




CONCEPTION OF HUMAN CORPOREALITY/ SUBJECTIVITY: CONTRIBUTION OF COMPLEX EPISTEMOLOGY TO THE FIELD OF PHYSICAL EDUCATION

*CONCEPÇÃO DE CORPOREIDADE/SUBJETIVIDADE HUMANA:
CONTRIBUIÇÃO DA EPISTEMOLOGIA COMPLEXA PARA O CAMPO DA
EDUCAÇÃO FÍSICA* 

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CONTRIBUCIÓN DE LA EPISTEMOLOGÍA COMPLEJA AL CAMPO DE LA
EDUCACIÓN FÍSICA* 

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Abstract: This essay aims to advance in the dialogues between complex epistemology and the field of knowledge of Physical Education, from the conception of human corporeality/subjectivity. This is a theoretical study carried out through bibliographic research on the work of Edgar Morin, especially the six volumes of The Method, on which this proposal was based. The scenario of debates on the theme of corporeality in the field of Physical Education was contextualised, in which it is intended to introduce the concept in question. This conception is the result of the theoretical articulation of the concepts of corporeality/subjectivity of the individual and of social subjectivity. With this proposition that assumes the paradigm of self-organised complex systems, it is hoped to establish dialogues with other theoretical perspectives, bridges with other areas of knowledge and to point out ways to think about pedagogical practice in its different areas of professional acting.

Keywords: Human Body. Epistemology. Physical Education.

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1 INTRODUCTION¹

The 1980s are a milestone for the beginning of debates and reflections (MEDINA, 1989; OLIVEIRA, 2006) that warn about the need to think the philosophical foundations of Brazilian Physical Education (PE). More specifically, in the second half of the 1980s, the epistemological debate starts and with it the discussions about the theme of corporeality (SERGIO, 1989; SANTIN, 1987).

As it is known, the 1980s are considered the initial moment of the “identity crisis” of the Brazilian PE, as an area of human knowledge (DAOLIO, 1998; MEDINA, 1989). In this scenario, the theme of corporeality has assumed a place of relevance giving emphasis to a philosophical reflection of the body, in order to problematise the conception of body assumed in the production of knowledge of this area. This problematisation is inseparable from the conception of human being underlying the idea of body, one of the philosophical assumptions to be considered in any theoretical proposal for the PE.

As evidenced by Nóbrega, Mendes and Gleyse (2016), until this historical moment, the predominant notion of body was biologically based and grounded on the body-mind dualism. With the emergence of philosophical reflections related to epistemological issues and anthropological, sociological, historical and psychological aspects of the notion of body, the theme of corporeality emerges bringing a new perspective to think the PE, Sports and Leisure in Brazil. Such perspective, outlined from the theme of corporeality, is based mainly on the ideas of the French philosopher Maurice Merleau-Ponty, having as mediators the Portuguese philosopher Manuel Sérgio (1987, 1989, 1995a) and the Brazilian philosopher Silvino Santin (1987, 1990, 2006).

Bringing contributions to think the PE in the school context, and seeking inspiration in the phenomenology of the same French thinker, Moreira (1995a) and Kunz (2012) developed philosophical reflections on the idea of corporeality. Besides these two authors, others appear in this scenario of PE in the late twentieth century and early twenty-first century, as will be exposed in this essay. The most important thing to be highlighted is that for these different authors the theme of corporeality is thought in the light of the phenomenological tradition coming from Edmund Husserl (1859-1938).

What is interesting is that, although these debates on corporeality tend to a certain hegemony of Merleau-Ponty’s phenomenology (ALMEIDA; BRACHT; GHIDETTI, 2013), at that same time a discussion on the body influenced by the complex epistemology proposed by Edgar Morin is presented to the field of knowledge of PE. Although he has not taken the notion of corporeality as a central aspect in his discussion, but the idea of motricity, João Batista Freire (1991) is the first Brazilian author to present and explore some contributions of this other French thinker to think the body in PE.

¹ This essay is an outcome of the author’s thesis titled **Corporeidade/subjetividade humana e psicoterapia corporal em Biossíntese: articulações entre o pensamento complexo e a psicologia clínica [Human corporeality/subjectivity and body psychotherapy in Biosynthesis: articulations between complex thought and clinical psychology]**. 2020. Available at: <https://repositorio.unb.br/handle/10482/40298>. Accessed on: Jun. 25, 2022.

Before Freire, Manuel Sérgio had already taken contributions from Edgar Morin's ideas to develop the epistemology of a Science of Human Motricity (SHM), without, however, exploring them to think about corporeality. After Freire, other Brazilian authors will emerge (MOREIRA *et al.*, 2006; NÓBREGA; MOREIRA, 1999; NÓBREGA, 2010) who point in the direction of problematising the issue of body and think the theme of corporeality establishing a dialogue with the theory of complexity. There are also other authors (ANJOS, 2010; DACOSTA; DUARTE, 2003; GAYA, 2006, 2008; SÉRGIO, 1987, 1989, 1999; TUBINO, 2002) who sought to develop an epistemological discussion in the field of Physical Education based on Edgar Morin's ideas, with the intention of contributing, mainly, to the challenges of delineating an object of study for this area.

In general, this essay is situated in this scenario of discussions that seek to explore the ideas of Edgar Morin for the field of PE. More specifically, with the intention of facing the ontological and epistemological challenge of proposing for the PE a conception of corporeality based on the ideas of this author and outlined by João and Brito (2004) and João (2018, 2019, 2020), it is elected as the objective of this essay: to advance in dialogues between complex epistemology and the field of knowledge of the PE from the conception of human corporeality/subjectivity.

2 THE THEME OF CORPOREALITY IN BRAZILIAN PHYSICAL EDUCATION

Without intending to present a literature review and without developing a discussion about the ideas on which they are based, it is only intended to indicate and outline the perspectives on which the conceptions of corporeality in Brazilian PE were based.

According to some studies in this field of knowledge (ALMEIDA; BRACHT; GHIDETTI, 2013; NÓBREGA; ANDRIEU, 2018; NÓBREGA; MENDES; GLEYSE, 2016; NÓBREGA; SILVA; LIMA NETO, 2015), although not exclusive, it is the existentialist phenomenological perspective of Maurice Merleau-Ponty that predominantly underlies the discussions about corporeality. As pointed out by these same studies, the precursors of this debate in Brazilian PE are Manuel Sérgio and Silvino Santin.

The Portuguese philosopher explores the ideas of Merleau-Ponty, concerning a conception of corporeality, to base the object of study of the SHM: the motor behaviours (SÉRGIO, 1987, 1989, 1995a, 1999). It is worth clarifying that Manuel Sérgio uses Edgar Morin's ideas to defend the need for the SHM to assume a conception of human being - underlying the notion of motor behaviours -, from the articulation of what is physical, biological and anthroposociological.

Among the Brazilian authors, Santin (1987, 1990, 1994, 2006) is the first to establish a bridge between a Merleau-Pontyan phenomenological view of corporeality and PE, exploring these ideas in a similar and punctual way, as Sérgio did (ALMEIDA; BRACHT; GHIDETTI, 2013). With this view, the author proposes a redefinition of the concept of human being understood in its unity and as immanent intentionality present in movement, gesture and expression, in contrast to the reductionist view propagated by the biologist perspective of the body dominant in Brazilian PE until the 1980s.

Another important Brazilian author to propose a discussion of the philosophical aspects of corporeality for PE is Wagner Wey Moreira (1995a; 1995b; 2019). In his long trajectory still underway to think about corporeality (GONÇALVES-SILVA *et al.*, 2016; MOREIRA; BOTELHO, 2021; MOREIRA; CAMPOS; SIMÕES, 2019; MOREIRA; CHAVES; SIMÕES, 2017; MOREIRA; NOBREGA, 2008; MOREIRA; SCAGLIA; CAMPOS, 2017; SANTOS; REIS; MOREIRA, 2020), this author also draws on Merleau-Ponty's phenomenology. His incursion into these ideas takes place in a similar way to the two authors mentioned above. That is, he explores some key concepts and highlights the notion of corporeality as a theoretical alternative for a conception of human unity. However, it also does not take advantage of the French philosopher's work more deeply and extensively. Still about this author, it is important to explain that his reflections about corporeality touched to some extent the ideas of Edgar Morin, to contextualise the epistemological scenario of his writings, but without exploring them to directly ground this notion (MOREIRA *et al.*, 2006; MOREIRA; BOTELHO, 2021; MOREIRA; CAMPOS; SIMÕES, 2019; MOREIRA; CHAVES; SIMÕES, 2017).

A third Brazilian author who participates in the debate about the idea of corporeality is Elenor Kunz (2000a, 2000b, 2012), although the term is not explored explicitly in the titles of his writings. The most relevant of his contribution is the development of a deeper discussion in the sense of using a wider repertoire of phenomenological concepts from Merleau-Ponty (ARAUJO; DOMINGUES; KUNZ; SURDI, 2010; BETTI; KUNZ; ARAUJO; GOMES-DA-SILVA, 2007; KUNZ; PEREIRA, 2019), as well as Husserl (PEREIRA; SURDI; KUNZ, 2010; SURDI; KUNZ, 2009, 2010), precursor of phenomenology and starting point of the French philosopher's ideas.

Due to the important contributions she has offered to discussions about corporeality in the field of Brazilian PE, the author Terezinha Petrucia da Nóbrega deserves to be highlighted. In all her academic production since her Master's degree in Education, published in 2000 in the book *Corporeality and physical education: from the object body to the subject-body* (NÓBREGA, 2019), through her doctoral thesis titled "For a theory of corporeality: A dialogue with Merleau-Ponty and complex thought" of 1999, and crossing the first two decades of this century (NÓBREGA, 2000, 2005, 2008, 2010, 2014, 2016, 2019; MOREIRA; NÓBREGA, 2008), advocates and establishes a conception of corporeality for the field of PE grounded in the ideas of Merleau-Ponty.

Her work stands out, as analysed by Almeida, Bracht and Ghidetti (2013), for the deeper and broader conceptual treatment of the French philosopher's work, allowing a more rigorous discussion about the idea of corporeality. Moreover, it explores notions that point to the dialogue between Merleau-Ponty and other areas of knowledge such as cognitive sciences and philosophy of mind and also discusses some ambiguities in the work of this philosopher.

Regarding the dialogues with the ideas of Edgar Morin, her doctoral thesis stands out, quoted above, in which she proposes a notion of corporeality as a field of transdisciplinary knowledge, a field understood as that which emerges from the interpretive capacity of the living being from the cellular level to the symbolic and transcendent level (NÓBREGA; MOREIRA, 1999). This perspective is in line with the proposal of a conception of corporeality/subjectivity which will be presented here.

However, in the development of her ideas, the author distances herself from Morin's ideas and dedicates herself to the work of Merleau-Ponty to think about corporeality.

till with regard to the contributions of Merleau-Ponty's phenomenology to PE from the issue of corporeality, we cannot fail to mention the academic production of Iraquitan de Oliveira Caminha (CAMINHA, 2012; 2015a; 2019; CAMINHA; MACEDO, 2015; CAMINHA; SOUTO, 2018; GOMES-DA-SILVA; CAMINHA, 2017). This author also presents other contributions to the debate about corporeality in PE, from other references that enrich the discussions (DECUSSATTI; CAMINHA, 2018, 2019, 2020; DECUSSATTI; TEIXEIRA; CAMINHA, 2016; SILVA; CAMINHA; GOMES, 2013). Moreover, he acts as a researcher in other areas of knowledge, such as philosophy, psychoanalysis, psychology and pedagogy/education.

After the indication of the main authors who gravitate around Merleau-Ponty's phenomenology to address and ground the discussions on the theme of corporeality in the field of Brazilian PE, we can now walk towards the exploratory, but significant and differentiated reflections of João Batista Freire (1991) on this same subject. Despite not having dedicated himself to the conceptual elaboration of this issue, the importance of his reflections lies in the originality of the search to approach the complex epistemology of Edgar Morin to the debate on the idea of corporeality.

In his book *De corpo e alma: o discurso da motricidade* [Of body and soul: the speech of motricity], the author proposes a view on the relationship between the sensitive and the intelligible that is based on the perspective of complex thinking to explore the ideas of motricity and corporeality. The attempt to assign a systemic view to the idea of corporeality stands out, considering the sensitive and the intelligible as parts of a whole, the body or the corporeality, and the latter as an organised body system.

Not by chance, João (2003) exposes these reflections by Freire (1991) as introductory to his first outline of a conception of corporeality based on Edgar Morin's *The Method*. He also states that these first reflections presented by Freire, bringing the idea of corporeality closer to a complex systemic perspective, indicate a very fruitful path of theoretical-conceptual construction for the debate about corporeality, both in education and in Physical Education. This path started in the early years of the XXI century and reached a first more rigorous and consistent definition after two decades of maturation, with the completion of the doctoral thesis (JOÃO, 2020) presented to the field of clinical psychology and now to the field of PE.

3 THE PATH TO ANOTHER CONCEPTION OF CORPOREALITY

The path undertaken to reach another conception of corporeality could not have another starting point but the same one: Merleau-Ponty's ideas. As explained in his master's dissertation JOÃO (2003), the approach to the theme of corporeality was made through the interpretation of Santin (1987) and Gonçalves (1994) of the French philosopher's text.

However, having practically lived, simultaneously, the contact with the theme of corporeality in the field of PE and Education and the incursion in the work of Edgar

Morin, João (2003) proposes to follow this work with the purpose and challenge of thinking and elaborating a concept of corporeality. Having reached the first draft of this concept, this is directed to ground an experiential educational practice (JOÃO, 2003, 2019) and also the pedagogical practice in PE (JOÃO; BRITO, 2004). And with the intention of exposing the development of this same concept and indicating its contribution to Manuel Sérgio's SHM, João (2018) presents its theoretical foundation throughout the work *The Method*, by Edgar Morin (1992, 1996c, 1997, 1999), limited in its first four volumes.

It is essential to clarify that, along this path, the author in question was able to understand the broader contexts in which the work of Edgar Morin is situated, namely, the epistemology of science and the philosophers who are precursors of a complex thinking. It is worth mentioning that Morin (1992, 1996c, 1997, 1999, 2003, 2005) builds his ideas from key theories that marked the 20th century: information, cybernetics, systems, self-organisation, thermodynamics of dynamic systems and out of balance, placing them in the Anglo-Saxon epistemological debate (mainly Karl Popper, Thomas Kuhn, Imre Lakatos) and also from the Frankfurt School, especially with Habermas (MORIN, 1984, 1990, 2000).

In addition to these references, Morin (2014) also seeks to establish bridges between philosophy and science, grounding the complex epistemology in Western philosophical thought, highlighting the precursor thinkers of a complex thought, from Heraclitus to Hegel, giving the necessary emphasis to the one who directly addressed the issue of complexity: Gaston Bachelard (MORIN, 1984, 1990, 2000). Not by chance, the dialogue of complex epistemology with different thinkers of Western philosophy demanded that the author of the proposed concept of corporeality/subjectivity sought an overview of the history of Western philosophy.

Aiming to follow the path opened by Morin (1992, 1996c, 1997, 1999, 2003, 2005), at this moment with the six volumes of the work *The method*, to forge a theoretical-conceptual proposal based more rigorously and consistently on complex epistemology, João and Ribeiro (2019) and João (2020) seek to appropriate the meta-reflection about knowledge performed by Morin. That is, explore the three epistemological principles proposed by Morin (1996c) to ground the conception of human corporeality/subjectivity. The recursive, which allows recognising the processes in which products and effects are necessary to their production and causation. The dialogic, which allows us to recognise phenomena in which it is necessary to link antagonistic, or even contradictory, terms in order to learn their reality. And the hologramatic, which allows us to recognise in everything what is complex, that just as the part is in the whole, the whole is in the part.

It is important to note that it is only from this point in their journey that João and Ribeiro (2019) and João (2020) give the necessary emphasis to the notion of subjectivity, placing it alongside the notion of corporeality, despite the fact that it has always been related to this concept.

4 THE CONCEPTION OF HUMAN CORPOREALITY/SUBJECTIVITY

The concept of human corporeality/subjectivity was elaborated more specifically from the concept of subject/subjectivity proposed by Edgar Morin in his work *The method*. In this work we find a theoretical basis for the formulation of a concept of corporeality inseparable from the idea of subjectivity, and which also allows integrating the different dimensions of subjective processes that are already present in the biological dimension. His conception of subject/subjectivity is the result of the articulation of the theories of self-organisation from Von Neumann, Heinz Von Foerster, Humberto Maturana and Francisco Varela, cybernetics, cognitive sciences and a framework of biology in conjunction with anthroposocial sciences (MORIN, 1996a, 1999).

We should clarify that the expression used for the concept in question articulates and brings together two concepts: corporeality/subjectivity of the human individual and social subjectivity. And it is also necessary to explain that the use of the slash [/], as a graphic sign, signifies inclusion, implication, relation and continuity between the two terms, the two concepts and the dimensions to which they refer. Moreover, as a simpler form of writing, the term in question is the translation of the expression/figure $\text{human corporeality} \rightarrow \text{subjectivity}^2$, which characterises the inseparable, continuous, emergent and rotating relationship between the constituent dimensions of human subjectivity since its biological condition.

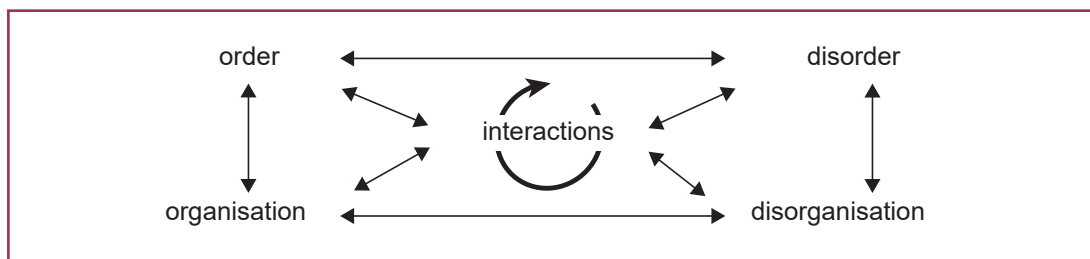
The endeavour carried out by Morin in his work *The method* has as its main theoretical result the complex concept of organisation, formulated from discussions about the ideas of system, thermodynamic processes, self-organisation and information (cybernetics) in the twentieth century (MORIN, 1997). The notion of organisation composes a broader and more fundamental idea related to the origin of the cosmos; it is the idea of tetralogical/pentalogical ring,³ the problematic heart of *physis*.

This capital idea allows us to understand the physical universe, the *physis*, as the place of creation and organisation, being common not only to what is physical, but also to life and the human (Morin, 1997). More specifically, this ring is an immanent principle of transformation and organisation of everything that exists in and from the physical world, from atoms to *Homo sapiens* and human societies. It is a principle abstracted by Morin (1997) to conceive the physical being of the atoms and the stars, that is, to conceive the way of functioning of the physical world, highlighting the main characteristics: disorder, interactions, order, organisation and disorganisation, in a circular spiral movement from which everything else is constituted in increasingly complex levels of organisation.

² For the condition of the individual-human subject, the circularity between the terms corporeality and subjectivity may lead us to position one or the other as the first term to highlight it in function of the discussion in focus.

³ The notion of tetralogical ring presented in volume 1 of the work *The method*, establishing the relationship between the four terms indicated here, is reconsidered in volume 5, in order to highlight the term "disorganisation", which was already present in the theoretical elaboration of the notion of tetralogical ring. With this change, Morin (2003) uses the expression pentagram to mention the figure that represents the relations between order, organisation, interactions, disorder, disorganisation. To maintain the expression and the idea of ring that characterises the circular form of the genic processes in Nature, as well as the way of thinking of complex epistemology, the expression pentalogical ring will be used in this essay.

Figure 1 – Pentalogical ring or pentagram.



Source: Morin, 2003, p. 23.

As will be explained further on, this immanent principle that gives origin to the physical universe and unleashes the genestic processes of life and of the human is the basis of the notion of somatic/subjective configuration, which explains the working logic of the processes that constitute the different dimensions of human corporeality/subjectivity.

From the ontological-epistemological point of view, corporeality and subjectivity should be considered systemic, relational and in an emergent continuum, forming a complex unit organised from three dimensions or constituent systems of the individual: organic-sensory-motor, psychic-affective-relational and mental/spiritual.⁴ Regarding the social subjectivity, this emerges from the interactions between individual members of a given society and its culture, constituting a system characterised by a higher level of complexity, which retroacts engendering the corporeality/subjectivity of the individual-subjects in its three dimensions.

Thinking in a systemic and relational way means seeking a vision that looks, at the same time, for the whole and for the parts of a complex organised unit, without reducing the parts to the whole and not the whole to its parts, to, then, reach a description and explanation of a given phenomenon, in this case, the human corporeality/subjectivity. Thus, such a vision must be assumed for the relation between the whole of the individual-subject and its parts, the three dimensions (systems). As well as for the whole of social subjectivity - in its various social subjective configurations -, and its parts, the individuals as subjectivities/corporealities.

To understand how the different dimensions of human subjectivity are constituted, it is necessary to explain the key notion of emergence for complex thinking. In a general sense, all dimensions or systems of human corporeality/subjectivity emerge from systems of systems. The idea of emergence “opens us to a new intelligence of the phenomenal world; it offers us a thread through the arborescences of organised matter” (MORIN, 1997, p.108). From the formation of atoms to the stars, from the unicellular and pluricellular living beings to the human being and the human societies in our planet, systems of systems were organised. And not only from the point of view of phylogenesis (evolution of species), but also of ontogenesis (development of the individual), from the zygote to the biopsychosocioculturally constituted person, systems of systems were organised, reaching the socio-cultural organisations.

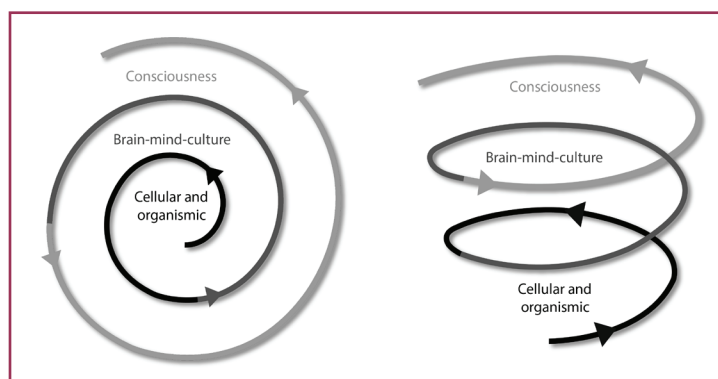
⁴ As Morin (2003) clarifies, the use of the word *esprit* (in French), or spirit, in English, is justified by the lack of another word in the French language that had its root in the Latin word *mens* (mind). In this sense, when the author uses the word “spirit”, he is referring to the mind and all the various qualities that arise from it.

In this sense, we can understand human corporeality/subjectivity as an emergence of emergences. Every emergence is a globality, a whole (a new system) that emerged from the activities of and between the parts, being a quality that does not allow decomposition and that we cannot deduce from the previous elements. As far as the debate in question is concerned, it means that the global products of the activities which form both the corporeality/subjectivity system of the individual and the social subjectivity system have their own global qualities which are irreducible to their isolated parts, and which have a retroactive effect on the very activities of the system from which they emerge and of which they become inseparable.

The idea of a *continuum* is fundamental to understand that the dimensions of corporeality/subjectivity emerge from a gradual constitution and transformation of the activities that configure each of the systems. It is a process in very subtle stages, without any clear division point. According to João (2020, p. 18), "the differences resulting from transformations and emergences occur in a certain sequence, in which each one differs minimally from the subsequent element, resulting in a marked difference between the initial and final elements of the sequence". Thus, the relationship between corporeality and subjectivity should be understood as an organisational continuum. In this continuum, subjectivity emerges gradually, in the individual, from the dimensions of the organism (cellular and intercellular), the brain_mind activity and consciousness, and also the social-cultural dimension, which acts recursively and retroactively⁵ on the previous levels, participating in their constitutions (JOÃO, 2020).

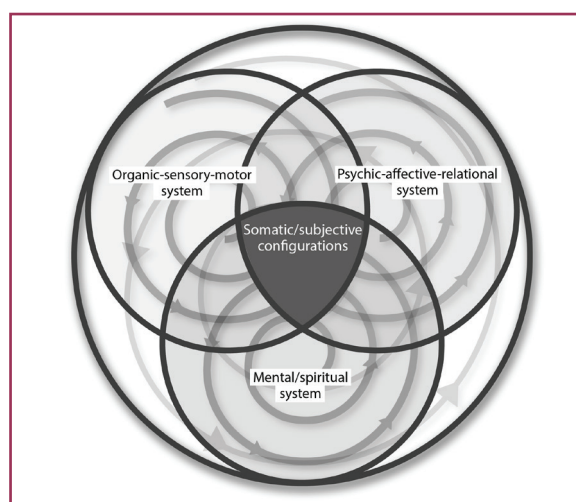
It is necessary to explain in more detail that the relationship between corporeality and subjectivity should be thought from three levels of emergence and organisation of subjectivity in the individual-human subject, maintaining its unity from the retroactive and recursive relationship between the three levels. Linked to this level of the individual is the subjectivity that emerges at the social-cultural level (through interactions between individuals), which in turn maintains its unity through recursivity and retroactivity on the individual subjectivity. Each of these levels maintains its relative autonomy, establishing boundaries between them and indicating that, although articulated and dependent on each other, they do not develop a linear relationship between them. Instead, they establish a relationship of open circularities as in a spiral and, at the same time, endowed (each one of the levels) with a closure that allows delimiting its own functioning and with a certain independence.

⁵ The notions of retroaction and recursion are fundamental to conceive the multiple unity of the corporeality/subjectivity of the individual and its relationship with the social subjectivity. Having already presented previously the definition for recursion, it is worth here to explain the definition of retroaction or retroactivity: it is the idea that the whole is retroactive, as a whole, on the particular moments and elements from which its parts emerged (MORIN, 1997). The explanation for the retroactive and recursive relationship between the levels of emergence of human subjectivity is in João (2020).

Figure 2 - Levels of emergence of human subjectivity

Source: João, 2020, p. 58.

Starting from these levels of emergence of human subjectivity, the two concepts that constitute what is being called the conception of corporeality/subjectivity were elaborated. The concept of corporeality/subjectivity of the human individual refers to a complex system that encompasses the whole, the globality of the human being. This larger complex system is made up of three parts (dimensions) or smaller complex (sub)systems. They are the organic-sensory-motor, the psychic-affective-relational and the mental/spiritual, interrelated, establishing an organisation from which the whole, the unit, or a larger complex system emerges. In the dynamism of the interrelation of the three dimensions, there is the constant production of somatic/subjective configurations⁶ that characterise the dynamic biopsychosocial-cultural states of the individual-subject (JOÃO, 2020).

Figure 3 – Corporeality/subjectivity of the human individual

Source: João, 2020, p. 61.

⁶ A The idea of organisational configuration (MORIN, 1997) explains the dynamism of the pentalogical-retroactive-recursive ring, present since the physical-chemical processes in the atom (generating negentropy and information) and in the self-eco-organising processes characteristic of the multiple dimensions of the *autos* (MORIN, 1997, 1999) which, in turn, underpin the dimensions of human corporeality/subjectivity. It brings together the five elements in the pentalogical ring, which characterise the generating processes of matter, life and the human world. The disorders, which generate interactions, from which orders, or regularities, are established, and the organisation. The organisation, as previously indicated, which connects the components that constitute any existing object. And the disorganisation, that is, the entropy that disaggregates any form of organisation. Every form of living organisation temporarily overcomes entropy by generating negentropy and information, which are the processes that give origin to living beings, keep them alive and are present in the multiple dimensions that constitute them. In this way, the functioning (dynamism) of the systems of corporeality/subjectivity is understood from the notion of organisational configuration, keeping for each system its specific characteristics.

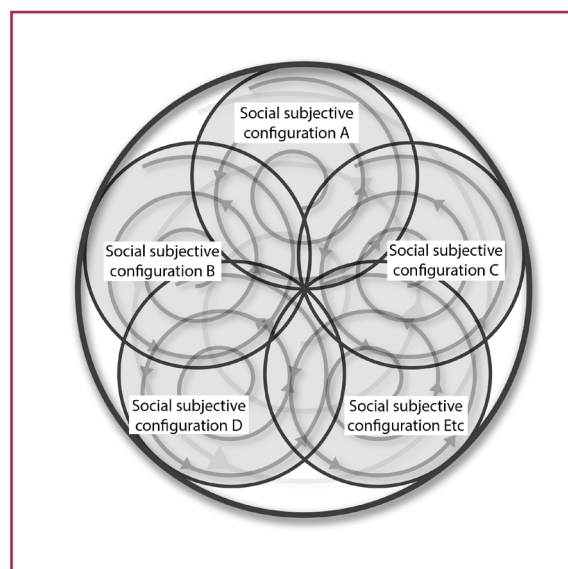
The organic-sensory-motor system endowed with an organismic subjectivity arises from a proto-psychism present in the cells and in cellular interactions, producing somatic configurations. As explained above, this is the first level of emergence of human subjectivity. From the interrelation between organismic subjectivity and culture, a neurocerebral-cultural psychism emerges, with the specific participation of the neurocerebral apparatus. From this conscious__unconscious superior psychism, two other systems are constituted.

The psychic-affective-relational system, characterised by the production of mythical/magical meanings (flows of thoughts and language) and by the affective processes (flows of affections) related to our imaginary, phantasmatic and oneiric experiences. It is a first level of psychic elaboration and a more subjective dimension of psychic functioning.

And the mental system, responsible for the organisation of thought and action, in which rational/empirical/technical meanings (flows of thoughts and language) are generated. From this system emerges the consciousness, the reflective thought of the subject about himself, about his operations and actions, through language, which, while mediator of thought, offers the reflective possibility for mental operations to become objects of consciousness (MORIN, 1996). Being, at the same time, an emergence related to the inseparability and continuity between the three dimensions, the consciousness is a radically new phenomenon, made possible by these attributes of the mental system. These characteristics confer to this system a second level of psychic elaboration which allows the subject to maintain a more objective relationship with reality and with himself. This higher psychism and its two systems correspond to the second level of emergence of subjectivity and with consciousness, the third level is configured (JOÃO, 2020).

The always interrelated functionings of these two systems (psychic and mental) produce a dynamic and uninterrupted flow of subjective configurations, and are constantly acting, also, recursively in somatic configurations, in such a way that, in fact, they are always somatic/subjective configurations, constituted by affects/feeling, the most elementary unit of somatic/subjective processes. From these three systems, the corporeality/subjectivity of the individual-human subject is constituted (JOÃO, 2020).

The interactions between individuals bring about social subjectivity, a larger complex system that emerges from the social subjective configurations that are constituted and represent the various and different social settings in which individuals interact, for example, the family, the school, etc. More specifically, social subjectivity is a subjective principle of social identity generated by culture, which inscribes the individual in society and society in the individual (JOÃO, 2020).

Figure 4 – Social subjectivity

Source: João, 2020, p. 213.

As a larger complex system, social subjectivity participates directly, through culture, in the constitution of the three systems of corporeality/subjectivity, mainly the psychic and mental systems. The most important thing to be highlighted is that the origin and production of the somatic/subjective configurations take place in the interrelation between individual corporeality/subjectivity and social subjectivity. And as mentioned above, it is from this interrelation that the psychic and mental systems of the individual-human subject emerge. In this way, we have in the interactions between individuals, and from the interrelations of their somatic/subjective configurations, the constitution of the social subjective configurations in the different groups and social institutions (JOÃO, 2020).

5 CONTRIBUTIONS TO THE FIELD OF KNOWLEDGE OF PHYSICAL EDUCATION

As an outline of the possible contributions of the conception of human corporeality/subjectivity to epistemological and pedagogical discussions in Physical Education, it will be indicated how it can be articulated with Manuel Sérgio's SHM (1987, 1989, 1995a, 1999). The proposal of only an outline is justified because this essay has as main purpose only to present this conception to this field of knowledge from the theme of corporeality.

In his epistemological proposal for PE, Manuel Sérgio (1999) makes an epistemological cut to establish the transition from PE, as an area of knowledge based on the paradigm of modernity (MORIN, 1984, 1990, 1992; SANTOS, 1989, 2006), to SHM, field of knowledge based on another paradigm, in course of its development, and which perhaps has in the word complexity the contours of its identity (DUPUY, 1996; MORIN, 1990, 1996b, 2000; PRIGOGINE; STENGERS, 1997; SOULIÉ, 1991). Going straight to the central question that characterises this other paradigm, the epistemological challenge lies in the articulation of the knowledge of physics, biology

and the anthroposocial sciences (MORIN, 1997), overcoming the logic of disjunction (MORIN, 1992). For this reason, Sérgio (1999, p. 272) proposes that SHM is the “science of understanding and explanation of motor conducts, aiming at the study and constant tendencies of human motricity, in order to the global development of the individual and the society and having as foundation” precisely, the articulation elaborated by Edgar Morin.

As a philosophical foundation for this epistemology, Sérgio (1987, 1989, 1999) bases his conception of the human being mainly on Merleau-Ponty’s idea of corporeality, although he refers to Morin’s ideas and also explores other authors to outline this same conception. It is precisely in relation to this philosophical assumption that the conception of human corporeality/subjectivity can offer a concept of human being for SHM. As previously presented, this conception was elaborated from the theory of organisation proposed by Morin throughout his work *The Method*, articulating what is physical, biological and anthroposociological in the human. In view of this, the concepts of corporeality/subjectivity of the individual and social subjectivity are defined, seeking to assume the articulation of these dimensions of the human condition.

By assuming this theoretical-conceptual perspective, possibilities are opened to delineate research objects from the understanding (of human subjective processes) and explanation (of biodynamic processes) of motor behaviours, as Sérgio (1999) idealised in his definition of SHM. That is, designing research paths that take on the challenge of articulating human dimensions that have predominantly been investigated separately. This challenge requires the construction of methodological contributions that articulate empirical-qualitative-subjective perspectives and empirical-quantitative-biodynamic-cognitive-behavioural perspectives.

From a pedagogical point of view, the conception of human corporeality/subjectivity can also contribute to motor education (SÉRGIO, 1995b), a pedagogical branch of SHM. In this sense, the development of methodological principles that allow involving human multidimensionality in educational practice (JOÃO, 2019), in the school and health promotion and leisure context, is of significant importance.

6 FINAL CONSIDERATIONS

With the exposed, it is possible to have an overview of the conception of human corporeality/subjectivity elaborated by João (2020) from the complex epistemology. Based on the theory of organisation developed by Morin in his work *The method* and more specifically in the notion of subject/subjectivity that is based on this same theory, such conception has as its ontological and epistemological matrix the paradigm of self-organised complex systems. Supported by this paradigm, the proposal in question presents a complex view of the human, that is, it seeks to understand the whole or the unit from the articulation of the different and multiple parts or dimensions that make up the whole.

Although a critical and comparative analysis has not been carried out between the conceptions of corporeality arising from the two French thinkers, Merleau-Ponty

and Morin, which already delimits the object of further research, it is possible to affirm that these are two distinct matrices of thought, immediately establishing the difference between the two views. However, a careful and detailed analysis is necessary to address their differences, in order to seek possible competitions and antagonisms, while considering the possibility of seeing in them some complementarity that points to the complexity of the human condition.

In this sense, the research of Nóbrega (2005, 2010, 2021), Caminha (2015b) and Joffily Abath and Caminha (2012) are important starting points, as they show the contributions of Merleau-Ponty's ideas to the debate with emerging sciences such as neuroscience, psychology, linguistics and cognitive sciences, which by the way gathers all of them, and even philosophy of mind. And this is because it is also with these areas of knowledge, among others, that Morin establishes the dialogue for the construction of his proposal of a complex method for the sciences.

Also considering the relationship of complex epistemology with these emerging areas of discussion throughout the twentieth century, it can be understood that the proposed conception of human corporeality/subjectivity allows establishing a bridge between the field of PE and these emerging areas of scientific and philosophical knowledge.

It is not by chance that the epistemological proposal for PE with which the conception in question is consistent is Manuel Sérgio's SHM, as outlined in this essay and in a previous publication (JOÃO, 2018). And as also indicated, the articulation of these two perspectives allows glimpsing theoretical and methodological research paths (proposal of objects of studies and methodological designs) to face the complex relationship between nature and culture in the theoretical and practical field of PE, from, more specifically, the notion of somatic-subjective configurations. Taking this challenge, not faced by Sérgio (NÓBREGA; MENDES; GLEYSE, 2016), points to the development of future research.

Finally, regarding the field of pedagogical practice in PE, the articulation of the concept of human corporeality/subjectivity with motor education (SÉRGIO, 1995b), mentioned above, also indicates the possibility of operationalising further studies in different contexts of performance of PE (educational, health and leisure) based on complex epistemology and SHM.

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Resumo: Este ensaio tem como objetivo avançar nos diálogos entre a epistemologia complexa e o campo de conhecimento da Educação Física, a partir da concepção de corporeidade/subjetividade humana. Trata-se de um estudo teórico realizado mediante pesquisa bibliográfica da obra de Edgar Morin, sobretudo, dos seis volumes de *O método*, com o qual se fundamentou a referida proposta. Contextualizou-se o cenário dos debates acerca do tema da corporeidade no campo da Educação Física, no qual se intenciona introduzir a concepção em questão. Esta concepção é o resultado da articulação teórica dos conceitos de corporeidade/subjetividade do indivíduo e de subjetividade social. Com essa proposição, que assume o paradigma dos sistemas complexos auto-organizados, espera-se estabelecer diálogos com outras perspectivas teóricas, pontes com outras áreas do conhecimento e apontar caminhos para pensar a prática pedagógica nas suas diferentes áreas de atuação.

Palavras-chave: Corpo humano. Epistemologia. Educação Física.

Resumen: El objetivo de este ensayo es avanzar en los diálogos entre la epistemología compleja y el campo de conocimiento de la Educación Física, a partir de la concepción de corporeidad/subjetividad humana. Se trata de un estudio teórico realizado mediante investigación bibliográfica de la obra de Edgar Morin, sobre todo de los seis tomos de *El método*, con el cual se fundamentó dicha propuesta. Se contextualizó el escenario de los debates sobre el tema de la corporeidad en el campo de la Educación Física, donde se pretende introducir esa concepción. Esta concepción es el resultado de la articulación teórica de los conceptos de corporeidad/subjetividad del individuo y de subjetividad social. Con esta proposición, que asume el paradigma de los sistemas complejos autoorganizados, se espera establecer diálogos con otras perspectivas teóricas, puentes con otras áreas del conocimiento y señalar caminos para pensar la práctica pedagógica en sus diferentes áreas de actuación.

Palabras clave: Cuerpo humano. Epistemología. Educación Física.

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CONFLICT OF INTERESTS

The authors declare that this work involves no conflict of interest.

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Renato Bastos João: conceptualisation and writing

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EDITORIAL RESPONSIBILITY

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