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Unveiling Radical Mediation: Navigating Body- Mind, Affect, and Technology in Media Literacy

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I. Introduction

Combating misinformation, fake news and, hate speech have become a main challenges for media literacy studies today. The proliferation of fake news and disinformation campaigns has prompted the emergence of new terms – news literacy; news appreciation; news media literacies (Fleming, 2014) – and new theoretical-methodological approaches to media literacy to investigate how people deal with news from different media (Murrock et al., 2018; Sangalang et al., 2019; Walter and Murphy, 2018; Moravec, Minas and Dennis, 2018).

Moravec, Minas, and Denis (2018), for example, conducted an experiment collecting behavioral and EEG data from 83 social media users to understand whether they could detect fake news on social media. They found that confirmation bias prevails and that most users cannot distinguish true from false information. The findings showed that users have more significant cognitive activity when news aligns with their political opinions. They also demonstrated that users are more likely to believe news that converges with their beliefs. The findings by Moravec, Minas, and Dennis show that people "stop thinking" about topics that go against their pre-established beliefs, as stated below:

> First and foremost, future research needs to understand how we can overcome confirmation bias in the use of social media. Our results show that once users recognize that a headline challenges their a priori beliefs, they stop thinking about it. In other words, confirmation bias is so strong in social media use that users simply stop thinking about information they don't like. In the era of fake news and intentional disinformation campaigns, people may be more reluctant than ever to challenge their closely held beliefs when presented with new information that may or may not be true. Yet, in a democratic society, we need to base our discussions and decisions on facts, not on what we want to be true. Unfortunately, social media users are often in a hedonistic mindset (Johnson and Kaye 2015), and individuals in a hedonistic mindset may be less likely to consider information critically than those in a utilitarian mindset, as their consumption is tied to what they desire reality to be (2018, p. 20).

The prevalence of confirmation bias in the phenomenon of misinformation and fake news in social media directly affronts efforts in the field of media literacy. People seek information that confirms their beliefs and reject divergent information and content, thus producing a stagnation in the possibility of critical reflection and qualified debate of ideas. This refusal of a reflective and critical discussion on the content conveyed by social media is intensified by the modus operandi of the algorithm that feeds back the contents that reinforce similar opinions, making it difficult to dialogue between different ideas and thoughts. Ultimately, as Moravec, Minas, and Dennis (2018) and Fleming (2014) argue, confirmation bias threatens democracies, the plurality of speeches, and diversity of opinions, favoring hate speech, fear, and intolerance.

As the spread of fake news and disinformation content grows, so does research looking for strategies to counteract misinformation, such as Murrock et al., 2018; Walter and Murphy, 2018; Sangalang et al., 2019. The point to which we intend to draw attention in these Media Education studies is that, although they demonstrate that there is the primacy of affect/emotion and confirmation bias in people's interpretation and engagement with the news in their daily lives, they promote actions of combat misinformation without engaging in a broader and more up-to-date discussion of affect/emotion concepts and how they affect media interactions.

The studies build their strategies to combat disinformation based on rhetoric, storytelling, and media planning (analysis of message characteristics and

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information design; narrative structures, knowledge about media companies; knowledge of the target audience, and others). Thus, proposals on combatting this type of discourse and which media education strategies to adopt do not include the affective and material factors that condition media consumption. In doing so, they ignore recent research findings that discuss how affective intensities modulate individuals and collectivities in interactions with contemporary media systems (Massumi, 1995; Ahmed, 2004; Clough, 2010; Grusin, 2010; 2015). Brian Massumi, Sarah Ahmed, e Richard Grusin are some of the authors who have published theoretical and experimental research arguing about how sensory and affective factors affect, in a non-symbolic way, engagement with the media, that is, how non-conscious factors interfere in the media consumption process.

Researchers of the autonomy of affect (Massumi, 1995) and the media (Grusin, 2010) explain how modulations of affective intensities occur in links with the media. Grusin draws on Daniel Stern' (1998) studies on affective attunement to show that our interactivity with the media produces a type of intensification or reduplication of affective interpersonal relationships that he called distributed mediation (2010) and, later, radical mediation (2015). Brian Massumi draws on experimental research in neurosciences to demonstrate that affects not only DO NOT converge with the production of meanings (sociolinguistic and intersubjective field) but are opposed to it. We learn from these authors that theories that give primacy to content factors, sociolinguistic approaches, and sociocultural representations are NOT sufficient to explain the processes of learning, communicating, and socializing. This statement is game-changing because, in the social and human sciences, due to the strong tradition of privileging more qualitative, symbolic, and subjective approaches and methods, there is a resistance to adhering to studies that explain how non-conscious factors affect our decision-making processes and conscious states. This paper aims to fill this gap in the collaborate with studies on media literacy, bringing to the debate how bodies and affects act in the interaction with the media, thus highlighting how non-conscious aspects affect consciousness. The proposal is not to disregard the importance of conscious thinking and critical reflection. It is about refining the debate by highlighting vital factors that have been ignored when we prioritize interpretation, symbolism, and representation.

The research question that will guide the present text is how radical mediation and affect theory can help us understand non-conscious interactions between people and media, opening up new research possibilities for media literacy studies.

The text is organized into two sections. The first presents the main concepts and authors of a new approach to affects and emotions: the affective turn. Theorists of the affective turn counter-argue the socio-constructivist approaches (which explain the formation of opinions and construction of meaning only from the discourse, the symbolic, and the sociolinguistic) and bring to light how bodily, material, and affective factors act in the conscience. In this section, we will also discuss how the theorists of the affective turn are aligned with the current precepts of the discussion about the embodied mind, which demonstrate that the body/mind acts in constant tune with the material and social environment, through the flows and exchanged intensities, including affects and other non-conscious factors. This discussion allows for new formulations involving modulations between body-mind and media technology. For this reason, in the second section of this text, we will approach how technological devices, including social media, permeate the exchanges between body-mind, media, and environment. Thus, the media system can intensify the proliferation of affects and moods between humans and non-humans, producing what Grusin calls distributed mediation (2010) or radical mediation (2015), that is, the production of dynamic assemblages and heterogeneous, composed of various technical, social, aesthetic, economic and political elements that merge and regroup in changing, but relatively stable formations, distributed throughout society.

II. The Affective Turn: Tuning in with Body-Mind, Affects and Environment

Studies on affect and emotion have a long tradition in the humanities. Over the centuries, they were treated by philosophical approaches, with Aristotle, Baruch Spinoza, Gilles Deleuze, and Félix Guattari being some of their greatest exponents. Recently, cognitive psychology and neurosciences have developed experimental research, launching new perspectives for these studies. Today, even researchers in the social sciences and humanities rely on empirical research findings to address these issues. Since at least the 1990s, neuroscientists such as António Damásio (1994; 2004) and Joseph Ledoux (1996) have defended the inseparability between cognition and affect and/or emotion, emphasizing the importance and precedence of affect and/or emotion concerning aspects of conscious thought.

In the early and mid-1990s, a new approach to affects and emotions – the affective turn – gained expression in critical theory and cultural criticism studies. Theorists of the affective turn counter-argue socio-constructivist assumptions (which privilege structures of meaning, discourse, and sociolinguistic factors), and emphasize the importance of the materiality of the body and the world in the cognitive

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processes. In opposition to socio-constructivism, according to Patricia T. Clough (2010, p. 207):

> The turn to affect points, instead to [socio-constructivism] a dynamism immanent to bodily matter and matter generally – matter's capacity for self-organization in being informational – which, I want to argue, may be the most provocative and enduring contribution of the affective turn.

The originality of the contribution of some thinkers of the affective turn, such as Brian Massumi, Sarah Ahmed, Eve Sedgewick, and Patricia Clough, was to be inspired by the conceptions of body, virtual, and affect present in the philosophical works of Henri Bergson, Deleuze & Guattari and Spinoza and, to integrate them with the concepts of self-organization of the matter present in the researches of experimental science of Ilya Prigogine and Isabelle Stengers (1997), in the ideas of enaction of Francisco Varela (1990) and the works of psychic, biological and collective individuation of Gilbert Simondon (1958). This theoretical-methodological approach gave concreteness to the discussion about the interactions between body, matter, and thought, understanding them as concrete, situated, and coupled to the surrounding environment. In other words: by relying on complexity theory, the precepts of embodied cognition, and the principles of individuation/ontogenesis, thinkers of the affective turn brought the philosophical discussion about the actual/virtual to the concrete. They allow thinking about the virtual-actual relationship in the concrete, in the field of self-organization of matter; enable us to understand that bodily matter (and matter in general) encompasses the environment and is self-organizing, that is, it can alter its own structure. In this way, the affective turn combines the philosophical discussion of the virtual with the sociotechnical discussion of interactions between humans and non-humans, allowing a new formulation of body-mind affectations with media-technology.

If one wants to understand how the affective turn became possible, it is necessary to understand the changes in conceptions about what is a body and what is a mind that occurred in recent decades.

Patricia Clough (2010, p. 206) explains that the affective turn, as well as post-structuralism and deconstruction, points to the discontinuity of the subject with himself, to a discontinuity of the subject's conscious experience with the non-intentionality of emotion and affect. The difference from previous approaches (such as post-structuralism and deconstruction) is that the affective turn proposed a substantive change in that it brings the bodily matter back to debates in critical theory and cultural criticism. This process of bringing bodily matter back will allow us to understand how organic factors and affective intensities interfere with conscious processes, favoring the formation of moods that, in turn, will produce the propitious terrain for fake news and misinformation. This return to the bodily matter was inspired by the scientific advances that have taken place since the mid-twentieth century.

In 1950, Norbert Wiener, the father of cybernetics, published *The Human Use Of Human Being* (*Cibernética e Sociedade,* 1954), a work in which he made an innovative appropriation of William Shannon's concept of information. François Jacob sums up Wiener's ideas this way:

> In an organized system, living or not, the exchanges, not only of matter and energy but of information, unite the elements. (...) any interaction between the members of an organization can then be considered a communication problem. (...) Any organized system, a society, an organism, or a machine, can be analyzed by referring to two concepts: the message and the feedback regulation. (1983, p. 255).

What was innovative in Wiener's thinking is that, by treating the concept of information as an entity for the organization of systems, living or not, the father of cybernetics climbed an essential step to think about the continuity between life and inert matter and between body and mind, inspiring other sciences.

In *The Logic of Life* (*A lógica da vida*, 1983), François Jacob explains that biology was inspired by the cybernetic concept of information to advance studies on the interpretation of chromosomes, thus revealing how information is processed at the molecular level. At that time, biology divorced itself from the idea of vital energy shared by all living beings and it began to explain the living being as a system that processes and exchanges information with its environment. According to François Jacob, since then, biology postulates that organs, cells, and molecules exchange messages through biochemical interactions, creating a communication network.

François Jacob explains that today the organization of living systems obeys a series of physical and biological principles: natural selection, minimum energy, self-regulation, and construction in 'levels' by successive integrations. Any living system is the result of a certain balance between the elements of an organization that is ordered based on the idea of architecture in levels. Components at a lower level interact and integrate with each other while integrating at a higher level. Instead of being an inexplicable product of "vital energy", life emerges from the association of inorganic elements that undergo a series of enzymatic reactions, transforming into specific molecules. Several stages of successive interactions follow until the constitution of a living being. The variety of the living world, the extraordinary diversity of forms, structures, and properties observed at the macroscopic level are created from the combination of a few molecular species, that is, in extreme simplicity at the microscopic level (Jacob, 1998, p. 112-113).

By discovering how information is processed at the molecular level, biology eliminated the possibility of vitalism. Today, there is no other explanation in biology

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for the phenomena of life other than physical-chemical reactions. By using concepts from cybernetics, molecular biology helped build the theoretical and practical foundations of a non-classical physics, the physics of complex systems. For complex systems, life is understood as a self-organized system whose complexity emerges from the interaction between the simple elements of matter, which, under conditions of dynamic equilibrium, generate properties that are irreducible to the simple parts of matter *(Prigogine and Stengers, 1997; Oliveira, 2003)*.

As Patricia Clough (2010, p. 207-208) ponders, the concept of body is always a historical construction that arises from the organization of material, political and economic forces, from scientific and technological discourses and innovations, and reconfigure our subjectivities, bodies, work, and reproduction. Thus, the rearticulations in the technical, cultural, aesthetic, political, and economic spheres from the mid-twentieth century to the present day give rise to a new conception of the body: the self-affective or self-organized body, that is, the body inseparable from its medium, capable of self-organization, which is coupled to the environment, exchanges information with the environment and modifies its own structure from the modulation with the environment. (Oliveira, 2003, p. 162; Clough, 2010, p. 208). Patricia Clough calls this new conception of the body the biomediated body. Luiz Alberto Oliveira explains how this biomediated (or self-organized or self-affective) body, which is in a constant exchange of matter, energy, and information, impacts the interaction between individuals and their environment: "The theory of complex systems will therefore invoke not relations between already constituted, finalized individuals – relations defined from the properties of these 'ready' individuals –, rather what can be called *connective potentialities*, the foundation of an immanent capacity to engender structures, to produce forms" (2003, p. 156).

The new concept of the body (and of a living being) also brings matter and thought into contact. The body that processes and exchanges information with the environment also remaps the human cognitive domains, opening new perspectives for mind-body articulations.

Also in the wake of the cybernetic wave, in the period between 1946 and 1953, the Josiah Macy Foundation promoted a series of 10 conferences, bringing together mathematicians, logicians, engineers, physiologists, neurophysiologists, psychologists, anthropologists, economists, and other specialists. The purpose of the conferences: to build a general science of how the mind works (Dupuy, 1996, p. 9). Thus, were born the cognitive sciences: a broad field of knowledge made up of different disciplines, composed of theoretical and experimental approaches, sometimes contradictory to each other. Cognitive sciences call into question important precepts, some millenary, about the nature of the human mind, its way of operating and its relations with the world, and, consequently, the very definition of human.

What we might call a proper cognitive turn would come in the 1970s and 1980s. At that time, researchers in cognitive psychology, evolutionary biology, neurosciences, and artificial intelligence observed that it was relatively easy to simulate on computers tasks that required traditional intelligence (decision-making, logical-mathematical reasoning), but it was extremely complicated to automate activities that humans do without thinking (walking, handling objects and recognizing a person). The long tradition of Western thought leads us to believe that the activities of the higher intellect, in particular those that require logical-mathematical reasoning, are more challenging to carry out than tasks that depend on the body and sensory functions. Studies in cognitive science and evolutionary biology have added new shades to the problem.

These studies claim that the sensorimotor system of humans – responsible for the activities we do automatically, such as breathing, walking, and handling objects – occupies most of their brains and results from two billion years of evolution *(Moravec, 1988)*. Daniel Dennett (1996, p. 13) explains that, while walking over rough terrain, our body performs – organically, non-consciously – various calculations to adjust the length of our stride. Therefore, many tasks that we perform "without thinking" depend on complex calculations that, after two billion years of evolution, have become automatic. Hans Paul Moravec estimates that the process we call "mind" is only possible because it is supported by the oldest and most potent knowledge of sensorimotor mechanisms. Human intelligence is developed on the solid rock that is the sensorimotor system. Therefore, our higher cognitive faculties are sustained in the lower layers: "Organisms that do not have the ability to perceive and explore their environments – such as plants – do not seem to acquire the capacity to develop intelligence", concludes Paul Moravec (1988, p. 16).

Cognitive science demonstrates that our mind is embodied and situated. It relies on non-conscious processes originating from the solid rock that is our sensory-motor apparatus and modulates itself according to the surrounding environment. Thus, the operations we call reason and/or mind encompass conscious and non-conscious factors, and the concept of cognition can be understood in a much broader view than the traditional one. In the words of Lakoff & Johnson:

> In cognitive science, the term cognitive is used for any kind of mental operation or structure. (...) Thus, visual processing falls under the cognitive, as does auditory processing. (...) Memory and attention fall under the cognitive. All aspects of thought and language, conscious or unconscious, are thus

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> *cognitive*. Mental imagery, emotions, and the conception of motor operations have also been studied from such a cognitive perspective.
>
> (...)
>
> Because our conceptual systems and our reason arise from our bodies, we will also use the term cognitive for aspects of our sensorimotor system that contribute to our abilities to conceptualize and reason. (1999, p. 11-12)

Based on the authors of the cognitive sciences (specifically the embodied cognition and enaction approaches), we were able to relate the principles that characterize a cognitive turn in Western thought: 1) the mind is embodied and infolds the environment: it is the product of the complex interaction between brain and body (including intensities, affects and perceptions), added to the attunements with the environment (people and objects); 2) cognition is situated and depends on the context and lived experience; operates from our relationship (with objects and people) and exploration of the world around. In short: the mind involves the environment, and conscious cognitive processes are affected by affective and non-conscious intensities of our body in constant modulation with the environment. (Clark, 2003; Varela, 1990; Varela and Thompson and Rosch, 2001; Oliveira, 2003; Massumi, 1995; Stern, 1998; Grusin, 2010; Lakoff and Johnson, 1999).

The biomediated or self-organized body is the body that, under the theoretical foundation of complex systems, can connect with the environment, exchanging matter, energy, and information, allowing itself to self-affect and change its own structure. It is this capacity for connectivity of the self-organized body that theorists of the affective turn invoke to understand how affect and other non-conscious bodily intensities affect conscious processes. It is important to highlight so we make no mistakes: the flow of information and the potential connections here do not refer to any kind of symbolic, representational, or sociolinguistic field. It is about intensity and flow at non-conscious levels, organic and non-organic intensities, putting life, matter, and thought in contact, that is, body-mind, technology, and world.

Despite the fact that the advances in cognitive sciences and the affective turn already accounted for decades, in studies on media and education, we do not usually give due importance to this cognitive and affective revolution. In a seminal work for the area of Media Literacy, Joan Ferrés and Alejandro Piscitelli make a reflection that seems to go unnoticed: the authors question whether any proposal for debate on media education that does not consider changes in the concepts of mind is insufficient:

> Among educators, there tends to be much more predisposition to incorporate the changes produced by the technological revolution in the teaching-learning processes than to assume the contributions of the neurobiological revolution.
>
> Neuroscience has turned many of the beliefs about the functioning of the mind held for centuries in Western culture upside down. Based on neuroscience, we are urged to change the way we think about ourselves forever. In educational praxis, we seem much more willing to change the way we think about the media than to change our view of ourselves as interlocutors of those media.
>
> The changes that neuroscience refers to have to do especially with the influence that emotional and non-conscious processes have on the conscious mind. In the practice of media literacy, attention is only paid to these processes. Therefore, education for the media is insufficient and focuses exclusively on conscious processes, because today we know that consciousness can only be understood if we study the non-conscious processes that make it possible, in the words of neurobiologist LeDoux (1999, 32). (Ferrés & Piscitelli, 2012, p. 78)

Ferrés and Piscitelli call for discussing emotional and non-conscious processes in the conscious mind. However, despite the great repercussion of the text in more than 20 countries in Portuguese and Spanish, we did not find evidence of such a debate in the areas of Communication and Education.

a) On Affects, Emotions, and Society Moods

The concepts and interrelationships between the terms affect, and emotions have been studied by researchers from different areas, such as philosophy, psychology, and health sciences, who attribute different meanings to them.

We start from the phenomenological philosopher Nathalie Depraz (1999) to differentiate affect and emotion. Depraz (1999) begins from the etymological roots of the Latin word affectio to explain that the words affection, affectation, and affectivity originated from it. Depraz (1999, p. 122) explains that affect is everything that reaches us from the environment in which we are inserted, it is what arrives, what is imposed. Thus, affect is relational, that is, it is shaped in the environment surrounding, in relationships with other people and material objects. Emotion, on the other hand, derives from the word ex-mover, the same origin as moving, putting oneself outside oneself. Emotion is a way of expressing our body. Before we can reflect or even name what we are feeling, we already express ourselves bodily, through emotions. According to Depraz, what affects us produces some kind of movement or emotion, and this emotion is not separated from the affect that created it. Affect is caused by a situation/environment that evokes an emotion.

Aligned with this distinction, says the American researcher Jonathan Flatley: “emotion suggests something that happens inside and tends toward outward expression, affect indicates something relational and transformative. One has emotions; one is affected by people or things.” (Flatley, 2008, p. 12).

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Brian Massumi also differentiates affects from emotions, but Massumi goes further. In his work, *The Autonomy of Affect* (1995), which has already become a classic of the affective turn, Brian Massumi brings together data from experimental research in the neurosciences with the philosophy of the virtual to defend his thesis of the autonomy and precedence of affective intensities over conscious factors.

For the Canadian theorist, affects are characterized as bodily responses, autonomous responses; they are intensities that overflow the conscious states of perception and point to a "visceral perception" prior to conscious perception (Massumi, 1995). But this visceral perception is not to be confused with bodily effects, as explained by Clough:

> But if this reference to autonomic responses seems to make affect the equivalent of the empirical measure of bodily effects, registered in activity such as the dilation of pupils, the constriction of intestinal peristalsis, gland secretion, and galvanic skin responses, Massumi uses such measures for a philosophical escape to think affect in terms of the virtual as the realm of potential, unlivable as tendencies or incipient acts, indeterminant and emergent (Clough, 2010, p. 209).

Patricia Clough explains that, for Massumi, the affective turn is an opportunity for the body to open up to its indetermination, the indetermination of autonomic responses. The author defines affect in terms of its autonomy in relation to conscious perception, language, emotion, and any attempt to capture its meaning symbolically. He proposes that if conscious perception is to be understood as the narration of affect – the case of emotion, for example – there is always, however, an autonomous remainder that will never be conscious, "a virtual remainder," an excess of affect (Massumi *apud Clough*, p. 209). Furthermore, it is this excess from which the narration of emotion is "subtracted", retrospectively smoothing it "to fit conscious requirements of continuity and linear causality" (Massumi *apud Clough*, p. 209). Consciousness is "subtractive" because it reduces complexity. Affect and consciousness participate in a virtual-actual circuit, in which affect is virtual and emergent. Massumi takes up Bergson's pair virtual/actual (1988) to characterize affect as virtual, with the duration of a fraction of a second (precisely because it lasts) that becomes present, updates itself into something new, transforming what is current. Affect thus operates in the ambiguity between virtual/actual (Massumi, 1995, p. 96). Patricia Clough points out that Brian Massumi, and also Francisco Varela, treat this fraction of a second, this ambiguity between virtual/actual, as a phenomenon of self-organization (2010, p. 213). Clough relies on Mark Hansen to explain Massumi's analysis through Varela's neurophenomenological research. For Hansen, Varela's analysis opens "to the microphysical domain in an unprecedented way" (*apud* Clough, 2010, p. 250) and, therefore, it shows the function of affectivity" in the genesis of time-consciousness: "as affectivity" the effort of human beings to maintain their identity with the basic body of (human) life. In short, affectivity comprises motivation of the (human) organism to maintain its autopoiesis over time" (Clough, 2010, p. 213).

Affect is synesthetic and acts beyond the body, encompassing the environment. Emotion, on the other hand, is confined to the body and is likely to be expressed, represented, and/or captured by sociolinguistic configurations. The interest of the affective turn to the fields of communication, education, and media literacy is that, as it is relational, affect carries the potential to produce moods, that is, a kind of affective atmosphere under which intentions are formed, designs drawn, and particular affects can be attached to specific objects. Flatley ponders that "If a person is anxious, for example, things in the world are more likely to seem frightening to him, if he is curious, new objects may seem interesting to him" (Flatley, 2008, p. 19).

To understand the importance of affect to the scenery of the proliferation of fear, hatred, and fake news through social media sites, for example, it is helpful to consider Flatley's reflection that "Mood provides a way to articulate the shaping and structuring effect of historical context on our affective attachments" (Flatley, 2008, p. 19). Thus, retweets and shares on social networks are duplicated and amplify trolls, making them occupy space and become the mood of society.

In the last two decades, cultural, literary, and media theorists have dedicated themselves to studying affect as a component of cognition in interacting with the media. These authors understand the action of affect as "pre-individual bodily forces augmenting or diminishing a body's capacity to act and who critically engage those technologies that are making it possible to grasp and to manipulate the imperceptible dynamism of affect" (Clough, 2010, p. 207). Brian Massumi, to take an example, relies on philosophers (Gilles Deleuze and Félix Guattari, William James, Henri Bergson) and on the neuroscientist Hertha Sturm to elaborate his theory of the autonomy of affect and defend the primacy of affect in the interaction with images of video (Massumi, 1995). Massumi's interest in the research developed by Sturm is to show that not only the body is affected by images, but also that the meaning of a conscious content is affected by bodily and non-conscious states. Both levels, quality of the image (image's content; its intersubjective context; sociolinguistic meaning) and intensity (strength or duration of the image's effect on the body), are immediately embodied. In other words, what the theory of the autonomy of affect teaches us is that the (conscious) interpretation we make of the image does not coincide with the (non-conscious) ways in which the same image affects our body. This ambiguity between conscious interpretation and how a message affects our body (and therefore consciousness) may

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help to explain, for example, opacity and even a lack of rationality and critical reflection in situations of sharing disinformation, speeches of hate, and fake news today.

III. Media and Radical Mediation: Connecting Body, Mind, Affect, and Technology

Seeking to understand the relationships between affect and media in contemporary society, especially after September 11, 2001, media theorist Richard Grusin (2010) used the research of Andy Clark and Daniel Stern to propose his conception of a distributed mediation (in 2015, became radical mediation) from the concepts of distributed mind and distributed affect.

Grusin builds on Andy Clark's ideas in *Natural Born Cyborgs* (2003). In this text, Clark explains that the mind/body, technologies/environment interaction is not a linear division of tasks, but a process of connectivity, made possible by the incredible plasticity of our brain/body that is modulated in contact with technology and the environment (self-organization). Based on experimental research in the field of cognitive psychology and neuroscience, Clark (2003) explains that the thumbs of young people under 25 years of age are more muscular and dexterous than other fingers, simply as a result of the extensive use of electronic controllers of portable games and cell phones. Clark argues that from these thumb adaptations, new generations of phones will be designed around this greater agility, leading to more changes in manual dexterity.

Clark establishes this integration between mind/body and the sociotechnical environment with the concept of feedback loops:

> In all the cases we have examined, what matters are the complex feedback loops that connect action-commands, bodily motions, environmental effects, and multisensory perceptual inputs. It is the two-way flow of influence between brain, body, and world that matters, and on the basis of which we construct (and constantly re-reconstruct) our sense of self, potential, and presence (Clark, 2003, p. 114).

According to Clark, it is through influence flows (action commands, body movements, multisensory perceptual data) between the brain, body, and world that the mind/body tunes/modulates with the environment (material and social environment).

Grusin starts from studies on feedback loops developed by Clark to work on his concept of distributed mediation. The American theorist observes that the feedback loops described by Clark (2003) operate in the same way as what the neuropsychologist Daniel Stern (1998) called affective attunement. According to Grusin, from his groundbreaking research on child psychology in the 1980s, Stern demonstrated that in the child's interpersonal world, the sense of self arises through cross-modal affective sensations or experiences, both with other people and with other things. Stern holds that the child's sense of distinction between self and other, as well as the unity of perception and the connection between perceptions and a world of people and things, is created and grounded at a very early level of psychological development and affective experience of the baby (Stern *apud* Grusin, 2010, p. 95).

Grusin relies on this description of affective attunement studied by Stern to assess the impact that this mode of operation of affects can have on media environments. The media theorist ponders that what is particularly intriguing in Stern's account is that he considers "that the pattern or cross-modal affective mapping is basic to our interactions with the world since childhood" (Grusin, 2010, p. 95). He explains it like this:

> From the perspective of affective attunement, sound film or TV become crucial forms of affect modulation because of the way in which they couple visual and auditory patterns or sensations, as well as the way in which they present audiovisual images of the affective states of other people. Even more complexly in some sense, video games (and interactive media generally) would seem to work as modes of trans-modal or cross-modal affective and cognitive modulation by adding touch to sight and sound, so when you move your avatar in a game, for example, or use your mouse to move the cursor on the screen of your PC, or manipulate the touch screen on your iPhone, you are adding cross-modal patterns of touch to the coupling of sight and sound. That is, the haptic movement of hand on controller, along with other bodily/muscular movements involved, produces a change in the medial other, in both the user's avatar or cursor and the other human and nonhuman actors on screen. In this way our media interactivity provides a kind of intensification or reduplication of affective interpersonal relations". (Grusin, 2010, p. 95-96).

Research on the embodied mind and the affective turn demonstrate that the body/mind acts in constant attunement/modeling with the material and social environment, through exchanged intensities and informational flows. Once the media permeates these exchanges, the media system can intensify the proliferation of affects and moods.

Grusin considers that contemporary media operates in a distributed mediation logic, that is, it produces dynamic and heterogeneous assemblages composed of various technical, social, aesthetic, economic, and political elements that merge and regroup in mutable formations but relatively stable, distributed throughout society. With the concept of distributed mediation, Grusin draws attention to a distribution of affect between human and non-human actors: "(...) I will address the affective feedback loops that structure our 'media in everyday life,' the ways in which we interact with multiple media in almost every aspect of our everyday lives" (Grusin, 2010, p. 90). For Grusin, thinking of mediation in terms of affect:

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> (...) is to think of our media practices not only in terms of their structures of signification or symbolic representation but more crucially in terms of the ways in which media function on the one hand to discipline, control, contain, manage, or govern human affectivity and its affiliated things "from above," at the same time that they work to enable particular forms of human action, particular collective expressions or formations of human affect 'from below' (Grusin, 2010, p. 79).

These "particular collective expressions or formations of human affectation 'from below'" refer to the bottom-up interactions of complex systems.

Grusin builds the idea of distributed mediation from the notion that the mind and affect distributed across the network of media systems intensify collective habits and behavior. For the author, "our interactivity with the media provides a type of intensification or reduplication of affective interpersonal relationships" (2010, p. 96). This idea converges with Sara Ahmed's study on the economy of affects. Ahmed argues that emotions/affects are not psychological dispositions, nor do they reside in a subject or object. They circulate between subjects and objects, mediating relationships between the psychic and the social, the individual and the collective, expanding the intensities of these affects in sociocultural contexts (2004, p. 119).

This conception of mediation leads us to rethink the concept of medium. Medium and mediation are recurrent topics in Communication Theory studies. Most theories start from the premise that there are physical supports (paper, film, DVDs) that operate as vehicles for the contents (ideas, contents, and representations) be conveyed. The representational approach supports "the belief in the ontological distinction between representations and that which they purport to represent." (Barad *apud* Grusin, 2015, p. 128). The representationalist approach is binary, it separates humans and non-humans, Grusin explains that:

> In these traditional representationalist accounts, mediation is understood to come between, or in the middle of, already preformed, preexistent subjects or objects, actants or entities. The role of mediation in such accounts is precisely to connect, or negotiate between, actants, categories, and events (or subjects and objects), which would otherwise have no way of understanding or interacting with one another. Especially in post-Hegelian, Marxian thought, mediation has been opposed to immediacy, functioning as what might be called an agent of correlation, which filters, limits, constrains, or distorts an immediate perception or knowledge of the world or the real. Mediation has in these accounts been understood both as enabling our knowledge of reality and as preventing or making impossible the direct and immediate relation with the world that Brian Massumi (and others) insist upon as a fundamental component of human and nonhuman experience. In many traditional philosophical accounts we cannot experience the world directly or immediately because we cannot know the world without some form of mediation (2015, p. 128).

We saw above how complex systems theory blurs the boundaries between life, matter, and thought. Through the flows and potential connectivity of information, the action of technology echoes and encompasses the human. Oliveira considers that "the supposed clear separation between the internal and the external, between subject and object and between entity and artifact remains abolished" (2003, p. 167). We can no longer think of technology separately from our own experience.

Media theorist Richard Grusin proposes the concept of a radical mediation. Inspired by William James' idea of radical empiricism and Brian Massumi's proposal, Grusin proposes that mediation begins in the middle.

> Mediation should be understood not as standing between preformed subjects, objects, actants, or entities but as the process, action, or event that generates or provides the conditions for the emergence of subjects and objects, for the individuation of entities within the world. Mediation is not opposed to immediacy but rather is itself immediate (Grusin, 2015, p. 129).

Grusin's proposal resonates with Gilbert Simondon's thought in his theory of the individuation process. In *Du mode d'existence des objets techniques* (*On the Mode of Existence of Technical Objects*, 1980), Gilbert Simondon discusses the genesis of technical objects and their role in the formation of culture. In opposition to the substantialist approach, Simondon proposes that individuals, whether natural or technical, never present themselves in a definitive configuration. They are always in process. And this characteristic is due to the constituent role of the environment in the formation of the individual. Simondon argues that there is a pre-individual stage, prior to individuation itself, which remains as a plethora of virtuals susceptible to actualization. Even after individualization, this virtual repertoire is not exhausted, because individuation makes not only the individual appear, but the individual-environment pair. Thus, the environment is never just a neutral vehicle, it is an associated milieu that constitutes and is constituted by the individual.

> The associated milieu is the mediator of the relationship between manufactured technical elements and natural elements within which the technical being functions. (Simondon, 1980, p. 49-50).

The associated milieu is an ambience; it is a condition for connectivity, exchange, and flow of information It is a space for communication and sociability; it is a space inseparable from reality. Also, through the theory of complex systems, we can reach the same conclusion since, through connectivity, the information allows a new relationship between the whole and its parts, insofar as the whole (an organism, for example), through signals, guides its elementary components (cells, molecules) in choosing how to connect/associate.

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We consolidate below what we have learned from the cognitive and affective turns that are of interest to communication, education, and media literacy studies.

From studies of embodied cognition and enaction, we have learned that the mind is embodied and coupled to the environment. It encompasses the brain, the body (intensities, perceptions, and sensory factors), and the material and social environment (people and objects). The cognitive process is situated and is a continuous process of attunement to the environment. This means that the cognitive process encompasses sensorimotor, non-conscious factors and that, therefore, factors such as message content, and its intersubjective and sociolinguistic context are not enough to explain how we learn, communicate and socialize.

Studies of the affective turn have taught us that affect is corporeal and relational, operating through affective attunements/modulations with the material and social environment. Affect infolds the environment; bodily intensities are coupled to the material and social environment and co-evolve with it (in it). Affect acts in the construction of individual and collective meaning. So, it is not possible to explain everything by language, subjective or intersubjective context, and/or socio-linguistic meaning.

The cognitive and affective turns go a step further. They incorporate the materiality of the body and bury the division between matter and thought once and for all. They deconstruct the idea of the universal human being as a rational, conscious subject who owns his or her free will. These advances abolish the boundaries erected by the moderns between subject and object; nature and culture; reason and affect; body and mind. They demand research methods, knowledge, and subjectivities supported by complex systems and inter and transdisciplinary perspectives.

IV. Final Considerations

We started the paper by presenting recent studies on media literacy that seek strategies to combat fake news and disinformation content. We observed that despite admitting that affective factors and confirmation biases prevail in the way people interact with the media, these studies propose discursive and representational strategies (rhetoric, storytelling, and media planning) as proposals to combat misinformation.

We presented recent advances in the Theory of Affects, which explains the primacy of affects over conscious and critical thoughts in media reception. We also present the concept of radical mediation (Grusin, 2015), which describes how our interactivity with the media provides a type of intensification or reduplication of affective interpersonal relationships, producing moods that circulate and influence people's reactions to facts and opinions.

Thus, we ponder: if the sciences of the mind postulate that reason is affected by affective intensities and non-conscious processes that are impossible to explain by sociolinguistic and/or symbolic factors, would it not be the case for us to start projects to improve our research methods to embrace these changes?

In their research, Moravec, Minas, and Dennis (2018) used methods from human and social sciences and neurological methods as a strategy to obtain more accurate results on the reception of fake news.

Researcher David Beer, when exploring the power of algorithms in society, considers the importance of bringing together efforts from the social and human sciences (which study individual and social behavior) and computer science (which examines the way algorithms operate). Beer suggests researchers submit collaborative work:

> That is to say that there is a sense that we need to understand what algorithms are and what they do in order to fully grasp their influence and consequences. This is where we can hit blockages in our understandings. It is quite hard to be versed in social theory and in the technical minutiae of coding. It is not that this combination is impossible, but it is more likely to require collaborative work than being within the scope of the lone scholar. (2017, p. 5)

Supported by positive results such as the research by Moravec, Minas, and Dennis (2018) and the lucid consideration of David Beer (2017), we propose the question of whether it is not the case that we make inter and transdisciplinary efforts to improve theoretical-methodological approaches in the field of media literacies, communication, and education.

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