A theoretical essay on the influences of social science paradigms on organizational decisions for sustainability

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Andrei Giovani Maia
Highest degree: PhD in Administration and Tourism (UNIVALI)
Academic Institution: Associate Professor at the Federal University of Santa Maria - UFSM / PM

Luiz Carlos Zucatto
Highest degree: Doctor of Business Administration (UFRGS)
Academic Institution: Associate Professor at the Federal University of Santa Maria - UFSM / PM

Elaine Ferreira
Highest degree: PhD in Production Engineering (UFSC)
Academic Institution: Associate Professor at the Federal University of Santa Maria - UFSM / PM

José de Pietro Neto
Highest degree: Doctor of Business Administration (UnB)
Academic Institution: Associate Professor at the Federal University of Santa Maria - UFSM / PM

Geferson Gustavo Wagner Mota da Silva
Highest degree: Master in Mathematical Modeling (UNIJUI)
Academic Institution: Professor at the RS State Department of Education

ABSTRACT

In a market economy, organizational decisions determine the fate of markets, societies, and nations. The constant challenges and the emergence of socio-environmental problems stimulate societies and organizations to seek a new paradigm as a disruptive worldview model that enables viable solutions and even more effective results, capable of overcoming the previous paradigm. Thus, the predominance of a paradigm tends to influence the evolution of science, organizational decision-making, the adaptation of markets and the advancement of society over time. The development of paradigmatic studies by the social sciences contributed to the classification of different worldviews and specific philosophical aspects that allowed the identification of functionalism/positivism as the dominant paradigm. The economic progress of industrial society was strongly influenced by the functionalist/positivist paradigm, whose philosophical bases are based on Cartesian rational thought directed to the objectives of maximizing economic results. However, given its objectivist and fragmentary bias, this dominant paradigm has serious limitations in disregarding other aspects or challenges such as socio-environmental ones. Currently, recognizing the limitations of the functionalist/positivist paradigm, both science and organizations seek to find models that better meet market demands in a more integrated, systemic and interpretative way to the various socio-environmental dimensions, aspects and challenges, pointing to a paradigmatic transition towards sustainability. Originating from the first author's doctoral thesis, this theoretical essay aimed to reflect on the possible influences of social science paradigms on organizational decisions for sustainability. This study used the paradigmatic classification of Burrell and Morgan (1979) to carry out some reflections on paradigms of the social sciences, organizational decision-making and sustainability. The study resulted in a typology that allows the classification of organizational decisions into simple and complex based on a set of criteria analyzed in the paradigmatic, methodological and theoretical perspective.

Keywords: Paradigms, Organizational Decisions, Sustainability.

1 INTRODUCTION

In a market economy, organizational decisions directly influence business, society, and the natural environment. As rational decisions are usually made based on a worldview that represents the paradigm accepted by decision-makers as the best way to solve problems or challenges faced by society and science, it becomes relevant to reflect on paradigmatic influences on decision-making. Based on economic rationality and the maximization of individual results, the dominant paradigm influenced, throughout the twentieth century, organizations and their decision-makers promoted the expansion of production processes and the growth of world economies, as well as contributed to the aggravation of social and environmental problems. Since the 1970s, the limitations of the dominant functionalist rationality have been evidenced by organizational theories and studies on socio-environmental issues. As a result, alternative paradigms with more subjective and interpretative perspectives have become part of organizational studies. In the face of new social and organizational challenges, the concept of sustainability emerged, which marked the paradigm shift in the social sciences towards worldviews that recognized the subjectivity and complexity of contemporary situations and phenomena.

Organizational decision-makers realized that the decision-making process would require a more systemic worldview, as well as a more integrated and complex understanding of the organizational environment and the consequent impacts of their decisions on the various dimensions of sustainability. Soon, organizational decision-makers began to seek better results, through alternative social science paradigms capable of responding to the multiple dimensions involved in companies' business and in sustainability as a whole. Given the importance of paradigms for organizations, this article aimed to reflect on the possible influences of social science paradigms on organizational decisions directed to sustainability. This study was characterized as a theoretical essay that allows the researcher the freedom of discussion and reflection on the theme addressed, without losing the scientific rigor on the subject studied. As a result, the study presents a typology that classifies decisions at a simple or complex level and each level is understood within the paradigmatic, methodological and theoretical framework of organizational decisions aimed at sustainability.

2 A BRIEF APPROACH TO ORGANIZATIONAL STUDIES PARADIGMS

Organizational studies present a theoretical framework that seeks to describe how organizational structures, processes, interactions, and decisions develop and change in the face of a set of environmental factors, understandings, or worldviews in a given period. In this sense, worldviews permeate and influence organizational dynamics and the constant changes of contemporary society. In scientific terms, worldviews are related to certain consistent, logical, and formal rational standards and procedures that underpin scientific knowledge.

In the social sciences, worldviews are called paradigms and their specific characteristics allow for classification and paradigmatic framing. According to Silva and Roman Neto (2006, p. 54) "The worldview, that is, the way in which social reality is perceived, is influenced by the philosophical paradigm adopted". Paradigm is a term of Greek origin, *paradeigma*, meaning model or pattern that came to be widely used by Thomas Kuhn in his book: The Structure of Scientific Revolutions (VASCONCELOS, 2002). The study of paradigms carried out by Kuhn (1998) has become an important scientific milestone for contemporary society. According to Kuhn (1998), paradigms are widely accepted models because they are more successful in solving certain problems that can be replaced by another that responds better to situations or new challenges over time. For Kuhn (1998, p. 108), "[...] A scientific theory, after having attained the *status* of a paradigm, is only considered invalid when there is an alternative available to replace them." To reject one paradigm without simultaneously replacing it with another is to reject science itself" (KUHN, 1998, p. 110). All crises begin with the obscuration of the paradigm and the consequent relaxation of rules that guide normal research (KUHN, 1998, p. 115). The transition from a paradigm in crisis to a new one, [...], is rather a reconstruction of the field of study based on new principles, a reconstruction that alters some of the paradigm's most elementary theoretical generalizations, as well as many of its methods and applications (KUHN, 1998, p. 116).

From an academic perspective, the recognition of the most appropriate paradigm for a given scientific study would be related to the way the researcher sees the reality around him, in addition, more than knowing whether reality is real or not, it is knowing how this reality is thought (GODOI, BANDEIRA-DE-MELLO, SILVA, 2005 *apud* GODOY, 2006). Nevertheless, even if one seeks to understand how reality is thought, what in fact motivates philosophical reflections is a continuous and epistemological search to deepen or criticize knowledge, and an ontological search to understand the nature of real reality and human existence. In the studies of paradigms by the social sciences, among the great challenges faced by researchers, both the diversity of existing paradigmatic classifications and the difficulty of choosing the one that enables the most appropriate responses to the problems encountered stand out. For Vieira and Boeira (2006, p. 31) "some maintain a philosophical bias, remaining generic and comprehensive, others govern scientific thinking in more restricted and specific areas of research". Without pretending to address all the different sets of philosophical assumptions of the social sciences, the following descriptions briefly present some of the main paradigmatic classifications that relate organizational studies to sociological aspects.

One of the most recognized paradigmatic classifications in the context of the social and organizational sciences is that of Burrell and Morgan (1979), who approach paradigms in terms of four broad worldviews: functionalist, interpretivist, radical humanist, and radical structuralist, each of which reflects a network of schools of thought that share common assumptions. Therefore, the choice

of one of the paradigms excludes the others and tends to directly affect the outcome of a study or the resolution of a problem. In this way, Burrell and Morgan (1979) describe the four paradigms and classify them in a diagram with two dimensions, one dimension with philosophical assumptions that contemplate the nature of science dividing worldviews into objective ones that involve functionalism and radical structuralism and subjective ones with interpretivism and radical humanism; the other dimension is composed of the sociology of regulation, divided into the sociology of regulation with interpretativism and functionalism and the sociology of radical change with radical humanism and radical structuralism.

The objectivist and subjectivist dimensions of Burrell and Morgan (1979) present four important philosophical assumptions: 1. The ontological assumption that involves how reality is seen, the debate occurs in the realist or nominalist dichotomy; 2. The epistemological assumption that involves the understanding of what knowledge is, and how it is acquired, divided into positivist and anti-positivist; 3. The assumption of human nature involves the relationship between human beings and their environment, divided into determinists and voluntarists. 4. The assumption of the methodology Different assumptions tend to lead to different methodologies, and can be divided into two extremes, the nomothetic and the ideographic.

In the paradigmatic framework presented by Burrell and Morgan (1979), the paradigms described as objective would be represented by two paradigms: the radical structuralist, which characterizes the instruments of domination, fragmentation and catastrophe; and the functionalist paradigm with emphasis on mechanistic determinism, on systems theory in which studies address organicist aspects, population ecology, cybernetic, social, and especially organizational systems. Therefore, both objectivist paradigms contemplate organizational studies in their structural and systemic perspective of contemporary society.

On the other hand, the subjective paradigms would be represented by the radical humanist paradigm whose main representation is the psychic prison; and the interpretative paradigm, represented in the realization and production of meaning, the language games and texts. Moreover, the radical humanist paradigm and the radical structuralist paradigm would be subject to the sociology of radical change and the interpretivist and functionalist paradigms would be subject to regulation. Thus, both paradigms emphasize the creation and social sustenance of reality, originating in an alteration of consciousness in which individuals themselves imprison themselves within the limits of the reality they create and sustain (MORGAN, 2007). According to Serva (2012), Burrell and Morgan's studies would be the first indications of the emergence of a specific epistemology of management. Despite the limitations of the rigid paradigmatic framework made by Burrell and Morgan, these four paradigms were crucial for the development of theoretical studies and organizational analyses based on the philosophical perspective of the paradigms of the social sciences.

In seeking to make more subtle transitions, Morgan and Smircich (1980) present a framing as a *continuum* with an objectivist or subjectivist tendency. In this characterization of assumptions summarized in a table, the further to the left the paradigmatic framework, the more subjectivist the approach will be, and the further to the right, the more objectivist such an approach will be. In addition to the columns that highlight the "subjectivist and objectivist approaches", the basic assumptions (central ontological and human nature) are highlighted (in lines), the basic epistemological stanzas; some permitted metaphors, the research methods and, finally, some examples of research are presented.

Another possible contribution to overcoming this dichotomy would be based on the phenomenological structuralism of Max Weber (1864 - 1920) by the notion of ideal types that reflect very well the conception of structure, without the intention of portraying reality in its fullness (MOTTA; VASCONCELOS, 2002). According to Paiva Júnior e Mello (2008), it was Max Weber who created the theoretical-methodological bases of the comprehensive view in which the role of the individual, his ideas and his actions in the construction of social reality is considered. For Weber (2003, p. 56), "the 'ideas' that dominated the men of an era, that is, those that acted on them in a diffuse way, can only be understood – as soon as it is a complicated framework of thought – with conceptual rigor in the form of an ideal type".

Thus, the ideal types model would have a comprehensive approach to social phenomena as a way of understanding the 'ideas' generated within certain conditions and contradictions of social phenomena, exposed through what Weber (2003) calls a logical structure of the prevailing conceptual systems. For Weber (2003, p. 62) "[...] The purpose of the formation of concepts of ideal-type always consists in becoming rigorously aware not of what is generic, but, on the contrary, of the particular nature of social phenomena. In this sense, Weber (2003) argues that consciousness in the study of social phenomena in more specific or restricted contexts can, in fact, be obtained by adopting ideal types, according to instrumental rationality.

Given the relevance of his works, Weber is one of the few scholars who developed interpretative philosophical ideas and applied them to organizational configurations (HATCH; YANOW, 2003). According to Paiva Júnior and Mello (2008, p. 30), the comprehensive approach has specific properties of comprehension and intelligibility of social phenomena by showing that the concepts of meaning and intentionality differentiate them from natural phenomena, and are therefore anti-positivist. However, "Weber's interpretivist sociology is a rather limited approach to subjectivism, when compared, for example, to the philosophy of Edmund Husserl" (VERGARA; CALDAS, 2007, p. 230). The philosophy of Edmund Husserl (2020) formed the epistemological basis of phenomenology, a much more comprehensive approach to the studies of social phenomena. Within a solid scientific perspective, Husserl, as a philosopher and mathematician, sought to bring greater rigor

and precision to philosophical studies, in an attempt to overcome the empiricist view that the source of the individual's knowledge is experience.

Thus, Husserl defines a phenomenon as something external, revealed and internalized by the individual's mind, and in the face of the intentionality of the human mind, phenomenology seeks to identify a set of common elements, perceived by individuals in relation to such object or phenomenon. Therefore, Husserl's (2020) phenomenology, by overcoming subjectivism, did not seek to understand the particular view of individuals in relation to the phenomenon, but rather, what each individual can extract or understand together from that phenomenon. In this way, phenomenology sought to overcome the subjectivity of worldviews and leave theoretical abstraction through a process of observation based on the suspension or immersion (*Epockê*) of the phenomenon, on the understanding of intentionality, that is, on the way of acting of the consciousness of individuals in relation to the object and the temporality that explains the mutation of consciousness over time. Consciousness is seen as changeable and fluid over time, which confronts the rigid and inflexible view present in other philosophical approaches based on the predictability and stability of the worldview (HUSSERL, 2020).

Aware of this, Alfred Schutz's phenomenological sociology is an attempt to unify Max Weber's theory of ideal types with Husserl's phenomenological tradition (LUHMANN, 2006). In his studies based on phenomenology, Schütz (1979) seeks to approximate the idea of interpretation of social reality based on the perspective of the individual's social action to the intentionality of the human mind to show how this reality results in a complex system of different social perspectives. For Schütz, every rational action of an individual only makes sense when it is associated with some purpose that can have mental meaning when meeting an individual goal or social sense when serving or contemplating results for society. Faced with the complexity of the social system, Schutz's studies reveal the existence of intersubjectivity, that is, the recognition of a set of elements of social consciousness that arise from the various experiences and interpretations of the individual that will lead him to very particular and specific actions and decisions throughout his life. In theory, "[...], the proposition put forward by Schütz is that experience and action are correlated acts that do not result from a mind that produces meanings, but from the connection between different minds, in interaction in the social process." (CASTRO, 2012, p. 54). In short, this individual mental process in constant interaction would lead to the understanding and construction of social reality.

With the emergence of new studies on sociological paradigms, the multiparadigmatic perspective breaks the thesis of the incommensurability of paradigms present in the studies of Kuhn, Burrell and Morgan. The assumption of incommensurability suggests that competing paradigms are incompatible, discontinuous with singular attributes without the possibility of sharing empirical criteria or neutral or conflict-free transition (MORAES, 2017). Therefore, incommensurability presupposes that a new paradigm will have *the status* of dominant only after the fall of the previous

dominant paradigm, i.e., the paradigms are mutually exclusive without the possibility of a gradual transition or continuous interaction between them. Over time, the dichotomous and disruptive paradigmatic notion begins to be questioned in social and organizational studies, which gives rise to an alternative way of seeing paradigms, called multiparadigmatic perspective.

The diffusion of the multiparadigmatic perspective occurs mainly through the studies of Gioia and Pitre (1990); Schultz and Hatch (1996) and Lewis and Grimes (1999), among others (SILVA; ROMAN NETO, 2006). For Lewis and Grimes (2007, p. 36), the term multiparadigm refers to the different perspectives and divergent paradigmatic premises and the term metaparadigm seeks to overcome paradigmatic distinctions by revealing possible paradigmatic differences, similarities and interrelationships. According to Schultz and Hatch (1996), three multiparadigmatic positions are presented and explained below: incommensurability, integration and intersection. As already seen, in the incommensurability present in the works of Kuhn (2000) and Burrell and Morgan (1979), it is assumed that the paradigms are mutually exclusive, and there is no possibility of interaction between them. Paradigmatic integration proposes that contributions of paradigms can help in obtaining a broader theoretical model, which would lead to an approximation of concepts and arguments that would be theoretically incompatible. Paradigmatic crossing, on the other hand, highlights the contrasts and connections between paradigms and emphasizes possible interdependent paradigmatic relationships (SILVA; ROMAN NETO, 2006, p. 70).

The crossing of paradigms can be done based on four strategies identified by Schultz and Hatch (1996), strategies that are briefly described below, based on the approach of Silva and Roman Neto (2006): the sequential strategy, which considers the mutual complementarity of paradigms and their applications occur in a sequential and linear way. The parallel strategy considers the possibility of applying several paradigms to a particular situation at the same time, based on paradigmatic contrasts. The linkage strategy suggests the existence of a transition zone between paradigms and emphasizes the similarities between the paradigms rather than their differences. Finally, the last strategy, according to Silva and Roman Neto (2006), is that of interaction that recognizes the differences emphasized by the parallel strategy and similarities emphasized by the linkage strategy, using this to understand the phenomena in the study of organizations.

Faced with the three multiparadigmatic positions, Mingers (2001) clarifies that paradigms are simply constructions of thought and that it would be an epistemic or anthropic fallacy to state that the world should conform to one of them, because the world is more complex than human beings can know. Mingers (2001) points out that the concept of paradigm is an important heuristic device that serves to guide a particular constellation of assumptions and argues that the choice of method (or methodologies) critically and with knowledge of the different assumptions of context, means that the researcher does not have to accept the integrity and limited assumptions of paradigms. nor adopt some

metaparadigmatic assumption that makes judgments between the paradigms themselves. As an evolutionary proposal, Mingers (2001) clarifies the need to create new paradigms with their own assumptions and approaches based on the strengths and weaknesses of the current ones, recognizing the plurality and diversity of the world, since the meanings and practices of the social world would be intrinsically loaded with value that lead to understandings of society and individuals.

There are other approaches that suggest a paradigmatic perspective, such as Edgar Morin's complexity theory, that are not restricted to the social and organizational sciences. However, given the importance and breadth of the theoretical framework that constitutes complexity theory, it was decided to classify it as another relevant paradigm of the social sciences. In the direction of the metaparadigmatic perspective, Morin (2008) highlights the need for a paradigm of complexity that, at the same time, separates and associates, conceiving the emerging levels of reality without reducing them to elementary units and general laws. Complexity theory allows opposites to coexist, which avoids the process of simplification and the consequent fragmentation of reality. Thus, it should be seen not as a recipe or order, but as a challenge, a motivation to thought; it can be recognized not as completeness, but as incompleteness and uncertainty, which differs from mutilating thinking in units (MORIN, 2008). According to Serva (2012, p. 4) "The emergence of the paradigm of complexity is an attempt to overcome the conceptual, logical and epistemological impasses that disciplines such as biology, cybernetics, physics, communication, among others, have created from their own developments".

In summary, it was evidenced that the most traditional and dominant paradigms involve assumptions based on simplicity, stability and objectivity, and the emerging or competing paradigms involve assumptions based on complexity, instability, subjectivity or even intersubjectivity. From a metaparadigmatic perspective, we seek to break with the orthodoxy of incommensurability by proposing ways to bring competing paradigms closer together. The fact is that the emergence of a new dominant paradigm does not definitively exclude potential contradictory competing paradigms, but on the contrary, it is a determining factor in the emergence of such potential paradigms and an important parameter to define ontological, epistemological and methodological aspects in relation to distinct paradigmatic positions, which suggests coexistence at a hierarchical level between paradigms. Proof of this is the existence of the classification of a dominant and non-dominant paradigms and paradigmatic frameworks defined as objective, subjective or even intersubjective, such as those discussed in this section.

The capacity of the paradigm to respond effectively to scientific, academic, social and organizational challenges is fundamental in the constitution of the hierarchy of paradigms and the classification of the hierarchy of complex systems proposed by one of the founders of systems theory, the economist Kenneth Ewart Boulding (2004), can contribute to the understanding of the levels of

complexity of social and organizational systems. In Boulding's (2004) hierarchy of complex systems, systems are classified into nine levels of complexity, ranging from the simplest systems, such as static structures or cybernetic mechanisms, to the most complex, such as social organizations. For this study, it is assumed that the simpler the system, the higher the level of objectivity will be required from the paradigm and the more complex the system, the higher the level of subjectivity will permeate the paradigm.

Finally, regardless of the direction that studies of the paradigms of the social sciences tend to take, the fact is that science seeks, in the worldview, certain standards that allow rational systematization of the procedures that result in consistent explanations, resolutions and understandings of phenomena, situations or events. Thus, despite the limitations of the sociological paradigms and the possible, but unlikely, paradigmatic interactions defended by the metaparadigmatic perspective, this study recognizes in the paradigms the support of the assumptions of research that contribute to greater scientific rigor. Therefore, the great challenge is to understand how paradigmatic worldviews influence organizational decision-making and how such decisions impact markets, society and the natural environment.

3 RATIONALITY AND OBJECTIVITY IN ORGANIZATIONAL DECISIONS

In the social sciences, the assumption of the rationality of individual decisions has its origin in philosophical and economic reflections on liberalism. In philosophy, the precursor ideas of John Locke's liberalism stand out, which defended individual freedom without harming the rights of others, the rationality of man and the natural right of individuals to private property. In the economic sciences, Adam Smith's study of the wealth of nations showed the importance of liberalism for economic growth, productive organization, and the achievement of optimal results. Nevertheless, Mises (2010, p. 37) reinforces that "liberalism does not assert that men always act unintelligently, but, on the contrary, that they must, in their own interest rightly understood, always act intelligently."

Thus, liberal economics is based on human rationality and the individual's ability to make economic decisions, giving rise to the concept of economic man (*homo economicus*) that influenced the first schools of management such as scientific management theory and classical management theory. In the concept of economic man, the individual can know all the available courses of action and thus always choose the best alternative and maximize, or optimize, the results of his decision (MOTTA; VASCONCELOS, 2002). In the search for maximizing results, there is a process of fragmentation and simplification of reality arising from the mechanistic view to facilitate decision-making. For Bachelard (1978), the spirit of simplification is the basis of determinism, which, evidently, explains the success of the mechanistic hypothesis.

Over time, advances in management studies have shown that the hypothesis of the perfect rationality of individuals was a flimsy, contestable, and limited argument for several reasons. According to Heyck (2008, p. 46), "in administrative behavior, published in 1947, Simon presented an analysis of decision-making that emphasized the limits of rational choice." The limitation in the rationality of decisions comes from factors such as cognitive limitations, incomplete or inaccurate information, uncertainty and imperfect competition (SIMON, 1978; MILLER; HICKSON; WILSON, 2004). For Luecke (2010, p. 18) "decisions are difficult when they involve uncertainty, present many alternatives, are complex and raise interpersonal issues". These factors affect and limit the human rational capacity to make decisions in the face of the complexity of situations. Hammond, Keeney and Raiffa (2008, p. 165) point out that "sometimes, however, the flaws in decision-making are not found in the process, but in the mind of the borrower. The way the human brain works can sabotage the choices we make."

The study of decision theory developed by Herbert Simon (1971) proved the existence of limitations in human rationality and that individuals can, at most, achieve satisfactory results, being content with what is possible to be done in the face of the situations faced. Thus, Simon (1971) causes the rupture of the concept of economic man, its presupposition of maximum human rationality until then accepted by the academy, and makes the concept of administrative man emerge with the idea of man's limited rationality. Within their limitations, the decision-maker would seek to understand situations and make decisions without trying to simplify situations coming from a real world. Therefore, according to Simon (1978, p. 350) "decision-makers can be satisfied by finding optimal solutions for a simplified world, or by finding satisfactory solutions for a more realistic world". To make decisions that result in satisfactory solutions, the decision-maker defines alternatives and sequentially evaluates the options and possible outcomes.

Simon (1963) divides decisions into programmed, generally simpler and made at the lower levels of the organization, and unprogrammed decisions made in situations of greater uncertainty by the higher levels of the organisation (strategic). According to Simon (1955, p. 110) "In most global models of rational choice, all alternatives are evaluated before the choice is made. In actual human decision-making, alternatives are often examined sequentially." Therefore, the sequential evaluation of the alternatives indicates the existence of a pattern of evaluation of choice among the possible alternatives for decision-making. Such sequential evaluation of alternatives can be accomplished through a formal decision-making process or steps. The chaining of these steps allows the sequential analysis of the parts that make up a certain situation or phenomenon (the whole) and reduces the decision-maker's insecurity in the face of the set of variables, agents and environmental uncertainties.

According to Vasconcellos (2002), this form of traditional (Cartesian) thinking is based on the assumption of simplicity found by separating the complex world into parts, on the assumption of the

stability of the world and its predictability, and on the assumption of objectivity in which it is possible to know the world objectively in its reality. These philosophical views of rational actions extend to the studies of planning and strategy, which are very present in organizational decisions. In relation to the study of organizational planning, three important planning philosophies proposed by Ackoff (1975) stand out, among them, the philosophy of optimization, satisfaction and adaptation. Of these three philosophies proposed by Ackoff (1975), both the philosophy of optimization and the philosophy of satisfaction are based on the most concrete and objective views of reality, with the philosophy of optimization representing the concept of economic man, and the philosophy of satisfaction representing the concept of administrative man. The philosophy of adaptation, on the other hand, represents a higher level of subjectivity and is therefore supported by ontologically more subjective paradigms. In fact, such planning philosophies represent only one example of how paradigms emerge from the more objective or subjective worldviews that tend to influence strategic positioning and organizational decision-making.

In principle, both the philosophy of optimization planning and that of satisfaction have connections with the concept of economic and administrative man and strong convergences with the objectivism of the functionalist (positivist) paradigm. According to Silva and Roman Neto (2006, p. 58) "the functionalist paradigm presupposes that society has a concrete real existence and a systematic character, oriented to produce an ordered and regulated social system". Under the functionalist paradigmatic perspective, it is considered that reality exists, independent of human comprehension, and that such reality could be explained by classical physics (Newtonian) and Cartesian philosophy in an essentially objective way. The Cartesian philosophy created by René Descartes "[...] consists of breaking complex phenomena into pieces in order to understand the behavior of the whole from the properties of its parts." (CAPRA, 2006, p. 34). According to Vergara and Caldas (2007, p. 224), "for functionalists, organizations are tangible, concrete, and objective objects."

In this way, the organizational decision-maker objectively seeks control and stability when choosing the alternative that would optimize the return or that generates a satisfactory return to the organization. In this sense, there is the influence of Cartesian thinking in the simplification of situations by limited rationality and the assumption that the objective can be easily identified, even in more complex situations. Therefore, in both cases, the decision-maker's worldview would be based on functionalist (positivist) objectivism. However, the constraints of the human capacity to deal with complex or uncertain situations would lead the objectivist decision-maker to satisfactory results and not to optimal ones as shown by the studies of Simon (1978), which exposes the fragility of the dominant functionalist paradigm.

4 COMPLEXITY AND SUBJECTIVITY IN ORGANIZATIONAL DECISIONS

Currently, it is common to associate the term complexity with situations involving multiple variables and dynamics, interactions with different objectives that challenge the human capacity for understanding. The term complex originated from the Latin *complexus* and means what is woven together, like wefts between parts of the whole (VASCONCELOS, 2002; MARIOTTI, 2007). According to Axelrod and Cohen (2000 apud MARIOTTI, 2007, p. 145) "what determines the complexity of a system is not the number of parts of which it is composed, but the interactions between these parts". For Donaires (2006, p. 29) "the complexity of a system is the result of the number of internal states it exhibits". According to Bertalanffy (2008), complexity, totality or system is found in all parts and fields of knowledge, which implies a reorientation of scientific thinking. Bertalanffy (2008) recognizes that a system is a set of complex summative elements that can be understood by the sum of elements or complex constitutive elements that can be understood not only by the parts, but also by the relationships between them.

Morin (2008), on the other hand, considers that systemic complexity lies in the fact that there are qualities and properties that can only be found in the whole (which are lost by isolating its parts) or only in the parts (which disappear under the organizational pressure of the system). In addition, Morin (2008) points out that complexity increases with the increase in the number and diversity of elements, and the greater flexibility of interrelationships. Thus, a complex situation, phenomenon, or system can be understood as a set of variables or interconnected parts capable of adaptations, adjustments, or dynamic modifications, according to the parameters, needs, and objectives of its totality.

According to Beer (1979, apud DONAIRES, 2006, p. 17), "the crucial point is that every system has a purpose". Bachelard (1978, p. 117) explains that "all formal thinking is an unfinished psychological simplification, a kind of limit-thinking that has never been reached." Bachelard (1978) also clarifies that the individual, when isolating an element for analysis, tends to simplify what is complex. According to Simon's studies (1963, 1971, 1978), this simplification is due to human limitations in dealing with situations of greater complexity. In his hierarchy of systems, Boulding (2004) points to organizations as one of the most complex systems, however, Miller, Hickson and Wilson (2004) and Daft and Weick (2007) state that research and organizational decisions are based on the simplest systems.

When relevant organizational decisions are based on a paradigm that seeks to simplify what is complex, it is assumed that the simplified solution tends, over time, to generate serious distortions and increase complexity. As organizations are among the systems of the highest level of complexity, it is imperative that the relevant decision-maker develops the ability to recognize, understand, and deal with the complex organizational environment without reducing it. By recognizing that complexity

presupposes subjectivity, a paradigm based on a simpler and more objective view of the world presents serious limitations in the search for effective solutions in an organizational context. In this way, the accuracy and scope of the results will depend on the level of perception or understanding of social reality and the organizational capacity to make effective decisions. In this sense, according to Silva and Roman Neto (2006), the perception of social reality is influenced by the adopted paradigm, and for functionalism reality is concrete, for interpretivists reality is subjective and for Marxists social reality is historical.

Among the assumptions of subjectivity studied by the social sciences, ontologically social reality is a product of human consciousness; epistemologically it has an anti-positivist bias; In terms of human behavior, the individual possesses free will and; methodologically, the most appropriate method is the one that uses the closest approach to the investigated theme (DONAIRES, 2006). Therefore, in social and organizational environments known to be highly subjective, new parameters of decision-making and scientific research are defined, presenting favorable conditions for the emergence of an emerging paradigm.

Nevertheless, of the social science paradigms addressed by Burrell and Morgan (1979), two of them are associated with subjectivity: the interpretivist paradigm subject to regulation and the radical humanist paradigm subject to radical change. However, by presupposing the alienation of the human mind by social reality and the economic exploitation of individuals by organizations, the radical humanist paradigm presents an essentially critical position of the existing social system, proposing a radical deconstruction of this system of organizations, which distances it from the possibility of making it the emerging paradigm capable of competing with the dominant paradigm. The fact that the radical humanist paradigm believes that the current reality is the result of an alienation of the human mind exposes the fragility of this paradigm given its inability to propose how society should be constituted from its own perspective.

Thus, the alternative paradigm with conditions to understand and deal with the subjectivity and complexity of the existing social and organizational system, without proposing its deconstruction, is the interpretivist/interpretationist paradigm. According to Vergara and Caldas (2007, p. 224), "for interpretationists, organizations are processes that arise from the intentional actions of people, individually or in harmony with others. [...] Social reality is a network of complex and subjective representations." According to Daft and Weick (2007), organizations must find ways to understand and interpret their environment, and interpretation is one of the distinguishing elements between the system of organizations and lower systems. Also according to Daft and Weick (2007), organizational decision-making is part of a process that involves information and interpretation, and decision-making processes can characterize interpretative modalities of reality.

In view of the instability or flexibility and the multiple systemically interconnected factors that characterize complex situations, another point to be considered is that the objectives are not always easy to define or identify (CHECKLAND, 2000). Rodrigues (2006) points out that in the *hard* worldview, one believes in the existence of a solution to every problem; in the soft worldview, the existence of a situation of difficult definition of the problem is recognized, and in this case, actions oriented through learning about reality are sought. In fact, without the possibility of identifying the problem, decision-making based on the functionalist paradigm is unable to find objective and concrete solutions, which opens the door to paradigm shifts in society.

On the other hand, Grandisoli and Jacobi (2020) clarify that the sustainability paradigm depends on propitious educational paths, but which are increasingly distant, for the formation of individuals with conditions to understand reality in a systemic, inter and transdisciplinary way that lead to choices for a greater, collective good. Therefore, it is emphasized that sustainability, in this study, is not approached as a paradigm in itself that emerges from a cohesive and consistent ontological and epistemological framework, but rather as a broad, political and subjective concept of an interdisciplinary nature that encompasses areas of knowledge such as the natural and economic sciences, whose dynamic focus involves different social realities in constant behavioral transformations. technological and marketing technologies. Thus, because it is a subjective concept and susceptible to individual, social and organizational interpretations, it was decided to analyze it from the perspective of the paradigms of the social sciences. From the interpretative perspective of the situations, it is possible to systemically understand the high degree of complexity of organizational decisions in view of the connections between the dimensions, pillars and principles of sustainability.

5 SUSTAINABILITY IN ORGANIZATIONAL DECISIONS

Since the emergence of the concept of sustainable development proposed by CMMAD (1988), which suggests a form of development capable of meeting the needs of current and future generations in all the complexity that permeates this concept, important productive, social and technological transformations have been implemented. According to Elkington (2012), sustainability is the principle capable of ensuring that the actions of current generations do not compromise the economic, social and environmental options available to future generations. In this sense, it is currently possible to perceive that organizational decisions have been contributing to the reduction of negative externalities and the generation of positive externalities. Externality occurs when the impacts of a certain activity or decision cause unintended impacts (losses or gains) to another party without any compensation (DALY; FARLEY, 2004).

In a market economy, organizational decisions can be made from perspectives other than sustainability. Among the possible perspectives, the vision of sustainability as a market strategy, a set

of principles and rules of conduct with an emphasis on organizational reputation, eco-efficient production processes and reduction of production costs, compensatory external socio-environmental actions or even a marketing strategy towards the consumer market stand out. Therefore, the achievement of sustainability depends on the understanding, purpose, and organizational capacity to simultaneously deal with the various factors involved. This does not necessarily mean that a competitive organization must forego profitability or the wealth generated over time in order to get closer to sustainability. In the search for sustainable results, in many cases, a company capable of systemically dealing with the complexity of decisions in the face of factors can certainly further leverage its returns, improve its reputation or become even more eco-efficient.

In this sense, Loures (2012, p. 26) warns that "it is necessary to abandon the false idea that taking responsibility for social and environmental well-being harms profitability". Makower (2009) explains that companies are realizing that it is possible to combine competitive strategies of (eco)efficiency, which is reflected in the reduction of waste and production costs, with sustainable organizational strategies associated with cleaner and more responsible production, which lead to higher returns. Merico (2009) reinforces that in terms of production, it is possible to build a sustainable economy with cleaner industrial processes and sustainable products that meet expectations in relation to products of high ethical and environmental standards. As Merico (2009, p. 17) points out, "although command and control mechanisms are essential today, and will certainly continue to be so in the future, it is increasingly clear that the fundamental thing is to progressively build new ways of organizing society economically." Elkington (2012) argues that capitalism probably cannot be trusted to ensure that the 21st century is the sustainable century, but points out that organizations are waking up to the need for change given the scale of the challenge.

Merico (2009) explains that sustainability points to the desire to change social and environmental paradigms, because the current process of economic development is unsustainable and economic rationality must undergo changes that incorporate social and environmental limits. This is due to the fact that current decisions, models and analysis tools are increasingly inadequate (ELKINGTON, 2012). For Loures (2012, p. 41) "the basic flaw of the command and control paradigm lies in thinking that by understanding things we can impose order on them". The essence of the market economy lies in the freedom of individual choice and the pursuit of increasing economic and financial results. Nevertheless, under the influence of sustainability, organizations that operate in the market economy already understand that their decisions can overcome the limitations imposed by the functionalist paradigm, raising productive and economic activities to another level of understanding of socio-environmental complexity.

The challenges faced by society are compounded by increasing complexity with economic, social, technological and environmental changes that require new demands on decision-making

(ELKINGTON, 2012). Makower (2009, p. 1) clarifies that "urgent environmental problems, such as climate change, are being seen as opportunities for innovation, stimuli for new products, processes, markets and business models". Willard (2014) also states that sustainability issues lead to new business opportunities and involve cost reduction, productivity improvement, employee retention, risk reduction, and increased profits. Organizational decision-makers have already realized that the achievement of economic objectives needs to be grounded in sustainable business strategies. Willard (2014) also reinforces that socially and environmentally responsible companies need to act as leaders in their sectors and consider the process of transition to sustainability as a competitive advantage.

With a broader and deeper understanding of organizational complexity, it is possible to break the limiting barriers of functionalist thinking focused essentially on merely economic results and systemically broaden the perspective of the worldview that can contribute to sustainable organizational results. The current modern (functionalist) paradigm is already showing clear signs of exhausting its potential for the future of humanity, as the logic of the dominant production and consumption system is in contradiction with sustainability (BOFF, 2014). For Merico (2009) and Willard (2014), the current model of economic development is unsustainable because it further deepens the disruption of the processes that sustain life and production. In fact, there is an ongoing process of paradigmatic rupture, towards a form of social and organizational organization that needs to continuously seek harmony and balance between the important systems in connection. However, although the concept of sustainability proposes an ideal of harmonious coexistence of humanity with the planet, it is evident that conceptual subjectivity leads to different directions and interpretations according to reality, experience or worldview.

Perhaps, among the biggest challenges of sustainability is the search for answers to what really needs to be sustained, what are the motivations and how to achieve a result that is effectively sustainable. Academic studies, social expectations, and organizational experiences can contribute to the definition of clear, integrated, and convergent parameters on sustainability. The development of integrated models, analytical methods and sustainable organizational strategies seek to contemplate the subjectivity of the environment through multiple dimensions, pillars or criteria of sustainability. In academia, there is a consensus that sustainability involves at least three dimensions and their cause-and-effect processes, which can be seen as an attempt to reduce complexity. Among the three main dimensions of sustainability, economic, social and environmental are (DALY, 1996, ELKINGTON, 2012, SACHS, 2008).

There are also authors such as Ignacy Sachs (2007) and Leonardo Boff (2014) who defend the need for other dimensions, in addition to these three also pointed out by the UN in the Brundtland report (1987). For Munck (2013), only a more complex system can face situations of high complexity and this depends on greater flexibility to create synergy and add value, given the high level of

complexity. Obviously, when considering that, under the influence of the functionalist/positivist paradigm, organizational decisions with an essential focus on the economic dimension tend to achieve at most satisfactory results, it can be inferred that any dimensional insertion arising from the challenges of sustainability will result in an increase in the level of complexity to be faced by the society of organizations.

Given the inevitable complexity present in the concept of sustainability, the interpretative paradigm can bring important contributions to organizational decision-making. As already discussed in the previous sections, both in methodological and strategic terms, the interpretivist paradigm depends on methods capable of dealing with the subjectivity of qualitative variables, methods based on a philosophical view that reality can be influenced by individuals and organizations. In theoretical terms, the transition from a functionalist paradigm that recognizes the reality external to the individual and seeks in fragmentation and simple measurement, static and optimized results, points to an interpretative paradigm that requires from organizations and individuals an interactive, dynamic and integrated thinking about social and sustainable phenomena for a better understanding of the reality around them.

It is worth noting that the worldview based on an interpretivist paradigm in no way excludes or rejects the analytical knowledge of quantitative variables characteristic of the functionalist paradigm, in the face of situations in which such knowledge, applications, models and methods are, in fact, recognized as more effective in terms of decision-making and organizational results for sustainability. Finally, it is also highlighted that the adoption or option for certain dimensions (pillars) in studies or decisions aimed at sustainability is not intended to reduce, fragment or even simplify the reality of the phenomena, but rather to propose a rupture with the dominant paradigm by recognizing the possibility of a much broader process of understanding, reflection and simultaneous reasoning. deep, dynamic, organized, and systemic about the interactions between the parts that make up the subjective whole of sustainability.

6 PARADIGMATIC INFLUENCES ON ORGANIZATIONAL DECISIONS

Sustainable decisions, according to Merico (2009), demand a conception of the world guided by values that are not only economic, but that contemplate at least social and environmental aspects (ELKINGTON, 2012; 2012; DALY, 1991; 1996; SACHS, 2008). However, this new perspective refers to a complex situation and demands a subjective view and understanding of the complexity involved in sustainable decisions. This new logic requires a shift in worldview from an emphasis on economic competitiveness to sustainability. In this sense, Willard (2014) argues that companies that are environmentally and socially responsible are necessary to act as leaders in the transition to sustainability. Based on this proposition by Willard (2014), it is understood that the relevant strategic

decision-makers of companies also need to incorporate new epistemological, methodological and theoretical frameworks into the analysis and worldviews, which requires training, preparation and coherence of executives and other professionals regarding the organizational role in relation to sustainability.

In relation to the process of education and training of managers oriented towards sustainability, Closs and Antonello (2013, p. 1) argue that learning should take place as processes of collective transformation that accompany social and cultural changes that open up possibilities for more critical and reflective management training and that take into account subjectivity and more inclusive and participatory visions. distant from the individual form that occurs in the midst of social and corporate pressures against such transformations. In addition, the authors also emphasize that this learning process should enable the critical insertion of the manager in society and should contemplate in the teaching-learning process, dimensions such as social, economic, cultural, political, and historical, as well as intellectual, affective, and moral, and not only material (CLOSS; ANTONELLO, 2013)

With regard to the strategic orientations of companies in view of sustainability, Coral (2002) argues that the three basic conditions of sustainability (economy, environment and society) would be seen as conflicting and mutually exclusive in the neoclassical economic model and the central concerns of managers would reside in economic and technological issues, in order to ensure the return to shareholders . On the other hand, in the view of Rezende and Santos (2006), when companies adhere to the logic of sustainability, they are supposed to be committed to principles of social and environmental responsibility. An example of this is the financial market, which, through bodies such as the Brazilian Securities and Exchange Commission, has introduced institutional changes that concern the adherence of organizations to a project of social and environmental commitment. To this end, companies need to ensure that they take into account in their activities, at least: the relationship with employees and suppliers; relationship with the community; corporate governance; and the environmental impact of its activities (GALLON; ENSSLIN, 2008).

In order for the shift from the exclusive orientation to the economic dimension in decisions to occur for decisions that take into account sustainability – economic, environmental and social, it is necessary that decision-makers adopt a systemic vision, supported by flexible methodologies that are adaptable to the situations encountered. In the process of change, according to Cao and McHugh (2005), there are interactions and an environment characterized by diversity - in the conception of Miller, Hickson and Wilson (2004) and Daft and Weick (2007) organizations are among the most complex systems - which is in line with Morin's (2008) perspective on the complexity of systems. Thus, the systemic view takes into account multiple possibilities of unfolding and admits that the solutions do not need to be optimal, but satisfactory. In this type of decision, complex processes are

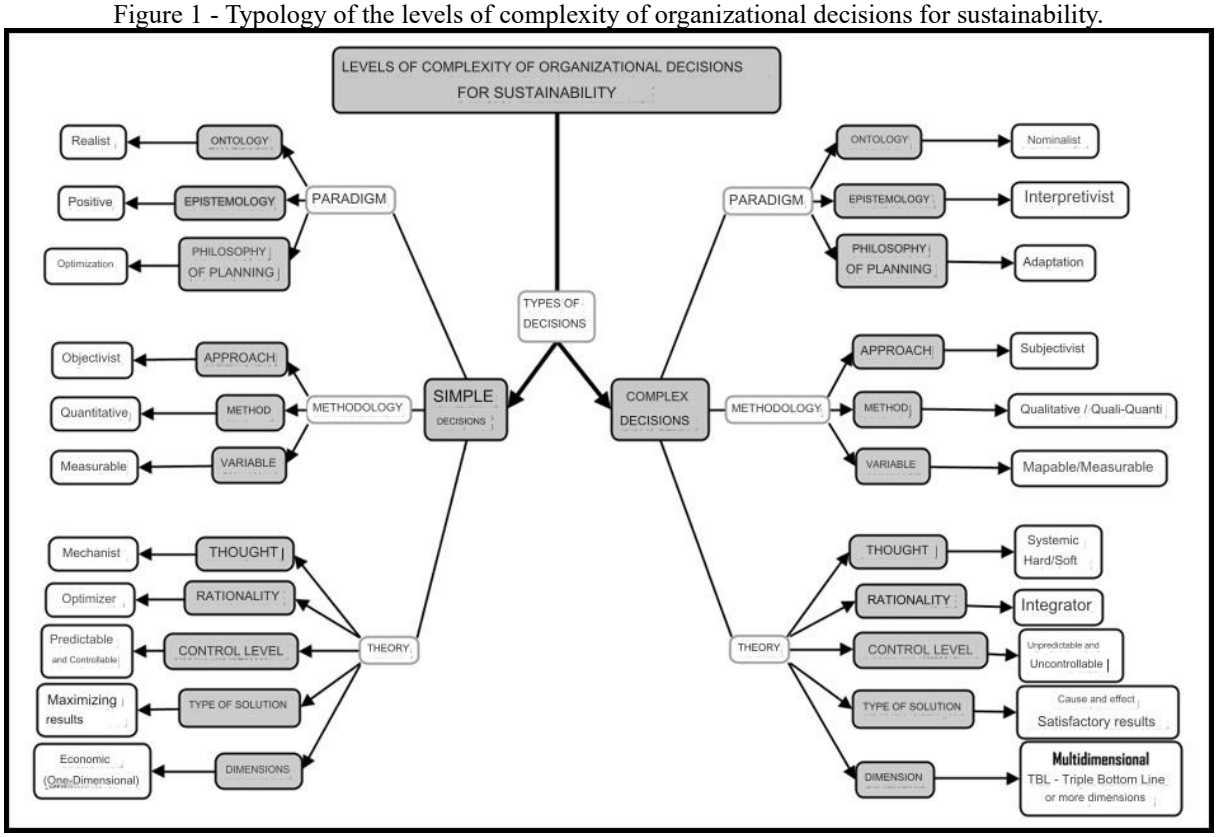
triggered that, according to Morin (2008), admit the coexistence of antagonists, avoiding the fragmentation and simplification of reality, typical of reductionist logic.

Moreover, reality is not seen as a recipe or order, but from the perspective of challenging thought and recognized as incompleteness. In practice, this new way of acting by companies implies the adoption of processes that reduce the waste of inputs – energy, water, raw materials, with increased eco-efficiency, as well as planning the insertion of products in production cycles – closed or open, at the end of their useful life cycle. In this sense, at the end of the life cycle of the products, it is possible to reuse them to obtain competitive advantages. These practices contribute to the establishment of relationships that promote the development of more interactive organizational structures, which favor the emergence of creative and innovative ideas with teamwork for problem solving. There is also greater participation and involvement of different stakeholders, who gain space to participate in organizational decisions.

7 ANALYSIS OF THE LEVELS OF ORGANIZATIONAL DECISIONS FOR SUSTAINABILITY

As seen in the theoretical approach of this article, it was observed the possibility of hierarchizing the analysis of the levels of sustainable organizational decisions based on three important criteria: the paradigmatic, the methodological and the theoretical. The paradigmatic criterion involves the classification of the levels of complexity of decisions in terms of ontological, epistemological and planning philosophy. The methodological criterion for classifying the levels of complexity of decisions comprises the elements related to the method, the approach and the type of variable. Finally, the theoretical criterion for the analysis of decision-making levels for sustainability contemplates the type of thinking, rationality, type of solution, level of control, dimensions involved at each level in relation to sustainability. Figure 1 shows the typology of the levels of complexity of decisions for sustainability and the criteria at the hierarchical level.

Figure 1 - Typology of the levels of complexity of organizational decisions for sustainability.



Source: the authors.

In the paradigmatic perspective, simple decisions are characterized as those based on the realist ontology of functionalist (positivist) epistemology. This level of decision-making would be classified as a philosophy of planning, optimization or satisfaction (ACKOFF, 1975), that is, it is the type of planning in which the decision-maker seeks to do as well as possible. In the methodological context, simple decisions generally use the quantitative method, with an objectivist approach and measurable variables to obtain accurate and result-optimizing answers.

From a theoretical perspective, simple decision-makers generally adopt a mechanistic/positivist way of thinking, which is based on extreme rationality in which the desired solutions are maximized in their fullness (optimal). At this level of decision-making, the aim is to obtain results in the short term and the disciplinary approach is fragmented (atomistic). The decision-maker is the only one involved with the decisions, not accepting participatory involvement. In relation to sustainability, it usually attends only to a single dimension, the economic one, as it focuses on the organization's individual economic interests and for this reason tends to contribute to the unsustainability of the organizational activity.

On the other hand, complex decisions, in paradigmatic terms, have as the criterion related to ontology, a nominalist posture, that is, social reality is perceived as a subjective existence produced by individual or shared consciousness (DONAIRES, 2006) and adopt the interpretivism of the social sciences as the epistemological criterion. According to Ackoff's (1975) planning philosophies,

complex decisions are related to adaptation planning, which has three parts: 1. the main value of planning is in the process it produces; 2. most of the problems that planning seeks to eliminate or avoid are man-made, and; 3. Knowledge of the future can be divided into certainty, uncertainty and ignorance and for this the following types of planning are required consecutively: commitment, contingency and adaptation.

In the methodological context, the criteria that deal with the method point to the qualitative or qualitative-quantitative approach of decisions, its approach is classified as subjectivist and the type of qualitative variable mappable and, in some cases, also measurable. Within the theoretical aspect, decision-makers at the level of complex decisions use *soft systems thinking for situations* with multiple variables or unstructured situations, and hard systems thinking for situations in which the problem has structure, clear objectives or even a smaller number of identified variables (CHECKLAND, 2000; MACKNESS, 2006). As the thinking is systemic, the rationality criterion is integrated, the type of solution emerges from deep analysis of cause and effect with results tending to be satisfactory and long-term, as for the criterion of level of control, it is classified as of little control or even unpredictable and uncontrollable.

The high level of complexity of this type of decision requires a much more participatory and shared process in relation to the organization's decision-making process. This converges with the idea of Gomes, Gomes and Almeida (2006) that making complex decisions is usually a task that challenges individuals and teams of professionals, because it involves decisions that must meet organizational objectives without compromising other dimensions involved. In view of the ability of the decision-maker at the level of complex decisions to deal with multiple variables simultaneously, or to understand problem situations for their structuring, the criterion of the dimensions of sustainability suggests that complex decisions consider their multiple dimensions such as economic, social, environmental, cultural, political and territorial, among other possible and identifiable dimensions. Thus, when these dimensions are simultaneously addressed, the tendency is for organizations to contribute to sustainability. It is important to note that the increase in the number of dimensions of sustainability further increases the level of complexity of decisions and the prediction of possible outcomes.

8 FINAL THOUGHTS

The main purpose of this article was to promote a reflection on the possible influences of organizational paradigms on decision-making directed to sustainability. The definitions and characteristics of the paradigms of the social sciences were addressed and reflections were made on how objectivity and subjectivity present in environmental understanding and organizational decision making can influence sustainability. Organizational studies bring the importance of social science

paradigms to the understanding of the limitations of worldviews and the rationality that involves the functionalist paradigm, as well as the possibilities and uncertainties present in the interpretative paradigm regarding the challenges of organizational sustainability. In addition, the study showed the evolution of decision theories, highlighting that individual rationality presents constraints when dealing with unstructured situations of high complexity.

The emphasis of the functionalist paradigm on maximizing results and its assumptions of predictability and simplicity presents serious restrictions for situations that contemplate the need to deal with multiple factors and variables simultaneously, as in the case of decisions aimed at sustainability. The need for an interpretative bias that enables a deeper understanding of the subjectivity that surrounds organizational decision-making can contribute to a better understanding of the complex systemic connections of cause and effect that exist between dimensions of sustainability.

The change to a paradigm that contemplates the complexity of the factors and dimensions of sustainability does not mean the abandonment of what was previously constructed by the functionalist paradigmatic on organizational decisions, but indicates a reflection of the limitations of this paradigm and reinforces it the advance to other epistemologies that recognize the subjectivity and complexity of situations involving the society of organizations. the dynamics of markets and the most harmonious interactions with the natural environment. Therefore, it is not a question of breaking with the functionalist/positivist paradigm, even because it continues to be the dominant paradigm and much of what has been achieved by contemporary society is due to the functionalist perspective of seeing the world. What is suggested here is the possibility of a transition between paradigms, making the paradigm that best responds to organizational situations and challenges in the search for sustainability stand out, given the existing complexity, which characterizes a kind of hierarchy of paradigms.

Discussing sustainability as a paradigm is an academic and organizational reality. However, the characteristics of a sustainability paradigm are as imprecise as the concept of sustainable development itself, and reflections on the paradigms of the social sciences, specifically with regard to the dichotomy between functionalism and interpretivism presented here, can contribute to delineate the philosophical, methodological, theoretical, strategic and practical aspects for achieving sustainability through organizational decisions. The contributions of this study are in the discussions presented and not exhausted between the chosen paradigms and in the proposition of a typology (figure 1) that allows the analysis and classification of the levels of complexity of sustainable organizational decisions. Among the limitations of the study, we highlight the impossibility of addressing other broader paradigmatic classifications and the non-application of the typology to situations of high complexity regarding sustainability. For future research, it is suggested that new paradigmatic approaches be contemplated by theoretical essays that contribute to the development of important reflections on various organizational and socio-environmental aspects.

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