanced social behavior as tool use in primates; we reserve “culture”, however, to complex symbolic behavior such as language, communication, and thought. Since I had developed more deeply the distinctions and the similarities between these two concepts (Medina-Liberty, 2002), it will be sufficient to say here that we consider that the social can be found in the sets of arrangements and general agreements that members of certain group or community sustain and keep them together. Groups, populations, cities, and even countries, are bound, precisely, by keeping these general arrangements and agreements alive. Those animal behaviors that are governed by biological determinants are excluded from this definition although more complex behaviors such as those of higher primates are encompassed by it. As for culture, we subscribe Geertz definition as a semiotic system,

The concept of culture I expose... is essentially a semiotic one. Believing with Max Weber, that man is an animal suspended in webs of significance he himself has spun, I take culture to be those webs (1973, p. 3).

Culture, in one word, is characterized as a shared conventional system that is represented by symbols. In this sense, mental functions as thoroughly dependent upon cultural resources—signs or symbols—that are not adjuncts to, but constituents of mental activity. In Vygotsky’s words,

The inclusion of a tool in the process of behavior (a) introduces several new functions connected with the use of a given tool and with its control; (b) abolishes and make unnecessary several natural processes, whose work is accomplished by the tool; and alters the course and individual features (the intensity, duration, sequence, etc.) of all the mental processes that enter into the composition of the instrumental act, replacing some functions with others (i.e., it re-creates and reorganizes the whole structure of behavior just as a technical tool re-creates the whole structure of labor operations (1981, pp. 139–140).

In effect, children do not just make sense of, or for, gestures and words; they make sense with gestures and words, that is, they use them to make culturally recognizable meanings, to perform meaningful actions. In such view, symbolic resources are not simply accessory to or simply facilitators to mind that would otherwise exists as an independent entity or as an autonomous unit. Instead, they primarily constitute mind.

We are entirely in agreement with the assumption that some animals—i.e., ants, termites, and primates—inhabit a social environment but only humans live immersed in a cultural atmosphere. Behaviors such as recognizing other members of the group, the establishing of relationships based on kinship or dominance ranks or the deployment of different communicational means such as “calls” or specific sounds when danger is detected can be considered as social; patterns of more conventional activities, however, such as teaching, verbal language, all types of artistic practices, reading and writing, driving a car or piloting a plane, to name only a few, are actions exclusively human, that is, of a cultural nature. Even when nonhuman primates use tools for accomplishing some task—i.e. chimpanzee use sticks to “fish” termites from their mounds—they don’t do it as an effect of a “culturally transmitted” tool-use practice (see Tomasello, 1999, for a in-depth discussion). Undoubtedly, a chimpanzee is a social creature: they scratch each other’s head, they play together, they develop dominance ranks and they even cooperate to solve problems. All these activities illustrate a social dimension of behavior, but they are not conventional enough to be considered as “cultural actions”. In their natural habitats, for instance, chimpanzees do not point or gesture to outside objects for others, do not teach or transmit deliberately any knowledge or new abilities to other, do not offer objects to other members of the group by holding them out nor try to bring others to specific locations so that they can observe things there (Tomasello, 1999). All these actions, however, are easy and habitually found in humans as young as one year old (Bruner & Haste 1987; Wood, 1998) or even earlier (Butcher & Goldin-Meadow, 2000).

In sum, we circumscribe the term ‘social’ to those behaviors that occur when two or more organisms are involved in a joint action while ‘culture’ will be applied exclusively to conventional or symbolic relationships. We believe that there is an intimate relation between the special cultural—symbolic—milieu that humans inhabit and the fundamental, distinguishing, symbolic qualities of human psychological processes.

V. TOWARD A SYMBOLIC CONSTRUCTION OF MIND

As we previously mentioned, gestures can be said to be meaningful insofar as they provoke a meaningful response. Even pre-verbal actions are unavoidably connected in one way or another to cultural meanings or communicative interactions. These human interactions will gradually provide not only a meaningful surrounding—the natural habitat of humans—but child’s actions themselves will make sense because of this particular cultural medium.

When a child performs an action there aren’t meanings going through—or attached to—in addition to the physical action: the action itself is the vehicle for some meaning. It is precisely this meaning, which is deeply entrenched in cultural practices, the one that makes this particular action meaningful. Almost no human activity is carried out exclusively by means of an automatic process of self-regulation—with the only obvious exception of reflexes and some mechanical actions such as walking or breathing.

It is important to mention that meaning is not fixed, it is characteristically relational; that is to say, it can’t be thought of as something static with predetermined boundaries. There is not a single thing or an individual action that has meaning, as somehow built in. Words, pictures, gestures, body language, diagrams, sounds, maps, numbers, and a very large number of other objects or actions can only be considered as symbols because meaning was made for all of them, by someone, and according to some conventions. This is a human ability that permits us to perform culturally meaningful actions.

The study of meaning can bring on together psychology—via Bruner— and anthropology—via Geertz. Both Bruner and Geertz have located meaning at the core of human sciences. According to Bruner,

The central concept of a human psychology is meaning, and the processes and transactions involved in the construction of meanings. [...] To understand man, you must understand how his experiences and his acts are shaped by his intentional states... The form of these intentional states is realized only through participation in the symbolic systems of the culture. (1990, p. 33).

If we remember Geertz’s definition of culture as a complex web of significance and consider the above statement by Bruner, it is promising to propose an integration of symbolic anthropology and cultural psychology. Both disciplines regard as central the nature and cultural shaping of meaning-making, and the central place it plays in human action. Cultural meaning is essential because it guides and controls our individual acts.

The significant matter here is that mental functions should not be considered separately from the exercise of symbolic devices. How the mind works is greatly reliant on the tools at its disposal. Cultural resources such as symbols (i.e., words, pictures, gestures, numbers) make impossible to regard them as external or supplementary to mental functioning, they are not prosthesis. They are a powerful element in any human psychological activity (Medina–Liberty, 2000).

In sum, it is a matter of conceiving of mind, or perception, or thought, or mental images as themselves and directly as human symbolic resources. Margaret Mead (1969) provides us a very interesting example of how the Arapesh from Papua New Guinea have so much trouble in counting because they lack of a useful counting system. For an Arapesh, you must enumerate by saying “one, two, two and one, one mouse (that is, four), one mouse and one, one mouse and two, one mouse and two and one, two mouse, etc. Naturally, this way of counting is so problematic that making counts results in a hard ‘mental effort’. When Arapesh need to refer to larger quantities than 20, they will simply say “a lot”. If the reader tries to multiply “3 x 8”, the result will come out almost immediately, “24”, which means that, you were able to perform a mental operation efficiently because you were taught to do it since elementary school years.

Numbers are mental mediators—that is, a symbolic resource—that permit us to perform mathematical operations mentally. A mediator facilitates the child’s development by making it easier for the child to perform a given behavior. As described above, in a Vygotskian framework mediators become psychological tools when the child incorporates them into his own activity. As any other cultural resource, symbols exist first in shared activities and then are incorporated by the child. Language is a universal cultural resource that is applied in almost any context to solve any number of problems. We use language for communicative purposes, for writing, depicting, and thinking.

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The vertebral idea that guided this essay was that mental activity is fundamentally transformed by the inclusion of signs, which mediates cognitive activity. The integration of mediators or symbolic means does not simply facilitate physical or psychological actions, as we see in the counting example; instead, as Vygotsky indicated, a psychological tool alters the entire flow and structure of mental functions. It is because human’s appropriate forms of symbolic mediation provided by cultural, historical, and institutional practices that their mental processes are socioculturally situated.

If we believe that culture—the medium where all human activities and relationships takes place—is the location of meaning generation, that meaning is fundamentally conventional, and, thus, cultural; then the external or the intermental functioning of the individual is inherently related to the internal properties of words and speech. The “locus” or “place” of meaning; therefore, is the cultural sphere, which is not in or out of the individuals but among them, distributed in an intersubjective manner, and cannot be simply configured as a physical space. The study of meaning provides the basis for a relational perspective since symbols meaning is not in the “exterior”-culture-or in the “interior”-mind-but has a relational nature. The meaning of symbols has an ambidextrous quality: meaning exists both “inside” as an essential component of self-regulation, and “outside” of the individuals, as another-regulation process, both in our minds and in culture.

The impact of digitization on the Namibian newspaper industry are positive and negative. With digitization, it is now easier to reach a wider audience, the interaction is fast, instant and continuous and has provided a multiplicity of sources for journalists. The negative impact is that newspaper loses revenue due to drops in circulation as well as the migration of both readers and advertisers to online platforms. Bu the study has shown that the threat of digitization on the Namibian and Newspapers in Namibia is yet to be felt as the circulation of hardcopy newspapers continue to increase. Digitization has brought more opportunities than challenges for the Namibian newspapers industry as the industry continues to thrive due to increasing sales and advertising and that advertisers are still miles away from completely embracing digital media and harnessing the power of the internet. It has also been observed that although there is willingness to migrate to online platforms by readers, factors such as internet connectivity and speed, remain immediate constraints towards full digitization of the newspaper industry.

VI. FINAL REMARKS

Although many would certainly agree with the idea of a unique or single science of mind, that is not the case, and it remains far, far off. The epistemological programs of behaviorism, human information processing, and Piagetian psychology will continue their development according to their own criteria and methodologies, however, there has been, as a tried to show, some interesting confluences between different disciplines.

Currently, there are hundreds of book and journal articles that contain the word ‘mind’. Nevertheless, a definition of mind, as I tried to insinuate, remains elusive. Sometimes, mind is simply understood as behavior, and whose physical properties can be described objectively. Other times, it is conceived as a computer metaphor according to which minds are ‘software’ which run on the hardware formed by human brains. Within Piagetian School, mind was view as a progressive and complex process of knowledge construction. Along this line, we can find several other models such as the Multiple Intelligences of Howard Gardner, Chomsky’s linguistic, or the neurological perspectives that I didn’t review for space reasons. It seems that mind is a term given to an open set of theoretical proposals, and in view of the difficulties attached to the notion of mind one has to assume a concrete position. My position here was to conceive mind from a symbolic point of view. This implies to view human beings as *homo symbolicum*. As Susanne Langer states in her highly revealing *Philosophy in a New Key*,

The importance of symbol-using, once admitted, soon becomes paramount in the study of intelligence. It has lent a new orientation to genetics psychology, which traces her growth of the mind. (1942/1979, p. 27).

In effect, we don’t have a propensity to see the world in terms of truth and validation, but in terms of significance. That means that we experience not a world of facts, but a symbolic world, a world of signs. Signs are all around us and I think that this artifacts, one way or another, will influence our future psychological research agenda. A semiotic approach to mind may lead, at least to a certain degree, to reformulations of traditional research questions.

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