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The body in communicative ecosystems: Developments for educommunication

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ABSTRACT
The communicative ecosystems designate the relationship between subject and media and are the basis for theoretical developments in different authors of Educommunication. The concept goes further by embracing the change of sensitive perception in the contact between human and technology. This transformation of the sensorium is a reference for Communication and the Human Sciences and also establishes a connection with Neuroscience, whose understanding of human cognition refutes the separation between body and mind. On the contrary, it points out that thinking and perceptual and expressive abilities are the result of an integrated action of the body, not just the brain. Therefore, the change of sensorium associated with communicative ecosystems implies also dealing with the body, which represents new possibilities of reflection and practice for Educommunication in the era of digital technologies in network.

Keywords: Educommunication, body, cognition, sensorium, technology.

1 INTRODUCTION

The idea of communicative ecosystem crosses the field of Educommunication from the concept introduced by Martín-Barbero for the first time in the year 2000. In the initial formulation, the author identifies communicative ecosystem with the relationship between subjects and the various technologies that characterize contemporary digital culture - encompassing from magnetic cards to the extensive routes of the Internet.

This is usually the starting point of different authors who reflect on Educommunication, when they cite the emblematic concept of Martín-Barbero and then update it. Prado Soares (2005) proposes an expansion by making reference, for example, to an integrative perspective of education and technology, in which there is no single model of communicative ecosystem:

> "The rescue of learning as a space that produces meanings in pedagogical processes has been, for example, one of the contributions of the Argentine Daniel Prieto to the analysis of technology/education relations. According to this author, the conceptual design to introduce technologies at the service of education is primarily communicational. On the other hand, the so-called displacement of learning centers, both of the sources of knowledge and of the actors of the educational process, seriously compromises the type of communication model that supports these formative practices. Therefore, there is not only one model of communicative ecosystem, but diverse, according to the degrees of interactivity present in the processes of symbolic exchanges." (PRADO SOARES, 2005, p. 7-8)

In the specific perspective of Educommunication, Tavares Jr.'s approach offers a more detailed definition of how communicative ecosystems operate in practice:

> "As for the concepts disseminated by the educommunicative theory, we can understand the communicative ecosystem as the set of actions that enable the promotion and expansion of communication relations between the various people and instances that make up the educational community. It includes everything from the organization of the environment to the availability of resources. It stimulates the decentralization of power, dialogue, interaction and the opening of space for different experiences and cultural experiences. It evaluates the quality of interpersonal relationships seeking harmony and balance in environments in which various actors can live with different technologies and means of expression." (TAVARES JR. 2007, p.72)

In another approach, Consani (2011) connects communicative ecosystems to the notion of community:

> "The concept of "communicative ecosystem" is identified with the notion of educational community as long as it is articulated transversally by communicative processes, which presupposes the shared management of processes, the horizontality of the organization chart (empowerment) and the stimulus to protagonism." (CONSANI, 2008, p.40)

All these developments of Martín-Barbero's initial proposition help to outline an updated understanding of communicative ecosystems and how fundamental they are in the relationship between Education and Communication.

For the discussion we are making now, it is worth noting, however, a little-remembered emphasis on the original concept of Martín-Barbero (2000): the change of the sensorium. The author explains this term by stating that it is more visibly revealed in younger people, through:

> "... their cognitive and expressive empathy with technologies, and in the new ways of perceiving space and time, the speed and slowness, the distant and the near, that they enter.
>
> It is a new cultural experience, or as W. Benjamin called it, a new sensorium, new ways of perceiving and feeling, of hearing and seeing, a new sensibility that in many ways shocks and breaks with the sensorium of adults." (MARTÍN-BARBERO, 2000, p. 37)

It is undeniable that young people demonstrate in practice a greater propensity to absorb and deal with technology, and to forge a cultural universe integrated with the digital reticular. It should be noted, however, that that initial scare and estrangement of adults with the new digital network culture, which emerged more than 20 years ago, is no longer the same, with older people also adhering, in different intensities, to social networks, smartphones, memes, apps, digital services and all kinds of connectivity.

The central point of this observation is that this change in sensoriality is a phenomenon that has spread across different spectrums of society. And this indicates new ways for people to be in the world, to interpret stimuli and situations, to express impulses and reactions, to construct thought.

Thus, the notion of transformation of the sensorium, proposed by Benjamin and rescued by Martín-Barbero, is a key element to fully understand the human dimension in communicative ecosystems. And even more, from the perspective of Communication as a whole. This is what reminds us of another emblematic author, who also drinks in the concept of Benjamin. When Marshal McLuhan asserts that "the medium is the message," he is not restricting himself to the factors of information transport and narrative production associated with the media. It is also alluding to how the sensory and cognitive qualities associated with different media become a bridge to new ways of perceiving, expressing oneself and reflecting on the world.

> "Whoever still feels inclined to doubt that the wheel, the photograph or the airplane alter our habits of sensitive perception, can no longer doubt before the electric lighting. In this domain, the medium is the message, and when the light is on, there is a sensory world that disappears when the light is off." (MCLUHAN, 1964, p. 150)

This is the dimension of the sensorium sometimes overlooked in the readings on McLuhan's concept, as well as receiving less emphasis in the readings on Martín-Barbeiro's reflection on communicative ecosystems. The motivation to make more evident the correlation between sensoriality, communication and communicative ecosystems lies, in the first place, in the possibility of strengthening perspectives already existing in Educommunication: as of the symbolic exchanges and qualities of interaction highlighted by Prado Soares (2005); or the qualities of dialogue, interaction, experiences, cultural experiences, interpersonal relationships and modes of expression highlighted by Tavares Jr. (2007); and the dynamics of community constitution, referred to by Consani (2008).

But there is a second motivation: addressing the transformation of sensoriality in the relationship between education, communication and technology has the power to overcome the limitations of a paradigm that even today reduces the power of this relationship, both from a conceptual point of view and from a practical perspective. The Cartesian bias of Western thought has for centuries synthesized people's ways of being and acting as exclusive products of the mind which, by this same bias, would be a specific result of brain activity.

Fortunately, a few decades ago this type of segmentation began to be challenged by new questions of the history of thought and discoveries of Neuroscience. This area of knowledge has been modifying notions that seemed crystallized about human cognition and today no longer works with the idea that human thought is an exclusive product of the brain. But, rather, an unfolding of the integration between different systems, layers and functions of the body, which together dialogue with internal and external stimuli, producing cognition. One of the most emblematic authors, Antonio Damasio, explains:

> "(i) The human brain and the rest of the body constitute an inseparable organism, integrated by means of regulatory biochemical and neural circuits (including endocrine, immune and autonomic neural components); (2) The organism interacts with the environment as a whole;

> the interaction is neither of the body alone nor of the brain alone; (3) The physiological operations we call the mind are derived from the structural and functional whole and not from the brain alone; Mental phenomena can be fully understood only in the context of an organism interacting in an environment. The fact that the environment is, in part, a product of the organism's own activity, only underscores the complexity of the interactions we have to take into account." (DAMASIO, 1994, p. 16-17)

Damasio's finding points not only to the complete integration between the brain and the "rest" of the body, in the context of cognition, but also stresses the continuous dialogue between body and environment for the constitution of the mind.

This perspective, which has become fundamental in the field of Neuroscience, is also present in recent reflections in the field of Human Sciences. This is what elucidates Ferreira (2013) when identifying the emergence of an "animist paradigm" in contemporary thought, which brings together a set of sociological approaches that give life (anima) to the flesh, previously summarized to the epistemological condition of discourse, material or ideal.

> "The concepts of "lived body" and "incarnation" explored in this paradigm bring to the center of the sociological discussion the assumption of indivisibility between the subject and his flesh, overcoming dualities and dualisms rooted in the history of thinking about the body." (FERREIRA, 2013 p. 521)

These recent contributions from Neuroscience and Human Sciences bring interesting developments to the understanding of communicative ecosystems. The first and most immediate of these is that the transformation of the sensorium, pointed out by Martín-Barbeiro, implies a transformation in the body. It is the integrated body, in dialogue with digital technologies and the entire social context that surrounds them, that comes into contact, interprets, feels, understands, reflects, reacts, expresses and resignifies the being and being of each subject in this new context, thus revealing a new sensorium.

This same perspective of the sensorium, rescued from Walter Benjamin by Martin-Barbeiro, in McLuhan is the basis for recognizing also a transformation of sociability that comes imbricated with the change of sensoriality. Di Felice refers to McLuhan to clarify the relationship between changing sensoriality and changing sociability: "His starting point lies in the realization that the introduction of a new medium into a culture changes the 'sensory balance' and, consequently, the forms and practices of interactions." (DI FELICE, 2009, p. 161)

For Di Felice, a distinctive feature of the sensorialities and sociabilities that emerge in the age of networked digital technologies is the constitution of a new way of inhabiting the world, of reticular and transorganic character, which he calls atopic inhabitation:

> "The result of the emergence of this new interactive and unlimited social is the construction of a sociability and a post-territorial habitation. In addition to architecture and geography, atopic inhabiting is no longer linked to topographic coordinates or to a genius locus, but to information flows and to a resident spatiality, neither external nor internal, an inhabiting

> neither sedentary nor nomadic that through wireless technology and mobile computing, makes the body the support of information, agglomerating the "biomass" with the "infomass" in a fluid interrelationship." (DI FELICE, 2009, p. 226)

This new way of inhabiting, characterized by the reticular perspective of technology, the environment, being and relationships in society, is rooted in the changes in sensoriality linked to the digital. Hence the pertinence in including the body in the notion of communicative ecosystems: one does not exist apart from the other. In this regard, it is worth recalling here a reflection carried out in a previous study:

> (...) Even what seems like a strictly organic relationship, will inevitably be appropriated by the transorganic dimension of the body, since an experience of connection with nature, moonlight, climate change, biodiversity, ecosystem services, geographies will eventually be digitized, stored in our virtual memory, shared on the network, accessed and commented on in our technological extensions.
>
> We have seen, therefore, that the sensory and perceptual changes associated with atopic inhabitation stimulate a recognition of the reticular in the world—a new perception of the connections of things and of natural and anthropogenic processes and their unfolding. At the same time, they stimulate the recognition of the reticular and fractal condition of the body itself and of making its potentialities, its perceptive, sensitive, kinetic, psycho and biophysical capacity one with the inhabiting of the world." (BARRETTO, 2013, p.66-67)

In this sense, the perspective of atopic inhabitation modifies not only our understandings about the human, but about the environment and technology itself, as Di Felice postulates:

> "The impossibility of perfect distinction of the limits that separate our bodies from the world and from those other entrepôtos between the technical instruments and our perception, induces, in our days, the need to rethink the meanings and forms of communicative relations with the environment, from the technologies used to communicate with it. The very concept of media, analyzed in this perspective, can be thought, in the path of the studies proposed by D. De Kerckhove [2009], as a psychotechnology, that is, as a technology of intelligence, which interprets and organizes information in symbiosis with our mental structure (...)" (DI FELICE, 2009, p. 63-64)

We have a double invitation there. On the one hand, there is no way to think about body and environment without also thinking about technology. On the other hand, understanding the possibilities of using technologies, media production, transforming subjects from interactions with digital devices and also the relations between Communication and Education means an invitation to recognize and explore how the body is implicated and affects all these elements.

The background to this reading is that of the perspective of complexity, as formulated by Morin:

> "What is complexity? At first glance, complexity is a fabric (complexus: what is woven together) of associated inseparable heterogeneous constituents: it presents the paradox of the one and the multiple. By looking more closely, complexity is effectively the fabric of events, actions, interactions, feedbacks, determinations, chances, that constitute our phenomenal world. This is how complexity presents itself with the unsettling lines of entanglement, inextricable, disorder, ambiguity, uncertainty (...)" (MORIN, 1994, p. 32)

The perspective of complexity also allows us to identify that there is no linear or cause-and-effect relationship in the emergence of an intimate connection between technology and sensoriality, since both elements feed each other. It is the type of dynamic that Morin (1994) calls recursion. This means that, at the same time that new technologies influence the way of perceiving and acting in the world, providing a networked perspective on different facts, these technologies themselves are also the result of a networked perspective already latent in human thought. Thus, one phenomenon feeds the other, without being able to define exactly who generated whom.

It is inevitable that this dynamic is also observed in the relationship with the body, revealing precisely the idea of change of the sensorium alluded to by Martín-Barbeiro (2000). In other words, the transformations of sensitive perception nourish and are nourished by the dynamics of digital reticular technologies; and instigate and are instigated by a new sociability, traversed by the connective flows between human beings, nature and technology.

This reticular perspective, which is often expressed in actions and thoughts in contemporary society, will reveal itself in situations as diverse as the systemic approach of Neuroscience on cognition and the body; the understanding of society and the environment as integrated and interdependent systems; the new ways of following the politics of a country, through digital media and networked activism; the disputes in electronic games with teams formed by people in different physical parts of the globe; the manipulations of public opinion through fake news that are spread by the said-me-said in the messaging applications etc.

These, among many other possible examples, could be the agenda of reflection and practice in the educative approaches, in the production of communicational content, in the realization of classes and educational debates.

But the specific focus here is to recognize the assimilation that the networks that shape communicative ecosystems also include the body in its systemic totality. Thus, what new paths and perspectives in Educommunication emerge from the body as a universe of the sensorium in the digital age?

A first relevant development is that, by adding the body among the elements that make up the communicative ecosystems, we propose an expansion of the sense of Communication that permeates this concept. We would have, in this way, something closer to the definition of Muniz Sodré, of the science of the common, "in which communication is configured as a regulatory form, essential to the cohesive bond with the socius or coexistence." (SODRÉ, 2014, p.232) This involves different types of forms of dialogue and flows oriented to the construction of the common, including those that cross the present body and the virtual states of human presence in the contemporary.

Another development is that Educommunication now has before its spheres of knowledge and practice the challenge of including the living body, not only as an object and subject of discourses, but as an experiential dimension and the complexity of the human, as Selgas helps to reflect:

> "... To emphasize the 'incarnate' character of our identity and our experience, and to focus attention on the constitution of social agents, leads us to see the two natures that inhabit our body: it is flesh and blood, but also a social entity; it is the first symbol of the self, but also of the community; it is something that we have and something that we are, that has us; it is individual and unique, but it is also common to all mankind; it is both object and subject." (SELGAS, 1994, p. 45)

The body is not, therefore, only the one that operates media; which expresses conceptions of culture, social patterns, forms of control and market dynamics; or who just thinks, speaks, and moves. The body continues to perceive the world, acting and interacting through emotions, feelings, instincts, impulses, desires, movement, sensorialities and all the singularities that are proper to this living system in constant internal and external dialogue.

And what powers can be unlocked in the subject by stimulating the entire body universe in the educative doing, without subjugating it to the role of vehicle for a thinking brain?

This is a question that demands answers forged in practice. Neuroscience and the Human Sciences already inform us that the human is more potent when the integrated and connective body universe is no longer neglected as a producer of experience and knowledge.

But some clues can be captured from another area that hybridizes with that of Education and that proposes to feed the body awareness and the psychomotor powers of the body in its multiple layers to generate transformations in perception, in the production of knowledge, in the ways of being and being of the subject.

These are somatic education approaches, which are practices that develop proprioception, the ability to recognize the subtle internal structures and dynamics of the body, and the ability of the human being to build movement and interact with space and others beyond the psychomotor patterns inherited and taught.

> "When I wake up, when I sensitize a given joint, I acquire another point of balance in my body, and this ends up acting on everything else, including things that apparently have nothing to do with muscles and joints, such as intellectual activity." (VIANNA, 2005:99)

In this simple and specific example, Klauss Vianna, developer of a unique and Brazilian method of somatic education, indicates the power that the stimulated body in all its systemic dimension can bring to the production of knowledge and self-knowledge. But perception at the collective level is also within the reach of these transformations, as another master of somatic education explains to us:

> "The modification of the imaginary must occur in the form of a collective experience, in a relationship of exchange with the group, in a classroom, for example. The student develops by

> observing the other, witnessing the action of the colleague. Through stimuli brought by the teacher and the companions, the exchanges begin to occur, triggering a network of mutual beneficial influences. The imagination, materialized in different modes of expression, is no longer content with the TV show devoid of ideas, with the poorly elaborated text, with the easy music." (BERTAZZO, 2004, p. 31)

These references propose a change of mental model in educational activities, by refuting the separation between body and mind proper to the Cartesian paradigm, as has also occurred in the Human Sciences:

> "Body and mind, body and thought, body and image constitute obstacles to the narratives of science. By prioritizing social relations as an analytical focus, the so-called humanities forget that senses, feelings, body images integrate and delimit the world of life. Credited to the Cartesian paradigm, this duality prevents a hominescence – a differential of hominization – from being put into practice in the present day." (CARVALHO, 2008, p. 27)

The ways in which this type of unlocking by the body can be transposed to the field of Educommunication are many: specific body practices to stimulate the integrated perspective of individual and collective thought; development of activities that enhance the construction of knowledge and communicative skills from the stimulation of sensoriality and body skills; realization of projects that instigate the expressive side of the body in consonance with the media production in educommunication; construction of collective knowledge and debates from previous stages of sensitization of body awareness and movement construction; experiential dive into the networked dynamics of the body to elucidate the reticular condition of the digital age and the systemic environment; among many other possibilities.

No matter the form, what is proposed here is that the field of Educommunication – which historically emerged between gaps and resistances and which has already opened up to the field of the arts, for example – has ahead another possibility of expansion of study and practice, from the assimilation of the living body as part of the communicative ecosystems that structure its focus of action. To appropriate this possibility is to advance beyond the Cartesian paradigm of segmentation between body and mind and, mainly, to deepen the sense of transformation of the subject that is the defining of reflection and practices in Educommunication.

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