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Sophia 33: 2022.

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Sophia 33: 2022.

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Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 27-28

Philosophy of the mind and education

Filosofía de la mente y educación

SUMARY

Sophia 33: 2022.

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626.

Sophia 33: 2022.

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Editorial

We are pleased to present the 33rd issue of Sophia: Collection of Philosophy of Education, whose main topics present various approaches and perspectives on the philosophy of the mind, bounds, impacts and relationships with education.

In this sense, this volume tries to answer relevant questions such as: What is the mind itself? What is the relation between mental processes and brain processes? What is philosophy of the mind? How to understand the relations of philosophy of the mind with education? What are the learning paradigms in the educational field? What is the object of study of philosophy of the mind? Is it possible to speak of interdisciplinarity as a reference to understand philosophy of the mind? What are the binding elements between language, thought and institution? How do we explain the corporal and extra-corporal extension of the senses? What happens in the head of the human being while thinking? What aspects define the mental structure in the subject? What mental aspects affect the subject for the emission of a true or false judgment? What is the incidence of the interests and concerns in the process of teaching philosophy? Why are there different ambiguities produced in the construction and/or in the use of categories in the mind of the subject? The answers to these questions will allow us to understand the sense, meaning and importance of the philosophy of mind.

The human being has always sought to explain the various problems that arise about himself, about the world around him and about the divinity; in this sense, in the effort of self-understanding emerges the need to understand the mind-body relationship, being a central aspect and the basis for the configuration of the Philosophy of Mind, which with the rise of cognitive sciences and computational sciences has constituted since the second half of the twentieth century as that which is concerned with the study of the different mental processes and their relationship with the body represented by its main dynamizer: the brain, aspects that aim to establish the bound between the mind and the behavior of the subject. Regarding the emergence of the Philosophy of the Mind, Sanguineti (2008) argued that "... it arises in the context of cognitive sciences and today it could be considered as the meeting point of these sciences

Sophia 33: 2022.

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that philosophically reflect on the problems they pose" (p. 1). Likewise, the aforementioned author notes that:

In the first half of the 20th century, the Philosophy of the Mind appears as a denomination typical to studies outlined with the methods of analytical philosophy and that tries to give a content to "mentalistic" themes -perception, intentions, representations- without capsizing the physicalist reductionism of the logical empiricism of the Vienna Circle (Sanguineti, 2008, p.1).

Nevertheless, the antecedents of the Philosophy of the Mind are already found in antiquity, when classics such as Aristotle considered that every natural body that participates in life has a soul, in other words, he argued that all matter has form, thus moving from Platonic anthropological dualism (body-soul) to a hylemorphism (matter-form). The philosophers of antiquity already reflected on the relationship between mind and body, an aspect that was later reinforced in modernity with the approaches of Descartes (1596-1650) for whom the mind was identified with consciousness and self-consciousness, and who also proposed to distinguish it from the brain as the space of intelligence, reason for which most scholars recognize him as the first to formulate the mind-body problem, a relationship known as Cartesian dualism.

The Philosophy of Mind constituted a branch of philosophy that proposes to address general questions about the origin, essence, and nature of mental phenomena (perception, sensation, desire, decision, volition, intention, representation and all the contents of the mind) in order to provide a systematic explanation of the world in general. Sanguineti (2008) considered that among the topics that deal with the Philosophy of the Mind are some related to psychology or neuroscience, such as:

> ... the categorization of mental acts and their relationship with neural acts, sensations or perceptions (qualia) and the matter of consciousness, intelligence and emotions, intentionality, self and freedom, mental causality, knowledge of "other minds", rationality... it would be desirable that the philosophy of the mind,...be connected with a more complete anthropology or vision of man, rooted in the notions of human person and reciprocal personal social relations (p.1).

The study of the mind deepens in the mid-twentieth century due to the parallel growth experienced by cognitive psychology and computer science (which proposed the sophisticated creation of systems for understanding the functioning of the set of neural networks of the human brain) along with the progress achieved by neuroscience (especially dur-

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 33-39.

ing the 1980s) and the development of artificial intelligence systems that forced new reviews, discussions and proposals in all fields of knowledge. In the 21st century, these antecedents make us turn our gaze to the Philosophy of the Mind and the study of the brain as its new object of study.

From the above, a series of questions have derived that are linked to the intentional content of the mental states of the teacher, of the student, of the mental processes that occur when we teach and of what happens in the mind of the subject who learns; of the beliefs, of the desires present at the moment of decision making; of the internal processes that arise in the face of the behavior and/or diverse actions of human beings. The question that concerns is: is everything we do preceded by a mental action or by physical-chemical laws (in the style of neuroscience) in which our intentions have nothing to do with? There is no single answer to the problem, on the contrary, there are multiple answers that depend on the categorical and comprehensive tendency of each one, which is why in recent times there is evidence of what, paraphrasing Moya (2006), would be a transition from the Philosophy of Mind to the Philosophy of Neurosciences or to Neurophilosophy, under which it is intended to address aspects of cognitive psychology (cognitive processes or consciousness) or would imply what Sanguineti (2008) says when he argues that:

> Given the importance of neurosciences, the topic neurophilosophy or philosophy of neurosciences has increased, even with "specialized" sectors such as neuroethics, which deals with ethical problems arising from the possibilities of medical or computational intervention in mental capacities linked to the brain or nervous system. For a similar reason, one could also speak of the philosophy of artificial intelligence (p.1).

In any case, this situation has a significant impact on the understanding of the sciences of cognition, behavior, bioethics, psychology and of course education, since regardless of the approaches, cognitive elements such as mental operations "...sensations, perceptions, emotions, conceptual processes, decisions, consciousness, freedom" (Sanguineti, 2008, p.1) will always remain being the same and are issues that will continue to be a permanent task of education as regulator of practices, behaviors and actions of human beings in society.

This is the context for the creation of volume 33. In this first section, the itinerary is as follows:

The article titled *Philosophy of mind and some paradigms of learning in Educational Psychology*, written by José Fernando Ospina-Carmona; Gloria del Carmen Tobón-Vásquez; Diana Marcela Montoya-Londoño;

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 33-39.

and Javier Taborda-Chaurra, aims to determine the existing relationships between mind and learning, approached from the philosophy of mind, psychology and educational psychology. Likewise, the authors try to explain the mind from different perspectives and horizons of understanding that applied to education would allow teachers to have the opportunity to understand thinking, to communicate with others and to recognize that the other has a mind. Among other aspects of interest, they address the issue of the relationship between representation, medium and content and its implications in teaching. In addition, the writers refer to the contributions of learning theories and know the importance of language mediation as fundamental in the configuration of the representation of the world.

The manuscript *Delusion in schizophrenia as an object of interdisciplinary study in the philosophy of mind* is written by Pablo Andrés López Silva and Álvaro Eduardo Cavieres Fernández. The authors analyze delusion as the most frequent transdiagnostic phenomenon in schizophrenia and as a mark of psychosis that has been historically considered. The study of the nature of the human mind has become one of the most relevant topics; in this sense, the writers argue that delusion has attracted the attention of philosophers, psychiatrists, and researchers in cognitive sciences in the last twenty years. Thus, the topic of delusion continues to be a source of concern and to generate diverse conceptual and empirical discussions that go beyond the field of rhetoric and contribute to clinical and experimental research, as well as to advances in its treatment.

On the other hand, the article *Language, institution and person*, written by Gustavo Alfredo Agüero, proposes to inquire about thought and language as two concepts that are at the core of the constitution as rational beings. The author seeks to analyze the connection between these two realities (thought and language) as fundamental and operative issues in people understood as complex beings and as beings of institutions; he tries to determine the relationship between the individual and the community. He defends the idea that it is the conceptual nature of the content of our thoughts and acts that makes rationality possible and configures the linguistic system.

Likewise, *The corporeal and extra-corporal extension of the senses,* written by Babu Thaliath, reconsiders the prevailing aporicity of the corporeal and extra-corporeal extension of the senses and solves it by means of a methodological analogy between the bodily extension of senses and the extra-bodily extension of the senses of sight and hearing. Theoretically, the author tries to establish a complementarity between philosophical

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 33-39.

and scientific epistemologies. This may lead to a scientific proof based on which the actual extension of the bodily and extra-bodily senses could be dictated by a philosophical epistemology and confirmed by a scientific-experimental investigation. In this regard, the writer states that the extension of the senses remained being an unresolved aporia throughout the history of the theory of perception. He states that the revival or rehabilitation of the theory of vision in early Cartesian modernity strategically reversed the predominant position of the sense of touch, which had prevailed in medieval scholastic philosophy, in favor of the sense of sight and since then, the external extension of vision has remained being an aporia, problematized and discussed in the works of Descartes, Locke, Molyneux, Berkeley, Condillac, Helmholtz, Gibson and others.

This section finishes with the article *What happens inside my head when I think*, presented by Taís Oliveira Martins, Marcelo Leandro Eichler and Janine Vieira. The authors set out to recognize the representations of human beings on the functioning of thought, ideas that involve mind and brain; they try to answer the guiding question stated in the title of the document. The authors observed that children associate the functioning of thought with familiar contexts, typical contents and key ideas that demonstrate their personal beliefs, an aspect that leads the writers to state that the biological content is determinant at all ages.

The miscellaneous section contains philosophical reflections coming from different geographical settings, ideological trends, approaches, and perspectives such as those described below:

The manuscript *Hermeneutic-dialogical elements for an eco-relational university education,* written by Fernando José Vergara Henríquez, works on some hermeneutic-dialogical elements of hermeneutic pedagogy applied to "university formation" for an eco-relational education. In this sense, the writer proposes an approach to university education from the Gadamerian philosophical hermeneutics to assume dialogue as a permanent source of humanization, overcoming differences and approaching truth, from which he establishes an eco-relational dialogic model whose axis is language for the inter-human understanding of a humanizing education, resulting from the crossing between the theoretical elements coming from philosophical hermeneutics, critical pedagogies and the requirements of university education as a community of meaning. The author concludes that university education plays in the exchange between subjectivities and otherness, where dialogue is the mediator between the concept and the educational experience, since the *ethos* of

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education is dialogue as, in turn, the *thelos* of education is interhuman understanding.

Likewise, the article *Daring to speak the truth from the good Greek citizen, to the relativism of Nietzsche and the care of oneself in Foucault*, written by César Augusto Ramírez-Giraldo and Rubén Darío Palacio-Mesa, highlights the need to rethink the problem of truth, which according to the authors has been a permanent challenge for human beings throughout the history of mankind. The writers present the subject by means of three moments in history in which daring to tell the truth became the basis of philosophy, analyzing the problem in ancient Greece, then focusing their attention on Christianity and the consequent criticisms made by Nietzsche, and finally, reflecting on Foucault's proposal, thus opening the way for new reflections on the problem of post-truth.

The paper *Teaching philosophy to adolescents based on their interests and concerns*, written by José María Nava Preciado, is based on the interest in finding didactic strategies to encourage philosophical disquisition in adolescents from their own motivations, for which the author starts from the assumption that there is a clear philosophical nuance in the concerns and reasoning of the students. The author's objective in this article is to explore the ordinary questions that young people have about the oddities of the world and about themselves, as the necessary basis for building a philosophy teaching project that is structured from their own voice. The writer is convinced that, from the students' own questions and interpellations, it is possible to include philosophy in educational institutions, always defining problems and topics of interest from the world and adolescent life.

The article *Ambiguity in the educational technology category*, written by Freddy Varona Domínguez, aims to show some theoretical criteria on ambiguity; he approaches the course of the technology category and the imprecision in its theoretical use; and finally, he deals with the educational technology category and the ambiguity that exists in it and in its use, reviewing some of the causes of this ambiguity. The author´s aim is to analyze ambiguity in the educational technology category.

Finally, the paper *Quality referents in Ecuadorian higher technological education*, written by Rodrigo Lucio Reinoso-Avecillas and Darwin Italo Chicaiza-Aucapiña, analyzes the quality of Ecuadorian technological higher education, and reflects on the need for the formation of student capacities, the review of the different administrative management processes and the proposal of improvements in terms of the promotion of institutional culture, organizational climate, strategies and instru-

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ments for monitoring and assessing this type of education. They study different evaluation models of higher technological institutes in Ecuador from 2010 to 2020 to show the need to rethink public policies from the State and strengthen the agency of the institutes.

Dear reader, we hope that the ideas presented in the 33rd issue of Sophia: Philosophy of Education Collection will serve to construct new proposals for reflection, for new research, approaches, perspectives and/or theories that will gradually contribute to educational transformation and to the construction of a different society.

Floralba del Rocío Aguilar Gordón
Editor-in-Chief

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Philosophy of mind and some learning paradigms in educational psychology*

Filosofía de la mente y algunos paradigmas del aprendizaje en Psicología de la educación

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Abstract

The objective of this review is to give an organized account of the set of ideas that support the possible relationship between mind and learning, approached from the philosophy of mind, psychology and psychology of education. The mind is understood from different perspectives, however, if given the character of a set of faculties, it would point to the existence of a set of capacities and dispositions in human beings, which allow them to have beliefs, think, communicate, among other activities. These understandings allow teachers to have the opportunity to understand thought, and to communicate with others, i.e., to recognize that the other has a mind. For its part, representation refers to something that represents something else, and in these representations, mental states are subsidiary to a representational function, Thus, the relationship of medium and content representation has a substantial correlation that has important implications in teaching. Regarding learning, different currents have explained it, however, Piaget and Vigotsky, recognize the existence of a system in charge of configuring the representation of the world, in which the mediation of language is essential. It is concluded that the relationship between mind and learning, mediated by representation, is an opportunity to appreciate possibilities of linking a philosophy of mind with learning

Keywords

Philosophy, learning, psychology, education, representation, mind.

Resumen

El objetivo de esta revisión es dar cuenta de manera organizada de un conjunto de ideas que soportan las relaciones entre mente y aprendizaje, abordadas desde la filosofía de la mente, la psicología y la psicología de la educación. La mente es comprendida desde diferentes perspectivas, sin embargo, si se le da el carácter de conjunto de facultades, se señalaría la existencia de capacidades y disposiciones en los seres humanos, que les los constituyen en sujetos que pueden tener creencias, pensar, comunicarse, entre otras actividades. Estas comprensiones permiten a los maestros tener la oportunidad de comprender el pensamiento, y de comunicarse con los demás, es decir, reconocer que el otro tiene mente. Por su parte, la representación hace referencia a algo que representa otra cosa y en estas representaciones, los estados mentales son subsidiarios de una función representacional, por esto, la relación de representación medio y contenido guardan una correlación sustancial que tiene implicaciones importantes en la enseñanza. Con relación al aprendizaje se reconocen las diferentes corrientes que lo han explicado, sin embargo, desde Piaget y Vigotsky, cognitivistas, se reconoce la existencia de un sistema encargado de configurar la representación del mundo, donde es fundamental la mediación del lenguaje. Se concluye que el establecimiento de una relación entre mente y aprendizaje, mediado por la representación, es una oportunidad para apreciar posibilidades de vinculación de una filosofía de la mente con el aprendizaje.

Palabras clave

Filosofía, aprendizaje, psicología, educación, representación, mente.

Introduction

In the last seven decades, interest in mental issues and in cognitive processes associated with learning in psycho-pedagogy has gained momentum and consolidated. In the perspective of Ferrater (2004), the construct of the mind in the history of humanity and in different contexts has been associated with concepts such as the soul, the spirit, the understanding, the intellect, and the psyche, normally linked to some philosophical tradition, historical period

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or paradigm in science (or particularly in psychology) without there being a conceptual unification in this regard, since a semantic homogenization would reduce its polysemic potential and limit the understanding of this field of knowledge. In a similar perspective, one could speak of learning, but essentially in relation to what is meant by the term; thus, each paradigm denies, confirms, locates or refers in some way the faculty, power or place and defines it in terms of change, transformation, construction, evolution, association, modification of issues as diverse as behaviors, representations, thought schemes, models, ideas, competencies, skills, abilities, processes, capacities, associations, connections, among others.

In the last two years, in scattered periods of three and four months, the authors have been discussing relevant issues associated with the philosophy of mind and different psychological and pedagogical approaches to describe and explain learning. From these discussions, agreements and disagreements, understandings and questions have emerged helping intensively to build a set of ideas that are the ones that model this conceptual review.

The aim of this review is to present the set of ideas that support a possible relationship between mind and learning, guiding the discussion in the philosophy of mind, psychology, and psychology of education. To this end, initially, the mind as a construct is approached from philosophy and the theory of mind from psychology. The issue of representation is approached, allowing a logical link between the mind and two paradigms of learning in educational psychology. Finally, some educational implications are presented, and conclusions are drawn regarding the limitations of what has been exposed and future studies are presented for authors and potential readers regarding mind-learning relationship and a philosophical approach to mental issues and learning.

The mind

Any allusion to the mind or to the mental aspect seems to necessarily refer to the relation with some substance or to some property or to a set of properties. In some way, from the ontological point of view it leads to consider that things are types of substances and that the mind is one of them or that things have properties that can be of two types: physical and mental. The theory that supports these ideas is dualism, which, according to its orientation, can be considered either substantialist or of properties.

In the substantialist dualism the mind and the body are not identical, but they are different substances; in the dualism of properties, the

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properties of things are physical and mental; the physical ones are associated with the features of physical objects such as length, volume and density present in a world considered as mechanical. The features of the mental are immaterial, they are associated in Lowe's perspective (2000) to what the person possesses as concepts, thoughts and sensations -conscious states- i.e., in the person as a subject of experience.

Both substantialist and property dualism show as a problem how mind and body are related or interact; or how one of the properties or substances is dominant in this relationship.

The matter can have different approaches in humans, as subjects of experiences. First, one could assume the denial that the physical exists as a property, that the mind, stage of reason, shelter of ideas, of will, of concepts, of language and thought, as well as of the so-called mental states, takes precedence in the constitution of what the person is; it is the mind that determines what the human being knows, a philosophical perspective that has been considered as idealism or spiritualism. Second, reducing the mental to the physical, one could assume the primacy of the physical, insofar as the source of knowledge and knowledge is based on a body that relates to the environment, that experiences in its relationship with it and in which such objective relationship is more determinant in the relationship of the person as a human being with the world, being a materialistic perspective. Thus, arguments could be extended in favor or not of one of these positions associated with the mind-body relationship or recognizing their interrelation, their interdependence, their interaction. As said, these three sides of the issue are part of the most current discussions in philosophy of mind.

Lowe (2000) affirms that Descartes' dualism is interactionist: "...it holds that the mental states of a subject or person can interact and often interact causally with the physical states of that person's body, both causing those states and being caused by them" (p. 27). And he does not fail to assign difficulties to it: a conceptual one (the physical and the mental are different entities, they do not have common properties) and an empirical one (by considering a location in the center of the brain –the pineal gland– of the interaction between the nonphysical and the body).

Any decision to side with one perspective or another is problematic. Even Putman (2012) refers to it. One or the other theory in the current state of the question may have support when dealing with the mind-body problem.

As professors, we are called to discuss about whether the mind has any localization; or if it is a kind of system without physical support. In taking a position, a position of localizationist criterion is evident, i.e.,

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there is a research line from which it is believed that there is a physical, objective element, a thing called the brain, which is the deposit, the place where the mind is established in a well differentiated way; this questioning is still problematic as the physical characteristics of such an object, of the brain in terms of size, weight, capacity for connection, morphology and physiology would relate more to the physical, to the mechanical that can be explained by the sciences of nature, than to characteristics of subjective experience that are not the same that would be observed in physical phenomena. The increment in educational neuroscience studies is led by teachers who have opted for this physicalist, mechanical version of understanding the mind. Physical processes reduce the corresponding mental processes, which seems to eliminate the latter.

In this sense, according to very influential researchers from the neurosciences, such as Luria (1988), the existence of anatomical-functional correlates of cognitive and cognition processes in general has been postulated, what has been considered from some psychological and philosophical positions as Solms and Turnbull (2004) as the easy problem, with respect to the really difficult problem, still unexplained, which allows to point out how one, in the physiological, chemical and electrical activity of his brain, becomes a self, capable of being conscious and of realizing.

From a different perspective, it is considered that human subjectivity has no direct correlation with brain functions, since there is no objective explanation so far, no empirical data that enables us to locate beliefs, subjective experiences, thoughts, among other things. In this sense, Carter (1998) has pointed out that this is a question that modern 'imaging' could somehow debate or at least partially controvert.

Many others still imagine the ethereal existence of a kind of box (understanding, soul, consciousness, mind) in which the objects of thinking are located or lodged without empirical or objectual explanation. In this sense, researchers such as Murphy (2010) point out that the concept of mind is transferred to the concept of reason, i.e., ideas, which somehow combine producing increasingly complex or abstract ideas. Close to or far from this approach, there are those who affirm and those who deny innatism in the presence of such matters of thinking.

However, correlates -close to what is believed as mind with the body- are seen in teachers who have no need to understand the one, the physical reality as something different from the mental. The body is an indivisible unity. Thus, it is considered that the human being thinks, feels, makes judgments, has beliefs and all that occurs in the body, in a corporeality that behaves as a whole. Organs and senses, mental system allow un-

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derstanding and transforming the world, establishing relationships with the world and internalizing it.

Another position for understanding the mind-body relationship is provided by psychology, with two perspectives that have been very influential: structuralism and functionalism. In the former, it was believed that in Schunk's (2012) perspective "human consciousness is a legitimate area of scientific inquiry, so they studied the structure or shaping of mental processes. They said that the mind is composed of associations of ideas" (p. 9). The method in this structuralist perspective is introspection and observation. However, it moves away from fragmenting reality and aims to understand it as an integrated set of relationships between its components.

In functionalism, following Schunk (2012) position, it was considered that adaptation is related with behaviors and mental processes. For functionalists "the functional factors were bodily structures, consciousness, and cognitive processes such as thinking, feeling, and judging...they were interested in how mental processes operate, what they accomplish, and how they vary according to environmental conditions" (p. 10). In other words, function is determined by the internal aspect that is observed in a physical state; it does not establish a metaphysical dichotomy between mind and body, nor does it affirm that they are a single substance, but rather functionalism conceptually distinguishes mind and body, which interact through representations evidenced in a physical organization defined in causal relationships constituted by environmental stimuli that cause a set of more or less complex internal processes that also interact causally and produce a set of behavioral outputs.

In Piaget, a mixture of functionalism and structuralism, it is possible to observe that schemas and operations are structures that are strengthened or transformed through processes of assimilation and accommodation. In this perspective, for Taborda (2006), the functional mechanisms that give them their special constructive character in learning are equilibration and awareness.

Fodor (1980) contextualized the discussion in two development stages in psychology. The first, psychological, oriented to "a functional characterization of the mechanisms responsible for behavior" (p. 43), without accounting for neurobiological mechanisms; and the second, associated by the same to the psychological-physiological. Thus, Fodor recognizes a relationship of dependence between the two explanations, the psychological and the neurobiological.

From what has been discussed so far, it is even possible to go further in the controversy, in which the customary mind-body dispute con-

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tinues. It is a matter of taking sides in relation to the description of the mind and of the mental as a set of faculties or as a device.

If giving the mind a set of faculties, we are indicating that there is a set of duly organized capacities and dispositions in human beings that allow them to have beliefs, to think, to use symbols in order to communicate. Thus, such a faculty would also imply acting, and such acting links muscles, organs and functioning. We would thus be speaking of a faculty that, in order to express itself, would necessarily be linked to minimal physical entities such as those mentioned above. And in order to do so, would it not somehow need a unit, somewhere, that would make such action possible? For some researchers such as Llinás (2013) such a unit resides in the brain, architect of the coordination of mental functions and multiple functions that make it possible for the relationship to somehow have expression or exposure. The capacities are in the newborns; they are developing; the dispositions are there so that thinking, using language and having beliefs become effective and give a special, human character to the subject, as he is a subject with mental states. Likewise, for some, this faculty is different from the body, while others will try to give the body and its physical experience primacy over mental states housed in the mind, in the spirit, in the soul, the depository of the aforementioned faculty.

If the mind is seen as a device, it would be very close to the thinking of Philippe Johnson Laird (1983 cited in Rodríguez-Palmero, 2008) insofar as its procedures could be developed by a mind conceived as a computational mind. The mind, the mental system, is configured on the basis of what the author called effective procedures, i.e., procedures that a machine, a computer, a robot can perfectly develop, such as obtaining information, processing it, recording it, having it available in a file or memory, recognizing it, recovering it, operating with it, giving answers. Such functions would require a device that sends information by various paths or that receives it. In humans it is the brain; in a computer it is a central processor with a language suitably configured to respond to user requests. Simple functions that account for what up to now as human beings is attributed to objects called robots, pcs, etc., given that objects and devices are now attributed affections and feelings. Today it is possible to listen expressions of affection and feelings in various robots at international robotics trade fairs.

Such devices are then considered to be at the same time capable of representing diverse spheres of the world in the form of propositions, images and even structures or models. The mind, understood in a general way, is then considered to be housed in something like a device that is at

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the same time something objective -it has length, size, density, etc.- but that fulfills functions and uses "meaningful" languages that cannot be objectively observed. If it is possible that a physical element can fulfill functions and have states that are considered subjective, in the same way in artificial intelligence it is possible to set activities, mental actions that were conceived as human in non-human devices, in objective, mechanical, physical devices built by man that can fulfill such functions. Computers would be an example of this. But, how would one answer, in this sense, to the questions: is there a mind available in computers? Could one speak of a theory of mind in material objects that show calculations, procedures, affections and feelings? Do these discussions about the mind-body relationship lead the human being to unwanted places in the humanity of humans? To recognize a mind in a computer is not the same as to recognize it as a valid interlocutor in moral, ethical or scientific and philosophical discussions?

In Dennett, following Thomson (2000) 'it is possible to recognize orienting elements that could be indicating contributions in this direction'.

> For Dennett consciousness consists of a very complex series of subtasks, and each of them is fundamentally mechanical or computational, which means that they can be syntactically represented by a formal system in a computer. If this is correct, then the computer is a good model of mental functions, because computers work with a very complex set of binary functions, which are mechanical and devoid of intelligence (cited by Thomson, 2000, p.122).

In *Consciousness Explained*, Dennett (1995) reveals his inclination to think that even a robot could have a self, a consciousness. The analogy of the mind with machines, with computers, is defended by Dennet in various passages of his work. For him, a virtual machine could explain mental phenomena, the phenomena of consciousness. Dennett (1995) says.

> If the self is "no more" than the narrative center of gravity, and if all phenomena of human consciousness are explicable "only" as the activities of a virtual machine performed on the automatically adjustable connections of a human brain, then, in principle, a properly "programmed" robot with a brain based on silicon chemistry could be conscious, could have a self (p. 443).

The latter can contribute to answer some of the frequent questions in the context of cognitive sciences, about whether machines can think, or what guides Crane's (2008) writing in *The Mechanical Mind* when he asks whether a computer can think, or whether the human mind is a computer, or whether some real mental states and processes are compu-

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tational in nature? Lowe (2000) argues that "it would be unreasonable to deny intelligence to the machine, to the computer, after considering the plausibility of the Turing test" (p.155).

Currently, it is not possible to think that there is a conceptual unity around the mind-body relationship. However, the most current and scientifically supported developments provide the understanding of mental phenomena with invaluable material to relate the mind with physical instances such as the brain or processors, as it is considered that they can, and indeed do, account for mental functions; as either the human or animal brain or a computer has the capacity to operate together many of the cognitive processes, which can be conceived as a type of mind, in such a way that such instances would be something like hardware, and the mind would be considered as a special presence: the programs, the software.

Now, why should the professor know that there are different conceptions or ideas about the mind and the mind-body relationship? Several initial considerations should be considered at this point.

In the first place, it is useful to understand how, through the ages, a certain understanding of the mental has also defined understandings of the mind, the body and learning.

Secondly, it is possible to think that, if it exists, if we recognize something that is called mind, it operates in some way and such operation makes it possible to think. And in such a direction, understanding thought would be an important step for those who wish to understand the mind.

Thirdly, since the professor is a social and sociable being, communication is a process that is at the basis of the interaction between the professor and the community. Therefore, to communicate and to establish dialogue between humans imply that the person knows the ability to communicate to others, to know that the ideas that communicate come from a person like oneself, who has beliefs, emotions, feelings, i.e., who has mental states. Communication implies then that one recognizes that the others have a mind, and this is what psychologists Rivière & Núñez (2001) call 'Theory of mind'.

In this sense, Rivière and Núñez (2001) say in 'theory of mind' a strange term to describe what is described, i.e., to account for the human mentalistic capacity. According to these authors:

> In a fuller and more complete sense, a theory of mind is a conceptual system that includes the notion -at least implicitly- of beliefs, i.e., the idea that there may exist forms of representation capable of being true or false in other organisms, or in oneself. This notion, along with intention and desire, constitute the baseline of the theory of the mind (p. 20).

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 43-67.

To such a conceptual system are also attributed intentions and desires, perceptions, hopes and fears called by Lowe (2000) as 'mental states of propositional attitude and states of sensation such as pain or nausea'. Thus conceived, the theory of mind and its inferences would be the result of a process originating in emotions and affects, in intersubjective experiences that enable access to the intentions of others. Riviere and Nuñez (2001 cited in López & Fernández, 2006), affirm that the nature of "...the approach to the mind of others would be innate and would become evident very early on through the adaptations of face-to-face relationships with people who, for example, raise babies" (p. 2).

In this perspective, humans have a theory of mind, i.e., they have mental states such as those mentioned above and, in addition to this, as people they build with age the capacity to recognize that others have a mind; they are subjects with mental states of propositional attitude and sensation. It is believed that around four and a half and five years old, in relation to beliefs, children are ready to attribute mind to others, they are ready to understand states of false beliefs, a vital issue to account for a theory of mind, from inaugural experiments on false beliefs to try to demonstrate that mental states effectively constitute or are part of the conceptual system called mind.

The growing representational capacity of children accounts for the growing capacity of the 'mind system' to understand false belief states, to recognize intentionality of self and others, to identify fears of self and others, to orient desires in a certain direction.

The Theory of Mind accounts for a human capacity to understand mental states in oneself and in others, a capacity that is essential when trying to understand educational work, teaching, and the training relationship. Understanding this capacity has educational implications.

First of all, it mentions the understanding of an unequal relationship in the capacity to represent and in the whole of what children and young people represent in a training relationship. This being so, recognizing this mentalism will make it possible to design teaching based on the representations, on the mental states of the students at a given time.

Secondly, it makes it possible to identify levels of communication that should be assumed in the teaching relationship, i.e., the mind has an evolutionary characteristic and, in relation to this characteristic, the language used in class should be adapted to the lexical repertoire available to the learner. Riviere and Nuñez (2001) point out that it is necessary to attribute to students neither less nor more knowledge, neither more nor less representations than they have to adapt, accordingly, the teaching to the lexical repertoire available to them.

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 43-67.

Thirdly, false beliefs are not simply an obstacle in education. They are powerful insofar as identifying them allows to help build solid knowledge that enables the student to progressively overcome naive or superficial thinking.

What has been said so far allows to point out the mind as a representational system and as a habitat of mental states. In this sense, the issue of representation is reviewed below, as it is at the basis of the system. For this purpose, it is described, characterized, and explained in order to establish plausible relations with the behavioral and cognitive paradigms of learning.

Representation

Representation is currently a construct of great interest in philosophy, psychology, linguistics, cognitive sciences, and artificial intelligence, (Crane, 2008; Lowe, 2000; Johnson-Laird, 1983; Rodríguez-Palmero, 2008; Perner, 1994; De Vega, 1995; Ibarretxe-Antuñano & Valenzuela, 2012), showing a relationship of directionality. For Perner (1994) this directionality is between an image, a word, a photograph, a gesture (representational medium) its sense, its meaning, its description (representational content) and the objects of the world, existing or not (representational object).

In Crane's perspective (2008) a representation is something that stands in place of something else, "something that represents something else" (p. 33). It has alluded in different contexts and times to ideas, schemes, propositions, concepts, models, etc., which are considered at the same time as objects of thinking that make it possible to think, judge, explain, make known. In another perspective, for Perner (1994) such representations can be internal or mental or be external representations of something thought or imagined by the subjects. Mental states explain action through a representational theory of mind, where mental states are subsidiary to a representational function in a functional relation between mental states and the world.

In *Understanding the representational mind*, Perner (1994) points out that in addition to the fact that a representation has the capacity to place itself in the place of something else to account for it, to signify it, it is possible to present other characteristics: asymmetry, singularity, the possibility of a representation being erroneous, and finally, the fact that the person can represent things that do not exist in his own mental system.

Such characteristics are related with the description of representation in terms of a representational relation between a representational

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 43-67.

medium and a representational content. In such a perspective, the character of representation alludes to a representation that is a representation of something and of a particular something, not of something else; for example, a photograph of the mother refers to her and not to another lady. Asymmetry accounts for the distance that exists between the medium that represents and that which is represented insofar as they are not equal, they cannot overlap; a photograph is a photograph and not, as an example, the mundane object it represents. The possibility of a representation being erroneous is clearly expressed in that not everything that is represented is true; there are, as examples, common sense representations that are shared by the public and that are very far from being true, many of them are the result of misleading propaganda that reaches the subjects through different media. And the last characteristic is associated with the fact that although the person may not have an objective, empirical referent of something, it may be possible to represent it, examples of this would be characters such as: 'Dumbo, fairies, sprites, angels', etc.

What has been said is not only a presentation of the characteristics of the representation. They can be important clues when considering educational practice. In this sense, it can be pointed out that, in the relationship between representation medium and content, there is a substantial correlation that has important implications in teaching. If the words in use, if the images, if the diagrams have no meaning, if they are not accompanied by descriptions that justify their presence in the classroom, if they have no content for the students, such words, gestures or images will not contribute to the students' learning; the professor can use refine words, be recognized because of the abstractness of the thought without the students actually understanding what they are being told about, or what they are being referred to.

On the other hand, recognizing the possibility that a representation may be erroneous not only positively affects the search for truths in the sciences that surpass previous ones, insofar as they may inadequately account for what is accepted as truth; it also positively affects what Ausubel (1976) pointed out as the recognition of students' prior knowledge, that things that are represented are at a low level of knowledge, are learning opportunities, prior knowledge that can become fixed hypotheses and real epistemological obstacles to learning or, duly recognized, an opportunity to organize teaching by finding out what the subjects know, what they mistakenly conceive or misrepresent in order to act pedagogically accordingly.

Non-existence as a representation character leads the person to two equally significant places. To the distancing, since it is not necessary

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 43-67.

to have a specific object or phenomenon in front of one in order to represent it (the case of the representation that can be seen in the School of Athens by Rafael di Sancio), or to the creation of subjects or objects that do not exist in the objective world but that beliefs, myths, fantasy, fiction may have helped to spread in the cultural context. In the condition and from the teacher's role, the teacher witnesses the presence of representations of this type in different spaces; moreover, many of the representations used in kindergarten and preschool classrooms seem to be supported by this special character of representation; likewise, fictional novel or dystopias, although some, such as the one presented by Orwell in his novel *1984*, seem to reflect a real issue in modern times.

Various types of representations have been mentioned at different times: simple ideas, complex ideas; primary, secondary, and meta-representations; mental models; internal representations, external representations, concepts, categories, and so on. They are ways of pointing out that the thought, the understanding, the mind, the spirit, operate with a set of propositions, images, analogies, metaphors, signs, and so forth.

Based on these discussions, it is considered that the greatest of them implies the innate or not innate character of representations, i.e., whether the person is born with ideas, with models of what is in the world, with even basic schemes of thought, or not.

On the side of those who could be called innatists, i.e., who consider that people are born with ideas, we can remember Plato (1999). The immortality of the soul is recalled in Menon, and it is said that it is the place of ideas. In this sense, humans are born with ideas. Learning for a human with soul that already has ideas is basically to make reminiscence, to learn is to remember: to bring, to update, to expose ideas that are in the soul, to make them explicit. The soul has ideas. In the Menon, Socrates shows his expertise; his method -the question, the interrogation- is fundamentally oriented to help humans who have ideas to remember, to bring them to the present.

> -Socrates: And so it happens that, the soul being immortal, and having been born many times, and having seen both here and in Hades and all things, there is nothing that it has not learned, so that it is not surprising that it is able to remember about virtue and other things that already knew. Since the whole of nature is homogeneous, and the whole soul has learned it, there is nothing to prevent anyone who remembers only one thing (and that is what men call learning) from discovering all the others himself, if he is a courageous man and does not get tired of investigating (Plato, 1999, pp.104,105).

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 43-67.

On the side of those who argue that ideas are not innate, but acquired, there are the most outstanding representatives of English empiricism: John Locke, David Hume and George Berkeley. With some differences among their approaches, they agree in presenting the importance of experience in the configuration of ideas in 'the understanding'.

For John Locke (2005) "The idea is the object of thought" (p. 21). Such ideas are based on experience. The philosopher says: "I call an idea anything that the mind perceives within itself or that is the immediate object of perception" (p. 95); in this sense, for Locke having ideas and perceiving them are the same. An idea or representation in Locke would relate to "resemblances of something existing in objects, in ideas of primary qualities" (p. 102). Simple ideas are combined, and the person has complex ideas from such a process. For Locke, simple and complex ideas have two sources: sensation and reflection (derived from internal mental operations).

For Hume (2010) immediate experience and sensation are the only way an idea can have access to the mind. More intense sensations define more intense ideas in the mind. The more proximity there is between a sensation and an idea, the firmer it can be in the understanding. In this sense, abstract ideas would be considered weaker, and would not be copies of any internal or external impression as they are mediated either by other ideas or are constituted from ideas derived from sensation; for Hume all sensation 'is strong and lively'.

In Berkeley (1985), the objects of human knowledge are the ideas impressed in the senses (the most firm and lasting ones) and those derived with the help of imagination and memory. An idea exists insofar as it is perceived; in this way he establishes differences between ideas caused by sensation and those produced by reflection. For Berkeley (1985):

> ...the ideas of the senses have a greater content of reality because they are more energetic, orderly, and coherent than those produced by the mind; but this does not mean that they can have extramental existence. They are also less dependent on the spirit, or thinking substance that perceives them, and in which they are provoked by the will of another more powerful spirit, but for that reason they do not cease to be ideas, since no energetic or weak idea can exist if it is not in a mind that perceives them (p. 87).

What has been said about the relationship between empirical experience and the acquisition of knowledge still has multiple applications today. Even in didactic principles, it is stated that the more senses are present in the apprehension of knowledge, the more stable, firm and lasting it will

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 43-67.

be (Taborda, 2017). In practice, in educational institutions, appealing to experience as a strategy to anchor ideas and understandings about something is common; even in universities, when students do not comprehend, professors can resort to example as a special model to link common experiences, close to the students, to favor the understanding of some subject.

Discussions as to whether they are innate or acquired are still unresolved; there is no agreement on the matter. Even the recognition of one or the other is present in the history of ideas. Descartes (2012) highlights the existence of one and the other by considering the existence of fictitious ideas (I construct them with my mind), adventitious (derived from my experience in the world) and innate (he says: those that God puts in our soul with absolute clarity and distinction).

An additional and very current discussion in relation to the character of representations, beyond whether they are innate or acquired as a function of experience, is that associated with what can be considered as artificial constitution of ideas or constitution of artificial ideas, a question that fits well with instantiation proposals of human mental functions with development possibilities in the cognitive sciences. Thus, in the present article, artificial ideas are considered as those that, in the form of images, propositions, schemes, function flows, are instantiated in machines or computers. To describe such ideas in this way requires that a human programming determines the installation of such ideas, artificially, in external devices capable of operating with information intentionally provided by humans. This leads to the question of whether machines or computers have ideas or representations.

Johnson-Laird (1983) was one of those who placed himself directly on the side of the possibility of the instantiation of representations, and of the establishment of a plausible analogy between the human mind and the computational mind. For him, the mind has the capacity to represent the world; the mind has a computational character and in this sense functions in an analogous way compare to how a computer works; it uses effective procedures, i.e., those that a machine can use; such procedures can be registration, codification, response, coordination of tasks, recursive revision (going to a processor, to a memory system, rescuing information to use it). For Rodríguez-Palmero (2008), to consider the computer-mind analogy, to give it a computational character, is to consider that such computational mind, in Johnson-Laird perspective, gives rise to representations of three types: mental models, as structural analogues of the world, images as concrete visions of the world and propositions or types of representations that can be verbally expressible.

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 43-67.

What has been mentioned about representation accounts for that with which the mind operates and which is the subject of work, under different names, in different descriptions and theories of learning. Whether they are denied or recognized as ideas, schemas, associations, etc., representation is the main issue in any discussion related to learning. What has been said about the mind, theory of mind and representations is useful to address the discussion about mind and learning, a discussion in which representation is an important link.

Mind and learning

The first experimental psychology laboratories with Fechner and later with Pavlov, with Wundt in Germany and James in the United States, were established with the aim of acquiring a scientific status, being considered the closest antecedents to psychological behaviorism. With Wundt and experimental psychology, psychology attempts to separate itself as a scientific discipline from philosophy. Encouraged by the promises of positivism, to reconcile the object of psychology (consciousness) with the methods of positive science, Wundt became the father of modern psychology, especially experimental psychology, and the forerunner of a radical psychology that went beyond his physiological psychology, which gave him a more precise, controllable, observable and measurable object, the future of psychology as a science of objective behavior and far, as possible, from the speculation of the preceding psychology.

It is John Watson -by following a knowledge derived from the experimentation on animal behavior developed by the Russian physiologist Ivan Pavlov- who is responsible for installing and promoting in psychology the development of a current generically called behaviorism; although the foundations of its developments can be justified on the basis of principles elaborated by English empiricists such as Locke, Hume, Berkeley (Bower & Hilgard, 2000), whose ideas are organized from two sources, sensation and reflection, and who give a very important value to experience in the constitution of ideas (Locke, 2005; Hume, 2010; Berkeley, 1985).

In this current -behaviorism- learning, is conceived as behavioral change. Environmental variables play a fundamental role in behavior. Consistent with this, the stimulus-response relationship was the basis for the whole set of processes supported by behaviorism (learning by contiguity, operant conditioning, classical conditioning).

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Thorndike was one of the most named psychologists in behaviorism in the first decades of the twentieth century. A position that in Pavlov's perspective was considered from the stimulus-response association as an objective theory on the stimulus-response relationship associated with animal and human learning, and at the same time, this paradigm is considered as the first school of psychology, which refuses to study issues associated with consciousness, or to consider mental states as an object of study. For Thorndike (1968), it is possible to account for human behavior from observation, and it is experimentation, from the study of such observation that can become the object of study of the new psychology. If there is a connection between stimuli and responses, the study of such connections can give precise orientations regarding animal and human behavior. Edwin Guthrie (cited in Arancibia et al., 1999), following criteria derived from the support to the study of the stimulus-response relationship, as a plausible relationship for the study of the new psychology based on the study of human behavior, considers that "when two sensations occur together repeatedly, they end up being associated, so that subsequently when only one of these sensations (stimulus) occurs, the other sensation is also elicited (response)" (p. 51). This principle accepted as true to account for the association of stimuli close in time to the corresponding behaviors, tried to be extended to matters associated with memory, an issue that was criticized insofar as it implied recognizing that somewhere, in the consciousness, ideas were installed that would later be evoked, an aspect that recognized the existence of the mind, of the consciousness, and that would not be recognized in the scenario of radical behaviorism.

In Skinner, behaviorism, in trying to explain the phenomenon of learning, took a different variant to the original line derived from Pavlov's approaches. In the latter, the stimulus-response relationship placed greater emphasis on the stimuli. Thus, the change in behavior was defined by a logic in which it was initially essential to identify precisely which stimulus provoked which response to pair this stimulus with another and produce the same response; after such pairing, eliminating the original stimulus by the conditioned one resulted in a response, the original one, but already conditioned. Skinner, unlike Pavlov, emphasized the side of the responses and particularly the consequences of such responses, so that the relationship, linking such consequence, would be E-R-C type in which C accounts for the consequence.

The consequences mentioned in Skinner were referred to as reinforcers or punishments. Thus, an event that is delivered immediately after a response causes that response to continue to manifest is called reinforce-

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 43-67.

ment, and an event that appears immediately after a behavior and makes it disappear is called punishment (Arancibia et al., 1999). On this basis, reinforcement can be considered as a new stimulus (reinforcing stimulus) that, duly introduced into the organism's environment, causes the behavior to be repeated, which can lead to the behavior being increased, maintained, or extinguished, for which, in a Skinnerian perspective, various reinforcement programs can be developed. According to Bower and Hilgard (2000), Skinner "...repudiates mentalistic or cognitivist explanations of behavior or those that attribute the causation of behavior to internal psychic forces of any kind" (pp. 216-217). Although, as Schunk (2012) says, Skinner "never denied the existence of attitudes, beliefs, opinions desires, and other forms of self-knowledge (after all, he had them himself) but rather assessed their role" (p. 89), he only compared the organism to the metaphor of 'the black box' in which cognitions could probably be generated, even if no way of measuring them was available.

Pozo (2006) calls the long period of influence of behaviorism in the field of psychology as the 'long behaviorist glaciation'. In this regard, he states:

> For many years, scientific psychology assumed that human beings, like other organisms, were mirrors of reality, of the organization of stimuli and responses in the environment, so that to study knowledge it was not necessary to imagine any intermediate structures between those stimuli and responses (p.122).

Estany (1999), to account for what Pozo refers to as the "long behaviorist glaciation", calls "death" the period in which behaviorism was imposed as the only way of studying psychology; as a substantial paradigm in this discipline, as the only one that could have the character of science. Consciousness was relegated and the mental states that could be sheltered in it were also relegated to the background.

Behaviorism, as a force in psychology, had skeptical researchers in relation to the methods of field study, including Wundt's experimental and physiological psychology, which sought to ingratiate with orientations arising from the same positive science. Introspection in this context was not considered as a scientific method, or as a source of knowledge about one's own mental states. Lowe (2000) summarizes the skepticism of behaviorism in this way:

> Behaviorists argue that the only kind of data we can have concerning anyone's mental states, including our own, are to be found in externally observable behavior, both verbal and nonverbal. Behaviorists -scien-

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 43-67.

> tists- opt for this idea because they think that a science of mental states -which is what scientific psychology pretends to be-must only rely on objective empirical information that can be corroborated by multiple independent observers, whereas introspection is a private and subjective matter (p. 45).

What has been said made us think that there not in psychology a mentalistic position in behaviorism. The lack of concern with mental states on the part of behaviorism is seen in Skinner, Guthrie, Watson, Thorndike. Belief, desires, fears as subjective issues do not interest them. They are interested in fear, as a function of certain behaviors that can be associated with it as responses; they are interested in language as behavior, as objective evidence of something that may be internal; but behaviorists are not interested in this position of the first person. If behaviorists are not interested in consciousness, mental states, and the cognitive system, it is assumed that the thought, understanding, the cognitive system, or the mental system would not interest them either, i.e., the representational mind, in the sense that Perner (1994) defends this construct, was not interesting for a science that only focused its object of study and work on observable behavior.

A breakthrough that can be considered important in the recognition of inner processes or mental processes occurred in the late 1940s with the so-called cognitive revolution. In Estany's perspective (1999) two events sat a trend in this sense: the Hixon Symposium on brain mechanisms of behavior, promoted by California Information Technology in 1948, and the Symposium on Information Theory in 1956, which had a strong influence on what would become the true development project in cognitive science.

However, concerns did not precisely arise for the configuration of a referent in psychology that could announce the recognition of a structure or system in which knowledge or information could have a favorable place for its configuration and development. Piaget and Vygotsky, in the second decade of the 20th century began to lighten the scenario of cognitive psychology in open competition with the behaviorist current.

Piaget (2001a, 2001b) trusted in the possibility of establishing universal criteria that would account for the way in which subjects constructed knowledge. For this genetic epistemologist, knowledge is constructed from actions that subjects establish with phenomena, with the environment, with knowledge; in such a constructive process, subjects, according to special periods of development that they considered, made available already constituted schemes, i.e., according to such schemes

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 43-67.

they assimilated the phenomena they faced. In Labinowicz's (1987) perspective, four issues were considered essential from Piaget's theory: experience, maturation, equilibration, and social interaction.

In Bringuier's perspective (2004), language as a form of representation progresses in children to account for objects, actions, phenomena by means of mental images and words. He distinguishes three representation levels in the constitution of language in children: the index, the symbol and the sign, which are part of a way of representing the world - language - as a component, in Piaget's view, of a great system of representation.

Knowledge constructed by subjects in Piaget implies adaptation. To learn in this way is to adapt a phenomenon mediated by assimilation processes of knowledge to thinking schemes that do not contradict it, or of accommodation if the new information available does not fit in precedent schemes, which would lead to the radical modification of a scheme or to the construction of a new scheme to interact with the objects of knowledge. In Taborda's perspective (2006), Piaget considers that two functional mechanisms are important in these processes, balancing and progressive awareness of the subject's relationship with objects or phenomena.

A contemporary of Piaget and with a different research program, Lev Semionovich Vygotsky, a psychologist who gave greater emphasis to the historical subject-context relationship, gradually became a referent of cognitivism, recognizing the relevance in the development of higher psychological processes of the interaction and negotiation of meanings of subjects in a specific sociocultural context. For Vygotsky (2000), knowledge is a process that implies internalization of culture. He elaborates, as part of his programmatic orientations, the notion of Zone of Proximal Development (ZPD) and the so-called law of double development. The notion of ZPD alludes to the distance that can be established between the zone of real development, given by what an individual can learn on his own, and the zone of potential development, given by the learning potential that is possible when a student learns from someone more expert and that marks his development. If in Piaget's view teaching should go hand in hand with development or, in other words, development precedes learning; in Vygotsky's view, teaching should be placed beyond, marking the developmental possibilities of the individual.

From the law of double development, also called the 'Crogenetic law of development', Vygotsky states that knowledge is first social or interpsychological, it is seen, it is given, it manifests itself in the social and cultural context and then, and only then, it becomes intrapsychological. Thus, in interpersonal relationships and scientific teaching, what is so-

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 43-67.

cial becomes personal, intrapsychological. "This can apply equally to voluntary attention, to logical memory, and to the formation of concepts. All higher functions originate as relationships between human beings" (Vygotsky, 1979, p. 94). The above points to the fact that psychological processes and learning processes are attributable to groups as well as to individuals and that there is an inseparability between the intra- and inter-psychological aspects.

Piaget and Vygotsky are cognitivists, and they say that there is an entity, a system, responsible for configuring the representation of the world, of social and human phenomena in different ways, organizing what is known, in which the mediation of language is very important. They both conceive a cognitive system -a mind- capable of functioning symbolically through language, of thinking, and of representing the world.

Among the many cognitivist approaches in the second half of the twentieth century is the position of meaningful learning. In this perspective Ausubel (2002) points out that learning is constituted as meaningful verbal learning, a process by which new knowledge is integrated into the cognitive structure in a non-arbitrary and substantial way. But it does not do so as a whole but with special parts of it, which are called subsumers or anchor ideas. In such acquisition of knowledge, assimilation, of the same Piagetian type, plays a fundamental role and essential conditions are present: the material must be meaningful, the teaching must be meaningful and there must be a meaningful attitude towards learning.

On the other hand, it cannot be ignored the emergence of mentalistic approaches to learning in the 1960s that do not deny that instruction can be conceived as an external stimulus or event that has an impact on internal processes that, although unseen, can be inferred from external manifestations of the students. In this regard, Gagné (1979) and his theory of instruction designed a basic learning scheme in which the environment provides stimuli or requests that reach the sensory system, filter, and pass to a short-term memory system, in which they are short-lived; they pass to a larger long-term memory system, from which they can return to the short-term memory system as this is a working memory. The information is organized depending on the request of the medium in a response system and from this, through effectors, a response is given to the request of the medium. Two parallel processes accompany this statement: executive control and expectations (dependent, for example, on the value given to a task).

For Gagné, internal processes are linked to external processes in such a way that instructional events can be associated with learning

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 43-67.

events by ensuring their expression. As examples, expectation and attention can be generated in the students' basic learning system, for example, if the name and purpose of an activity is made known or if its future usefulness is explicitly pointed out; a greater chance of permanence in the memory of a certain concept can be generated by showing it in its different expressions and repeating its rationale; it can be checked whether certain information remained in the memory system by reviewing what was taught, and so on.

Considering this basic learning scheme reminds us that, based on schemes such as this one, in which images, propositions and structures are stored, mentalistic proposals are being developed, establishing credible analogies between mind and computers, proposals that suggest a very promising future for the development of artificial intelligence. But, at the same time, the teacher should not be unaware that Piaget, Vygotsky and Ausubel ideas are still valid in multiple educational agendas in the world in which learning is constructed by students based on their experiences, their contacts with peers, their multiple relationships with social groups, with culture, with tradition.

Conclusions

Historically, learning has been part of the discourse of important referents in philosophy and psychology. Conceiving learning as a remembrance of ideas of the soul can be valued as one of the first philosophical presentations about learning, pointing out that such ideas are innate. To conceive ideas as derived in their origin from sensation and reflection, and the most vivid and lasting ones as derived from direct experience, accounts for ideas in their non-innate character. The presented versions place discussions that recognize innate and non-innate origin of ideas. In psychology and philosophy, the subject of representation has had different names: ideas, schemes, associations, mental models, concepts, symbols, mental representations, social representations, general motor program, conceptions, among others. Such names are somehow considered as objects of thought, of understanding, of consciousness that allow us to think, to have states of consciousness, mental states, to judge, to analyze, to solve problems, among others. In this way, representation could be considered as a link that allows to understand the 'mind-learning' relationship as it has been presented in the text.

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 43-67.

From the analysis of this relationship in the behavioral paradigm of learning and in the cognitive paradigm, it is evident that in the former, the occupation with the mind and mental states in an internalist and first-person sense was not of interest insofar as the object of interest, "observable behavior" in terms of the E-R-C relationship, implied the ignorance of questions that, in the positive science of the time, had no possibility of empirical validation since they were not objects of public access. Neither consciousness, nor the mind, nor mental states were precisely interesting, marking a kind of 'glaciation', described as a 'period of death for consciousness' by Ana Estany.

In the cognitive paradigm, to which we relate programmatic stakes of Piaget and Vygotsky as valid narratives of interest in that paradigm, the recognition of a mental system is evident, a system for which processes of assimilation or internalization, or incorporation into the system of representations, concepts or knowledge to schemas or the cognitive system of socially constructed knowledge is considered essential.

This review represents a plausible relationship between mind and learning with the mediation of the construct representation, and the opportunity to appreciate, at least initially, possibilities to relate a philosophy of mind with learning, which is necessary to be understood by the teacher, as the person responsible in schools for promoting the formation of other individuals, and in such formation learning is associated, in part, as a mental process, thus seen from psycho-pedagogy. It is also pointed out that it is not necessary to take an openly realistic position on the concept of representation, since it is always possible to philosophically access the problem of the mind from a conceptual point of view, setting aside strong commitments with ontological and epistemological character.

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Delusions in schizophrenia as an interdisciplinary phenomenon for the philosophy of mind*

El delirio en la esquizofrenia como objeto de estudio interdisciplinario en la filosofía de la mente

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Abstract

Delusions are a transdiagnostic phenomenon with higher prevalence in schizophrenia. Historically, delusions have been regarded as the hallmark of psychosis. Over the last 20 years, delusions have attracted the attention of philosophers, psychiatrists, and cognitive sciences due to the ways in which they challenge some of the most fundamental claims about the nature of the human mind. However, despite its clinical relevance for the diagnosis of a number of conditions, the study of delusions still leads to a number of conceptual and empirical disagreements. This article clarifies some of the most fundamental problems raised by the observation of delusions in schizophrenia from an interdisciplinary point of view. Our analysis is meant to inform experimental approaches to the phenomenon, and, in turn, advance its treatment. In this sense, conceptual progress in this field is fundamental to map different paths for empirical and clinical research. This because any theory aiming at explaining delusions in schizophrenia should offer answers to the problems that we clarify in this paper.

Keywords

Delusions, psychosis, philosophy of mind, phenomenology, schizophrenia.

Resumen

El delirio es un fenómeno transdiagnóstico más frecuente en la esquizofrenia. Históricamente, el delirio se ha considerado la marca de la psicosis. Dada las formas en que desafía algunas de las premisas más fundamentales acerca de la naturaleza de la mente humana, durante los últimos 20 años el delirio ha atraído la atención de filósofos, psiquiatras e investigadores en ciencias cognitivas. Sin embargo, a pesar de su relevancia clínica en el diagnóstico de una serie de condiciones, el estudio del delirio aún produce diversas discusiones conceptuales y empíricas. Este artículo intenta clarificar algunos de los problemas más fundamentales que surgen del estudio interdisciplinario del delirio en el contexto de la esquizofrenia. Es importante señalar que la resolución de tales discusiones no constituye un simple ejercicio retórico, sino que permitiría, en el mejor de los casos, sentar las bases para el avance en la investigación clínica y experimental conceptualmente bien informada y, por ende, permitiría importantes avances en su tratamiento. En este sentido, el avance conceptual en el área será importante para definir la carta de navegación de la investigación empírica en el tema. Esto, porque cada teoría que intenta contar una historia explicativa completa y contextualizada del fenómeno de los delirios en la esquizofrenia debería ofrecer respuestas a los problemas que identificamos en este trabajo.

Palabras clave

Delirio, psicosis, filosofía de la mente, fenomenología, esquizofrenia.

Introduction

Delusions are one of the most severe disturbances of the human mind (Hooker, 1850; Berrios, 1991; Sass, 1992; APA, 2013; Connors & Halligan, 2020). Individuals who have delusions may indicate being dead (delusions of Cotard et al., 1995), or that some parts of their bodies are controlled by external agents (delusions of external control, Frith, 1992), that they can be in two parts at once (Weinstein & Kahn, 1955), or that different entities can introduce thoughts into their head (López-Silva, 2018), among many other things. Whatever the case, delusion has histo-

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rically been predominantly understood as believing something that is not the case (Porter, 2002; Bentall, 2003). In psychiatry, Karl Jaspers (1965) defined delusion as the hallmark of psychosis, an idea that appeared in contemporary psychopathology. With the popularization of phenomenological and scientific-experimental approaches to the phenomenon of mental illness as a medical issue in the 20th century, delusions have a key role in the context of the diagnosis of psychosis when it is included by Schneider (1959) in his list of *first-rank symptoms* of schizophrenia, becoming one of the main guides for the diagnosis of the condition in the last century, especially in Germany, the United States and the United Kingdom (Peralta & Cuesta, 1999; Murray & Quattrone, 2021). However, considering the elimination of preferential treatment of delusions in the diagnosis of schizophrenia in the latest version of the Diagnostic and Statistical Manual of Mental Disorders (DSM-V, APA, 2013), the diagnostic role of delusions in psychiatry is an open discussion (Tandon, 2013; Soares-Weiser et al., 2015; López-Silva, 2017a).

During the last 20 years, delusions have attracted the attention of philosophers and researchers in the field of cognitive sciences because it will enable to learn about fundamental aspects about the conceptual and cultural nature of the human mind (Stephens & Graham 1994; Zolotova & Brune, 2006; Bortolotti, 2010; Radden, 2011; López-Silva & Cavieres, 2021a). In this context, the study of delusions in psychopathology has become a source of multiple conceptual and empirical debates on the structure of rationality, the nature of self-consciousness, the phenomenology of agency and voluntariness, among many others. Most of these debates are still open and present diverse ways of research for different (López-Silva, 2020). Based on a critical qualitative analysis of the literature, this article aims to clarify some of the most fundamental debates arising from the interdisciplinary study of delusions in the framework of psychosis focused on the following debates, the typological problem of delusions; the etiological problem; the problem about the adaptability of delusions and, finally, the phenomenological problem of delusions. After this, our conclusion will try to present some of the challenges that remain open in the literature. It is important to note that the relevance of this type of analysis lies in the fact that the solution of several of these discussions does not constitute a simple rhetorical exercise but would allow to lay the groundwork for a conceptually well-informed experimental approach to the phenomenon and, therefore, would allow important advances in its clinical treatment (López-Silva, 2020). Thus, the conceptual advance in the area is important to define the chart of empirical research in the field,

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because every theory that attempts to tell a complete explanatory story of the phenomenon of delusions should offer answers to the problems identified in this paper (Connors & Halligan, 2020).

Delusion and the typological problem

The way of studying delusions is normally through the patients' verbal reports. Accepting the existence of several methodological and epistemic problems derived from the above, our initial gateway to the phenomenon of delusions is what patients say. Now, when Geraldine tells me that her coffee is 'too bitter' and that she should have chosen another with a lower percentage of cocoa, what is Geraldine reporting? It seems no problem to accept that this verbal report makes sense as a report of a *taste sensory experience*. Now, when she tells me that she wishes she had lived during early medieval Scotland, Geraldine's verbal report is the report of an *imaginative cognitive* state. When Geraldine tells me that her new car is yellow, that report implies the report of a *visual sensory experience*. So far, there seems to be no controversy. In each case we can clearly define what the mental state is at the basis of such reports; we can identify the experiential modality (sensory or cognitive) that informs Geraldine's reports.

But what happens when a patient reports that trees have been inserting thoughts in their head? (Payne, 2013) Is it by virtue of 'feeling' or 'seeing' trees inserting thoughts into their head? Does the patient actually feel that? Is it something they are imagining? This is a problem in psychopathology as it involves the challenge of identifying the type of mental state a delusional patient is reporting. In the literature, this issue has been referred to as the *typological problem of delusions*, which involves defining the type of mental state that is instantiated in the reports of patients who are suffering from delusions (López-Silva, 2017b; López-Silva, 2021). For some people, formulating typological problem might seem overly conceptual, a matter more important for philosophers than for psychiatrists. We do not completely agree with this. All experimental research and psychotherapeutic treatment of delusions lie on the idea that this phenomenon is a specific type of mental state (Bayne & Pacherie, 2005). Let us imagine that delusions instantiate a type of mental state M. Experimental research on delusions is only possible as the investigation of how M is produced in the brain and how alterations in the processes of M production would produce delusional states in a subject (McKay et al., 2005; López-Silva, 2022). Without the typological definition M, it would

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 43-67.

be very difficult to advance on empirical research in the field of delusions. On the other hand, progress in the psychotherapy of delusions is only possible if we understand how to deal with a specific type of mental state. If we do not understand what type of mental state a delusion is, and thus do not understand its main characteristics and paradigmatic behavior, how could we generate forms of psychotherapy that are only effective and efficient if we know the type of mental state we are dealing with and its paradigmatic behavior? Much of current psychotherapy involves anticipating and foreseeing potential delusional behaviors in a patient, but this would be very difficult to achieve without having an answer to the typological problem, and therefore, this debate is not a mere theoretical exercise, but a practical problem for current psychopathology as well.

Potential alternatives to the typological problem

There are currently two major alternative solutions to the typological problem in the literature. On the one hand, the doxastic approach indicates that delusional reports instantiate abnormal beliefs (Bayne & Pacherie, 2005; Bortolotti, 2010, 2014; López-Silva, 2017b). For this approach, delusions are beliefs that lack certain paradigmatic features but can nonetheless be considered as beliefs (Bayne, 2010). The initial appeal of this approach stems from the fact that delusions seem to be reported in the same way that some beliefs are reported (Green et al., 2018). There are at least two major formulations in the doxastic model of delusions. On the one hand, the bottom-up formulation will indicate that certain patterns fed over time by delusional ideas begin to set in the way a subject begins to interpret reality. Over time, this delusional pattern could even contaminate the content of a subject's sensible experience, which would imply the origin of delusion (Campbell, 2001). On the other hand, the bottom-up formulation will suggest that anomalies in a subject's sensorimotor apparatus will be the basis for the creation of delusions as beliefs. In this sense, delusions would have their basis in experiential anomalies with highly abnormal content (Bayne & Pacherie, 2005). Although there are other distinctions within the bottom-up formulation of the model, the doxastic approach has become the dominant alternative within the typological discussion because of its conceptual clarity, empirical scope, and heuristic power (Bortolotti, 2010).

Although the doxastic approach has prevailed in the current literature on the typological problem, there is another group of theories that originated as a critique of it. This approach can be called anti-dox-

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 43-67.

astic and refers to a group of theories that indicate that delusions do not seem to meet the requirements to be considered beliefs (see, for example, Schwitzgebel, 2012). Within the anti-doxastic argumentation, the Imagistic approach to delusions groups several authors who associate delusions with alterations of the imagination. For example, Currie (2000) indicates that delusions are 'cognitive hallucinations', namely imaginative states misidentified as beliefs by a subject. McGinn (2004) suggests that delusions are imaginative states created by the uncontrolled and unmonitored imaginative activity of a subject. While for Currie, delusions arise due to problems in the identification process of different mental states, McGinn says it occurs due to hyper-production and alterations in the monitoring mechanisms of the production of imaginative states. Likewise, Egan (2009) indicates that since delusions have characteristics of imaginations and beliefs, delusions should be catalogued as *bimaginations*. However, these proposals have been criticized by their lack of conceptual clarity and lack of phenomenological and empirical appeal (Bortolotti, 2010; López-Silva, 2017b). For example, it is not clear how alterations in imagination would produce states that are reported as if they were beliefs; neither could one characterize the phenomenology of delusion as a *bimagination* because the very phenomenology of this mental state does not seem to be clear. Finally, there is no clear experimental evidence about how alterations in the production of imaginative states could produce the kind of mental state we call delusion. Whatever the case, the typological problem of delusions is an open discussion and although the doxastic approach has a dominant argumentative appeal in current neuropsychiatric psychopathology, advocates of anti-doxastic approaches continue to propose new options. Clearly this is not something we can solve in this section.

How are delusions formed? The etiological problem

Each alternative to the typological problem may be the basis for telling a story about how that specific type of mental state is formed in the human mind - a belief, an imagination or a bimagination. The above is referred to as the *etiological problem* of delusions (Coltheart et al., 2011). In this context, the doxastic approach has become dominant because most proponents of imagistic approaches have failed to present a consistent etiological story with plausible empirical and/or experimental support (Bortolotti, 2010; 2015; López-Silva, 2022). For example, in the case of

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 43-67.

Currie's approach, it is not clear that people with schizophrenia have a generalized impairment in identifying the typology of their own mental states, and if this could perhaps be explained as the product of delusional atmospheres prior to the emergence of psychotic delusion; the model fails to explain why this type of specific misidentification would generate delusion. For its part, there is no evidence of uncontrolled imagistic activity in psychotic patients as proposed by McGinn. Finally, no one is sure what bimagination is and how it would be produced. For this reason, the three most popular proposals on the etiological problem have adopted the doxastic approach, meaning that they are proposals of delusion formation as beliefs. Alternatives are presented in the following section.

Alternatives to the etiological problem of delusions.

Maher's (1974, 1992, 2001) one-factor model indicates that the type of experiential anomalies present in psychotic patients is sufficient to produce beliefs with the type of content present in delusional reports. The content of the delusions as beliefs would basically be acquired from the content of the first-order abnormal experience that produces them. For Maher (2001), delusions would not be created in ways so different from the way normal beliefs with direct experiential content are generated. Delusions emerge as a theory that attempts to make sense of the aberrant experiential content of psychotic patients. Thus, if delusions are understood as beliefs, the main problem lies in the experiences that underlie them, not in the reasoning processes (Maher, 2001).

Several criticisms of the one-factor model led to the development of the two-factor approach (Davies & Coltheart, 2000; Coltheart, 2007; Coltheart et al., 2011). For the advocates of this approach, Maher's model would fail to discriminate between people who possess experiential abnormalities but never develop psychotic symptoms such as delusions from those who end up generating this type of mental state. For example, according to the one-factor approach, anyone who suffers brain damage that reduces their affective response to faces should develop Capgras delusion or something close to it. At the basis of this delusion, there is an abnormal experience that is explained by a specific type of brain damage in the area responsible for the emotional response to faces (Hirstein & Ramachandran, 1997). However, people with this type of anomalous experience do not necessarily produce the specific delusion (Davies et al., 2001). In addition to this, it has been suggested that the one-factor model would not be able to explain why delusions persist, even if their

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 43-67.

emergence arises as a way of making sense of the underlying abnormal experience. In this sense, the model is not able to explain why patients do not reject the doxastic hypothesis with bizarre content in the face of evidence against it (Coltheart, 2007), and, therefore, it is normal to think that another type of element (besides the sensory one) could be playing an important role in the psychogenesis of the phenomenon. Therefore, it has been suggested that a second factor could explain these open issues.

For Davies et al. (2001), the second factor in an etiological theory of delusions should account for a subject's inability to reject a potential belief on the basis of its implausibility and inconsistency with the rest of the patient's knowledge. Several proposals have emerged as candidates for the second factor within the model; however, all of them tend to emphasize the role of cognitive type disturbances as a complement to the experiential type disturbances captured by factor 1.

For some (Bentall, 1995; Bentall et al., 2001), factor 2 is an attributional bias, i.e., alterations in the way subjects tend to explain events that occur in their daily lives. Whether externalizing or internalizing, exacerbation of either of these explanatory patterns could cause alterations in the way experiential evidence in a patient's life is examined. For others, factor 2 is best described by the observation of various reasoning biases, indeed, the most popular versions of the two-factor model tend to rely on this idea (Coltheart et al., 2011). According to (Garety et al., 1991; Garety & Hemsley, 1997; Garety & Freeman, 1999), patients at risk of psychosis would tend to jump on conclusions without sufficient evidence for them (*jumping to conclusions bias*). However, this proposal has been criticized for its low explanatory-statistical power, i.e., the differences between the psychotic population and the controls do not seem to be significant enough to support the whole proposal (López-Silva & Cavieres, 2021b). For this reason, Coltheart et al. suggest that the second factor should be understood as a deficit in the general system of generation, evaluation, adoption, and maintenance of beliefs due to a plethora of reasoning problems that may have specific characteristics that may vary from one subject to another. However, this being an experimental subject.

During the last few years, the error-predictive theory has developed which is alternative to the etiological problem and which seems to be complementary to the aforementioned approaches, (see Sterzer et al., 2018; Miyazano & McKay, 2019). This approach is based on the *predictive-coding* paradigm of Corlett et al. (2006, 2015, 2016). According to this approach, the brain attempts to predict potential sensory inputs based on its existing representations of reality. In this sense, the brain would be a predic-

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 43-67.

tion-making machine. When interacting with the environment, the brain compares projected inputs with actual inputs. When there is a *mismatch* in this comparison, the brain will try to minimize the disturbance generated by this mismatch by revising the internal representations from which such predictions are derived. For Corlett et al. (2016), this minimization of prediction error is done by Bayesian logic to the extent that internal representations in the brain are updated as a function of previously predicted inputs and new inputs. Within this context, delusions would emerge as a way in which the brain would attempt to decrease the incongruence arising from various prediction errors in psychotic patients.

This approach has been studied in the last years. However, it has also been pointed out that it fails to distinguish the etiology of various symptoms explained in the same way (*indiscriminability problem*). For example, Sterzer et al. (2016) indicate that prediction errors in the human cognitive system would produce symptoms such as hallucinations and delusions. However, suggesting that these types of phenomena might have a common etiology do not explain how these general system abnormalities manifest in different ways in the subject's consciousness. Another problem associated with this approach is that it seems to apply successfully to the first psychotic episode but fails to explain how the delusion persists over time if the prediction errors have already been neutralized. Whatever the case may be, the etiological problem is an open issue in the current literature and, due to the strengths and weaknesses of the various proposals, there seems to be a tendency to explore hybrid theories that manage to integrate different aspects of the alternatives available in the literature.

What is the role of delusions? Adaptability and the functional problem of delusions

The etiological and typological debate are related to a third discussion that arises from the clinical observation of delusion; this debate has to do with the discussion about whether delusion could have some benefit to the functioning of the individual (Freud, 1924, 1986; McKay & Dennett, 2009; Lancellotta & Bortolotti, 2021). The idea is to analyze whether delusion (i) could happen to attenuate certain negative consequences in the psychic apparatus, or (ii) whether the emergence of delusion could have some benefit, even if its emergence is due to dysfunctional mechanisms. On this basis, there are several alternatives in the literature. We will review them below:

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 43-67.

Types of adaptability and alternatives to the functional problem of delusions

The first alternative to the problem suggests that delusions could play a beneficial role in the mental life of patients by the way they manage to attenuate psychological suffering. This type of adaptability is referred to as *psychological adaptability* (Mckay et al., 2005; Lancellotta, 2021). In the history of psychiatry, the psychoanalytic tradition is one of the first to indicate that delusions are produced by the psychological benefit provided to the mental life of patients. In this paradigm, delusions arise because of their palliative role in the way the mind deals with intrapsychic suffering (Bell, 2003). For Freud (1924), a delusion arises as a patch that is placed where there was originally a crack in the relationship between the subject and the external world. For psychoanalysis, delusions are ways of the mind generated to maintain its integrity and reduce the suffering provoked by a traumatic unconscious event -following the classical formulation of the model.

Regardless the various criticisms to the psychoanalytic model of psychopathology, the idea that delusions can play a psychologically beneficial role in the mind of the patient is an *insight* that has been developed by other traditions. For example, the so-called *motivational approaches* - which could be considered as a version of the two-factor approach - suggest that this phenomenon is caused by the psychological benefits they give to the subject (Bentall & Kaney, 1996; Bortolotti, 2014). Here, delusion is an active psychological response that arises in the face of internal or external threats to the integrity of the self by using certain interpretation patterns of the reality (see previous section). For Bentall et al. (2001), delusions arise as a way for the mind to deal with conflicts that are overwhelming for the individuals as they would allow the management, processing, and incorporation of highly negative experiences in their lives.

Similarly, but without appealing to an etiology based on unconscious conflicts, the phenomenological tradition of Jaspers (1965) and Conrad (1958) indicates that the emergence of a delusion in psychosis comes with generalized changes in the way of experiencing reality and the self. This period, commonly referred to as 'delusional atmospheres', can last from months to years and represents the prodromal stage of psychosis. As Conrad indicates, delusions arise in this context as an experience of revelation in relation to what has been causing strangeness and perplexity throughout this period (Fusar-Poli et al., 2022). Conrad says that this experience is usually accompanied by feelings of relief as it would imply regaining functional levels of reflexivity. The idea, we may

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hypothesize, is that in this context, delusion plays a beneficial role insofar as it manages to pathologize only one dimension of reality, contrasting with the generalized patients' experience of reality that precedes delusion (see Mishara & Corlett; 2009; Mishara, 2010). While this proposal needs further elaboration, it is clearly a more plausible alternative than the psychoanalytic one by the experimental evidence available in the literature on the etiology of delusions.

In contrast to this tradition, most proponents of two-factor models for the etiology of delusions have indicated that the phenomenon originates from the existence of distinct *deficits* in the process of belief formation (Coltheart, 2007). Because of this, it seems difficult to defend the idea that delusions can have any intrinsic benefit for the mental life of patients. This conclusion seems to be based on the idea that paradigmatic beliefs play a fundamental adaptive role in the psychological life of living organisms to the extent that their content is true (McKay & Dennett, 2009). However, there are proposals that indicate, although it is true that delusions are produced by multilevel deficits, the mind is designed to reduce the damage of such failures, making it possible to outline the idea of a deficit-based approach that preserves the palliative idea of delusions. Considering the phenomenological evidence described above, this hybrid idea seems to apply to both the one- and two-factor approaches, as well as to the emerging prediction error approach. Undoubtedly, this is a research project that needs to be deepened because of the importance it could have for generating more focused and contextualized psychotherapeutic tools.

Psychotic experience and the phenomenological problem

As indicated in the initial sections, the main way in which delusion is approached is through patients' reports. Moreover, psychosis is a phenomenon of philosophical and medical interest based on the alterations in conscious experience reported by individuals (Jaspers, 1965; Sass, 1992; Fusar-Poli et al., 2022). For this reason, the in-depth description of psychotic experiences from the point of view of the first person becomes an essential issue when defining the elements explain by a theory of the phenomenon (Parnas & Zahavi, 2000; López-Silva, 2018). In this context, phenomenology is essential for understanding the delusional phenomenon (Mayer-Gross, 1932; Jaspers, 1965; Fuchs, 2005; Van Duppen; & Fayaerts, 2020). Phenomenological practice (as developed by Husserl) uses methods to reduce the observer's biases and commitment to certain abs-

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 43-67.

tract conceptions regarding a phenomenon by attempting to 'suspend' them in the description process (Gallagher, 2013). In this context, researchers in psychopathology and philosophy of mind will use the phenomenological method to suspend the naive realism of our own experience of the world (Mishara & Fusar-Poli 2013). However, even the most disciplined phenomenologists are not able to suspend all their preconceptions about reality, and therefore the phenomenological method seems necessarily to include a hermeneutic approach. This will generate several problems in attempting to elucidate the phenomenology of psychosis, which proposes fundamental disagreements in analyzing the elements to which explanatory theories of the phenomenon should make sense.

For example, thought insertion delusions show patient reports, indicating that different animate or inanimate entities introduce certain ideas or thoughts into their head (Schneider, 1957; Mullins & Spence, 2003; López-Silva, 2018). Generally, this type of delusions - although transdiagnostic, is predominant in schizophrenia - emerges in multiple alterations in intersubjective experience, corporeality, and the self (Mayer-Gross, 1932; Jaspers, 1968; Mishara, 2009; Fusar-Poli et al., 2022). Some authors have attempted to explain the emergence of this delusion as alterations in the sense of mental agency (Zahavi, 2005; Gallagher, 2015). The idea is that the absence of the sense of being the creator of certain thoughts would produce their externalization. There are several problems with this interpretation. However, one of the most important has to do with the way in which the phenomenology of thought in psychosis is analyzed, and the role that the concept of a sense of mental agency occupies in explanatory theories of the phenomenon by noting that:

> Certain people see their thoughts as something they act upon [thoughts as a kind of mental action], and others see them as something that occurs mostly outside their control [...] Thoughts are sometimes simply presented [in consciousness] and seem to determine our behavior without any voluntary control over them, leaving aside any possibility of a sense of agency (Proust, 2009, p. 253).

As can be seen in this case, there are fundamental disagreements regarding the phenomenological elements associated with certain mental states, which, in turn, will generate disagreements in the interpretation that some theories make to explain the origin of delusions. However, it is important to point out that the deepening of phenomenological research in the study of delusions is an open task at present. On the other hand, current progress seems to complement not only the contributions of classi-

Sophia 33: 2022.

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 43-67.

cal authors (Mayer-Gross, Jaspers, Conrad, Kraepelin, among others), but has also begun to explore important connections with some of the current theories being worked to elucidate the neurophysiology of psychotic delusions (Mishara & Fusar-Poli, 2013; Corlett & Fletcher, 2015). Undoubtedly, this is a connection that should continue to be studied to inform theoretical models of delusion and to be informed by such conceptual reflections in their process of mutual feedback and complementary progress.

Conclusions

The study of delusions is full of methodological, theoretical, and empirical difficulties. In this article we have attempted to clarify four of the most fundamental problems that arise when trying to elaborate an interdisciplinary understanding of psychotic delusion. Moreover, it is important to note that each of these debates remains open, arising several challenges for an interdisciplinary and contextualized understanding of the delusional phenomenon. One of these challenges has to do with the current confusion that exists in elaborating theories of delusions without including the diagnosis of which they are a part. For example, in many parts of the literature, psychotic delusion in schizophrenia is treated interchangeably with other delusions that do not appear to be specifically associated with this condition. We believe that failure to include the diagnostic category of delusion might lead to overlooking phenomenological and ecological- and even etiological-features that would fail to plausibly support such comparisons. For example, it does not seem to be the same to elaborate a theory on Cotard's delusions as one focused on delusions arising in schizophrenic psychosis, exactly because they are accompanied by different phenomenological, ecological, and etiological conditions. As seen, psychotic delusion emerges in a rarefied atmosphere where the general experience of the self, intersubjectivity and external reality is altered. In turn, this kind of general alteration of reality seems to be constitutive on the way in which delusion manifests in schizophrenia. Now, this type of context does not seem to be typical of all delusions, and, therefore, it is not clear that we can make direct comparisons if we do not consider these constitutive differences, which does not imply that comparisons cannot otherwise be made. In this sense, we are not indicating that different types of delusions could be different types of mental states -although we do not rule out the option- but rather that the integration of the diagnosis in which a specific delusion is framed would specify some fundamental

Sophia 33: 2022.

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 43-67.

elements to understand different types of delusions to establish informed comparisons. Any approach to the general phenomenon of delusion and its expression in schizophrenic psychosis should consider this complexity when exploring interdisciplinary and contextualized forms of research for this phenomenon.

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Language, institution and person

Lenguaje, institución y persona

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Abstract

The reflexive effort proposed is aimed at investigating two concepts that make up the core of our constitution as rational beings, i.e., as people, we refer to thought and language. The idea is to contemplate this relation under a somewhat different perspective from those that are usually presented in the literature that circulates through the main bibliography, which usually come from psychology, linguistics and, increasingly, from neurosciences. A look is proposed here that emphasizes the relation of these concepts with different regions of the conceptual space that we inhabit, which opens reflexive area that are revealed when we give the chance to review or question certain assumed or inherited understandings about said concepts. This journey goes through strong statements, sometimes intentionally careless and free of nuances, which above all seek provocation, open debates, reactions and new productions, before taking care of the style and coverage of all the flanks. It does not resist humor or everyday text, it exposes, i.e., it tries to open rather than close the conversation. People are complex beings, beings of institutions, of language, we are not bodies nor are we inside them; our limits are not cut in space but, without a doubt, they go beyond our body.

Keywords

Language, institution, person, community, rationality, norm.

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Resumen

El esfuerzo reflexivo que aquí se propone se orienta a indagar sobre dos conceptos que se encuentran en el núcleo de nuestra constitución como seres racionales, es decir, como personas, nos referimos al pensamiento y al lenguaje. Lo que se busca, ante todo, es contemplar ese vínculo bajo una mirada un tanto diferente de las que suelen presentarse en la literatura que circula por los principales circuitos bibliográficos, que suelen provenir de la psicología, la lingüística y cada vez más de las neurociencias. Proponemos aquí una mirada que enfatice el vínculo de estos conceptos con regiones diferentes del espacio conceptual que habitamos, lo que abre instancias reflexivas que se revelan en su máxima expresión cuando revisamos o cuestionamos ciertas comprensiones asumidas o heredadas sobre estos conceptos. Este recorrido transita por afirmaciones fuertes, a veces intencionalmente descuidadas y libre de matices, que ante todo buscan provocación, abrir debates, reacciones y nuevas producciones, antes que el cuidado del estilo y la cobertura de todos los flancos. No se resiste al humor ni al texto cotidiano, se expone, en definitiva, trata de abrir antes que de cerrar la conversación. Las personas somos seres complejos, seres de las instituciones, del lenguaje, no somos cuerpos ni estamos dentro de ellos; nuestros límites no se recortan en el espacio pero, sin lugar a dudas, van más allá de nuestro cuerpo.

Palabras clave

Lenguaje, institución, persona, comunidad, racionalidad, norma.

Introduction

Understanding a philosophical discourse is not always, or almost never, a simple task. Philosophy, like many other activities, requires conceptual training; but what distinguishes philosophy from many other activities is its role in culture, or perhaps we should say, the intense discussion that is often opened about its role in culture. In any case, what philosophy or reflective practice should not be allowed to indulge is superficiality and lack of authenticity.

People who reflect on what we are and what we do, on what we think and feel, i.e., people who philosophize sometimes seek, as part of a broader task, to explain the concept in which, unknowingly and unwittingly, we members of a linguistic community are generally immersed. We can say that, as rational, we are conceptually constituted beings, which is not unlike saying that we are the kind of beings who can understand, who are exposed to changes in our ways of thinking and feeling, changes that can be seen as part of a process of conceptual redesign. We are thinking beings whose lives are constructed, transformed, and sometimes also unmoored according to the scope of our understandings and the value of our decisions.

What then motivates reflective practice? Why do we make such questions and requests? This is also a matter for reflection, a task that will always have to be carried out with others, practiced in dialogue, as Socrates said twenty-five centuries ago. But if make sense to those ques-

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tions, perhaps it would be best to start from the obvious fact that we are beings who attach value to things, who consider that there are better and worse things that can happen, who understand that there are good and bad situations that can be faced, who perceive that there are justice and injustice, we are, in short, beings who inhabit a world in which facts can be described through value judgments and valued through descriptions. We reflect because things can be favorable for us and for the environment that constitutes us and that we constitute, but they can also be toxic and destructive. We do not have an infallible standard of measurement for our decisions and actions, because we value things that are not always the same. Some of the concepts that we claim to be essential to the culture of our contemporary societies, such as education, democracy, and pluralism, are the result of such a view.

What can we expect from such reflective practice? What we expect from many of the practices[1] instituted in our community is a collaboration to improve the quality of life of the community and its members, but specifically we expect to achieve a better understanding of ourselves, what we are, what we want and what we do not want for ourselves. We aspire to a better version of our rationality, one that includes the limitations and inconsistencies of our emotional life. When reflection is sustained and deepened, it can lead to the strongest truisms losing their obviousness and showing other narrative possibilities, even when such an opening can lead to another enclosure that requires a new beginning.

The reflective effort proposed is oriented to investigate two concepts that are at the core of our constitution as rational beings, i.e., as people, we refer to thought and language. The aim is to is to see a relationship under a somewhat different perspective from the one usually presented in the literature, which usually comes from psychology, linguistics and, increasingly, from neurosciences. We propose a look that emphasizes the relation of these concepts with different regions of the conceptual space we inhabit, which opens reflective aspects that are revealed when we review or question certain assumed or inherited, but in any case, firmly naturalized, understandings about these concepts.

As a form of conceptual exercise, we can assume that what motivates philosophers to ask about the relationship between the concepts of thought and language is the suspicion that this relationship can provide with a better understanding of the relation between individuals and the community. Part of the task proposed is to show the meaning of this assumption.

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Basically rational

Addressing the concepts of thought and language is not a minor issue in the effort of conceptual clarification done by philosophy if we have already assumed the condition of rationality. This condition is not something that we have found or perhaps obtained by means of some empirical investigation and that, therefore, we can one day abandon or replace without further ado by some other condition. Our understanding of ourselves as rational beings describes us, but at the same time constitutes us. Rationality, a feature of every linguistic being is the game in which our lives are played, but as a game, it is a practice in which we can educate ourselves, i.e., improve as players[2]. Although rational beings can be described in the same way as many sportsmen, namely, "anyone plays, but not everyone plays well". Even though we play every day, we do not always reach our goals or expectations, nor do we always meet the expectations that others have of us. While it is true that we do not bathe twice in the same river, as Heraclitus understood, this does not mean that we should leave our education in the fate of destiny; not any change or transformation that a person may have can always be valued positively. Sometimes life takes us to unenlightened paths, leads us to destinations we would not have wished for, and makes of us superficial, insensitive people. We not only need to be other people, but to be the people we need, for this we educate ourselves; we would like to avoid at all costs to see ourselves one day claiming from the previous versions of ourselves the little or no importance they have assigned to their heirs.

Anyone is rational, but being rational does not mean behaving according to the results of applying a formula or an algorithm, there is no such thing, we have to make decisions and act. We want to be better people, which means, to use an Aristotelian tone, to be better in the role of being a person. We want to master the game, but sometimes things do not work out and not infrequently we fail, if not as individuals we fail as a community, which is also a failure of all.

Let us be certain that our life does not depend on the application of a formula and in this sense, we try to learn to play the game or games in our community, but we must consider as a fact that there are attempts against our own dignity, the fact that in our own community there are people living unfavorable conditions. In most cases these conditions are the result of community life and can therefore be modified; whether this happens will depend on the rationality of some other people, or rather, it will depend on the ways in which other people exercise their rationality. We can then think of rationality as an exercise, something that is prac-

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 89-107.

ticed, something that is not exercised when the community marginalizes some of its members by dragging them into inhuman living conditions; this, in different ways, does not affect only some sectors of the community, it affects all of us in our quality of life. Therefore, there are circumstances in which rationality must not be sought in the individual behavior of the most vulnerable members, but elsewhere; it must be demanded from others, but insistently from those who assume the responsibility of making this a fairer, more democratic community.

A community that limits and excludes some of us by making its living conditions extreme is a community that urgently needs to rethink itself, that needs to 'deconstruct' itself. In such conditions, it is not rationality that needs to be questioned, but its exercise, just as we do not question teaching, political, artistic, trade union, business activity, but the ways in which these activities are exercised. Our lives do not respond to an algorithm, although they do respond to rules or norms; we are rational and this means that we can understand what we do, we can see ourselves as reasoning beings, as logical beings; what we question is not the game of rationality itself, nor its rules, but how we play it.

We could then say that being rational is not a sufficient condition to be reasonable; therefore, in the game of rationality what makes us reasonable, sensible, better people is the way we play. Anyone is rational, but... It is then worth taking up again those words of Hannah Arendt (2003), regarding Eichmann, "No, Eichmann was not stupid. It was only pure and simple thoughtlessness - which in no way can we equate with stupidity - that predisposed him to become the greatest criminal of his time" (p.171).

Speaking of institutions

Both what we perceive and think, as well as what we say and do, has a conceptual content, something that can be made explicit or enunciated by means of a judgment, as we do when we say 'I saw that two people with luggage came in' or, 'I am not sure, but I believe that they are married'. In the first case, the propositional content of the perceived 'two people with luggage entered' is made explicit and in the second case the propositional content of the believed or thought 'they are married', is made explicit. Similarly, the propositional content of an action such as 'he set the fire by accident' can be stated. To be able to establish the content of the acts of an individual is the only way to understand his behavior, but also the condition to be satisfied to be able to evaluate it.

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 89-107.

In short, it can be said that it is the conceptual nature of the content of our thoughts and acts that makes rationality possible; in other words, our lives are ordered, projected, and transformed according to regimes and processes of a conceptual nature. For this reason, we say that we are conceptual beings:

> Concepts, which govern our thinking, are not simply a matter of the intellect. They also govern our daily functioning to the most mundane details. Our concepts structure what we perceive, how we move in the world, how we relate to other people. So, our conceptual system plays a central role in defining our everyday realities (Lakoff & Johnson, 2004, p. 39).

In either way, when we speak of concepts we are not speaking of certain words, such as giraffe, tree, or window, which could well be understood as names of concepts. But as Lakoff and Johnson say, concepts govern our intellect and our perception and then we infer that we are not talking about certain words, nor about the form we give to the 'raw material' provided by the senses, in which we could think of the reality of a non-conceptualized raw material. Our perception is conceptual, but this does not mean that concepts constitute the formal input of the rational mind to the material of perception. There are other ways of thinking about concepts, ways that allow us to see more clearly the relation that individuals have with the community, i.e., the relation between thought and language.

To begin the journey let us recover a well-known fragment of someone who has reflected on the matter, Donald Davidson (1990), who focusing on the concepts of belief and truth affirms, "Belief is constructed to fill the gap between sentences considered true by individuals and true (or false) according to public standards. Belief is private, not because it is accessible to a single person, but because it may be idiosyncratic" (p.162).

There is in this passage the appeal to a double conceptual binomial; on the one hand, the public/private binomial that helps us to understand how individual thought is cut on the background of social practices set in a community. On the other hand, there is an implicit use of the true/false binomial belief.

We begin by addressing the concept of social practice to avoid taking the path that leads to contrast between individual belief and collective belief. It is not a question of approaching the matter as if it were a matter of consensus to finally counterpose the belief of the majorities to individual belief, which would leave us with no more tools than those of contractualism to understand our own constitution. Something that could well be highlighted in Davidson's text is the fact that even though

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 89-107.

the linguistic community and its norms are an authentic artifice, a product of collective arbitration, the possibility of error arises with it, the possibility of saying or believing that things are different from the way they are. This shows that error is not the product of the accurate adjustment between language and the world, or between individual sentences and beliefs and the way the world is, but between individual´s behavior and the norm that defines the community itself. Thus, adjusting sentences and beliefs in search of 'truth' is also an expression of the desire to be part of the community, to give validity to its norms. In all this are the words of Stanley Cavell:

> The philosophical appeal to what we say and the search for our criteria from which we say what we say are claims of the community. And the claim of the community is always a search for the bases upon which it could be or has been established (Cavell, 1979, p.20).

Now, to formulate the question about the relationship between thought and language, it would be necessary to begin by being clear about the concepts involved. Just as in order to ask ourselves what relationship exists between Vladimir Putin and Volodimir Zelenski, we should at least know, perhaps as a condition for the question to arise, who these people are, i.e., who we are talking about. In the same way, the question about the relationship between the morning star and the evening star could hardly arise if we did not know with a certain approximation, or perhaps if we did not think we knew what we were talking about, let alone that the matter requires a previous reading of Frege's 'Meaning and Reference'.

Here is where we start covering some parts of the conceptual framework in which thought and language are located[3]. In the first place, we could say that when we use the concept of language we are not talking about an object or a set of objects, we are not talking about a code or a set of signs that enable us to communicate. We are not speaking of a convention nor of a resource that we develop for communicating our thoughts to others, as if our thoughts were hidden from them while they are evident to each of us, or at any rate and to be rigorous, as if my thoughts were evident to me, who am a thing that knows that I think, while the situation is not so clear to me in the case of others. Even so, I will not let this suspicion about the existence of other things or thinking beings take away my desire to go ahead with these reflections.

When I speak of language, I should say (so as not to commit anyone to this), I am speaking of an institutional configuration[4], so that we do not say that we possess language, but that we inhabit the linguistic

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 89-107.

space. This institutional configuration occurs, as in any institution, in social practices that guide the behavior of the members of the community, without losing sight of the fact that to speak of community means to speak of an institutional configuration. As the German philosopher Hartmut Kliemt states, human societies clearly differ from animal societies, just as states differ from insect groups; clearly, human social coexistence is essentially based on organizations created by men, and we call these organizations social institutions (Kliemt, 1998, p. 13). Therefore, the concept of community does not only refer to a group of individuals, but to the institutional character of this group and therefore to the presence of what many consider as an 'abstract' entity, and they consider it as it is understood that we can see, touch, and talk to people, but we cannot do such things with the community, nor with the university, nor with the clubs, etc. So, what is the reality of institutions? Let us recall that famous passage of Ryle's on categorical errors:

> A foreigner visiting Oxford or Cambridge for the first time is shown the *colleges*, libraries, sports fields, museums, scientific departments, and administrative offices. But then he asks: 'Where is the University? I have seen where the members of the *colleges* live, where the Registrar works, where the scientists do experiments, but I have not yet seen the University where its members live and work'. It must be explained to him, then, that the University is not another parallel institution or a sort of counterpart of the *colleges*, laboratories and offices. The University is the way everything he has seen is organized (Ryle, 2005, p. 17).

In this sense, institutions seem to have the intangibility of meanings, of what we do not see but we still know when it is there and when it is not; in the same way, institutions give meaning to a human group. An institution is a system of norms that regulates the behavior of a community, but not of a previously constituted community, as if it were a house or a building that is constructed to be inhabited, but rather the community is constituted as such by adopting a system of norms for itself.

How does a human group make the transition to community? The system of social practices that define a community or a culture is instituted to the extent that the behaviors of individuals become convergent, and individuals consciously begin to order themselves based on such convergences, which thus take on a normative aspect and nature. Let us recall that the idea of postulating a pact or contract would mean assuming a prior norm, language -which makes it possible to carry out such a pact or contract- in order to account for the way in which a norm is instituted;

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 89-107.

then, as John Searle says, "if we take language for a presupposition, we have already taken institutions for a presupposition".

Why would we accept the rules? Why would we accept the institution? Because of the desire to be part of the community, because we do not constitute ourselves as people outside the community, and we do not leave the community once we have entered it. One does not leave the community just by entering the woods like Henry Thoreau, a claim to leave that was not his own, nor is one part of the community by living in the city like Kaspar Hauser, according to legend. Accepting a norm means accepting the game and this implies awareness of the existence and validity of the norm or, in other words, commitment to the system or institution of which the norm is a part. The norm demands that the members of the community adjust or adapt their behavior, but it demands it rationally, in such a way that the norm can always be complied with or violated, this is a possibility that, in each case, is presented to every individual to assume responsible behavior.

The idea is to think that a community is an institution that has originated in a linguistic space, i.e., that it has been instituted fundamentally as a linguistic community. It is language that makes it possible to create senses, meanings, culture, community. We are saying that there is no community that is instituted outside language, so every community is a linguistic community. With respect to language, we can say something similar; we do not understand what we are talking about if when speaking of language we do not focus on social practices that shape a community; language is always in the community. In short, what we are simply saying is that we cannot understand the concept of community without understanding the concept of language and vice versa.

The footprint of the believer

We will return to the text of Davidson to mention that the concept of belief is a concept that can only be used in the framework of a normative system, i.e., it is a concept that can be attributed to those individuals who intend to adapt their behavior to the norms set in their communities. This, of course, is neither a whim nor the mere exhibition of an anthropocentric spirit, but is the result of the attitude of rationality, an attitude that must necessarily be adopted towards the members of a linguistic community to be able to interpret their behavior in terms of actions, i.e., to give some meaning to their behavior[5]. In this way, an individual is a true believer to

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 89-107.

the extent that his behavior can be understood against the background of the norms that constitute his community, just as an individual is a tennis player to the extent that his behavior can be understood in terms of the actions and intentions that define the practice of playing tennis, i.e., the norms that regulate the game. Similarly, an individual is a cook if his behavior can be understood in terms of actions and intentions that define the practice of cooking. In this sense we say that belief, like the other psychological concepts in terms of which we understand a person's behavior, constitutes a key piece in the game of rationality, a game that we begin to play from the moment we enter the linguistic community. Hence, our behaviors can be seen as rational actions insofar as they are interpreted as carrying out, or at least intending to carry out, certain social practices.

As in the case of institutions, we cannot see a person's beliefs, desires and other mental or psychological states... but they are there, giving meaning to their behaviors. We do not see people's minds as we see their bodies and their behaviors, neither do we see the meaning of the ink used to write the pages of a book, nor do we hear the meaning in the words that someone pronounces. Meaning is not, as mentioned by Ryle, referring to categorical errors, something we will encounter in the world just as we encounter tables, chairs, cell phones, apples, and sandwiches. As Charles Peirce (1988) said of rules, "(...) they have no existence at all, even though they have a real being consisting in the fact that existents will conform to it" (p.154).

What Peirce affirms for rules could also be said of any normative or institutional phenomenon, namely, that there is nothing concrete or abstract that can be identified with the rule, with the norm or with the institution, beyond what is observed in the behavior of the individuals who express it. However, we do not distrust the existence of meanings any more than we distrust the existence of rules or institutions even when we can only observe buildings, offices, libraries, individuals, etc. On this point Peirce also said:

> We have seen that thought can only be known through external facts. Therefore, the only thought that can be known is thought in signs. A thought that cannot be known does not exist. All thought must, therefore, be in signs (Peirce, Ch. (Ch. 5.251) [6].

If we understand Peirce's 'thoughts' as our meanings, norms or institutions, we realize that that there are no meanings that are not expressed in things such as actions or products of actions, such as ink or paint marks, sounds, light indicators, and so on. There are no thoughts or meanings that

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 89-107.

do not 'take body' in observable things or facts. We should also say that our thoughts are expressed in actions, i.e., in the practices we perform or try to perform. Our thoughts are hidden, they are not kept in our heads or elsewhere, nor are they so exposed to us; our thoughts have the substance of meanings, of norms, of institutions, of actions and of people.

Nor is it the case that my thoughts must somehow be guessed by others or that when doubting as to whether my thoughts are these or those, there is something beyond my behavior, whose consultation can clear it up. My thoughts, like those of any other believer, are the result of the interpretation of my behavior in a background of social practices.

What were the facts?

We had said that we could consider the community or linguistic community as the first institution but, at the same time, as the institution that makes the others possible. To affirm that the linguistic community is the first institution is equivalent to saying that nothing is instituted outside language, since institutional life requires, on the part of its members, a particular type of consciousness that can only be admitted in a linguistic setting[7]. To try to address the point we could use a well-known reflection of Ludwig Wittgenstein (1988) about the nature of language, "to understand a sentence means to understand a language. To understand a language means to master a technique" (§ 199).

What does Wittgenstein claim here? That understanding a play in a game is conditioned to understanding the game. Let us suppose that a spectator is in the lower part of a stadium watching a soccer game and observes with some displeasure that in the fifteenth minute of the second half the referee decides to award a penalty kick against his team[8]. Only a person with a certain degree of understanding of the game can complain, loudly, obviously, that the defender reaches the ball before the striker and tries to explain to his anonymous companion that it is the striker who seeks contact and not the defender who provokes it. The spectator would not be able to see, discuss and comment on the play if he did not understand the game as a whole. Why is this so? Because the set of rules or norms that define the game constitutes a system, a logical plot, in such a way that understanding one rule presupposes understanding others, or in other terms, one can only understand the rules if one understands the rules. Let us bear in mind that understanding a game or a particular rule should not be thought of as understanding a written text or a set

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 89-107.

of instructions[9], but as the condition to which our spectator has access, someone who can see the game and perhaps also play it[10], which means being able to see it. If language is a system, then understanding a part of the system means understanding the system.

A rather more hermetic way of saying what Wittgenstein said is by mentioning that we only have something if we have something else. When this principle is applied to our multiple descriptions and stories that give content to the reality we inhabit, it turns out that we cannot only account for a fact, for example, the fact that there is a glass on the table. To see that there is a glass on the table requires certain conditions, among them, to know that something is a glass, to know that something is a table, to know when x can be said to be on y, also to know that such conditions are present at this moment. But knowing that something is a glass and that something is a table implies knowing that something is a device designed for drinking and something else is an artifact designed for carrying out every day activities such as eating and drinking in rituals we call breakfast, lunch, and dinner, for example, but which is also often used for work, homework, writing essays, playing poker and other board games, and many other activities as well. These are some of the things that one who claims that there is a glass on the table should know, and of course, one who knows these things knows many other things that are a condition for knowing these and so the chain extends to the condition of inhabiting a world. We say that we only have something if we have something else; we do not have a habitable world in which there are only one or two facts, this means that such a world is not possible and if it were possible, it would not be like us who would inhabit it. What this brings out is the concept of system that defines every institution such as language or community, as we said; neither part has meaning by itself, in which case we would have a hard time understanding how such meaning is acquired. To add psychedelic images to the matter, let us think of a child who is beginning to speak but who for the moment only uses one or two words, whose vocabulary is a couple of words, and who, in using them, knows perfectly well what he is saying.

Narrating events, explaining, arguing, conversing, understanding, etc., are activities that require a complex institutional framework. Events are produced, observed, described as a figure on a normative background, and in our case this horizon is conceptual. We could not even have elaborated the concept of reality if we were not inhabitants of language; however, this does not mean that reality is a product of our unbridled fantasy as linguistic beings and not even a construction free of all conditioning.

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 89-107.

In any case, it must be said, along with Willard Quine (2002), that "what there is in the world does not depend on our use of language, but what there is depends on it" (p.158). This makes us believe that our ontological commitments, which counts as reality, cannot be contracted without the practice of making statements, of telling what the facts are.

We reintroduce the idea of *seeing* to ask ourselves about the game we attended but did not get to *see*, the one where our understanding was zero, where we only saw people running around, jumping, and kicking a ball. What there is, for us game-blind people, in our world is anything but a soccer game. The fact of not being able to see the game means we cannot see the plays, the infractions, corner kicks, penalties, goals, etc., and if instead of having a blind man watching the crowd screaming and cheering, it would be a blind crowd watching just one person doing it, perhaps they would think the guy was deranged. This is not meant to be a plea for insanity but rather to point out that there is something 'in the world' that one is evidently missing in that one is not seeing what others seem to be seeing (if one intends to remain steadfast in the skeptical attitude).

Can one learn to perceive, i.e., to *see* the game? In fact, all those who can see the game have learned to do so at some point, they were not born knowing or being able to see. Even one can continue to learn to *see* all one's life, there is no end point in this. Just as in the realm of scientific knowledge there is no arrival point at which we close our eyes and can say, "we have finally come to know how things really are."

Our purpose at this point is to account for something inferentially connected with the preceding reflection and that is the fact that seeing, being aware of something like a soccer game is a conceptual or linguistic matter, as Wilfrid Sellars (1971) says "All awareness of types, facts, etc., in a word, all awareness of abstract entities - indeed, all awareness - is a linguistic matter" (p.140).

It can be inferred that Sellars means that consciousness is a linguistic, institutional phenomenon and not, for example, a biological one, but on the other hand he could be affirming that what we are conscious of always has a linguistic or conceptual format, i.e., that the type of consciousness we have is linguistic or conceptual. The consciousness we refer to is always of something as something; of something such as an animal, a chair, a plant, a clock, etc. Perception, as a conceptual ability, not only allows us to classify between what is cold and what is hot when it meets our body, but also to make sense by classifying under concepts.

Now, why would Sellars say that all consciousness of facts is a linguistic matter and not, for example, a matter of biology or neurobiology?

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 89-107.

It is not infrequently assumed that the kind of consciousness that is usually referred to as self-consciousness is a particular kind of consciousness, of a higher level or of a different character than simple fact-consciousness. In this way, it is assumed that some living beings located at the top of the evolutionary pyramid would have managed to develop a form of consciousness that could be called consciousness of the world, of facts, etc., but they would have been surpassed by others even more evolved that would have managed to develop a consciousness of themselves, i.e., a consciousness of the world in which they are, but they know it now. In short, self-consciousness or self-awareness is not a new form of consciousness but consciousness focused on oneself. How can we think that we could be conscious of something -of facts, of things- without being at the same time conscious of ourselves? It would perhaps be a selective consciousness with a particular type of blindness, one that would only remove blindness from the perceptual horizon. It is precisely this characteristic feature of our consciousness that defines it and authorizes us to think that an individual who does not perceive himself not only acts but does not have the type of consciousness that we people have attained.

In short, perhaps it is the conceptual or linguistic nature of our consciousness or awareness that explains why some can and others cannot *see* a game, a movie, a text, in short, a fact. As Quine, if we cannot *see* or *say* that something happens then such (hypothetical) events will not appear when we tell our story. But one would still like to ask, are there events of which we were not or are not aware? There are only two answers for this, as for many other things that could be correct, one affirmative and one negative. The affirmative is the result of the historical or perspective view, the one that affirms that radioactivity had its effects even though, before 1896, the year of Henri Becquerel's discovery, nobody knew about radioactive processes. The negative is the result of the conceptual gaze, what we cannot *see* will not be part of the world we inhabit when we make an inventory of what is there. In this second sense we can say that it is our conceptual or theoretical developments, developments that do not necessarily mean progress, that alter the world. In short, under the conceptual gaze facts do not seem independent of our histories, of our consciousness, of our understanding. There are facts to the extent that we can or are in a position to account for them; to suppose otherwise would commit us to the idea of facts that can be considered or described by beings who have concepts and theories that we do not have, or who perhaps have only the right theories, but then those beings are not part of our community, they are not and will not be us.

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 89-107.

The image of the game adopted many times in the history of philosophy makes us see more clearly at least two very surprising things; firstly, that language can be seen as a normative space, and it is so insofar as we realize that entering the linguistic community is entering an institution, and this does not only mean mastering norms or living according to them, but that it is a constitutive process[11]. Secondly, and linked to the above, the relationship between fact and norm is one of dependence. We will try to explain this.

Going back to Quine's point, what if we cannot say what is there? We are not posing the hypothetical situation of being in a country whose native language we do not know and where we do not know how to ask about the university. It is the situation we are, when, perhaps in an exotic country, we see a group of people behaving strangely, shouting, jumping, pushing, and shoving, coming and going, throwing themselves on the ground and quickly getting up, walking slowly and sometimes running, and then one of the subjects, perhaps noticing our particular aspect of foreignness, approaches us and pushes us repeatedly. What is this all about? Is it a game? Is it a ritual? Is it a fight and we are invited to fight? Is it some kind of political debate? What should we do in such a situation? We do not know, but... how to describe what we see? Well, we already did and that is all, or at least that is all we see. Are we missing something? Possibly. Maybe it is a game or a sport whose rules we do not know. Well, what can we say there is? No more than what we said, and maybe there is nothing more; what we can be sure of is that there will be no more than this in our best description of the world. If we cannot see a set of actions in those behaviors that derive meaning from being the conduction or actualization of certain practices, from conforming to certain norms, then we have nothing, and saying that we have nothing is saying that we have neither the actions nor the facts, if there are any. It is not a matter of denying that such events are happening given our impossibility of seeing them, but of ignoring their existence altogether and therefore that we cannot include them in a more complete description of the world. Our description will be devoid of such events, which reveals, as we anticipated, the relationship of dependence between fact and norm, i.e., between fact and institution.

Institutional world

Perhaps it can be anticipated, from the preceding reflections, that what can be thought about people is intimately related to what we have said

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about facts or descriptions of the world. Indeed, people do not constitute as such outside the linguistic or conceptual universe, which means that we are literally linguistic or conceptual beings. This seems to be a truism, and it is, but what is not so obvious is that we are literally linguistic or conceptual beings. Let us see how to clarify it.

What does it mean that people are constituted as such in the linguistic universe? It means that we would not be rational or thinking beings if we did not belong to that universe. We need to see Victor de Aveyron[12] to understand what the linguistic community represents. Being part of the institution of language does not only mean learning to write and read, not even the mother tongue, it means acquiring a conceptual constitution, which means perceiving, thinking and acting in a word, becoming rational. People are the kind of being that can only emerge in a linguistic universe. To ask ourselves if there is 'intelligent life' somewhere else in the universe is to ask if there are conceptual beings elsewhere, if perhaps the linguistic institution occurs elsewhere in the universe. To be part of the normative space of rationality already means to possess a particular constitution that only people attain, or in other words, we become people when we attain such a constitution. Rational people are a particular class of beings, those for whom inferential practice is relevant. We are beings who have constituted ourselves as such in the inferential space in which reasons are the official currency, we give and ask other reasons for what they say and what they do, we seek reasons for what happens, we want to understand. We look for reasons to act, reasons more solid than those we achieved in the past, we seek to improve the rational support of what we believe and we are generally willing to oppose our reasons to those of others. Sometimes we also abandon our reasons because we consider them weak and adopt other more solid or we simply run out of reasons to think what we think or do what we do, but this is not something that happens often, unfortunately. Entering the space of the linguistic community is not simply mastering a few words but shaping a scheme of beliefs, desires, emotions, and other mental states.

If the linguistic community is not the result of a pact consciously made, it will have to be thought as an implicit contract or pact, i.e., as a convergence of behaviors. Contracts and institutions constituted explicitly derive from contracts and institutions constituted implicitly, as is the paradigmatic case of the linguistic community and of our own rationality, the system of norms instituted 'accidentally' by human beings that transformed them into people. Such rational institution is the *sine qua non* condition for perception, thought and action, i.e., the condition for

Sophia 33: 2022.

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 89-107.

the conceptual constitution. Being the kind of beings we are, has no justification, just as the norms that define it have no justification, just as the logic of our rationality does not claim to have any, since it is the result of an 'implicit contract', but what we make of ourselves once we have constituted ourselves as people will depend on the education we give ourselves, and that will need justification. The kind of conceptual constitution we seek for ourselves, as individuals and as a community, will need to be justified. Determining the concepts that will be central to our culture is something that has to be debated in a community.

Conclusion

What we have said make up an allegedly philosophical text. As we said at the beginning, we reflect because our descriptions and evaluations, our thoughts and emotions might help us and the environments that constitute us, but they can also be toxic and destructive.

The objective has been once again to make some clarifications regarding certain concepts that are paramount to us, to our culture and to our constitution as the people we are. Philosophers or those of us who try to reflect on the issues that shape our individual life and our life in community have a great responsibility, which is perhaps no more than a form of civic responsibility, and that is to contribute to improving the living conditions of our community and that of its members.

People are not individual units, as are our bodies; we are beings of institutions, beings that inhabit normative wefts that contain and constitute us. Like a jigsaw puzzle, each person's life depends on the lives of others. Our limits are diffuse, we cannot say where they begin and where they end, sometimes they expand and sometimes they contract, and we only know that those limits go beyond our bodies.

Notes

1 When speaking of practices, we will generally assume that we are speaking of the universe of significant behaviors in a community, which will allow us to recognize something as an action (or the performance of a practice) and not a simple movement.

2 One can be more or less adept at using concepts, but using concepts is an all or nothing matter, just as in the case of rationality we do not say that someone is half-rational, but rather that he is or she is not rational, even if he can be said to be unreflective.

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 89-107.

3 It should be considered at this point that the relationship between thought and language has been approached from different parts of the literature, among which we must mention psychology, education, anthropology, linguistics, and, of course, philosophy.

4 When speaking of institutions, some authors also incorporate the concept of value along with the concept of norm or normative system; however, I believe that the values accepted by a group or an individual can also be expressed in normative terms. Consequently, when using the concept of institution, I try not to introduce more precisions than those of the normative system, firstly because they are not necessary for the reflection I am proposing and secondly to allow this concept to be embellished later with different nuances and uses that are proposed in the social sciences and in philosophy.

5 This does not mean that we do not have the right to extend our uses of some psychological concepts such as belief, desire, fear, etc., to find some meaning in the behavior of individuals who are not part of the linguistic community, such as animals or technological devices.

6 The citation is from Collected Papers 5, Book 2, Question 5. "Whether we can think without signs". We use the abbreviated format usually employed (Ch. 5.251). The translation of the original is mine.

7 This type of consciousness is conceptual consciousness, which some philosophers recognize to the sapient, as in the case of people, as opposed to the consciousness they recognize to the sentient, as in the case of animals.

8 The penalty, if necessary to clarify, is one of the unlimited possible situations in the development of the game.

9 The penalty, if necessary to clarify, is one of the unlimited possible situations in the development of the game.

10 The penalty, if necessary to clarify, is one of the unlimited possible situations in the development of the game.

11 In the following section we will see that being part of an institution is far from being a superficial matter.

12 In the following section we will see that being part of an institution is far from being a superficial matter.

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The bodily and extra-bodily extension of senses

La extensión corporal y extra-corporal de los sentidos

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Abstract

The extension of senses remained an unresolved aporia throughout the history of the theory of perception. An appropriate example of the historical persistence of this aporia would be the priority-dispute between extramission and intromission theories of vision prevailing since the ancient philosophy of Plato, Aristotle, Plotinus and others. The resurgence or rehabilitation of the intromission theory of vision in the early Cartesian modernity strategically reversed the predominant position of the sense of touch, which had prevailed in the medieval scholastic philosophy, in favour of the sense of sight. Since then, the external extension of vision has remained an aporia, as problematized and discussed in the works of Descartes, Locke, Molyneux, Berkeley, Condillac, Helmholtz, Gibson, and others. The present treatise is an attempt to reconsider the aporicity of the bodily and extra-bodily extension of senses and resolve it by means of a methodological analogy between the bodily extension of sensations and the extra-bodily extension of the senses of sight and hearing. On the theoretical level, this investigation tries to establish a complementarity between philosophical and scientific epistemologies. This may lead to a scientific proof, on the basis of which the real extension of the bodily and extra-bodily senses could be dictated by a philosophical epistemology and confirmed by a scientific-experimental investigation.

Keywords

Epistemology; theory of perception; vision; intromission theory; extramission theory; auditory perception

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Resumen

La extensión de los sentidos siguió siendo una aporía no resuelta a lo largo de la historia de la teoría de la percepción. Un ejemplo apropiado de la persistencia histórica de esta aporía sería la disputa de prioridades entre las teorías de extramisión e intromisión que prevalecen desde la antigua filosofía de Platón, Aristóteles, Plotino y otros. El resurgimiento o rehabilitación de la teoría de la intromisión de la visión en la temprana modernidad cartesiana revirtió estratégicamente la posición predominante del sentido del tacto, que había prevalecido en la filosofía escolástica medieval, a favor del sentido de la vista. Desde entonces, la extensión externa de la visión ha permanecido como una aporía, problematizada y discutida en las obras de Descartes, Locke, Molyneux, Berkeley, Condillac, Helmholtz, Gibson y otros. El presente tratado es un intento de reconsiderar la aporicidad imperante de la extensión corporal y extra-corporal de los sentidos y resolverla mediante una analogía metodológica entre la extensión corporal de sensaciones y la extensión extra-corporal de los sentidos de la vista y el oído. En el plano teórico, esta investigación intenta establecer una complementariedad entre las epistemologías filosóficas y científicas. Esto puede conducir a una prueba científica, sobre la base de la cual la extensión real de los sentidos corporales y extra-corporales podría ser dictada por una epistemología filosófica y confirmada por una investigación científico-experimental.

Palabras clave

Epistemología, teoría de la percepción, visión, teoría de intromisión, teoría de extramisión, percepción auditiva.

Introduction

In comparison with the conceptual thinking, sensory perceptions are clearly endowed with spatial extension and temporal simultaneity. The individual sensory perceptions can be divided into two categories, namely the bodily extended sensibility, as represented in the sense of touch or taste, in the sensation of pain or cold, etc., and the extra-bodily extended sensibility, to which the sense of sight and hearing belong. In both categories, the bodily and extra-bodily extension of the senses poses a clear challenge to the prevailing modern epistemologies and theories of perception, as represented in the seminal works of Descartes, Locke, Molyneux, Berkeley, Condillac, Helmholtz, Gibson, and others. It remains an unresolved aporia, which also necessitates a fragmented disciplinary contextualization of its investigation. As a prevailing aporia the extension and objective localization of sensibility form a point of contention not only in the context of the philosophical theories of perception, but also in other areas of science such as psychology and neurobiology.

In the case of bodily sensibility, we clearly experience the bodily extension and localisation of mental sensations and their temporal simultaneity. The question now arises as to whether the bodily extension and the temporal simultaneity of sensory perceptions are accomplished solely by the mind, or also by the body, which takes part in bodily sensa-

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tions through the nervous system that is spread all over the body. Here we are inevitably confronted with the problem of the possible interaction between mind and body in all cases of bodily sensibility. Such an interaction would furthermore point to the necessary complementarity between philosophical and scientific epistemologies, which alone can seemingly solve the persistent aporia of the extension of bodily sensibility.

However, it is difficult to imagine the interaction between mind and material bodies in the case of the external extension of senses such as sight and hearing, as the nervous system is confined to the human body and cannot extend externally in the surrounding free space. Nevertheless, *structural* analogies can be drawn between the bodily and the extra-bodily extension and simultaneity of sensory perceptions. This will prompt us to search for the possibility of whether the external extension and objective localization of the sense of sight and hearing is *analogous* to the bodily extension of the sense of touch or taste as well as the sensation of pain or cold. Such an analogy would reinforce, even justify, the complementarity between philosophical and scientific epistemologies in the study of the extension of the senses. This complementarity, which applies equally to the bodily and extra-bodily extension of the senses, would also call into question the apriority of spatial and temporal *forms* of sensibility, which are philosophically speculated or represented in the prevailing framework of the Kantian transcendentalism.

In the following a methodological analogy between the bodily and extra-bodily extension of the senses is explicated. Using this methodology, the intromission theory that has prevailed since the early modern era and which gave rise to almost all unresolved aporias in visual perception, is re-examined. In doing so, attempts are being made to legitimize the extramission theory of vision, which was already represented in antiquity and middle ages and later suppressed in modern times. The methodological analogy between the bodily and extra-bodily extension of the senses also presupposes the complementarity between the scientific and philosophical foundations of sensory perception. Such a complementarity would justify not only the extramission theory of vision, but also the real extension of all the senses.

The complementarity of philosophical and scientific theories of perception

The bodily and extra-bodily extension of senses refers to completely different modes of existence, namely the mind and the body. Since the

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emergence of the Cartesian modern age, sensory perceptions as fundamental epistemological processes were generally ascribed to the perceiving subject; on the other hand, the connectivity of the senses with the body and the external extension of the sense of sight and hearing tend to be regarded by philosophy as aporias. The complete separation of subjective sensation from the object – an undertaking which is decisive and propaedeutic for modern epistemology – was hardly strived for in the traditional scholastic philosophy[1]. On the other hand, the complete separation of the sensory qualities from the object of perception and their appropriation by the perceiving subject, which Descartes achieved through his method of doubt and negation, became a propaedeutic to modern epistemology in general. Cartesian dualism, as most closely represented in its absolute differentiation between *res cogitans* and *res extensa*, was based on his method of negation, which was repeatedly used by many philosophers of the early modern period.

The body-soul dualism, introduced and established philosophically and systematically by Descartes, culminated in his radical idea: "The soul can also exist without a body" (Descartes, 1972, p. 67). This gave rise to two kinds of aporias in the context of early modern epistemology: If the soul as *res cogitans*, to which the sensory perceptions as well as the acts of the will belong as different modes of thinking (Descartes, 1972, p. 145), can exist completely separate from the material body and therefore prove to be immaterial and unextended, how can it cause bodily acts of will (volition) and extend in the body through sensory perceptions? Immediately after the appearance of Descartes' *Meditations*, Princess Elisabeth of Bohemia, a passionate Cartesian, polemicized against both of these problems in her first letter to Descartes on May 6, 1643.

> How can the soul of a man determine the spirits of his body so as to produce voluntary actions (given that the soul is only a thinking substance)? For it seems that all determination of movement is made by the pushing of a thing moved, either that it is pushed by the thing which moves it or it is affected by the quality or shape of the surface of that thing. For the first two conditions, touching is necessary, for the third extension. For touching, you exclude entirely the notion that you have of a soul; extension seems to be incompatible with an immaterial thing (Nye, 1999, pp. 9-10; Lauth, 2006, p. 189).

In his reply, Descartes admitted, as is well known, that he neglected the indispensable connection between the soul and the bodily acts of will and sense perceptions in favour of "thinking":

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> There are two facts about the human soul on which depend all the things we can know of its nature. The first is that it thinks, the second is that it is united to the body and can act and be acted upon along with it. About the second I have said hardly anything; I have tried only to make the first well understood. For my principal aim was to prove the distinction between soul and body, and to this end only the first was useful, and the second might have been harmful. But because your Highness' vision is so clear that nothing can be concealed from her, I will try now to explain how I conceive the union of the soul and the body and how the soul has the power to move the body (Descartes, 1970, pp. 137-138; Ebbersmeyer, 2015, p. 29).

If "thinking" is immaterial and not extended in comparison with sense perceptions and volitional acts, it can only be abstract-conceptual thinking. However, certain modes of thinking determined by Descartes, such as memory or imagination, clearly include the factum of seeing, and the bodily acts of will includes the mechanical-material volition. The virtuality of imagination and memory refers to their immateriality— although they are spatially extended —but, as necessary references, the imagination and memory presuppose the real, material and spatially extended objects that are at some point directly looked at. The factum of sensibility —especially the sense of sight but also hearing— is indispensable here. This also points to another aporia that is still difficult to solve, namely the extra-bodily extension of senses.

The epistemological turning point in the early modern period, which was initiated by Descartes and established almost paradigmatically in the post-Cartesian philosophy from Locke to Kant, also marked the historical occasion for the emergence of natural sciences and their divergence from the philosophy of mind. The early modern emergence of natural sciences, especially mathematical sciences such as mechanics and optics, had its basis in the medieval-scholastic *philosophia naturalis*, i.e. ultimately in the overall framework of philosophy itself, as the seminal works of Anneliese Maier demonstrate. The historical transition from the medieval-scholastic *philosophia naturalis* to the early modern mechanical philosophy turned out to be one of the most important characteristics of Cartesianism. The two parts of Descartes' main work, *Les principes de la philosophie*, namely *On the principles of human knowledge* and *On the principles of physical things*, signalled the origin of the historical unfolding of a divergence between philosophy and natural sciences. The early modern mechanical philosophy arose first from mathematical sciences, namely classical mechanics and optics; it later evolved into material sci-

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ences like chemistry. It is important to assume here that in the context of early modern mechanical philosophy, the philosophers and natural scientists —as "natural philosophers" such as Descartes, Gassendi, Newton, Locke, Galileo, Hooke, Boyle and others— formed a unique community.

The early modern divergence between philosophy —as the philosophy of mind— and natural sciences thus had its origin in philosophy itself, more precisely in the predominance of epistemology initiated by Descartes. As never before, epistemology began to show an ambiguity precisely in its referentiality, i.e. in the epistemic access to objects. While philosophical epistemology aimed primarily at an epistemic access to mind, body, which is completely separated from mind as a purely natural object, became the main referent within the framework of natural philosophy. This unfortunate epistemological divergence initially gave rise to the historical unfolding of a methodological divergence between philosophical and scientific ways of thinking. Thinking with natural objects – within the framework of natural science – now strictly excluded the undesirable factum of mind.

Is it legitimate to have two different epistemological methods and strategies in our philosophical endeavour to understand our self and the world of objects around us? The question is most likely to concern the body and the mind housed in the body itself, to which we seek a sufficient epistemic access both within the framework of philosophy and that of natural sciences. This ambiguity of epistemic access, which results in the disciplinary and contextual differentiation between philosophy and natural sciences, clearly concerns the previously discussed aporia of corporeal and extra-corporeal extension of sensibility. The bodily extension of the sense of touch, taste and smell, sensations of pain, cold and warmth, etc., are undoubtedly caused by the material body itself. But we ultimately attribute all of these sensations to a merely perceiving subject. How and to what extent are these purely subjective sensations based on the natural scientific – or physiological, neurobiological, etc. – processes in the body, especially in terms of their physical localisation and extension?

The indispensable nexus between purely bodily causes and processes and purely subjective sensations resulting from them is tacitly assumed in everyday life; in philosophy, on the other hand, an attempt is made to completely separate the material causes from their mental effects. Let us consider (hypothetically) the possible case of a strict Cartesian who is inclined to ascribe all bodily sensations or their origins and existence to the soul alone. One day he wakes up with an excruciating toothache, that he feels localized at the root of a particular tooth. Would

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 109-136.

he —as a strict Cartesian— continue to think that his toothache, despite the clear localisation of the pain at the roots of the tooth —that is, in the body— is ultimately a purely subjective sensation and as such should be treated mentally? In this case he would first go to a psychologist with the conviction that his toothache can be treated and cured solely at the level of his mind. In another possible case, in which our philosopher-patient in addition to his conviction, that the sensations are purely subjective or originate solely from the subject, also believes in the neuronal processing of the pain sensation in the brain, he would go to a psychiatrist or a neurobiologist with the hope that his toothache can be completely relieved by treating a specific part of the brain that processes the neuronal input from the roots of the tooth into the sensation of toothache. In everyday life, however, he will immediately go to a dentist who would treat the toothache purely physiologically. The dentist would first locate the origin of the toothache precisely in the roots of a particular tooth and therefore only operate this tooth. The first step in this dental surgery would be a local anaesthesia, which temporarily eliminates the sensation of toothache. After that, the inflamed roots are removed. Local anaesthesia here also means the complete exclusion of the factum of the subject, i. e. mind and its sensation, and the restriction of the surgical treatment to the roots of the tooth, that is, to a specific part of the body. This example shows that most people in everyday life think the purely mental effect and its material cause together without any problems, and that every physiological diagnosis of pain in reality and its medical or surgical treatment are more dependent on the "scientific" basis of the treatment. He trusts the doctor who diagnoses the causal origin of the pain in a certain place in the body and tries to heal the inflamed area in the material body – in the gums or in the roots of the tooth. Such an integrated thinking of merely mental effects and natural scientific causation in the art of healing —in every medical treatment of the body— is here not just a normal social practice, but rather it points to a necessary unity of epistemologies, shown in this example as a uniform nexus between the subjective perception of the localization of pain in the body and its purely objective-physiological treatment. Both diagnoses correlate with each other. More precisely; there is a mutual complementarity between the mere perception-theoretical basis of the subjective sensation of pain and its purely physical or objective-physiological diagnosis and treatment.

In a broader sense, the epistemological complementarity discussed above consists of a mutual complementarity between primary and secondary qualities. Pain as a purely subjective sensation forms a secondary

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 109-136.

quality, while the physical localization and simultaneity of the pain show its indispensable connection with the primary qualities —space and time. The fact that we feel the pain spatially or physically localized and in temporal simultaneity proves the necessary nexus between the secondary quality of the pain and its real extension in the primary qualities —i.e. in the spatial-material extension of the body and in the temporal simultaneity (between the origin of the physical cause of the pain and its reality as a mere mental sensation). This nexus is obviously built on the neuronal nervous system in the body. Ultimately, it is the nervous system spread throughout the body that enables mind to localize the pain physically and feel it simultaneously. This function of the nervous system is known to be based on the electrical phenomenon that underlies the nerves and their interconnectedness in the nervous system. The temporal simultaneity of our bodily sensations seems to depend solely on the electrical phenomenon in our neuronal nervous system; a purely biological or physiological, fluid mechanical phenomenon such as the blood circulation in the body, on the other hand, cannot give rise to simultaneity, but rather to a sensation that lags behind in time.

Neither the neuronal network of the nervous system spread throughout the body nor the underlying phenomenon of electricity —in the brain and in the nervous system— were discovered in the early modern period, i. e. at the time of Descartes and other post-Cartesian philosophers and scientists from the 15th to 19th centuries. Philosophers and scientists were already aware of the function of the brain and the whole body nervous system in sensory perceptions, as several works by Descartes (*Traité de l'homme* or *Les Passions de l'âme*) clearly demonstrate. But the electrical phenomenon as the basis of our nervous system, which ultimately facilitates the physical localization, extension and simultaneity of every (physical) sensory perception, remained an undiscovered fact of nature and physiology at that time. Electricity in the brain and in the entire neuronal nervous system also differentiates itself from the chemical or biochemical processes in the nervous system, in which it ontically forms a more or less uniform phenomenon. That is, the electricity as the basis of the nervous system remains almost invariable with different bodily sensations and as such forms a common basis for all forms of bodily sensations and their bodily extension and simultaneity. The entire bodily extension of the nervous system together with its neuronal processes enable us to analogize all bodily sensory perceptions with regard to their bodily extension and simultaneity. The bodily localizations of different sensory perceptions such as pain, taste, warmth or cold and their

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 109-136.

temporal simultaneity therefore show a clear analogy based on the primary qualities of space and time. While the bodily sensations as merely subjective sensations of various secondary sensory qualities differ from one another completely, they all have more or less a general or analogous basis in their bodily extension and simultaneity, which form their basis of existence in primary qualities, space and time. The entire bodily extension of the neuronal nervous system —with a uniform basic phenomenon of electricity— underlies such an analogy of bodily sensibility.

In this way, in order to understand the bodily localization and extension of sensory perceptions in their entirety, we need to "think together" the merely mental origin of sensory perceptions —as secondary qualities— and their bodily extension and simultaneity in primary qualities of space and time through neuronal processes in the material body. That is, we ascribe purely qualitative sensations to the subject and their extension and simultaneity to the material body or to the physiological-neuronal processes in the body. Accordingly, the complete conception of bodily sensations presupposes a synthetic mode of thinking which includes and integrates the factum of the subject and that of the object or the objective-material body. The purely mental performance here seems to be limited to the generation of sensory perceptions as secondary qualities, whereas the primary qualitative extension and simultaneity of the sensory perceptions in the body basically come about purely objectively through the body itself —on the basis of the nervous system extended in it. It is well known that the Cartesians —hence modernity— defended themselves against this kind of *thinking together* with regard to the complete epistemic access to bodily sensations. With the example of phantom limb in meditations (in the sixth meditation) Descartes wanted to demonstrate that the physical localization of sensations is accomplished solely by the mind located in the brain. At this point, Descartes ascribes the primarily qualitative or spatio-temporal and corporeal-material extension of the sensory perceptions only to the mind. However, these and similar cases of sensible virtuality cannot exclude the reality of sensory perceptions, in which the material body and also external objects participate directly.

The extra-bodily extension of senses

The question now arises as to whether the analogy of bodily sensations discussed above, which is based on the actual extension of sensations in the body, applies to the extra-bodily sensations such as sight and hearing.

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 109-136.

So far we have discussed the localization of sensations in the body. Now we examine whether there is a clear analogy between the localization of bodily sensations, such as pain, taste or cold, in the body and the external localization of the sense of sight and hearing in external objects in the environment. Do we perceive the localisation of color or tone in an object outside the body in an analogous manner as the perception of bodily localisation and extension of pain or taste? In other words: Can our bodily and extra-bodily sensory perceptions be analogized with respect to their spatial extention and temporal simultaneity? Here we come across the unresolved aporias of the sense of sight, which were actually the outcome of the prevailing intromission theories of vision.

In our attempt to analogize the bodily extension of sensory perceptions such as pain or taste to the extra-bodily extension of the visual and auditory senses, we should first identify what can be the analogous physical input for the external sensations. A bodily infection can give rise to a sensation of pain that is localized in the same spot in the body, just as our various taste sensations are localized on the tongue that comes into contact with the food. The only physical input while seeing —apart from other "cues" such as the movements of the eyes or the pupils, which can be methodically negated (Author, 2017, 157ff) — is the retinal image in the eye; likewise, the vibration of the eardrums through air waves sent by the vibrating objects is the only bodily input in hearing. The intromission theories of vision have the retinal images in both eyes more or less as the most important bodily input in the process of vision. The retinal image, which objectively is a colorless image on the retinal plane —with zones of exposure and shades— is then converted into photoelectric signals by the photosensitive surface of the retina, which is called *photoelectric transduction.* These signals are then delivered to the brain through the optic nerves. The vision arises from the neuronal processes in the brain in which the photoelectric signals sent are processed. It is important to note here that the visual process from the creation of retinal image, which is actually the result of an external physical and geometrical-optical process, continues as a mere physiological-neuronal process that is fundamentally based on the electrical phenomenon. There is a clear modal and ontological difference between a purely optical input, i.e. the retinal image, and its conversion into photoelectric signals on the retina and their neuronal processing in the brain. There is an analogous difference in the hearing process, whose only physical input is the vibration of eardrums.

The claim made by the proponents of intromission theories, that vision arises from the neuronal processes in the brain, is ultimately tested

Sophia 33: 2022.

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 109-136.

against two categorically different aporias —ontological and epistemological. The ontological aporia consists of the fact that a purely material cause, namely the material processes in the body —from the photoelectric transduction on the retina to the neuronal processes in the brain— gives rise to a purely mental effect, namely the immediate three-dimensional visual image in which near objects appear approximately in the correct size, depth, position, perspective and with other secondary qualities such as color and brightness, and the non-bodily free space is *seen* directly. The complete ontological leap from a purely material causality to a purely mental reality of the sense of sight eludes our rational imagination and thus a sufficient justification of this causal nexus. The epistemological aporia of seeing here is the complete inappropriateness of the retinal image as the only reference in the process of vision (according to the intromission theories). In reality, all the necessary references are missing in the retinal image, without which the real visual image cannot arise, such as the reference to the correct size, position and depth of the appearances, to the immeasurable extent of the visual free space, to the upright position of the appearances, the real construction of the visual virtuality and the directly visible perspectivity of the visual space as well as the solidity of the appearances etc.

In comparison with the immense, immeasurable extent of the immediate visual space, the retinal image forms a very tiny image, which, however, cannot be seen in the process of vision. The fact that we do not see the retinal image[2], but only the real objects, also means that the retinal image cannot be assigned the perspective or the perspective structure of the direct visual image. Because perspectivity presupposes direct vision (Author, 2017, p. 94). At most, we could assume that the invisibility of the retinal image in the process of vision means that there is a unity of the eye with the immediate visual space, that the retinal image is only a necessary connection between the purely physiological-optical and the physical- and geometric-optical part of vision (Author, 2005, p. 209; Author, 2017, p. 96). According to this, actual seeing —with all its primary qualitative basic features such as the approximately correct perception of size, distance and position of objects, perception of the immense extension of free space, the perspectivity of vision and the visual virtuality— could actually happen in the real visual space itself, and not alone caused by the neuronal processes in the brain in the framework of physiological optics. The neuronal processes in the brain would ultimately constitute a merely supporting causality; they cannot form a completely independent generative causation.

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 109-136.

Among the above-mentioned aporias of the sense of sight, the visual perception of size, distance and position as well as the perception of the immeasurably extensive empty space are those that have been debated directly or indirectly in connection with the lack of references to these basic features of the visual space that are represented on the tiny retinal image. These aporias actually form the propaedeutic for George Berkeley's seminal work *An essay towards a new theory of vision*. Even if a very influential psychologist and scientist of optics like James Gibson in the first half of the 20th century refers to the complete lack of an input for visual distance perception on the retina, his remark also implies other missing references in the retinal image such as references to correct visual perception of the size of the appearances and the non-bodily free space:

> Das Problem der visuellen Wahrnehmung hat eine lange Geschichte. Jahrhundertelang verspürten Menschen das Verlangen nach einer Erklärung dafür, weshalb denn Dinge gesehen werden. Unter den vielen schwierigen Fragen, die das Problem beinhaltet, ist die älteste und umfassendste vielleicht diese: Wie kann man die Ergiebigkeit des Sehvermögens erklären in Anbetracht der Unzulänglichkeit des Bildes innerhalb des Auges? Das Sehen hängt von diesem Netzhautbild ab. Aber wie unangemessen erscheint es im Vergleich zu dem Ergebnis! Die sichtbare Szene hat räumliche Tiefe, Entfernung und Körperlichkeit; das Bild ist flach. Wie kann das Sehen auf den Bildern in den Augen beruhen und doch eine Szene hervorbringen, die sich bis zum Horizont erstreckt? Die physikalische Umwelt hat drei Dimensionen; das Licht projiziert sie auf eine lichtempfindliche zweidimensionale Oberfläche; sie wird dennoch in drei Dimensionen wahrgenommen. Wie kann die verlorene dritte Dimension in der Wahrnehmung zurückgewonnen werden? (Gibson, 1973, p. 18).

The depth of objects in the visual field and the free space that extends to the sky and the distant horizon are completely missing references in the retinal image. The image size of objects and their movements on the retinal image are very small compared to their correct sizes of appearance (because the diameter of the eye ball is about only 2.5 cm) and also reversed —both horizontally and vertically. The correct perception of size and position from these very inadequate and even incorrect references was and remains the subject of a long prevailing discourse in modern times. In his major works such as *Dioptrique* and *Traité de l'homme*, Descartes tried to explain this aporia of the visual sense on the basis of various models of the interaction of visual and tactile senses.

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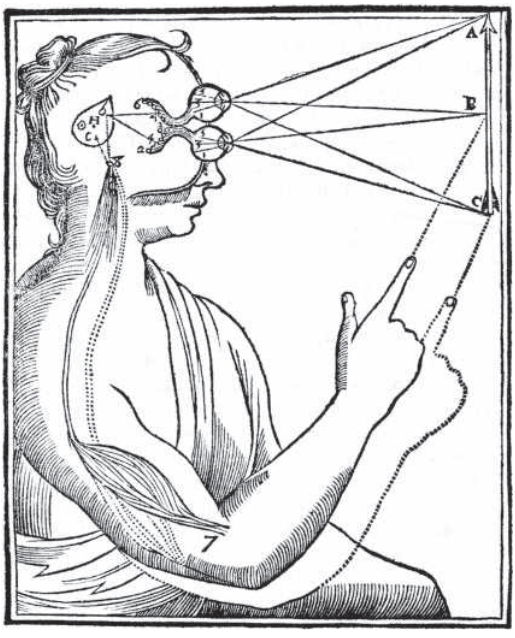
Figure 1[3]



The inferential nexus between the sense of touch and the sense of sight was rejected by the post-Cartesian philosophers and scientists of optics. The famous Molyneux problem addresses the speculative complementarity between the sense of touch and sight. The answer from William Molyneux himself and from philosophers such as Locke and Berkeley excludes the possibility that the sense of touch can suggest the spatiality of the sense of sight.

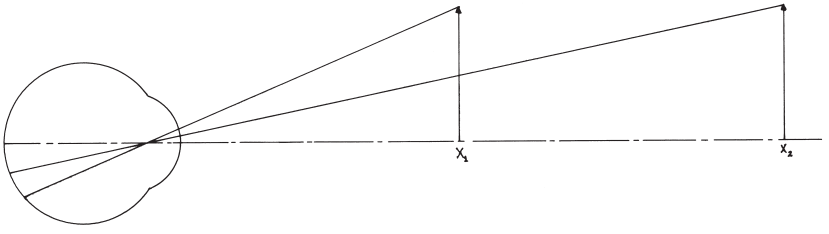
In addition, our physical sense of touch is limited to few smaller objects in our immediate surroundings, which we mostly grasp with our hands. It is hard to believe that our direct visual perception of gigantic architectural and natural objects such as skyscrapers, mountains, meadows or oceans can be suggested solely from this limited and inadequate physical-haptic perception of smaller objects. Even if we speculatively assume that the tiny appearances on the retinal image are subjectively enlarged by a certain factor of multiplication and that our immediate visual image is derived from this, the problem of missing references to the correct perception of size in the retinal image is hardly solved. Because in the retinal image, which is created according to the principles of geometric optics, the nearby smaller objects appear larger than the —above-

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 109-136.

mentioned— huge but distant objects; this contradicts our immediate visual perception of size.

It is therefore a mere belief and not a well-founded knowledge that the brain *visually* develops the approximately correct and huge size of an appearance in direct vision from a very tiny image on the retina. On the other hand, neither psychological nor physiological reasons can be given as to how the tiny retinal image as the sole input —i.e. as the only reference— ultimately creates our immeasurably extensive visual space. The object size consistency in the visual perception, as problematized by Condillac, clearly shows how the images on the retinal image cannot be references to the immediate visual spatial perception of the object-sizes:

Figure 2



> "Locke's error, as Condillac clearly points out, was to think that we see the retinal image at all. If we *first* see the flat image and then later perceive, Locke's argument (and Helmholtz's) follows: some process of inference must have go on. But if we never see the image —and Condillac correctly points out that we are never conscious of so doing— then the 'inference' is gratuitous. We do not and cannot see the retinal image: we see objects in the outside world. The Lockean and Helmholtzian language of 'unconscious inference' is an undesirable relic of the 'camera' theory of vision.
>
> In some respects Condillac thought more clearly about this problem than many contemporary psychologists. Take the question of 'object consistency' for example. Condillac knew that 'If a man four feet away... steps backward to eight feet, the image of him on the retina is halved in size.' Because of this it has seemed even to some contemporary theorists to be a problem that objects do not shrink rapidly in size as they go away. Originally, the descriptive term 'object size consistency' was used to refer to the non-shrinkage phenomenon. Its use in that way is unexceptionable. But some people now use the term 'consistency' as if it applied to a *process* which set to work on the retinal image: they speak of consistency 'scaling things up' or 'scaling them down'. What exactly do they think is being altered in size by constancy? The size of objects? Obviously not. The retinal image? Still less so. The size of an image in

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 109-136.

> the brain? Possibly: but for what purpose? A moment's thought shows the problems in treating constancy as a magnifying/minifying process. The cause of the fallacy is the belief that we see the retinal image.
>
> Condillac disposes of the fallacy. For one thing, he makes the very just remark that 'If perception is an inference involving a link between the idea of a man and a height of about five feet, either I should not see the man at all, or I should see him five feet tall' – whereas in fact objects seem to decrease insensibly in size as they move into the middle distance. He ends with the remark 'Nature determines that the sight of these objects should tell me how far the man is away; it is impossible that I should not have this impression every time I see them.' In other words, we see things as we do, not because we make inferences, but because we are as we are. As modern jargon would have it, the system is *hard-wired*" (Morgan, 1977, pp. 78-79).

Following conclusions can be drawn from Condillacs polemic against the inference theory of Locke and Helmholtz as well as from the object size consistency in visual size perception as problematised by him: 1. Since we cannot see the retinal image, there cannot be a direct inferential reference to the appearances of real objects on the retina. From this it can be concluded that there must be a direct reference to the real objects in the visual space. 2. The Object Size Consistency proves that even an indirect neuronal access to the images on the retina cannot be an appropriate reference for the immediate size perception. This is because, despite the halving of the retinal image of the object, its immediately perceptible size of appearance remains unchanged, as figure 2 shows. 3. The basic reference of real size perception cannot be an innate idea of the object. I.e. The referentiality of the correct visual size perception should be explained in the context of physiological-physical optics.

The problem of sufficient reference clearly emerges here. Neither the tiny image size on the retina nor a latent or innate idea of size (a priori) in the subject can be the correct and appropriate reference for direct vision. In addition, the optical phenomenon of *object size consistency* clearly indicates that the mind relies on actual objects themselves in a referential manner when directly perceiving the sizes of appearances. The constancy of visual size perception is therefore dependent on the constancy of the object size itself. In other words; the true reference for visual size perception in the optical phenomenon of *object size consistency* is not the retinal image that is not seen, but the real object in the field of vision itself (Author, 2017, p. 98ff).

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 109-136.

The *object size consistency*, as problematized by Condillac, together with the subsequent problem of sufficient reference to the visual size perception form the most important aporia of the sense of sight, which cannot be solved on the part of the visually perceiving subject. This aporia alone is enough to invalidate the prevailing intromission theory of vision and thus to reverse it referentially. Because in the case of impossibility of solving a clearly identifiable aporia in terms of ideas or perception theory, we are necessarily dependent on the object of the aporia which alone can provide the solution.

A direct visual reference to the real object of appearance, which alone can resolve the aporia of visual size perception discussed above, also provides a sufficient explanation and justification of mind's direct access to the real objects while seeing. In this case, the eye should *optically touch* the real objects in the field of vision. This requires a real extra-bodily extension of the visual sense, which accordingly forms a clear analogy to the bodily extension of pain, taste and other (bodily) sensations. What would then be the scientific basis of the external extension or embodiment of the sense of sight?

If we extrapolate this case of the direct object reference in visual size perception to the analogous optical phenomena such as the visual distance perception of the objects and the visual perception of non-bodily free space, the need for a direct object reference while seeing becomes even clearer. Because neither the immeasurably extended free space nor the free spatial distances of objects is represented on the retina. The complete absence of these references in the retinal image indicates that we must have direct optical-haptic access to the real visual space in our visual perception of the free space and the free spatial distances of objects. With this necessary referential access the sense of sight should *really* extend out of the body, just like a pain sensation that extends in the *real* body.

The analogy between the bodily and the extra-bodily extension of sensibility —that is, between the bodily extension of sensations such as pain and the extra-bodily extension of the sense of sight or hearing— leads to the aporia of the true *mediality* of the extra-bodily sensory perceptions. What is the material-physical basis of *optical touch* while seeing and of *auditory touch* while hearing? The nervous system is only extended in the body; it does not extend to the external space. Before we get back to this point and elaborate on it, let us discuss some additional aporias in the visual space perception that support the real extra-bodily extension of the visual sense. They are, for example, the directly perceived geomet-

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 109-136.

rical-optical structure of the visual space and the experience of visual virtuality with the dioptric phenomena of reflection and refraction.

Just like a photo, the retinal image is created through a geometrical-optical process; the perspectivity of our immediate visual space is therefore usually attributed to the geometrical-optical image on the retina (which also presupposes the eye-camera analogy that has prevailed since the early modern period). The perspective structure of seeing is basically created by the light rays, reflected from the objects and converging on the eye or the visual point of sight. In the perspective construction of a painting, the orthogonals converging on the vanishing point actually represent the real physical light rays in a light pyramid, which defines the structure of our visual space. However, the perspective structure of the visual space should arise in a real domain or within the real light pyramid itself. Because we see or directly experience all perspective deformations of the objects in the field of vision in accordance with the inner structure of the real light pyramid, in which all real objects are geometrically and optically arranged, or rather *designed* by the light rays reflected from the objects and converging on the eye. The previously discussed invisibility of the retinal image in the process of vision complements this basic idea that the perceptible perspective structure of our visual space comes about on a real level —or in the reality of the geometrical-optical light pyramid itself. The retinal image basically consists of only two-dimensional images— that is, of the exposed and shaded zones, boundary lines of the objects, etc., which are all colourless and non-perspective. Because both the perception of colours and brightness as well as the perspectivity of the objects seen require immediate spatial-perspective seeing[4]. Since the retinal image is not seen during the process of vision, one cannot conclude that the direct visual experience of the perspective structure of the visual space and its immeasurably huge extension are developed solely from the very tiny and basically non-perspective retinal image.

We usually regard the dioptric phenomena of reflection and refraction as appropriate examples of the purely subjective creation of visual image. In the case of dioptric virtuality of reflection and refraction, the objects appear in different sizes, distances and places, which only the visually perceiving subject seems to construct. However, the retinal image again lacks adequate references to the perception of size, distance and position of the virtual appearances in the field of vision. While the references to perception of distance and position are completely absent in the retinal image, the enlargement and reduction of the image sizes are not sufficient to adequately explain the sizes of virtual appearances. In vari-

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ous geometrical-optical models, the visual perceptions of size, distance and position in the dioptric phenomena of reflection and refraction are geometrically-optically calculated in the *real visual space*.

Figure 3

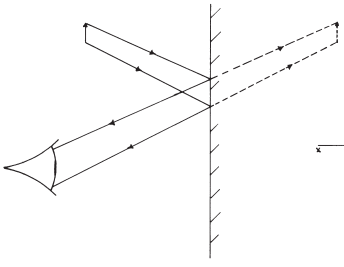


Figure 4

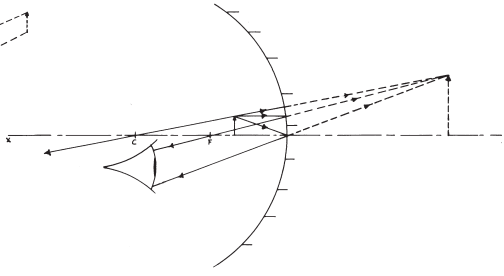


Figure 5

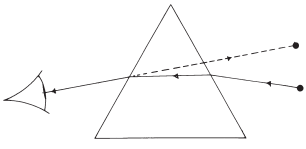
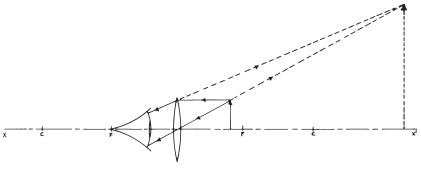


Figure 6



Figures 3, 4, 5 & 6 show the reflection by plane and concave mirrors and the refraction by a prism and a convex lens. If our eyes are included in these purely geometrical-optical processes, we see the virtual appearances precisely in the size, distance and position as we calculate or construct them geometrically and optically in the real visual space[5]. All of these virtual phenomena are represented by virtual lines (broken lines in Figures 3, 4, 5 & 6) which, in contrast to the light rays, are not subject to the physical-dioptric phenomena of reflection and refraction, and which as such form the linear extension of light rays, constructed geometrically and optically. This construction clearly occurs here in the real visual space (Author, 2017, p. 125ff). It is inconsistent to assume that the brain somehow precisely calculates through a geometrical-optical method the size of the virtual appearances as well as their distance and position solely from the retinal image, in which the references to the perceptions of the real size, distance and position of objects are missing, and projectively construct them in the real visual space. The dioptric reflection and refraction clearly demonstrate the necessity of the immediate extra-bodily

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 109-136.

object-references (discussed above) while seeing. The fact that the visual objects here are virtual appearances explains and justifies the assumption that the geometrical-optical construction of virtual appearances experienced should occur in a real visual space.

The visual rays

The geometrical-optical construction of the dioptric virtualities in a real visual space also suggests the possibility of the real existence of certain visual rays that are not subject to dioptric reflection and refraction, and which thereby extend the geometric linearity of the light rays and exactly construct the virtual appearances in a real visual space. This geometrical-optical exactness of the dioptric virtualities actually justifies their *real* origin in a *real* visual space. The visual virtuality in reflection and refraction is therefore not only based on light rays, but obviously on a different type of linear visual rays, which in the normal case remain united with the light rays, but which during reflection and refraction by material media (prisms, lenses, mirrors, etc.) separate themselves from the reflecting and refracting light rays and construct the virtual appearances geometrically and optically in precise form, size, depth and proportion. It is evident here that the uninterrupted linearity of such rays, which are not subject to the dioptric phenomena of reflection and refraction, construct the virtuality that exactly conforms to its geometrical-optical design. Now we must endeavour to scientifically prove the real existence of visual rays, which has been identified speculatively but with necessity and certainty, so that their materiality, which is comparable to the rays of light, can be determined.

Such an investigation, which is presupposed in the context of the philosophical theory of perception and geometrical optics, but which at the same time goes beyond this scientific framework, is obviously accomplished in the field of physiology and physics. This necessary scientific investigation has hardly been attempted so far, because the intromission theory of vision has paradigmatically dominated for several centuries — especially since the Cartesian early modern era. The intromission theory only legitimises the receptive function of the light rays converging on the eye or the visual point of sight, allowing the retinal image to emerge as the sole bodily input in the process of vision. The union of the receptive light rays with the projective visual rays, on the other hand, imparts to the orthogonal light rays and thus the visual pyramid in its entirety an optical *feel* or *haptics*. The factum of visual rays, which alone enable the visual

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 109-136.

sense to achieve its primary-qualitative or extra-bodily spatial extension and safeguard it, refers to the process of seeing in a unity of physiological, physical and geometrical optics, whereby the retinal image created by the light rays acts in principle as a mere connection between these different disciplinary domains of ophthalmic optics. In such unity of the process of vision, the correct focusing of light rays on the retina, which results in a sharp retinal image, is just as important as the optical haptics in the visual space discussed above, which arise from the union of receptive light rays and the projective visual rays. While the mind owes all secondary-qualitative basic features of the visual sense, such as colour, brightness, shaded transitions, etc., to the light rays that construct the retinal image, it is dependent on the projective visual rays and their union with the light rays for the external extension of the visual sense.

It is astonishing to see how the existence of the projective visual rays, which through their union with the orthogonal light rays create the optical haptics in the real visual space, solve at once all the aporias of visual sense (discussed above)! They are the following (Author, 2017, p. 182):

- Visual size perception
- Visual depth perception, perception of the solidity of the objects
- Visual perception of the free or intermediate space
- Visual perception of position (perception of the upright position of appearances)
- Perspective structure of the visual space
- Visual virtuality —of reflection and refraction— and its geometrical-optical structurality and regularity
- Visual perception of movements

Likewise, the existence of projective auditory waves can explain the extra-bodily objective localization of the sense of hearing. It is important to mention here that all these aporias originate from the scientific paradigmatic legitimization of the intromission theories of vision. The main reasons for this are on the one hand the limitation of the premises, that the intromission theories ultimately recognize only the retinal image as the most important input in the visual process, and on the other hand the missing references in the retinal image that are presupposed by the above-mentioned facts or characteristics of the visual perception of space, time and movements. The intromission theories of vision emerged already in antiquity in contrast with the prevailing extramission theories, as represented by Plato, Euclid, Plotinus and others. The predominance of the extramission theories historically extended to the Middle Ages.

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 109-136.

When the intromission theories resurfaced in the early modern period and with their phenomenal resurrection seemed to surpass the long prevailing extramission theories once and for all, this historical new beginning in the field of perceptual theory and the science of optics was clearly in tune with the emerging early modern Cartesian subjectivism. The Cartesian negation of secondary qualities in the object and their subjective appropriation caused a historically unfolding subjective apriorization of objective qualities. A certain culmination of this historical apriorization can be seen in Kant, who, within the framework of his propaedeutic doctrine of the transcendental aesthetics, also reduced the primary qualities of space and time —in favor of his philosophical transcendentalism— to mere a priori ideas of the subject.

The optical haptics, which the visual rays generate through their union with the light rays, resolves the aporias of visual size and distance perception discussed above (which also includes perception of spatio-temporal movements); it justifies the optical phenomenon of "object size consistency" by enabling the perceiving subject to have appropriate epistemic-referential access to the true referent, namely the visual object itself, and thereby synthesizes in direct vision the object sizes and their spatial distances with one another. Seeing therefore becomes an immediate optical touch at a certain distance[6]. Seeing, based on the union of light and visual rays, also establishes the direct optical perception of the free or intermediate space, which is not represented on the retina and therefore leaves no reference as a physical input. In their union with the light rays, the visual rays penetrate the entire visual space, as a result of which the optical haptic extends within the entire, perspective structured visual space. Accordingly, we directly touch visually the emptiness of the free space both in its clear proximity and immeasurable width, breadth and height. Subsequently, the correct perception of the position of static and moving objects in visual space, which leave contradicting references on the retina due to their geometrical-optical inversion in the eye, finds its simplest and entirely appropriate justification in the basic idea of an optical haptics in direct vision. That is why the inversion and reversal of appearances on the retina —in their static and movements— are not errors of nature, but a natural necessity that presupposes the geometrical-optical structure of the visual space. If we add or integrate the purely subjective development of secondary qualities such as color, brightness, shaded transitions etc. to the real extra-bodily extension of the visual sense, which comes about solely through a direct optical haptic, we recognize to our astonishment that eyes subjectively *paint* the objects that actually exist in the visual space —in

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 109-136.

color and in a perspective structure. The colors of objects and their brightness and shades arise here in a *real* aesthetic synthesis between the domain of the subject, in which only the color and brightness sensations —as secondary qualities— arise, and the domain of the objects, in which spatial and spatiotemporal qualities are extended.

The establishment of intromission theories as a powerful historical paradigm prevents us from discovering a new and appropriate extramission theory and thereby solving all of the previously unresolved aporias of the visual sense at once. If the prevailing intromission theory gave rise to all the aporias discussed above, and, on the other hand, the immediate optical haptics that the projective visual rays develop in their union with the rays of light simply and at once resolves these aporias of the visual sense, why do not we bother to scientifically test the real existence of visual rays? During the time of Plato, Euclid, Plotinus and others in antiquity, who advocated the extramission theory of vision, and also during the time of the great proponents of intromission theory in the early modern period, the strong presence of the electrical phenomenon in the neuronal network in the brain and in the entire bodily nervous system was not known. The fact that the electrical phenomenon produces electromagnetic waves and emits them in free space was a great scientific discovery. However, only since the discovery of electromagnetism by Hans Christian Oersted and the subsequent emergence of field theories of Faraday and Maxwell the study and research of electromagnetic waves that can travel through free space emerged and developed in the 19th century. It was only with the emergence of neurobiology as an important discipline in the 20th century that people began to notice how the neuronal processes in our nervous system that produce sensory perceptions are based on electrical phenomenon in electrochemical and electromagnetic processes.

If our bodily nervous system is full of electricity and the neuronal network in the body is based on the electrical phenomenon, why cannot we assume that the strong presence of electricity in the body can produce extra-bodily emission of electromagnetic waves —as brain waves, visual rays, auditory waves etc? The human beings have perhaps a sensorium constructed by electromagnetic waves, which extend out of the body into the environment, and on the basis of which the subject can directly perceive the extra-bodily spatial and temporal extension of the sense of sight and hearing, as represented in the perspective structure of the visual space, the extension of objects and the visual free space, the movements of objects, the objective localization of the sense of hearing, the visual and auditory virtuality, etc. Here we try to show a clear analogy between the

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 109-136.

bodily and extra-bodily extension of sensibility. Accordingly, we perceive the color of an object in our external visual space as well as the voices, noises and musical tones in our external auditory space as localized in the objects seen and heard, just as we feel the pain localized in an inflamed area of the body. Such an analogy between the bodily and extra-bodily sensibility sets an equally analogous procedural basis of our nervous system, which enables and guarantees the spatial extension and temporal simultaneity of sensibility. The fact that the neuronal transmission of electromagnetic signals constitutes this process-related basis of the brain and the network of the nervous system in the whole body is ultimately based on the electrical phenomenon, as discussed above. This points to the possibility that the electrical phenomena present in the brain and the entire bodily nervous system could extend beyond the body as electromagnetic waves and thereby fill our visual and auditory space entirely. The question now arises: Do such electromagnetic waves exist, that in a certain sense allow our bodily nervous system to expand outside of the body and, in their union and interaction with the receptive light rays and air waves, enable us to extend our visual and auditory senses as a whole? Is it that the fire coming from the eyes, which Plato speculatively imagined in *Timaeus*, and which in direct vision merges with the rays of light falling on the eye, will finally find its proper evidence and expression?

The intromission theory of visual perception is based on the process of photoelectric transduction, in which the retinal image, constructed by the light rays falling on the inner photoelectric plane of the retina, is converted into photoelectric signals. These photoelectric signals are then transmitted to the brain through the optic nerves. Here we imagine the process of photoelectric transduction and the transmission of photoelectric signals into the brain, where they are processed, clearly within the framework of a receptive processuality. At the same time, why couldn't we imagine a perceptual process in a projective framework in which the light rays falling on the retina create electromagnetic waves, which are then sent in the opposite direction or projectively outwards, forming a structural unity with the light rays falling, i.e., converging on the eye? Such a scientific speculation, which has not yet been adequately investigated, is evidently not recognized within the framework of the prevailing intromission theory of vision. Because this speculation causes the reduction of the neuronal processing of retinal images in brain, which is by far a completely generative cause within the framework of the intromission theory, to a merely accompanying or supporting cause of visual perception, which in reality is based on an extra-bodily geometrical-optical effectuation.

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 109-136.

The claim of neurobiology or neurophilosophy that the brain originally creates the bodily and extra-bodily extension of senses through neuronal states and processes is hardly supported from the outset by the reality of senses. Because the purely material processing of every sensory input in the brain can neither constitute a complete ontically different causation that ontologically effectuates the development of bodily and extra-bodily extension of mental sensations, nor can it epistemologically justify all the essential features of the spatial extension of sensory perceptions. As is evident in the discussion of the bodily sensations and —even more clearly— the extra-bodily sense of sight and hearing, the bodily and extra-bodily extension of senses (which include their temporal simultaneity) apparently develops on a *level of effect* itself than on the level of a purely neuronal causation in the brain. Because on the material, i.e. neuronal domain of causes in brain, the necessary epistemological references are either not adequately given or they are completely absent. Strictly speaking, the true and real references of bodily and extra-bodily extension of senses are only given on the *level of effectuation* or realization of the senses themselves. As the cases of the sensation of bodily localized pain or the extra-bodily visual perception of size, position and distance as well as the perception of the objective localization of auditory sense clearly show, the primary-qualitative reality of senses is constructed on their level of effectuation, i.e. in the real bodily and extra-bodily visual and auditory spaces. It is true that every characteristic of this construction on the level of effect —such as the perception of size, distance or position of a real or virtual phenomenon, the objective localization of hearing, the bodily localization of pain, etc.— can have a neuronal-causal state or process in the brain. But such purely neuronal causes are here, when it comes to the creation of the primary-qualitative characteristics of sensations, not entirely generative, but rather supportive and participatory, as discussed above. Strictly speaking, the purely neurobiological states and processes in the brain do not create the real bodily and extra-bodily extension of senses (apart from the virtuality of bodily sensations such as phantom pain or visual virtuality such as dreams, imagination, etc.), but rather they *support* the actual development or construction of the bodily and extra-bodily extension of senses and all their essential traits solely in the domain of effect —i.e. in the bodily and extra-bodily space— where alone their references are present. A more morphological unity between the reality of sensibility and its referential causality on the level of effect reduces the neuronal causation of sensibility to a mere accompanying and supporting causality; the purely generative causality

Sophia 33: 2022.

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 109-136.

of neuronal processes in brain, as it is paradigmatically conceived, is not negated here, but only partially recognized by ascribing to it a rather participatory function.

Conclusion

The connecting function of intuition (*Anschauung*), as emphasized by Kant, between a cognising subject and the object of perception and cognition[7] seems to require a decisive specification of the extension of senses in the pre-logical domain of sensibility. While the synthetic unity of apperception does not cross the boundaries of the Kantian transcendentalism and apriorism, a conceivable *synthetic unity of perception* would refer to a *real nexus* between the perceiving subject and the perceived object. In addition, the unity of perception necessitates the consideration of individual senses, which Kant strategically ignores in the context of his transcendentalism by subsuming all sensory perceptions under a general concept of sensible intuition (*empirische Anschauung*). Kant's almost dogmatic epistemological assertion that space and time are mere a priori notions (*Vorstellungen a priori*), suppressed or even philosophically and historically veiled the problem of spatial and temporal extension of sensibility that had been debated for centuries. This debate was best represented in the discourse on the visual perception of object's size, position and distance, the perspectivity of the visual space, etc., as problematized in the modern era by Descartes, Locke, Molyneux, Berkeley, Condillac, Diderot, Helmholtz and others. The historical apriorisation of the primary-qualitative extension of sensibility in the early modern age from Descartes to Kant, namely the spatiality and temporality of sensory perceptions, is an important factum that requires detailed research.

This treatise attempted to deal with the problem of spatial extension and temporal simultaneity of sensibility confined to a pre-logical domain of direct sensory perceptions. Such an investigation presupposes that the senses must not just be specified in their entirety —as sensibility— but also individually as visual, auditory, olfactory, gustatory and haptic sensory perceptions and analyzed as such. The analogy between bodily and extra-bodily sensory perceptions constitutes the methodological basis of the research. The bodily extension of sensibility, as represented in the sense of taste, pain, the feeling of cold, etc., is obviously based on an extra-mental phenomenon of electricity, which is inherent in body's neuronal network as well as in all the neuronal processes in the

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brain and nervous system which is extended throughout the body. The fact that the primary-qualitative extension of bodily sensibility is based on this phenomenal medium seems to suggest that particularly in the area of sensibility and its spatial and temporal extension philosophical epistemology as methodology must necessarily correlate or establish a complementarity with a scientific epistemology. Such a unity of epistemologies allows us to compare the bodily extension of sensibility with the extra-bodily extension of senses, that is, the senses of sight and hearing. The most important result of this methodological analogy is the *real* extension of the sense of sight and hearing in a *real* space. The aporias of visual and auditory perceptions, which are manifested especially in the visual perception of size, distance and position of objects, as well as in the localisation of the sense of hearing in extra-bodily objects, seem to be reversed here, as they now —as purely objective aporias— *dictate* certain intuitions to the perceiving subject, which the subject by itself can hardly access. These intuitions are the *ontological* separation between the primary and secondary qualities of sensibility and the subsequent attribution of primary qualities, namely, the spatial extension and temporal simultaneity of senses, to the objective-phenomenal body and extra-bodily free spaces and objects. The primary-qualitative or spatio-temporal extension of the senses here resembles a skeleton of sensibility perceived in *reality*, which is irreducible, i.e., cannot be subjectively appropriated as an a priori notion, and on which secondary sensory qualities spread like flesh. The apodictic certainty of this intuition requires the scientific discovery of an objective extra-bodily phenomenal medium through which the extra-bodily senses can extend.

Notes

1 Instead of a strict separation between the existential sphere of sensibility and that of objects, medieval scholastic philosophy tended to blur the epistemological and existential demarcation between sensibility and corporeality, to which Anneliese Maier refers in one of her main works, *Zwei Untersuchungen zur nachscholastischen Philosophie*. Scholastic philosophy assumes the mental origin of secondary qualities such as color, but emphasizes their localisation in the object, that is, in the primary quality of physical-spatial extension. „für die Scholastik entstehen die qualitates secundae aus den primae im Objekt und nicht erst, wie für die späteren, im wahrnehmenden Subjekt. Ihre Realität wurde darum in der traditionellen Philosophie nie in Zweifel gezogen, und ebenso wenig die Abbildlichkeit der Qualitätsempfindungen. (Maier, 1968, p. 18).

2 "Johannes Kepler verwies auf die Falschheit der Theorien der Inferenz, die davon ausgehen, dass die visuelle Größen-, Lage- und Distanzwahrnehmung der Gegens-

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tände durch die Inferenzen aus ihren Netzhautabbildungen entstehen (Author, 2017, p. 38): 'Kepler (1604) leaves to the natural philosopher the question of whether the retinal image is made to appear before the soul or tribunal of the faculty of vision by a spirit within the cerebral cavities, or the faculty of vision, like a magistrate sent by the soul, goes out from the council chamber of the brain to meet this image in the optic nerves and retina, as if it were descending to a lower court'" (Braunstein, 1976, p. 5).

3 In his work *Die Welt*, Descartes examines the involvement of the sense of touch in the sense of sight, i.e., in the visual perception of location, shape, distance, size, etc.: »Ich muß Ihnen aber noch sagen, was der Seele ermöglichen wird, Lage, Gestalt, Abstand, Größe und andere Qualitäten zu empfinden, die sich nicht auf einen Sinn im besonderen beziehen wie die, über die ich bislang gesprochen habe, sondern dem Tastsinn und dem Sehvermögen gemein- sam sind und in gewisser Weise sogar den anderen Sinnen« (Descartes, 2015, p. 241). Descartes then explains the involvement of the sense of touch in the sense of sight using various demonstrations, such as the following (Descartes, 2015, p. 287).

4 A good example would be the famous case of Cheselden's patient. Cheselden was a doctor at St. Thomas Hospital in London in the 18th century. For the first time in history, Cheselden removed the cataracts from the eyes of his patient, who was born blind, through eye surgery. When the patient began to see, he reported that at the very beginning he could not perceive either the perspective structure or the depth in a perspective image (Author, 2005, p. 236-240).

5 It is important to mention here that in the geometrical-optical construction of virtual phenomena, their size, position and distance are not calculated arithmetically. The virtual phenomena resulting from dioptric reflections and refractions can only be drawn geometrically and optically in their correct size, position and distance.

6 The fact that the object size consistency apparently disappears when the visual object is far away does not invalidate this relationship between the size and distance of appearances. Even if the objects appear small at greater distances, we experience them clearly in our direct vision in an optical synthesis of their size and distance. (Author, 2017, p. 100-102).

7 "Auf welche Art und durch welche Mittel sich auch immer eine Erkenntnis auf Gegenstände beziehen mag, so ist doch diejenige, wodurch sie sich auf dieselbe unmittelbar bezieht, und worauf alles Denken als Mittel abzweckt, die *Anschauung*" (Kant, 1998, p. 93).

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What happens inside my head when I think?

¿Qué pasa dentro de mi cabeza cuando pienso?

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Abstract

The images about the brain have been gained prominence in the 21st century. In this work, we seek to recognize the representations of children about the functioning of thought, ideas involving mind and brain. This study replicates the Piagetian tradition research conducted with the following guiding question: 'What happens inside my head when am I thinking?' The data were collected through interviews and mainly from the drawings made by the children to represent their beliefs. A total of 51 children from four to twelve years old, from public and private schools from the state of Rio Grande do Sul, Brazil, took part in the study. The collected data were discussed with the original research and intended to understand children's thinking in their representations about the functioning of the mind and brain. It was possible to identify that child associate the functioning of thought with family contexts, typical contents, and key ideas that demonstrate their personal beliefs. The references used in the child representations - for Genevese or Brazilian children - point to feelings, blood flow, mental image, lamps, gears, straps, briefcases, memory, and others. The results found with Brazilian children are very similar to the original research, even though the time gap between polls is considerable. In all ages, the typical content classified as biological was the most indicated by the children.

Keywords

Brain, children, drawing, learning, mind, thinking.

Resumen

Las imágenes sobre el cerebro han ganado protagonismo en el siglo XXI. En este trabajo, se busca reconocer las representaciones de los niños sobre el funcionamiento del pensamiento, ideas que involucran mente y cerebro. Este estudio replica la investigación de la tradición piagetiana realizada con la siguiente pregunta orientadora: '¿Qué pasa dentro de mi cabeza cuando estoy pensando?' Los datos fueron recolectados a través de entrevistas y principalmente a partir de los dibujos realizados por los niños para representar sus creencias. Participaron en el estudio un total de 51 niños de cuatro a doce años, de escuelas públicas y privadas del estado de Rio Grande do Sul, Brasil. Los datos recopilados se analizaron con la investigación original y tenían como objetivo comprender el pensamiento de los niños en sus representaciones sobre el funcionamiento de la mente y el cerebro. Se pudo identificar que el niño asocia el funcionamiento del pensamiento con contextos familiares, contenidos típicos e ideas clave que demuestran sus creencias personales. Las referencias utilizadas en las representaciones infantiles, para niños ginebrinos o brasileños, apuntan a sentimientos, flujo sanguíneo, imagen mental, lámparas, engranajes, correas, maletines, memoria y otros. Los resultados encontrados con niños brasileños son muy similares a la investigación original, aunque la brecha de tiempo entre las encuestas es considerable. En todas las edades, el contenido típico clasificado como biológico fue el más indicado por los niños.

Palabras claves

Cerebro, niños, dibujo, aprendiendo, mente, pensamiento,

Introduction

We currently live in a time of enchantment with neurosciences and theories of mind. After the Decade of the Brain (1990s), studies in neuroscience multiplied, mainly with research aimed at generating and analyzing brain images. For Lisboa and Zorzanelli (2014), the representations of the human brain in contemporaneity have led to a "rise of the brain as a

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privileged, if not exclusive, place of origin of the mind, behaviors, choices and desires" (p. 364).

In this sense, it is not surprising that the theme of neuroscience is found in museographic exhibitions. Molinatti and Girault (2007) carried out an analysis of four museum exhibitions on the brain held at the turn of the millennium. The analysis was carried out from a socio-constructivist didactic perspective that paid particular attention to the study of the visitors' conceptions, extended to their social practices of reference. With regard to the scientific knowledge presented in the exhibitions and retained by the visitors, the investigation identified that it is essentially a reductionist and monistic neuropsychological perspective, of the concepts of neuroplasticity and the interaction between the genome and environmental factors in the realization of the phenotype brain. In their conclusions, the authors point out the difficulties of museological institutions in explaining the history of the relationship between the brain sciences and society. In this sense, the museological popularization of neurosciences seems to proceed more from an update of basic scientific knowledge, in light of recent studies on brain imaging, than to present and reflect the possible theoretical and methodological debates and the necessary scientific controversies in the specialized community.

Despite the variety of materials and research methods, research in neurosciences tends to look at the mysteries of the brain and its functioning. For this, initially, it is opportune to pay attention to the warning by Fuentes and Collado (2019), who warn that the orientation of educational and school decisions based on 'neuroscientific evidences' should not be conceived as a 'panacea' or as the only support and foundation for a 'new educational revolution'. This type of approach would be characterized by a 'naïve' enthusiasm, based on non-systematized approaches and without the necessary rigor. Furthermore, this biased approach would have been responsible for the emergence of an authentic neuromythology in the field of education, which could be named as the paradigm of Brain-Based Learning.

In relation to the philosophy of mind, several authors consider Jerry Fodor's thesis (1935 - 2017) indispensable to raise a philosophical discussion about mental states, intelligence and the role of computational models in cognitive processes. Particularly, in this sense, his modular-computational theory is recognized as an indisputable contribution to the current models of the philosophy of mind.

The criticism of Fodor can be found in recent articles published in this journal. Tillería (2021) undertakes the critique of Fodor's com-

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putational theory of mind, which seems to have an undeniable contribution to current models of cognitive science, in particular considering his idea of informational encapsulation. In turn, Bernache (2021) develops a critique of the notion of internal representation, which would have a primary function to explain cognitive activity.

However, following the suggestions of Mounoud (1996 and 1997) and Richelle (2000), in this article we intend to show how Jean Piaget's (1896 - 1980) approach to the mind and cognitive development can be productive in going beyond naive, albeit paradoxically, highly literate and influential elaborations.

Mounoud (1996 and 1997) indicated that most of the references in the debates about the new reductionist theses proposed by the philosophers of the mind (including the psychological approaches about the 'theory of mind') gave the impression of studying a new area of research, with new and unexplored problems. However, the author suggests that it is surprising to note the complete absence of references to Piaget in the works of all these philosophers (including Fodor), since the contribution of the Swiss epistemologist is considered one of the most comprehensive of the 20th century.

As Richelle (2000) emphasizes, the omission of Piaget's work is almost general, despite Piaget's work being one of the most fertile in twentieth-century psychology, including in the approach to the old theme of the mind and its relations with the body:

> Piaget's anchoring in biological thought would have justified the attention, however allusive, of the numerous authors who participated in the debate on brain and mind, although the Genevan epistemologist was little interested in the spectacular advances in neurosciences initiated at the end of his career [But] (...) this does not in any way diminish the relevance of his works for those who wonder about the nature of the mind and its relations with the brain (...) Is Piaget already forgotten, (...) knowing that, whether about consciousness or about the mind, just a few pages of his work teach us more than many volumes born out of a recent fashion? (Richelle, 2000, p. 233 - 234, our translation).

Therefore, this article is also a tribute to Jean Piaget's immense contribution - the text was written on the occasion of the celebration of the 40th anniversary of his death - to the understanding of the development and acquisition of human knowledge. Swiss Jean Piaget was primarily a naturalistic biologist. Influenced by evolutionary works and nature studies, he adopted the scientific method as a working system. His curiosity about how things and minds work led him to use naturalist search methods for all his later research, and to formulate the theory of Genetic Epistemology, the work of a psychologist interested in how the

ISSN impreso:1390-3861 / ISSN electrónico: 1390-8626, pp. 137-160.

human mind develops, and how knowledge is acquired. Montangero and Maurice-Naville (1998) stated, about Piaget, that:

> […] he produced the most complete theory of intellectual development because it deals with the period from cradle to adulthood and strives to define the links of intelligence and logic with other cognitive functions such as memory, language, perception, etc (p. 17; our translation from Portuguese version).

Before that, still, at the beginning of the 20th century, Piaget researched how human beings build their knowledge about the world from research with children. These researches revolutionized psychology's beliefs about epistemology. Jou and Sperb (1999) refer in their work to a large number of researchers who claim that Piaget was the first "to take an interest in children's mental contents and the processes responsible for these contents" (p. 288). These researches started at preschool ages and extended to follow the evolution of children's thinking.

Therefore, the study presented here sought to follow what children believe happens in our heads when we think. When carrying out this mapping, important questions arise. The first is how children of different age groups see the functioning of thought, its importance, and its mechanisms. The second is about the maturation of children's representations, their delay or absences, can also be discussed. Is it possible to perceive by the representations of children, through drawing, how they perceive the functioning of the mind and brain?

It's known that Piaget dedicated his research to understanding how human beings build their knowledge. He demonstrates that the subject-object interaction also occurs with biological meaning, and learning is nothing more than the organism's adaptation to the environment in which it's inserted. Furthermore, it's also known that the roles of mind and brain are complementary and interdependent, although different.

From tests and clinical interviews that began at preschool ages and extended to follow the evolution of children's thinking, Piagetian research revolutionized psychology's beliefs about epistemology. In his work *The representation of the world in children*, originally from 1926, Piaget presented a long-term study on the reality and causality present in children's thinking. This study is part of the 1st period of his works (the 20s to early 30s), whose themes were called at understanding children's mentality and the progressive socialization of thought, seeking the specific nature of young children's thinking and the differentiation of this thinking that of the adult (Montangero and Maurice-Noville, 1998).

ISSN impreso:1390-3861 / ISSN electrónico: 1390-8626, pp. 137-160.

This book related more than 600 observations in many settings, and then, to present the description of the development of children's thinking about their spontaneous representations of the world, moving from realism to animism and finally to artificiality. Analyzing and understanding the form, functioning, and content of children's thinking proved to be a complex task, as according to Piaget (2005):

> […] the form and functioning of thought find out each time the child comes into contact with other children or with the adult: it is a form of social behavior that can be noted from the outside. The content, on the contrary, shows itself or not, depending on the child and the objects of representation (p. 10; our translation from Portuguese version).

In addition to Piaget's studies, other researchers such as Carey, Zaitchik, and Bascandziev (2015) reaffirm and expand the discussions proposed by Piaget for children's representations when they present the concept of 'vitalist biology' as a "theory spread across different cultures that highlights thinking about life, death, health" (p. 3). According to these authors:

> Vitalism provides a functional understanding of bodily processes: the body functions, bodily organs, and bodily processes to sustain life, health, and growth. [...] The process of building vitalistic biology starts young at the age of 4 or 5 years old for some children, with an average age for the emergence of some fundamental principles around 6 or 7 years (Carey, Zaitchik and Bascandziev, 2015, p. 4).

In the field of neurosciences, the stages of human development established by Piaget in the 3rd period of his work (between the late 1930s and the late 1950s), in which the subject of study was focused on the formalization of mental structures to explain the organizing and explanatory power of reasoning in addition to providing explanations for the qualitative leaps in the course of cognitive development (Montangero and Maurice-Noville, 1998), were confirmed years later by the extensive research by Epstein (1974a and 1974b), which established the correlation between brain development and Piaget's stages of thought development, and which was later endorsed by Hudspeth and Pribram (1990), Hansen and Monk (2002), among others.

Representations of the mind and brain in children

The mental contents studied by Piaget also are addressed in the area of psychology called theories of mind (Mounoud, 1996 e 1997; Richelle, 2000). Jou and Sperb (1999) defined this theory as an area of investigation into "the

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ability of preschool children to understand their mental states and others, in this way, predict their actions or behavior". The interest of researchers in theories of mind is focused on the first manifestations of understanding it and the possibility of representing it. It is possible to identify the beginning of these representations around 4 or 5 years old (Saada et al., 1996).

Otherwise, the work of Wellmann (2017) shows that "theory-of-mind understandings begin in infancy, but also progress" (p.2) throughout life. In his report the author states that in the 80s, theories of mind researches were focused "on preschoolers, but now chart theory-of-mind achievements from infancy through adulthood, from nursery to the schoolyard to the classroom and into the highways and byways of social life" (p. 6). Still, it highlights that the child's understanding of the mind and people has an important development around the ages of 5 or 6, and only after preschool years "do children develop a deepening appreciation of the mind as different from the brain" (p. 5).

Mounoud (1996) talks about the child's capacity to attribute beliefs to others. Wellmann (2017) indicates the capacity to attribute beliefs and desires to others. Directly related to Piagetian theory, these researchers point to rational, non-vague, and precise concepts evidenced in young children demonstrating the relation with operations, points of view, egocentrism, and decentration to create ideas about Theory of mind. For Mounoud (1996), the "objective remains to understand the origin of the rational norms or of the laws of the mind" (p. 100).

In a study on children's notion of thinking, Piaget (2005) identified three stages (or levels) of child realism development and, on the importance of these notions, stated that the "awareness that we have to think distinguishes us, in effect, from things" (p. 37), noting that children ignore the specifics of thought, "even at the stage where they are influenced by what adults say about the 'spirit' the 'brain' the 'intelligence'"(p.37). In his description of these stages, it was observed that in the first stage:

> […] children believe that we think 'with our mouth'. Thought is identical to voice, and nothing happens in the head or the body. Of course, thought is confused with things themselves, in the way that words are part of things. There is nothing subjective about the act of thinking. [...] The second stage is marked by adult intervention. The child learned that one thinks with the head, sometimes even mentioning the 'brain' [...] Indeed, thought is often conceived as a voice in the head, or in the neck, which indicates the persistence of the influence of the child's previous beliefs. Finally, it is the materiality that the child attributes to thought: it's made of air or blood, or it is a ball, etc. The third stage, whose average

ISSN impreso:1390-3861 / ISSN electrónico: 1390-8626, pp. 137-160.

> age is 11-12 years, marks the dematerialization of thought (Piaget, 2005, p. 38-39; our translation from Portuguese version).

Also in this same study, it was pointed out that although some 9-year-old children have this characteristic, the average age is 11 years old so that they start to manifest that "thought is not a matter and differs from the phenomena it represents" (Piaget, 2005, p. 51). Before this, it is characteristic that children present two confusions according to Piaget:

> [...] between thinking and the body: thinking is for the child actors of the organism – the voice. It is, therefore, one thing among things, consisting essentially in acting materially on the objects or people that are of interest to us. But there is, on the other hand, the confusion between signifier and meaning, between thought and the thing thought. From this point of view, the child doesn't distinguish, for example, a real house and the concept, the mental image, or the name of that house (Piaget, 2005, p. 51; our translation from Portuguese version).

In the work presented by Carey, Zaitchik, and Bascandziev (2015), it was pointed out that the 'intuitive biology' of children, studied by Piaget (2005) as animism (when children tend to indicate the existence of life based on the presence of movement or utility of beings and objects), undergoes conceptual changes over time. According to them when young children:

> [...] are asked about the functions of Organs bodily organs, they tend to report a single and independent function for each part of the body (e.g., the heart is for beating), demonstrating a lack of understanding of the body as a biological system whose the parts work together to sustain life.

When this 'intuitive biology' is in action, somewhere between 5 and 12 years old, according to Carey, Zaitchik, and Bascandziev (2015), many advances in children's thinking are observed, especially that:

> [...] the concepts of living, real, present, and existing are differentiated; the plant and animal categories have adhered to a single category of *living organisms*; the mortal is distinguished from *inanimate*, and self-propelled movement and activity are no longer at the heart of the concept of alive. (p. 14)

Regarding the representations made by the children, they are accessed and studied through drawing by several authors. Einarsdottir, Dockett, and Perry (2009) carried out a study on the analysis of children's perspectives through drawing and highlighted that this type of approach shows the fluidity and flexibility of the child's construction of meaning, in addition to reflecting their control of the process.

ISSN impreso:1390-3861 / ISSN electrónico: 1390-8626, pp. 137-160.

In this sense, it is important to rescue Reith's (1997) description that many fields of study and practice of psychology focus on the perception and production of graphic representations (not only images - such as drawings, paintings and photographs - but also representational systems such as maps, plans, diagrams, graphs, etc). In this sense, one can distinguish two categories of work in psychology that are interested in graphic representation. The first includes works that use graphical representations as a means of exploring the mental life of individuals or as a methodological instrument to carry out basic research on psychological processes. The second category consists of works in which the pictorial presentation is an object of study in itself. The researcher seeks to obtain information on the subject's knowledge of drawings and graphics, on the processes involved in their perception and production, as well as on the paths taken by the subject in acquiring the capacity to implement them.

If we were to follow such criteria, we would have to indicate the hybrid character of our research approach, like other authors, such as Giordan and Vecchi (1996), who aimed to study students' conceptions about the human body and the evolution of this knowledge in the school environment, and Rabello (1994) who also carried out a study using representation to analyze perceptions about the human body in children, refer to several other authors who use the same technique. Through these works, it's possible to identify how children, and even young people, represent their bodies it's much more linked to the imagination than to reality. The lapses, that occurred in the formation of school concepts about the body itself are quite visible in these representations. The central nervous system (CNS) and its functioning were not addressed in the works mentioned above, even with important relevance for the body as a whole. Understanding children's representations about the brain, thinking, and its functioning helps us, above all, to understand how this theme can be initially approached in their study.

In the research by Molinatti and Girault (2007), on museum exhibitions about the brain, the conceptions of children and adolescents about the brain were inventoried. The study showed that for older children, the brain is involved in 'intellectual' situations (talking, counting, etc.). The brain learns, commands and controls, but it is also very rarely involved with emotions, for example with love. Children ask themselves about the composition of their brains and use analogies with the intestines (speaking of "the bowels of the head") or with the brain-computer model (evoking the entanglement of wires, the existence of a memory, of a "central unit"). In teenagers, however, the limits of school culture can be seen, since many notions such as neurons and nervous messages are not accommodated by

ISSN impreso:1390-3861 / ISSN electrónico: 1390-8626, pp. 137-160.

most teenagers, despite a lexical varnish. Teenagers often use the model of the 'muscle brain' that commands, that acts. Furthermore, a constant in mapping teenagers' conceptions to the brain is the famous "we only use 10% of our brains", albeit without any scientific basis. Finally, there were frequent references to brain pathologies and disorders.

A clear example of how the children's representation of thought was used, in a very interesting way, occurred during the Jean Piaget centenary celebrations. On this occasion, a congress occurred in Geneva with the theme 'Thought in evolution'. Among the activities of this congress, there was a large exhibition, which had a part dedicated to children's works. In preparation for this event, an academic group, from all levels, was selected to study, classify and sort thousands of documents from the Jean Piaget Archives and the Archives of the Jean-Jacques Rousseau Institute. Subsequently, this work resulted in a fixed exhibition at the Museum of Ethnography in Geneva (between September 1996 and January 1997), followed by a traveling exhibition that visited all the continents. This exposition is reported in the book whose title can be translated as: *Jean Piaget: acting and building, the origins of knowledge in children and students* (Hameline and Vonèche, 1996).

The third chapter of this book has the theme used in this research: 'Qu'est-cequi se passe dans ma tête quand je pense?' (Saada *et al.*, 1996). At the time, the researchers interviewed about 500 children from 4 to 12 years old, students from Genevean schools. To these, it was proposed that they represent, in the form of drawings, models, decoupage, among others, what they believed to be the answer to the question: 'What happens in my head when I think?'. The original research was aimed at demonstrating that fundamental beliefs about the nature of thought and its participation in human action are decisive for the social and cognitive development of children. The authors of the research believe that the metarepresentations of children on this topic, the reflection on their thinking and that of others, exert an important influence on cognitive and social development – acquisition of spoken and written language, moral judgment, memory, social interaction, and more.

For over two decades later, this study then proposed to question children again, using the technique of child representations through drawing.

Methodology

Using Jean Piaget's clinical method, an open conversation was proposed with the child, seeking to follow their ideas and explanations on the pro-

ISSN impreso:1390-3861 / ISSN electrónico: 1390-8626, pp. 137-160.

posed topic for data collection through interviews. Delval (2002) describes that the Piagetian clinical method aims to "investigate how children think, perceive, act and feel" (p. 67).

According to Delval (2002), the clinical method was named by psychologist Lightner Witmer in 1896. Initially created to prevent and treat mental deficiencies and anomalies, it was used together with other tests to reach a diagnosis. Afterward, it came to be used by psychiatrists for a detailed study of individuals, allowing generalizations and the establishment of categories of symptoms and diseases. Starting in 1919, Piaget, carrying out a study commissioned by Theodore Simon on the standardization of intelligence tests, "initiated a method of open conversations with children to try to capture the course of their thinking" (Delval, 2002, p. 55).

As time went by and his research matured, Piaget reformulated the method that was no longer based purely on conversation and started to use activities carried out by the subject to establish a free dialogue, adapted to each child and helping them to become aware and formulate their mental attitudes. According to Delval (2002), language in the clinical (or critical) method is used to:

> […] give the subject instructions on what to do, to ask him to explain why he is doing it, to give him suggestions about what he is doing, to try to explain what he is doing to find out what difficulties he has, and what is the course of his thinking, but without supposing (as was the case in introspective works) that the subject will explain the course of his thinking, which is an unconscious activity but, rather to, obtain data that allow us to formulate hypotheses about the organization and functioning of his mind (p. 65; our translation from Portuguese version).

In the present study, the interviews were based on the question 'What happens inside my head when I think?'. This question was common to all, but it was expanded and complemented according to the responses of each one. The answers, according to Piaget (2005), guide the course of the interview.

> To evaluate children's logic, it is often enough to argue with them; it is also enough to observe them with each other. Judging your beliefs requires a special method, which we warned from the beginning is difficult, laborious, and requires a point of view that assumes at least a good year or two of training (p. 10; our translation from Portuguese version).

For the preparation of the basic questions of the questionnaire, Piaget (2005) talks about the importance of knowing children's spontaneous questions about the subject and then applying the very form of

ISSN impreso:1390-3861 / ISSN electrónico: 1390-8626, pp. 137-160.

these questions to those that are intended to be asked to the children in the interview. Boschvitsch (1974, *apud* Roazzi, 1987) showed that completely different answers can be obtained depending on the context (formal versus informal) and the interviewers (teacher versus psychologist). As a result, the interviewers' classroom experience was useful to plan questions that could be presented with different approaches according to the age group and without the child feeling the need to respond with the formality and rigor of the classroom, but with spontaneity.

Another concern present in this process was to structure the interviews to avoid 'fabulation' and "suggested belief" as much as possible. Following the criteria set out by Piaget (2005):

> When the child, without further reflection, answers the question by inventing a story in which he does not believe or in which he believes through simple verbal training, we say that there is *fabulation*. When the child tries to answer the question, but the question is suggestive, or the child simply tries to please the interviewer, without resorting to his reflection, we say there is a *suggested belief*. [...] When the child responds with reflection, extracting the response from its base, without suggestion, but the question is new to her, we say that there is a *belief triggered*. The belief triggered is necessarily influenced by the interrogation, since the very way of asking and presenting the question to the child forces him to reason in a certain direction and to systematize his knowledge in a certain way, but it is nevertheless an original product of the child's thinking, for neither the reasoning done by the child to answer the question nor the body of prior knowledge that the child uses to reflect is directly influenced by the experimenter. [...] Finally, when the child doesn't need to reason to answer the question but can give a ready answer, because it has already been formulated, there is a *spontaneous belief*. There is, therefore, spontaneous belief when the question is not new to the child and when the answer results from a previous and original reflection (p. 16; our translation from Portuguese version).

When the children are invited to answer this very original question (what happens inside my head when I think about it?), there was still the concern that there would be an opportunity for reflection. From the initial question, it was proposed that the children make representations of their answers using drawings. Different from the original work, which used the construction of models, decoupage, and others (for representations), in addition to the drawing technique, the present study used as a resource the drawing on a sheet of paper, using colored pencils, crayons, and pens. After completing the task, the interviewer asked the subjects to explain, in words, what they had drawn. From the child's explanations

ISSN impreso:1390-3861 / ISSN electrónico: 1390-8626, pp. 137-160.

and the basic script of questions prepared, the interview was conducted to understand what the child believed was going on in his head while thinking. Thus, it was expected that it would be possible to access the 'unleashed beliefs' of the children interviewed about the proposed theme.

Table 1
Family contexts presented in the chapter
"Qu'est-cequi se passe dans ma tête quand je pense?"

Family Context	Description
Sociological Context	It corresponds to the presentation of a central figure responsible for the global control of the brain, often accompanied or replaced by several characters who share control by transporting and communicating information.
Mechanical Context	It is driven by the movement and flow of energy, through gears, cranes, pulleys, liquid or solid channeling circuits (belt, bearing, etc.)
Computer Context	It suggests a tangle of circuits, often an arrow, that indicates the direction of information flow. It also suggests the expression of a hierarchical control (central frame) or distributed controls (several linked elements), memory (information storage), and information processing (channels through a ball, for example).
Technological Context	It refers to the operation of devices such as audio and video recorders, calculators, cameras, cameras, etc. Children, therefore, show the link between, on the one hand, taking information through thought and retention - memorization, and, on the other hand, the input of information, its production, and its conservation by a man-made device.
Biological Context	That affects the organism, here especially the brain, according to the knowledge that children may have of its functioning, especially concerning neuronal flow and blood flow in circuits, channels, pipes, tangles of variable complexity. The sense organs play the role of entry (often in the ear) and exit (usually in the mouth) of the flow of information.

Source: SAADA *et al.* (1996, Author's translation).

Interviews were carried out with 51 Brazilian children from 4 to 12 years old. As the procedures took place in two schools, we informed the ages of interest for the research, and the pedagogical coordinators of each school selected the participating students without interference from the researchers. All respondents came from a public school and a private school, located in the state of Rio Grande do Sul, and those responsible for the students who participated in the research signed the Informed Consent Form, authorizing the use of the information obtained.

Sophia 32: 2022.

ISSN impreso:1390-3861 / ISSN electrónico: 1390-8626, pp. 137-160.

The children's representations, along with their explanations, were classified according to the family contexts (Table 1), the typical contents mentioned and the underlying key ideas (Table 2), as described in the original work by Saada *et al.* (1996). From the classification, graphs were generated showing the diversity of responses, in addition to quantifying and comparing the data collected according to age and with the original work.

Table 2
Typical contents and underlying key ideas presented in the chapter "Qu'est-cequi se passe dans ma tête quand je pense?"

Typical Contents	Underlying Key Ideas
- gears, pulleys, straps, transports - electrical network - blood circulation	Circuits
- power plants, engines, batteries, electrical flow	Energy
- central manager character, instrument panel - multiple characters or devices connected - virus (disturbed command)	Control
- input output→ →(e.g., ear mouth)→ - ask answer, calculation, coding - mirror reflection - answer by light: lamps, candles - S.O.S. intelligence box	Information processing
- memory drawers, computer memory, briefcase, image conservation	Memory storage
- mental images: the evocation of events, people, objects... (good grades, my dog, mother) - dreams	Thought-Contents
- pleasure of success - joy, sadness, love, evil, etc.	Emotional states

Source: SAADA *et al* (1996, Author's translation)

Some correlations with this research can be traced from the work of Lisboa and Zorzanelli (2014), where the authors analyze metaphors of the human brain used in scientific popularization materials and reflect on the meanings and associated use with it. As demonstrated by them, a metaphor dominated scientific thought, and other areas (politics, economics, and philosophy), in each era. In this way, the brain has already been described using metaphors such as the hydraulic machine, the clock,

Sophia 32: 2022.

ISSN impreso:1390-3861 / ISSN electrónico: 1390-8626, pp. 137-160.

the steam engine, and, later, the telephone exchange, the computer, and, finally, the Internet.

Mein's (1998) research shows that throughout the History of Science, the answer to questions about the specificity of psychic or mental phenomena and their location - as well as the relationship between these phenomena and our material body - took various forms. The article presents images and descriptions of the cardiocentric or cephalocentric thesis, brain machines (eg hydraulic models, electrical models, the mirror brain, the brain as a computer, the brain as a chemical plant), the brain mosaic and the global brain - in relation to levels of organization and locations. These different ways of conceiving the brain would succeed each other at different times, more precisely, they coexisted without being completely replaced.

On the other hand, the wide diversity of children's representations of the location of thoughts and the functioning of the mind (or brain) suggest the difficulties that are well known in science teaching and, in this particular case, in the teaching of biology (Clément, 1998). These child representations, presented as spontaneous conceptions, are the amalgamation of recollections of cultural learning (which may have taken place in schools or other educational spaces) and of mistakes and factual gaps.

Regarding the theme presented in this article, the research by Bec and Favre (2010), on teaching and learning of the nervous system, shows that the body remains, for most secondary school students, a black box whose structures and modes of functioning are unknown. Most students had great difficulty in acquiring the concepts that were introduced and defined during the teaching sequences dealing with the nervous system in high school classes. Thus, the conceptions appeared in most students as being confused, imprecise, often resulting from empirical analysis and, therefore, not being built from biological data. In their conclusions, these actors indicate that the problem that arises when teaching the nervous system in high school is, therefore, finding an answer to the following questions: why do students have so much difficulty in acquiring the concepts that are defined in the course? Why do they regard the organization as a black box? Why are they so lacking in knowledge of biological structures and their workings?

In the context analyzed here, thus, the representations of children are also related to the social and cultural representations with which they are in contact. According to the authors (Saada *et al*, 1996), children's ideas about the functioning of the mind are represented by the content they have organized according to family contexts, contexts largely related

ISSN impreso:1390-3861 / ISSN electrónico: 1390-8626, pp. 137-160.

to the social representations conveyed in our culture, within and out of school. In this way, the typical contents mentioned could be organized into key ideas that are integrated into family contexts, and these data provided support for the interpretation of the results.

Development

Many may be wary of the results of research carried out in the 1920s or 1930s and use the technological revolution of the last decades to justify the existence of large cognitive differences between those children and those of today, which would invalidate the results of older research. Countless researchers around the world have successfully replicated Piagetian experiments and observed their validity, as in Batistella, da Silva and Gomes (2005). Even with all the ease of access, the high consumption of household appliances, and the widespread use of the Internet, the way children think doesn't seem to have changed. What has changed is the access to information and the speed with which this happens. Jaan Valsiner (2001) highlighted that "technologies advance, information overflows, but children's creative curiosity remains without obstacles imposed by the consumer society" (p. xx).

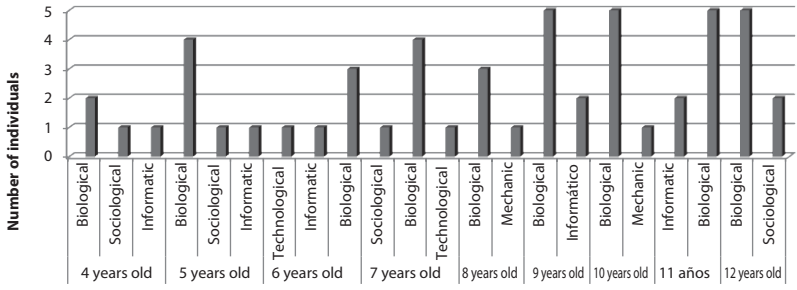
Children receive early and constant information and notions about their bodies through cartoons, virtual games, magazines for children and in the school environment. However, this study showed that, despite this access to information, the students represented in their drawings similar images to those of the Geneva students in the original study.

Children's ideas about how the mind works are represented by the content they have organized according to family contexts (Table 1). These contexts are largely related to the social representations conveyed in our culture, inside and outside the school. In the original and the current research, sociological, mechanical, computer, technological and biological contexts were considered. All family contexts that were reported in the work by Saada et al. (1996) also appeared in the current research.

The biological family context was most frequently reported at all ages (Graph 1). The reports referring to the organism, here especially the brain, were classified as biological family context, according to the knowledge that children may have of its functioning.

ISSN impreso:1390-3861 / ISSN electrónico: 1390-8626, pp. 137-160.

Graph 1
Family contexts identified in the representations presented by age



Source: Produced by the authors.

During the interviews, most children used the word 'brain' in their explanations. Was identified this expression was even among 4 years old respondents (Fig. 1). One of the 6 years old children stood out, using words such as the brainstem, encephalon, and cerebellum (Fig. 2). When questioned, he declared that he learned the nomenclature at school during the presentation of his colleagues. This report highlights the influence of schooling, and especially of, adults, on children's impressions of the functioning of thought.

The family context that was reported less frequently was the mechanic. In this context, representations and speeches that referred to the movement and flow of energy, through gears, cranes, pulleys, liquid or solid channeling circuits (belt, bearing, etc.) were considered. The mechanical context was reported by two interviewees, one eight years old and the other ten years old. The eight-year-old student drew gears and said that when the teacher passes on a content she already knows, these gears move faster and when she doesn't know the content yet, the gears move slower (Fig. 3).

Figure 2
Representation of
a 4-year-old student

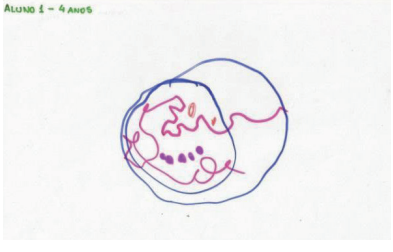
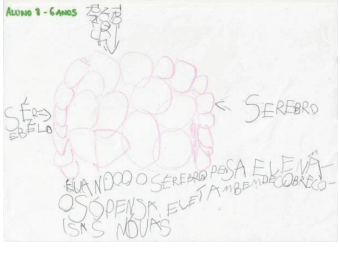


Figure 3
Representation of
a 6-year-old student



ISSN impreso:1390-3861 / ISSN electrónico: 1390-8626, pp. 137-160.

Figure 4
Representation of
an 8-year-old student

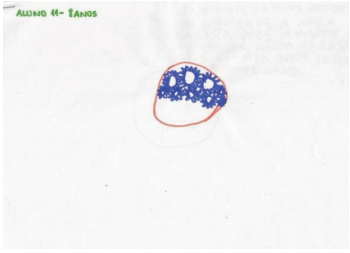
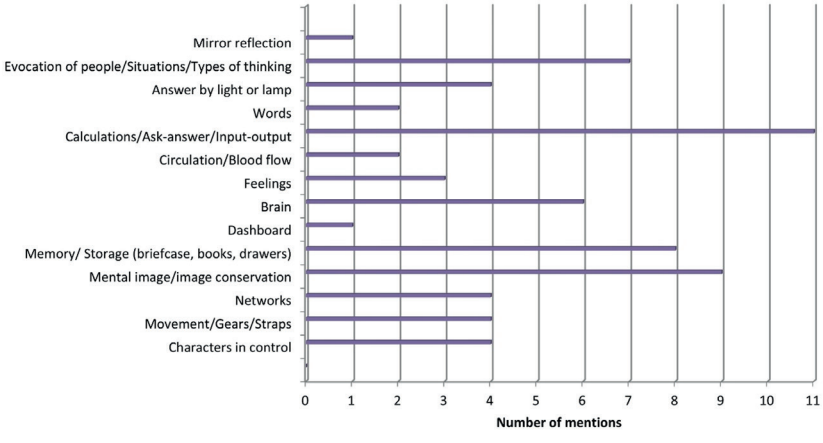


Figure 5
Representation of
a 5-year-old student

Some constants emphasized in the original work show that the different key ideas (Table 2) deduced from the expressed contents are present at all ages and that individual variations within the same class and within the same age are considerable. These variations were also detected in our study and are presented in Graph 2.

Graph 2
Key ideas mentioned presented by age



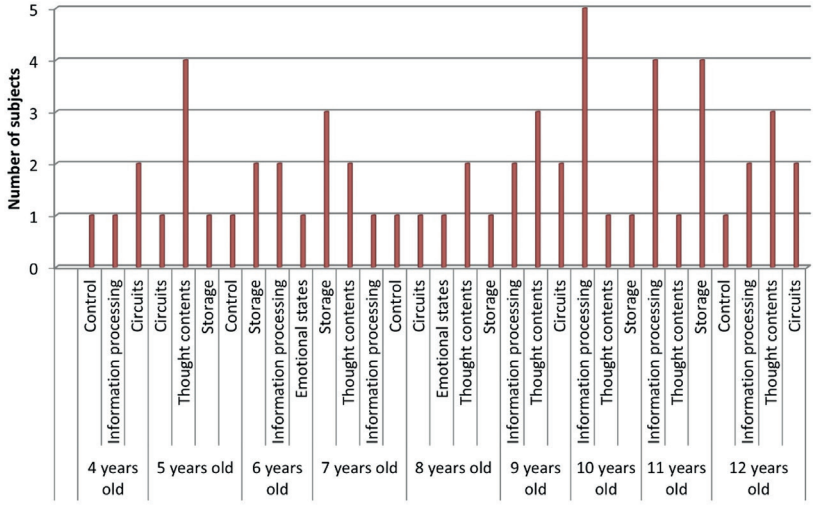
Source: Written by the authors.

The key idea of 'energy' whose typical content refers to power plants, motors, batteries, the electrical flow that appeared in the original study, was not identified in any of the representations of the Brazilian students. However, in the key idea of 'storage', it was necessary to add a new typical content to represent the storage outside the head (Graph 3).

ISSN impreso:1390-3861 / ISSN electrónico: 1390-8626, pp. 137-160.

Some students reported that the information was stored in a literal cloud next to the head (Fig. 4).

Graph 3
Typical contents mentioned during the interviews



Source: Produced by the authors.

Among the youngest children interviewed in Geneva, content and states of thought are especially expressed. Among Brazilian children aged 4 to 6 years, in addition to thought contents, references were made to circuits (Fig. 6), storage, and information processing (Graph 3).

Figure 8
Representation
of an 12-year-old student

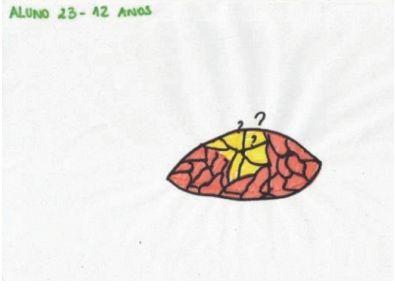
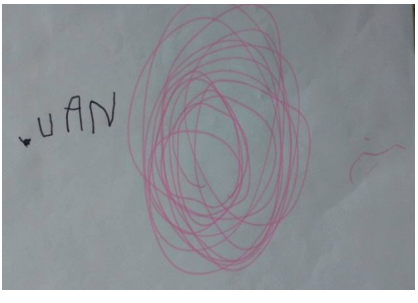


Figure 9
Representation
of a 5-year-old student



Sophia 32: 2022.

ISSN impreso:1390-3861 / ISSN electrónico: 1390-8626, pp. 137-160.

The key idea most reported among Brazilian respondents was the 'handling of information', specially between the ages of 10 and 12. Within this classification of the idea of 'information processing', the most cited typical contents are input and output, question and answer (Fig. 7), and calculation.

The typical contents that had the least representations were the control panel (Fig. 8) and the reflection in the mirror. The representation of thought employing light or lamp was mentioned among younger children and persisted in the explanations of some interviewees up to twelve years old (Fig. 5). This permanence of misunderstood concepts is discussed in the work of Giordan and Vecchi (1996).

Figure 10
Representation
of an 11-year-old student

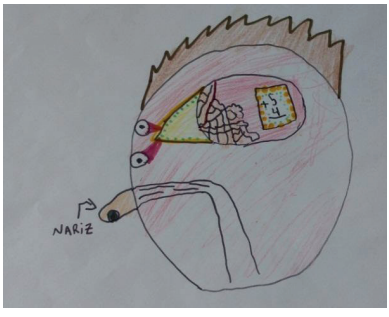
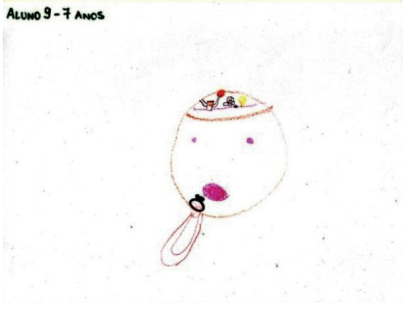


Figure 11
Representation
of a 5-year-old student



Martins and Eichler (2020) carried out the research in Science and Biology textbooks distributed in Brazilian public elementary and high schools, where they analyzed approaches to consolidate the nervous system in teaching materials. In this way, the typical contents needed in the original research and, also, in the current, are present in the reference models used by the authors of these textbooks to explain the functioning of the nervous system.

Like Jiménez, Prieto, and Perales (1997), who also analyzed textbooks that addressed the nervous system, Martins and Eichler (2020) identified that the reference models used indicated hydraulic models, telephone exchanges, electric currents, electrochemical machine, mirror, location mosaic, computer (informatics) or self-organizing model to explain the structure and functioning of the nervous system.

As Clément, Mouelhi and Abrougui (2006) point out, our scientific knowledge about the human brain and its functions has been renewed very quickly, also reflecting in its teaching, according to the evolution of social practices related to health and social behavior, in that underlies the development of values. In their didactic research, these authors

ISSN impreso:1390-3861 / ISSN electrónico: 1390-8626, pp. 137-160.

tried to identify the interactions between values, social practices and scientific knowledge through a critical analysis of curricula and textbooks for secondary education in natural sciences in France and Tunisia. The results show a great variability of conceptual and epistemological approaches. Although some programs have introduced, with the concepts of epigenesis and brain plasticity, the biological bases of constructivism, more traditional values are also present. Many manuals are still limited to behaviorist theses, where, for example, the hereditary (which reduces the emergence of the brain to genetic determinism) is very present in textbooks, either in a more or less explicit way.

Knowing the influence of adults and schooling on the development and acquisition of knowledge by children it's possible to infer that technological advances and access to information provided to new generations have not overcome the influence of the pedagogical material used to study this topic. Therefore, as similarities found in the representation of Genevese and Brazilian children, even in such a significant time interval between them, and in research with different proposals, it only demonstrates the importance of the discussed topic.

Drawing a correlation between this study and Piaget's research on the notion of thought in his book *Representation of the World in Children* (Piaget, 2005), the first stage wasn't identified, in which children believe that one thinks "with the mouth", that the thought is identical to the voice and that nothing happens in the head and the body. For Piaget (2005), this stage occurs in children approximately with 6 years.

The second stage identified in the work of Piaget (2005) is marked by adult intervention. At this stage, which occurs on average at 8 years old, the child has already learned that one thinks with the head; sometimes it even alludes to the 'brain'. The child imprints material quality on thought and expresses it in the form of air, or blood, or a ball, etc. During the interviews carried out with Brazilian students, this stage appeared from the age of 4 and remained until 12 years old. There is no child classified as the third stage, where the average age is 11-12 years and marks the dematerialization of thought.

Conclusions

The illustrations of Brazilian students showed many similarities with those of students interviewed in Geneva as described, demonstrating that children's beliefs about the topic addressed in this article remain

ISSN impreso:1390-3861 / ISSN electrónico: 1390-8626, pp. 137-160.

constant. On the importance of the influences of these reflections, 'meta-representations', for the cognitive and social development of children, Saada *et al.* (1996) contribute by stating that:

> It's believed that the child doesn't only have first-order mental states – namely, intentions, desires, goals – but also second-order mental states – namely, beliefs and a reflection on his own and those of others. These second-order mental states are commonly called "meta-representations". It's postulated that they exert an important influence, on cognitive and social development, including the acquisition of spoken and written language, moral judgment, memory, and social interaction in problem-solving (p. 91; our translation).

It is possible to see, through this study, the great relevance of this discussion for the context of philosophies of mind, science education, teacher training, and research on developmental psychology.

Finally, it can be indicated that a unified and common theory of the mind, its functioning, and its development with advancing age has not yet been developed. Furthermore, awareness of the workings of the mind requires the ability to reflect on your reflection, which is less developed in young children. However, as we have been able to demonstrate, despite several studies on representations of children, they can have specific and relatively elaborate ideas about the mind without being able to translate them into drawings or models. Despite that, observing the diversity of children's representations, it can be said, as Mein (1998) suggests, that our brain will remain an 'extraordinary garden' for a long time.

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Hermeneutical-dialogic elements for an eco-relational university education

Elementos hermenéutico-dialógicos para una formación universitaria eco-relacional

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Abstract

This article discusses/elaborates the hermeneutic-dialogic elements of an hermeneutic pedagogy applied to "university teaching", for an eco-relational education since where there are relations, there are contradictions; where there are contradictions, there is context; where there is context, there is dialogue; where there is dialogue, there is education; where there is education, there is history to interpret; where there is history; there is learning and understanding. We approach to university teaching from the perspective of Gadamerian philosophical hermeneutics in order to assume dialogue as a source of permanent humanization, of overcoming of differences and approaching to truth. From this standpoint, we propose a dialogic-eco-relational model, which axis is language for an inter-humane understanding of humanizing education spawned by the intersection of theoretical elements coming from philosophical hermeneutics, critical pedagogies and the demands of university teaching as a community of meaning.

The objective of this article is oriented towards the deepening of knowledge and the construction of a theoretical proposal through the hermeneutic dialogue of understanding in order to know and improve the training practice for deep human understanding in the university environment. As a problem, a kind of "monologization" of the formative practice is assumed as an expression of the current neoliberal market education. To do this, we explore Gadamer's hermeneutic coordinates to shape an eco-relational formation in the context of late modernity and its instrumental r(el)ationality. The phenomenological-hermeneutical method, in its integrating capacity, poses a unique harmony from the ontological and epistemological point of view, by constituting itself as an interpretive-ontological approach, which simultaneously assumes existing, being and being in the world expressed linguistically. We conclude that current and future university education is played out in the exchange between subjectivities and alterities where dialogue is the mediator between the concept and the educational experience, since the *ethos* of education is dialogue as, in turn, the *thelos* of education is interhuman understanding.

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Keywords

Philosophy of education, pedagogy, hermeneutics, education, dialogue, university.

Resumen

Este artículo desarrolla algunos elementos hermenéutico-dialógicos de la pedagogía hermenéutica aplicada a la "formación universitaria" para una educación eco-relacional, pues donde hay relaciones, hay contradicciones; donde hay contradicciones, hay contexto; donde hay contexto; hay diálogo; donde hay diálogo, hay educación; donde hay educación, hay historia que interpretar; donde hay historia, hay aprendizaje y comprensión. Nos aproximamos a la formación universitaria desde la hermenéutica filosófica gadameriana para asumir al diálogo como fuente permanente de humanización, de superación de diferencias y de aproximación a la verdad, desde el cual proponemos un modelo dialógico eco-relacional cuyo eje es el lenguaje para la comprensión interhumana de una educación humanizadora fruto del cruce entre los elementos teóricos provenientes la hermenéutica filosófica, de las pedagogías críticas y de los requerimientos de la formación universitaria como comunidad de sentido.

El objetivo de este artículo se orienta hacia la profundización en el conocimiento y construcción de una propuesta teórica mediante el diálogo hermenéutico de la comprensión con el fin de conocer y mejorar la práctica formativa para la comprensión humana profunda en el ámbito universitario. Como problema se asume una suerte de "monologización" de la praxis formativa como expresión propia de la educación de mercado neoliberal actual. Para ello, exploramos las coordenadas hermenéuticas de Gadamer para darle forma a una formación eco-relacional en el contexto de la tardía y su r(el)acionalidad instrumental. El método fenomenológico-hermenéutico en su capacidad integradora, plantea una singular sintonía desde el punto de vista ontológico y epistemológico, al constituirse como un enfoque interpretativo-ontológico, que asume simultáneamente el existir, el ser y el estar en mundo expresados lingüísticamente. Concluimos que la formación universitaria actual y futura se juega en el intercambio entre subjetividades y alteridades donde el diálogo es el mediador entre el concepto y la experiencia educativa, pues el *ethos* de la educación es el diálogo como, a su vez, el *thelos* de la educación es la comprensión interhumana.

Palabras clave

Filosofía de la educación, pedagogía, hermenéutica, educación, diálogo, universidad.

Introduction

This article elaborates the constitutive elements of the proposal of a philosophical hermeneutics of education as a philosophical hermeneutics of eco-relational formation based on what Gadamer determines as the "hermeneutic situation", which consists in the centrality of the relationship in the hermeneutic praxis of understanding equivalent to the educational praxis of formation. Therefore, this philosophical hermeneutics of eco-relational training is based on the centrality acquired by the relationship understood as r(el)ationality, i.e., the pedagogical relationship of meaning based on the capacity of questioning (question and answer) for configuring an interpretative tradition and since understanding is intrinsically dialogical, there is no understanding without dialogue, and there is no education without both.

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The aim is to establish a hermeneutic theory of understanding from the hermeneutic coordinates of Hans-Georg Gadamer. The problem detected and to which we react is the excessive "monologization" of current education in the face of the forcefulness control of competition for the market. Competition has muted the dialogical capacity of education, undermining the critical capacity in the horizon of interhuman understanding of the place and destiny of the subject in the world. The overlapping between the capacity for dialogue, the will to interpret and the comprehensive experience indicate the hermeneutic faculty of education in the face of a technocognitive, technocompetitive neoliberal education which, being fundamentally anti-dialogical, slows down the flow of exchange of interpretations for an understanding that assures that which complex societies have substituted by technology: the spatio-temporal presentiality for the survival of the human, even more, humanity itself for the projection of the human.

We maintain that education is played in the exchange between subjectivities and otherness where dialogue is the mediator between the concept and the educational experience; dialogue is the sign of the educational experience. That which takes place in the dialogic interaction between the world, the subject and the word is what constitutes the relational ground of humanity and, therefore, the sign of university education.

The theoretical framework proposed refers to contemporary philosophical hermeneutics and its projection in the educational world, specifically in higher education or university training, which necessarily establishes the need to develop cognitive skills and relational competencies consistent with this form of interpretation, i.e., critical discursivity and relational dialogicality. We will follow the following methodological criterion that converges critical theory, education, and hermeneutics: the understanding and interpretation of a text, considering as text any human situation content that has a symbolic content (didactic language, culture of the institution, interpersonal relationships in the university context, documents produced in the institution, etc.....). What is pursued is the unveiling of meaning as a hermeneutic category of a subject in formation, since the meaning that nourishes a definition of education, according to García Amilburu and García Gutiérrez (2012) attending both its etymology and its scopes and modulations as a sociocultural phenomenon or in direct confrontation to the processes of indoctrination, conditioning and training (pp. 47-64) is that solidary process in which each one always accepts the other in a horizon of possible mutual understanding for its humanization and transformation. To this end, it is important

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to answer some of the following questions: What would be the role of dialogue? Is education the place of dialogue, i.e., does it place a word that, in dialogue, transcends the appropriation of knowledge to be led towards the formation in the understanding horizon of the other, since dialogue develops between the subject and his significant other in a bidirectional communication, constituting itself as a dialogic onto-linguisticity constitutive of pedagogical relations?; What is the main role of pedagogy if we consider understanding as the main activity of the human being? Where are the relations, approximations, distances and limits between pedagogy and hermeneutics established? Is it possible to establish a hermeneutic-pedagogical model for university education of general character and integral horizon? Is it possible to consider that the main problem of education is to attend to the question of meaning, since every educational process involves an interpretation and entails an understanding?

Hermeneutics is a philosophical paradigm that provides the basis for interpreting the linguistic experience underlying *pedagogical praxis*. Therefore, the theoretical path followed, draws coordinates for the orientation of educational relations whose north is the de-instrumentalizing intercomprehension of dialogic formation understood as a relational and socio-temporal event between the subject and the world that (trans)form that has three main meanings: (a) it is that which is interpreted, not being comprehensible, pretends to pass itself off as a meaning that relays a sense; (b) it refers to that which is possibly interpretable or comprehensible, but has not yet been experienced; and (c) it mentions the idea, judgment or theory that is supposed to be understood, although it has not been interpreted or experienced, and from which the relational dialogue takes place. We consider as a reflective basis and methodological orientation that education should not be considered or defined as a fact or a thing, nor as an interpretation or an objectification, nor as a result or doctrinal or ideological clarification, but as a vivifying humanizing dialogue where hermeneutics acquires a primary role at the time of the solidary compressive construction of knowledge. The concreteness of the problem of a relationship between hermeneutics and pedagogy is played in the proposal for a hermeneutic-dialogical pedagogy of understanding that broadens and deepens the learning processes, situated and besieged by the instrumental evaluative processes that give way to reasoned practices of formative action endowed with meaning, an action that unfolds in labile contexts in constant mutation and evolution, which demands that interpretation be a lasting basis for a comprehensive experience as

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 163-189.

dialogical subjects of the educational process and not monological objects of the competitive process.

The issue here is the sense of the hermeneutics of eco-relational dialogue, or, in other words, what happens in modern rationality when it tries to adjust its intradiscursive monologic character of an asymmetrical individuated subject with the interdiscursive dialogic character of a symmetrical communitarian other.

The methodological perspective is phenomenological-hermeneutic, which implies both an intellectual and attitudinal orientation rooted in the study of the essential meaning of phenomena, as well as in the sense and importance they have when thinking the fundamental categories of tradition. Phenomenology is the experiential study of reality and of the phenomenon in its essential radicality, its own nature and as it presents itself to the consciousness; it is applied in the description and analysis of the contents of the consciousness, seeking to delve into its realities that, temporally contextualized, the researcher must find; furthermore, it is methodologically constituted in an experiential study of the personal interiority of the subject, perceived in interaction with reality. For its part, hermeneutics, as an art or technique of interpretation, fulfills the role of mediator between the subject and the object of study, interpreting the phenomena from its own context of action, from its particular historical time in order to unveil, give meaning and perspectives. In this sense, hermeneutics would suppose the clarification of the true "intention" and of the "interest" that underlies all "understanding" of reality, and with this, it would be presented as the art of correctly understanding the word of the other. The phenomenological-hermeneutic method, in its integrating capacity, is harmonic from the ontological and epistemological point of view, as it is constituted as an interpretative-ontological approach, which simultaneously assumes the existing, and being in the world expressed linguistically (Vergara, 2008a, 2008b).

This article presents the context of what we have called modern r(el)ationality as a sociocultural scenario determining a closed subjectivity impossible for dialogue as the basis of a humanizing education; to understand this sociocultural and epochal *ethos* for contemporary education, we present the hermeneutic elements for an eco-relational formation from Gadamer's hermeneutic philosophy: language, tradition, understanding and formation constitute its theoretical basis for the proposal of a dialogical rationality that aims at interhuman understanding as the most proper sign of an eco-relational formation.

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 163-189.

Modern r(el)ationality

In the human cultural process, the history of philosophical thought reflects both the scientific thought and the beginning of perpetual questioning, which makes of existence a passionate work of critical reflection on the aspirational and regulatory character of knowledge; on the shaping of individual and collective meaning together with the ethical-political commitment to the other; and especially, on the meaningful formulations of thought and action for the understanding of our existence in the world, in short, on the totality of reality. We cannot avoid the fact that today the disinterested contemplation of ideas, the systemic theorization of reality, the modeling of thinking, techno-science now understood as cosmotechnical, as well as doctrines with their political operability for social change have not been able to avoid the discredit of enlightened utopias and moral-ethical discourses to transform reality in terms of social justice and, thus, to prevent the divorce between the instructive reason of values and the instrumental reason of goods within modern subjectivity. Proof of the above is what the dichotomous design of the modern rational matrix has been able to achieve, firstly, as a substantive or normative condition of political-moral self-determination and totalizing faculty of theoretical functionality to understand nature, order, legality and the meaning of the world and, secondly, as an instrumental or regulatory condition as a historical differentiation process of social spheres with procedures oriented to rational-formal action that pursues the calculation and control of social and natural processes. As mentioned before (Vergara, 2014), these operations are embodied in the project of progressive modernity whose axis is the "dogmatic articulation of the rational destiny of the particular, social and historical life whose direction is not founded provisionally -insisting on the immediacy of events-, but programmatically -insisting on the planning of facts-" (p. 281), as an organ of social production of immanent sense replacing the organ of communitarian creation of transcendent sense, opening the great danger for theory: its disaffection with respect to nature and the theoretical instrumentalization for the control of the regular variables of the real.

The theoretical place and existential habitat are placed within the late version of modernity and the hegemony of an onto-techno-globalized rationality that has meant a resemantization of the categories of thought, beliefs and knowledge; a revalorization of ethical-political guidelines of coexistence and moral norms; a cosmovisional resymbolization in the construction of meaning; a withdrawal from the substantial to the instrumental of speech and language; an epistemic explosion and

Sophia 33: 2022.

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 163-189.

instrumental dehumanization of the paradigms of thought; a re-reading of the traditional cultural wefts in the face of the new emerging discursive orders; a resignification of politics in the face of the radicalization of fundamentalist ideologies along with the entry of capitalism as a new religion; and an urgent discourse for ecological rescue in the face of systems constituted for human servitude and exploitation and environmental and animal overexploitation.

Reason is relational in its root, modulation, and exercise. This means that, as animals of meaning, we are rooted in reality in and from a relational feeling articulated by reason as a function of an individual goal inscribed in a collective destiny. This sort of recognition and otherness has been disarticulated in late modernity, due to a progressive privatization of human existence from the equally progressive weakening of the conditions that make it be recognized as other. The problem we pose is that of the dissociation that occurs between relationality (feeling) and rationality (reason) in late modernity as its own space for reflection, since both acquire a dysfunctional form, resulting in a paradoxical disarticulated relation between the two, affecting both the autonomy of the subject and its capacity to install in a common world, incorporate in a tradition and relate with history.

We observe that the connection between techno-utilitarian rationality with the subjectivation of life of a utilitarian-contractual nature will take place under the sign of economic value and of a blind relation only open to means; this value will be the reason of a privatized existence whose supreme end will be well-being, understood -according to the terms of mercantile transaction- as satisfaction in consumption. This privatization has the character of a vital experience as the property of a self-referential and radically relational subject for whom the other is a distant reality external to him without the possibility of communication from the common. In such exteriority, both manifest as living corporeal objects inaccessible to the community. It is the conformation of what we could call a non-subjectivity as an expression of a painless moral neo-individualism.

This has led to a sort of radicalization of the contradictory character of the rational modulation of modernity, namely, the discordance between the ethical-political norm and the technical-functional control, which has created sociocultural gaps with consequences and scopes observed daily, such as the secondary role of the subject in social change, the reduction of cultural spheres under the unequal sign of globalization as a totalizing character of the political-economic, the weariness before

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 163-189.

the warning of the defunding of meaning by a nihilistic corruption of the conscience, the weakening of the value contours, as well as a deep disbelief in the transforming capacity of the techno-scientific reason to cure the own diseases generated by the totalitarian program of modernity that betrays reason and its purpose of human fulfillment, and to turn the subject into a means for instrumental manipulation for the alienation of nature and alienating reification of the ends.

Modern reason, as we have said (Vergara, 2020), is not interesting by the conceptual clarity that bases its philosophical-political program, but by the material results and transformations that instrumental reason is capable of achieving, i.e., the unfulfilled material promise is better than the longed-for immaterial promise - an insurable immanentism is preferable to a reliable transcendentalism - since instrumental rationality does not lead to universal freedom, but to the administrative-bureaucratic control that encloses the subjects in a swarm of social circuits of computerized systems, disconnecting the forms of life from those cultural spheres that edify meaning and value, i.e., from the coordinates of a humanizing education.

From the above, it must be said that the possibility of a new mode of r(el)ationality will necessarily depend on a life-giving dialogical experience that recovers the value of historical intersubjectivity as a constituent cultural order of knowledge for the human community, and will be presented as an expanded background of consciousness, reflection, interpretation and understanding of the mundane and the transcendental for a global solidarity consciousness, because the crisis is expressed in the ethical-cultural contradictions that lie at the core of the market society and its place in nature, and it will indicate the paths that will lead our relationships towards an eco-r(el)ational re-enchantment, i.e., a relational-reason and a rational-relationship that will sustain the anthropological condition of our existence in harmony with nature, from a fulfilling existence, not for the advent of a new humanity, but for the arrival of the awaited humanity.

Hermeneutical elements for eco-relational training

We believe that the main problem of education is to attend the question of meaning, since every educational process involves an interpretation and comprehension. Education is played in the showing and withdrawal of the educator, so that the meaning emerges before the existence of the

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 163-189.

learner. Dialogue shows the way to the meaning of existence that emerges linguistically in the experience of the other, in a *dialogic hospitality* of understanding as educational *praxis* and hermeneutic experience. A university hermeneutic formation will allow interpreting the languages with which the formation has been defined, knowing that "there is no progress without past nor tradition without future" (Maceiras & Trebolle, 1990, p. 15), since knowledge, culture and the theoretical framework where human formation lies are constructs whose meaning is given by the historicity of the concepts as well as in the very being of the subject as stated by Bárcena and Mèlich (2014):

> As interpretative beings looking for meaning and understanding, the human being is a hermeneutic being [...], a "mediator", a being who must pass through intermediate spaces, textual spaces in which he keeps his secrets. He must therefore learn the art of deciphering indirect meanings, the very art of hermeneutics (p. 108).

Where are the relations, approximations, distances and limits between pedagogy and hermeneutics established? In the overlap between interpretation and understanding with language and the world, i.e., in the structuring and encompassing relationship of history to which we incorporate meaning as a basic movement of human existence. This same intersection is applicable to education, at the moment in which it is defined as a consensual interpretation and understanding in the formative interaction between educability and learning. Education, understood as a dialectical process of socialization (socio-cultural tradition) and formative autonomization (self-training, formation and critical transformation), is a place of dialogue, since it places a word that goes beyond the appropriation of knowledge to be led towards the formation in the comprehensive horizon of the other, since dialogue develops in a bidirectional communication, forming a dialogic ontolinguistic constitutive of pedagogical relations.

First, we consider that hermeneutics and education are conceptually related in practicality, i.e., the ultimate goal of education is inherently a sort of exercise of human solidarity, which contributes to integral human development, as Wierciński (2010) argues:

> The real goal of education is not to support false confidence in one's intellectual treasures toward self-reliance and optimally orchestrated independence, which contributes greatly to the social perception of a well-educated person as proud and arrogant. It is rather to help discover what it means to be a human being and how to live a good life (p. 31).

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 163-189.

The main axis of hermeneutic understanding and its experience is language as an element of historical mediation and existence of universal and ontological character to access the world and reality or more, that there is world, we are and we are in reality, because only the being that can be understood is language the understanding of what is, although the linguistic experience of meaning of the world is always inapprehensible at all. Understanding is only reached with a historical community where language and dialogue are socio-cultural constants in the development of humanity.

The conceptual constellation of Gadamerian hermeneutics has the following statements: first, there can be no understanding that has not been oriented by a prior understanding, i.e., by the initial presence of a pre-understanding or, in other words, by prejudices as anticipation of the meaning of understanding or prior interpretation for an understanding. Interpretation is language that mediates between the subject and the object interrelated in the dialogue that takes place in history so that truth is an event that is said, written, and rewritten for interhuman understanding. Understanding is a collective experience recorded and accumulated during the activation of interpretation and the need for meaning of the historical existence of the subject. Gadamer (2004, 2005) gives importance to the prejudices of meaning in the constitution of the being, since prejudices are a clear anticipation of the opening to the world and constitute the previous orientation of all our experience and pre-conditions for understanding. Prejudices are not only part of the subjective installation in the world, but are also in the tradition to which we historically belong. Secondly, the circular structure of understanding or structure of the Heideggerian being-in-the-world, i.e., understanding is the circular relationship, interrelation and interpenetration that occurs between tradition and the subject inserted in a community that unites and roots him in a tradition in an endless and uninterrupted process of formation and transformation. This dynamic character of the world in a process of constant transformation means the expressions of history and historical-effectual consciousness, it is the effectuality of history on the consciousness of the subject. For Gadamer (2005) our consciousness is defined by an effectual history or by a historical event between the past and the present. In its insertion in the historical happening, the consciousness receives the action that is exerted upon it, since it is formed and shaped by this effectuation of history: it is a consciousness that is exposed to the effects of history. Thirdly, understanding is to understand oneself and to understand another; it takes place in and from a situation and from the horizon that defines it; for this reason, understanding acquires the fusional figure of horizons or perspectives.

Sophia 33: 2022.

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 163-189.

Gadamerian hermeneutic philosophy is part of a tradition that considers education as a process of one's own will of autonomous character with representatives such as Rousseau (2011), Kant (2013), Nietzsche (2009), Simmel (2008), Freud (2011), Adorno (1998), Gadamer (2000) in which the teacher fulfills a collaborative function of stimulating, empowering, inciting, provoking, mediating the student's own will that is formed, self-formed and transformed in an enabling and edifying dialogue of humanity.

Hermeneutic pedagogy pursues the unique, individual, and social aspects of existence, both in its external expressions and in the internal lived experiences. Inasmuch as each person, from different and new horizons, understands new meanings in an infinite process of interpretations, as Gadamer (2000) argues "education is to educate oneself and formation is to form oneself" (p. 11). According to the hermeneutic tradition, as García Amilburu (2012) states:

> The understanding of meaning is carried out in three phases: intellection, explanation, and application. These are fully complied in any educational experience because something is learned when its meaning is grasped and not when information is passively received. Things acquire meaning when they become one's own and the subject is in a position to apply them (p. 106).

Gadamer (2004, 2005) conceives language as that field of existential experience for the human being and this fundamental conception of his philosophical hermeneutics has made possible a radicalization of the philosophical problematic of understanding where language belongs to the ontological, anthropological, epistemological and political spheres of the existentialist and universalist subject, since it not only places us in a world, but also confers meaning and that meaning acquires meaning when it is shared communally in history. For Ortiz Osés (1973), "language is the structure where the ebb and flow of temporality crystallize, and it is the only one that configures the extemporaneous figure of man" (p. 23). We consider that Gadamer has carried out a radicalization of the philosophical problematic of understanding where language belongs to the ontological, anthropological, epistemological and political spheres of the existentialist and universalist subject, since it not only places us in a world, but also confers meaning and that meaning acquires meaning when it is shared communally in history.

In order to overcome behaviorism and positivism in the philosophy of education, the hermeneutic horizon of education places the ques-

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 163-189.

tion of the purpose of education and the reformulation of objectives in the dialogical understanding of the experience of historical finitude for interhuman formation. Hermeneutics, applied to pedagogy, seeks to understand the educational process in its historical-cultural context. Hermeneutics does not seek to describe or explain educational phenomena, but rather to interpret and understand them as they occur in history from a dialogical horizon. And despite falling into the temptation that hermeneutics in relation to education can only be considered as a pedagogical theory because its statements are transitory and incapable of transcending history, it could be said that the theoretical legitimization of Gadamerian hermeneutics of a universal ontolinguisticity of the historical situation of the subject, enables hermeneutic pedagogy within the hermeneutic constellation of the philosophy of education sustained by conceptual bases to overcome the consideration of consensus, result of good will or imposed by dogmatism.

Given its temporal character, education takes place and acquires meaning both in its definition as mediator and in the horizontal fusion of perspectives that it opens to the comprehensive articulation of meaning in the dialogue of universal ontolinguisticity with the infinitude of the temporal tradition in a hermeneutic task of understanding in which language is not exhausted in the subjective conscience of the interpreter and even less in the dialogical construction of the common world where, as Duque (2002) says, "to understand is to be part in a movement that comes from afar, imprinting such mutations on it that make it recognizable as a pleiad of sendings" (p. 109). As opposed to science and metaphysics that yearn for the perennial and the universal, for what remains invariant, regular and objective, a pedagogy inscribed in the hermeneutic tradition would value, as Mèlich (2008) states, finitude, historicity, time and space, contingency and chance, the singular, the situation and the detail (p. 121).

Following Pagès (2020) we can think of "hermeneutics as Philosophy of Education [...] recovering three fundamental topics for Pedagogy: a) historicity, understood as the impact of history on our biographies; b) tradition, in its dimension of pre-judgment to which we must position ourselves, but which we cannot get rid of; c) understanding as a modality of dialogue in language. From the point of view of philosophical hermeneutics, we can affirm that education, by transmitting values, cultural heritage, languages and ideas, "undertakes a double purpose: on the one hand, to lead the learner to the place of inherited knowledge through instruction; on the other hand, to inspire a symbolically productive questioning of inherited knowledge, opening new meanings, allow-

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 163-189.

ing other readings and broadening the perspective of meaning" (p. 101) in an opening towards the other.

Although it is impossible to reduce hermeneutics to a pedagogical method due to a conceptual contradiction, it is possible to establish it as an educational mediation with a practical purpose; it is even possible to establish it as a formative mediation with a humanizing purpose. The dialogical experience of hermeneutics takes place between the recognition of the nature of knowledge and the incompleteness of human understanding. Far from pedagogical normativity and close to educational relationality. "Thus, hermeneutics cannot be reduced to a simple pedagogical method: "hermeneutic pedagogy" includes hermeneutics as a teleological horizon, at the level of the educational purposes that give meaning to the practice itself. However, it is not possible to speak of a pedagogical hermeneutics, because hermeneutics cannot be transformed, under any circumstances (at the risk of becoming a mere instrument) into a norm or a prescription. Thus, when the Manifesto [*Manifesto for a Post-Critical Pedagogy*] proposes "to move from a hermeneutic pedagogy to a pedagogical hermeneutics" it poses a *contradictio in terminis*. If we define pedagogy as a normative science of education, whose objective is to prescribe the way in which the act of educating should be organized and carried out in the sense of the duty to be, it is impossible to propose hermeneutics as a pedagogy, because what precisely characterizes it as a philosophy of education is its irreducible condition to any prescription or norm that directs an action. According to Pagès (2020), the ontological aspect of Gadamer's hermeneutics proposes precisely "to reverse the idea of hermeneutics as a mere method, despite the richness and complexity of its known applications in the field of religion, law and music or literature" (pp. 101-102).

In view of this, it is worth asking what is the contribution of a relational hermeneutic pedagogy of understanding for university education? What is the basis of the proposal for a hermeneutic-dialogical pedagogy of understanding? In the deep structural coincidence in the concept of "mediation", which defines it for hermeneutics and concretizes it for education, in that it expands or complements the processes of situated learning (besieged by instrumental evaluative processes) to give way to the reasoned practices of formative action endowed with meaning, action that unfolds in labile contexts in constant mutation and evolution, which demands that only interpretation will be the lasting basis for a comprehensive experience as subjects of the educational process, since every educational process has an eminently social character, a sort of socio-educational *ethos* for mutual development.

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 163-189.

In hermeneutic pedagogy, self-formation, formation and transformation constitute an event that the subject assumes through the processes of self-interpretation and interpretation always open to the understanding of the experience of the world, in which education is the most profound and determining humanizing experience in the existence of the subject and in the determination of the human world, since the person has to transform his natural condition of anthropological and existential incompleteness into prolongation opportunities of his life, transformation, existence and historical projection. The subject involved in education acts on himself, on the other, on the world and on the multiple relationships derived from it.

In these areas, training as self-cultivation, self-training, self-education constitutes the hermeneutic framework to insert the proposal of a hermeneutic pedagogy for the dialogical transformation of educational *praxis*, since, as Mendoza (2008) states:

> Hermeneutics, assumed more as a philosophy than as a simple methodological or technical tool, has profound implications in the field of education, not only as a possibility of interpretation of the pedagogical phenomenon [...], but also as the very mission of the formation of the human being....], so that one could speak of a "hermeneutic pedagogy" aimed at developing in the learner forms of understanding of the world thanks to the dialogical interaction between theory and practice, texts and contexts, being and becoming, the individual and society, without the illusion of definitive certainty, not the easy accommodation to a technique or to a knowledge that is given and accepted as certain; but by virtue of an attitude of permanent questioning of reality, which allows the being in formation to confront the facts and the points of view on the facts with alternative perspectives and from broader horizons that seek to overcome the first perceptions [...]. And it is precisely in view of the complexity implicit in the mission of educating man that the complexity and uncertainty of the educational phenomenon is also recognized, which explains the collapse of the classical approaches of modernity to assume the analysis of this reality (p. 121).

If the theoretical horizon of pedagogy is to transform the information obtained from reality based on sensitivity, rationality and relationality and convert it into knowledge, and transform this knowledge into education, we are facing the humanizing activity that places the subject not only in reality, but humanly among subjects in a subjectivized interaction of identities. From this, the practical horizon of pedagogy emerges, and it becomes a simultaneous theoretical-practical activity where the

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 163-189.

subject is also the object of educational action. It is in this imbrication or co-implication that the place for hermeneutic pedagogy as philosophy applied to education is drawn. Then, the ultimate goal of education is to develop together in life through the understanding of others.

The hermeneutic process tries to recognize the events of the educational *praxis* of the subjects co-involved in it, who dialogue about existence, share knowledge and trace meanings. We are not only what we remember, but we are what we say in a constant dialogue with oneself externalized by the language that brings us back in the encounter with the other, withdraws and replenishes us, externalizes us, liberates, and exposes us in the limit that marks the dialogue between language and the world, Bárcena and Mèlich (2014) expose it as follows:

> Our societies seek this progress by promoting a technological culture for which technology is a totalizing system. A society in which "educating" constitutes a task of "manufacturing" the other in order to make him "competent" for the function to which he is socially destined, instead of understanding it as a hospitable reception of newcomers, i.e., an ethical practice interested in the formation of subjects (p. 22).

Hermeneutic pedagogy -which we will continue to call hermeneutic university training for an eco-relational education- seeks to interpret both the latencies and pathologies of meaning by emancipating the soul or interior of the subject in a dialogical exercise that attempts to bring out its potentialities, raising awareness of the unconscious and symbolically projecting values in a liberating axiology, because hermeneutics - as a paradigm of study on educational development that provides the basis for interpreting the theories and practices that underlie every educational process as a sociocultural event and understanding the interhuman formative event - is understanding the other that amplifies and overflows the subject to insert him in a complicity when he recognizes the other for a profound transformation of himself to become what he is, i.e., to be and become human among humans.

As stated by Moreu and Prats (2010), hermeneutics constantly reminds us that "education, as a human aspect, is a thinking and rethinking, a reading and rereading, a multiple and constant interpretation" (p. 86). For its part, hermeneutic pedagogy will revolve around the interpretation of education as mediation deeply linked to hermeneutics as educational interaction, oriented towards the interpretation and understanding of the world, as Mendoza (2008) says, where the practical dimension of education is inscribed, influencing the course of educational action

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 163-189.

(p. 127). To interpret education from this hermeneutic perspective means to penetrate into the hidden folds of its pedagogical practices, since hermeneutics affects human learning in the theoretical-practical perspective. The place of realization of dialogical hermeneutics is education, since it is in its formative exercise that the humanization process reaches its internal coherence, contextual consistency, and common consensus in dialogue as a foundational experience of relationality.

Dialogue as an essential condition for eco-relational education

Following Gadamerian statements about the relationship and importance of education and the contributions of hermeneutic philosophy, we consider hermeneutics as a methodology to understand the educational phenomenon, its *praxis* and its scope, since it assumes the historical and socio-cultural conditions that configure the narrative, the temper and the rationality of the people involved in the educational *praxis* and in every learning process. In other words, it is only possible to understand the complex and plurisignificant educational process from the interpretative radicality of the personal experience inscribed in a historical community of perspectives, i.e., from a reasoned and reasoning dialogue for interhuman understanding.

We assume the dialogue with an investigative methodological foundation in order to approach and review university education as a permanent source of humanization, overcoming differences and approaching the truth, from which we propose some concepts for the possibility of an "eco-relational education". By eco-relational education we mean the crossing of theoretical elements coming from philosophical hermeneutics, critical pedagogies and the requirements of university education as a community of meaning. Formation implies a correct understanding of reality, which is achieved through the dialogue with the other, with things, with the history of humanity. This exchange takes place in tradition, which is the great continuous conversation among human beings, in which we insert ourselves communally.

The relevance of establishing a dialogic hermeneutic model within the eco-relational university training lies in the encounter between the nature of the university as a critical consciousness of culture and the humanizing *praxis* of training in the sense of providing an updated look at the founding relationship of the dialogue between technique and art,

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 163-189.

now between competence and relationship. On the other hand, it is the encounter between human nature and the vital nature of the real, as Paz (2003) says "we are made of words" (p. 30) where, for Ricoeur (2015) "the man who speaks gives meaning; in his verbal way of acting" (p. 253). Thus, the world exists in the linguistic forms that we establish to define the human and enables the union of the mind with culture (Bartra, 2014, p. 41), because according to Gadamer (2004) "language only exists in conversation" to relieve that "the capacity for dialogue is a natural attribute of the human being" (p. 203).

Therefore, what is the attitude that promotes dialogue? Do anthropological incompleteness and contradiction promote the gestures that initiate dialogue? It is the life-giving dialogue that takes place in the contextualized narration of history, without forced or fictitious counterpositions between the arguments of our discourses and the expectations of recognition. Therefore, the rationality applied in dialogue is fundamental, because in order not to fall into relativism or authoritarianism or excessive hermeneutism, it is necessary a reflexivity within the construction of meaning of cultural contexts, i.e., it demands the inter-logic articulation of life, which opens to other logics, as Picotti (1996) states, to the "historical construction of the human logos as inter-*logos*" (p. 298) now implying the multiplicity of rationalities and differences of relations.

Dialogue is the great forger of worlds, since it unfolds possible horizons in the construction of meaning for interhuman understanding and its purpose is understanding through the fusion of perspectives of interpretation, as Gadamer (2004) states "when two people meet and exchange impressions, there are two worlds in a certain sense, two worldviews and two world builders that confront each other" (p. 205). In this sense, dialogue is a social praxis of understanding where, for Gadamer (2005) "language is the medium in which the interlocutors' agreement and consensus about the thing take place" (p. 462).

Eco-relational education focuses on the linguistic-dialogical phenomenon in the horizon of inter-human co-understanding in experiential programs of dialogical learning for the community construction of meaning, since learning is the result of the relationships involved in the environment, history, social practices, cultural narratives, scientific interpretations, etc., as education would be defined from the dialogical implication for inter-human understanding. In this way, eco-relational education is a network of interpretations, so that the practical field of educational intervention is the historicity of personal projects, their unveiling and narrative construction.

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 163-189.

There is a substantial tradition of dialogue first described by Socrates. In more modern times, several dialogists have argued for the power and value of dialogue as both an equitable and emancipatory form of communication such as Buber (1969), Gadamer (2005), Gergen (2015); Hirschkop and Shepherd (2001), Isaacs (2008), Poulakos (1974), Wierciński (2010) where to educate is to cultivate a special sensitivity towards the exercise of freedom and of a deep willingness to learn about oneself and, with this, to learn from the other and what r(el)ational humanity is all about. For their part, Latin American authors such as Freire (1970), Flickinger (2014), Hermann (2002), Barragán (2005), Molino (2012), Flórez (1994), Rillo (2009), Carvalho (2007) and Aguilar (2007) have each developed, with their own scopes, a proposal for the application of hermeneutics in the educational field in their countries. However, our proposal is the undeveloped application of a hermeneutic design for university education in Chile inscribed in the theoretical-practical of Mèlich, Bárcena, Esteban, Pagès among others of the Spanish tradition.

The formative need that nourishes education and configures the pedagogical experience of knowledge and learning has its origin in a sort of previous dialogue as Ipland (1999) states between an "internal logic of a dialectic of the concept with human existence" (p. 49), whose aim is to orient the subject within society and culture: education is the first link for the development of humanity and the last end that ensures the meaning of the question of what is the human being. Hence, education responds to the projection of the subject both in his existence and in culture; projected to the fullness of his existence, given form to human qualities and capacities in the cultivation of reason, of sensitivity, forging freedom and social interrelation. This projection has a mediator which is the language whose nature is dialogical and whose purpose is the understanding of meaning as a vital and humanizing experience of the initial formative need. Following Rubio (2013):

> Pedagogy [university hermeneutic training] is presented as a great text that has had the purpose of orienting the future decisions of our societies and, at the same time, to progressively shape these projects in the present in a theoretical-practical conciliation inserted in the complexity of the cultural and social reality that it contributes to build, relying on the understanding and orientation (explanation and normative character of the reality thought), disciplinary features that have been deployed by configuring a particular rationality around the purposes that move it (p. 375).

Education is a life-giving and humanizing dialogue as a comprehensive experience; therefore, it requires a kind of hermeneutic primacy

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 163-189.

in the construction of knowledge that serves as a basis for learning based on the hermeneutic-dialogical experience of pedagogical otherness. Understanding is the linguistic interpretation of the phenomena we experience in life, understood as a source of meaning. Gadamer (2004) discovers that hermeneutics is an experience broader than the consciousness of the subject. Thus, the experience of being in time, that time is the being and, as such, is the way in which human life reveals the being that understands it, since we are beings of meaning "thrown" into a world in which we co-participate in its conformation and transformation as beings of language:

> It is not sovereign understanding that grants a true enlargement of our self-imprisoned in the narrowness of experience, as Dilthey assumes, but the encounter with the incomprehensible. Perhaps we never know so much of our own historical self as when the breath of totally foreign historical worlds reaches us. The fundamental character of the historical entity is to be revelatory, to be meaningful, in the active sense of the word; and to be for history is to let something be meaningful. Only in this way does [the] authentic link between the I and the thou emerge; only in this way is the binding of historical destiny constructed between us and history (p. 40).

If language exists to take positions in the world, for Gadamer (2004) the "path of truth [...]begins with dialogue, whose mode of performance always has to do with anamnesis and, with language. This is the language of conversation, awakening convictions and permanently going beyond oneself, which never allows us to understand the question completely" (p. 230), a path that involves three fundamental aspects: recognition of all others as equals; freedom to propose each one's ideas about what can be best for all; and existential coherence between the ideas proposed and the social and civic practices of each one.

Let us ask: how does language reveal? It reveals in dialogue, because *logos* is born in conversation and there, in dialogue with the other, language manifests its true nature, dialogue as Vergara (2008a) states: "is the linguistic epiphany as totality of meaningfulness of meaning" (p. 191). No human experience is extralinguistic, i.e., generated outside the community of dialogue. Understanding and agreement with the other are achieved through dialogue, and social life is effectively performed, which is built as a community of dialogue where thought is dialogical in nature, since, as Gadamer (2001) states: "all thinking is a dialogue with oneself and with the other" (p. 96).

What we are dealing with here is the sense of the hermeneutics of the eco-relational dialogue or, in other words, what happens in modern

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 163-189.

rationality when it tries to adjust its intradiscursive monological character of an asymmetrical individuated subject, with the interdiscursive dialogical character of a symmetrical communitarian other. This meaning is not only the object of interpretation or understanding, but it is also the object and subject of hermeneutics, since we grasp the object from the subject, which indicates that meaning is neither given by an objective truth nor put there by a subjective reason, but interposed objectively-subjectively insofar as it is a linguistic meaning, something given in relation to the subject, something objective said subjectively. This intersubjective character of dialogue responds to the co-implication between subject and world, subject and society. We bring here the image of *homo implicator* of Ortiz Osés (2003), namely, that subject who, when looking at himself, contemplates not only his own face, but also that of the other implied in his existence as a welcomed otherness (p. 114).

The mutual recognition of the participants in the eco-relational dialogue and in the balanced and symmetrical quota of relational power protects the subject from falling into the opacities of unilateral representations of reality; also, from remaining in the contradictions inherent to any interpretation of reality; and from the domination, conversion or imposition of cultures, because identity is deployed by deploying the relational word, and a discursive or narrative unity is prolonged as a disposition of being, thinking and doing. In this sense, interculturality is an integrating dialogical challenge and, therefore, carries in itself a basic hermeneutic requirement, without which neither of the two can be understood or put into practice. For this reason, the dialogue is not a mechanical or instrumentally programmed process, but the result of recognition of each one involved in the dialogue.

Eco-relational dialogue takes place between different perspectives that harbor indisputable and incommensurable meanings of the networks of meaning that form their different social phenomena. Each one has strong networks, which function as common places or premises for argumentation and make discussion, exchange of arguments, interpretation and understanding possible. But a condition for interpretation is to assume the incompleteness of cultures. The incompleteness to which we have referred can only be seen from the perspective of the other, since one's own point of view is always marked by the intention to set one's own identity as the identity of the totality. In this sense, hermeneutics is located in the "between" of cultures.

At this point, what is the profound relationship between dialogue, education and relationship? In that they constitute the ethical-political *praxis*

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 163-189.

of eco-relational education in its "existential cognitive form" as Fornet-Betancourt (2016, p. 19) states by pursuing epistemological and cultural justice, which makes possible a radical transformation of both the subject and society in the critical construction and equitable transmission of knowledge from a rethinking of its legitimacy. The word in dialogue corresponds to the question of meaning and as such, a word that is reciprocated, shared and committed, as Ortiz Osés (1973) conceives "active and consented word" (p. 110) that places the hermeneutic meaning in the social task of justice as a product of a critical task. As a consequence, "understanding and revision, hermeneutics and critical theory, are thus the tasks of contemporary man according to an elucidation of his own language" (p. 112). The hermeneutic reason:

> It is extemporaneous, i.e., it integrates and shapes the reality it interprets. This reconstruction (co-formation) is ultimately the triumph of universal hermeneutic reason over subjective reason: the world of human experience as a totality made and to be remade is, according to what has been said, the ultimate responsible for all interpretation, the scale and guideline of all signification, the meaning -at once immersed and emergent- of subjective reason (Ortiz Osés, 1973, p. 95).

From here we differentiate semantic rationality from hermeneutic rationality. Semantic rationality has been well expressed by Habermas (2002) in his consensual theory of truth, according to which it is possible to attribute a predicate to an object only if also any other person who could dialogue with me would attribute the same predicate to the same object (p. 140). Such a semantic theory obtains truth by means of rational consensus about meaning - abstracted from signification - or utterance - abstracted from enunciation -, thus moving into the realm of things, objects or their mere functions without accessing the region of human signification of meaning; we could say that Habermas arrives at the intersubjective interpretation of reality, but not at the personal interpretation of meaning. Hermeneutic rationality is not mere functional rationality of semantically consensual meaning, but the interhuman rationality of dialogue as suture of the original cleavage of the fissure that separates other from oneself, being from entity, world and God, unconscious and consciousness, life and death, good and evil, fate and freedom, male and female, day and night; but, on the other hand, we gain the experience of the suture or mediation of the opposites through their mutual co-implication.

For Gadamer (2004) dialogue is the free and hospitable "articulation of a common world" (p. 6) where the true communal humanity of recognition and care is at stake: "This is to a greater or lesser degree, and

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 163-189.

I emphasize it, the essential feature of all of us. To make oneself capable of dialoguing in spite of everything is, in my opinion, the true humanity of man" (Gadamer, 2004, p. 209). Understanding is expressed in dialogue and experience is related to tradition which is relational language. Only through dialogue, understanding will be linked to an action-oriented interpretation, i.e., towards the formation and change of attitudes; this understanding is made from a communicative action (Habermas), expressed from the intention of the speech of one subject with another, allowing self-formation, formation and transformation. Furthermore, dialogue is the possibility of understanding meaning as a dynamic of self-transcendence of immanence in an expansion towards the other. Dialogue inserts us in the understanding of meaning (the "thing itself") mediated by language and not in a process intentionally directed by aprioristic rules, but, as Gadamer (2005) states "as soon as we understand we are included in an occurrence of truth and we are always too late when we want to know what we should believe" (p. 585).

For Gadamer, dialogue is the indicator of the linguistic nature of the human experience of the world where democratic, egalitarian and respectful interaction with the other indicates the capacity to understand, use and apply dialogical language for the fullness of humanity. The dialogical experience of language is the intersubjective space proper to the truth unveiled in the interaction between subjects mediated by dialogue, as Gadamer (2005) argues "conversation possesses a transforming force. When a conversation is achieved, something remains in us, and when something remains in us that transforms us" (p. 206), in which an incapacity for dialogue in the other would in fact be the recognition of one's own incapacity for dialogue in the self. Such incapacity is not an immanent quality of human nature, therefore, it is possible to modify, to model, to educate an adequate hermeneutic-dialogical capacity of understanding the interpretation of the other. Here the hermeneutic experience reaches its authenticity as a human experience of recognition inserted in the historical tradition understood not as an objective succession of facts governed by instrumental logics of convenience and competence, but as a subjective implication of interpretations under substantial logics of coexistence and dialogicality.

Conclusion

Current and future education is played in the exchange between subjectivities and otherness where dialogue is the mediator between the concept

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 163-189.

and the educational experience; dialogue is the very sign of educational *praxis*, since the *ethos* of education is dialogue as, in turn, the *thelos* of education is interhuman understanding.

Education is the relationship between world and word, where dialogue pops up true meaning in its diverse modalities of cohabitation of the word in the world; if phenomenologically the inter-subjective relations are unveiled in the educational sphere by putting them in parenthesis, hermeneutics dialogue opens the parenthesis before the agonizing inter-human linguistic relationship of understanding. Education is played in the showing and withdrawal of the educator, so that the meaning or complex totality of meanings that emerges from the existence of the learner may emerge. Dialogue shows the way to the meaning of existence that emerges linguistically in the hospitable experience of the word of the other. In pedagogy, does the hermeneutic process try to recognize the events of the educational *praxis* of the subjects co-involved in it who dialogue about existence, share knowledge and trace meanings? is it possible to establish dialogic hermeneutics as a model that (re)mediates differences for a life-giving recognition of the other? Is it possible to consider that the late-modernity of market competition-performance-results with all its externalization of human qualities with a whole culture of self-training, self-awareness, etc., is responsible for the weakness of communal dialogue for the collective construction of meaning?

According to Freire (1970), only an education based on dialogue as an "existential demand" (p. 107) can give meaning to its *praxis* as an understanding of the world, i.e., the purpose of education is none other than human beings understand themselves and the world. For Gadamer (2000), training for the human being is to return to his abode, i.e., to the language that protects his universal ontological condition; therefore, training entails a hermeneutic condition of origin, since language is the medium of all human experience, but that experience becomes educational only in dialogue and entering dialogue is true humanity. Education is a dialogic experience for human fulfillment, which is attenuated by the indicator of compliance of educational quality in neoliberal competition.

We consider it relevant that dialogue describes the reproductivity dialectic of the experience of historicity and finitude, i.e., of tradition, and underlies all understanding in a circuit from pre-understanding to the understanding of meaning in a perpetual oscillation of interpretative perspectives-resonances of Nietzschean perspectivism and the Heideggerian project in a continuous dialogic process of self-formation (for oneself), formation (with the other) and transformation (for the other).

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 163-189.

Formation is played in the exchange between subjectivities and otherness, where dialogue is the mediator between the concept and the educational experience; dialogue is the sign of the educational experience. What takes place in the dialogic interaction between the world, the subject and the word is what constitutes the relational ground of humanity and, therefore, the sign of university education.

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Sophia 33: 2022.

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Daring to tell the truth from the greek's good citizen, to Nietzsche's relativism and Foucault's care of the self

Atreverse a decir la verdad desde el buen ciudadano griego, al relativismo de Nietzsche y el cuidado de sí en Foucault

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Abstract

Throughout humanity, telling the truth has always been seen or understood as a challenge, as a defiance of the status quo or what is established or known, and could very easily be torn down by an announced truth at any given moment. That is the main reason a speaker, in most cases, will avoid expressing his/her interpretation of what is real and true, and will prefer to intentionally alter it with convenient and accommodating lies that will not result in any type of discomfort for the people around. This text presents a general overview of three very important and crucial moments in history, in which daring to tell the truth came to be the very philosophical foundation and gave some specific characters in history the importance and relevance they have been given today. First, it covers a brief review of the ancient Greek term *Parrhesía*, its relation to other relevant philosophical terms and its importance within the different philosophy schools of the era. Later, the process of how truth is started to be manipulated from a Christian stance and later the proposal of relativity from Friedrich Nietzsche. Finally, there will be a reflection about Michael Foucault's proposal that relates *parrhesía* to the care of the self. As a conclusion, an open discussion focusing on the recent post-truth issues illustrating the mechanics involved since ancient times in regard to telling the truth.

Keywords

Truth, *parrhesía,* relativism, subjectivity, care of the self, Foucault.

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Abstract

Throughout humanity, telling the truth has always been seen or understood as a challenge, as a defiance of the status quo or what is established or known, and could very easily be torn down by an announced truth at any given moment. That is the main reason a speaker, in most cases, will avoid expressing his/her interpretation of what is real and true, and will prefer to intentionally alter it with convenient and accommodating lies that will not result in any type of discomfort for the people around. This text presents a general overview of three very important and crucial moments in history, in which daring to tell the truth came to be the very philosophical foundation and gave some specific characters in history the importance and relevance they have been given today. First, it covers a brief review of the ancient Greek term *Parrhesía*, its relation to other relevant philosophical terms and its importance within the different philosophy schools of the era. Later, the process of how truth is started to be manipulated from a Christian stance and later the proposal of relativity from Friedrich Nietzsche. Finally, there will be a reflection about Michael Foucault's proposal that relates *parrhesía* to the care of the self. As a conclusion, an open discussion focusing on the recent post-truth issues illustrating the mechanics involved since ancient times in regard to telling the truth.

Keywords

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Introduction

The aim of this text is to present truth as courage, through a path that begins with the exemplary Greek citizen -Athenian, to be precise-; then it will go through Christianity as an imposing form that unifies the value of truth in order to make it one. It will then point to the official objector of such truth, Nietzsche -who dares to claim lying as an equally vigorous way of achieving meaning-; and will finish with the return of the Greek tradition's own ability to tell the truth as the alternative to overcome the risk of relativism.

The problem to be addressed is the ability to tell the truth as the willingness to understand that it is a challenge that went beyond the merely epistemological and became a problem of action, i.e., of a lucid encounter between ethics and politics. This *aletheia* that occurs is what can be seen in Socrates, the man who was capable of truth. Foucault (2010) exposes in detail and property these athletes of ethical and political truth that was at the same time a truth of themselves.

The main ideas that strengthen the problem are aimed at abandoning the comfort in which *aletheia* had ceased to be an aspiration and became a certainty without discussion, without anticipation. Truth ceased to be, at some point in Christian tradition, that know-how that demanded challenge and fearlessness, and became a surprising imposition that demanded obedience to dogma. Then *aletheia* ceased to be that unsettling interrogation of self to become a motto to be followed, a cer-

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tainty to be revealed, a treasure to be unearthed, a command to be obeyed or an image to be forced to accommodate. Truth became official and the ability to access to it was reduced to obedience.

Moreover, the topicality of the subject lies in raising the question of what is certain, coming out of the stupor, admitting that *aletheia* was no longer a certainty to be abandoned with confidence and became a challenge to be faced with courage and bravery.

This text does not attempt to present a mere historical itinerary of the development of the concept of *parrhesía*, but to show, through a careful investigative methodology, how this concept configures a reinvention of *aletheia* as a public matter, as will be found in the first section. In a second moment it will delve into truth in Christianity and Nietzsche's relativism, since *parrhesía* as the importance of knowing and telling a particular truth that obeys the concrete political situation, not only goes hand in hand with the physical aspect, but also strongly involves the spiritual aspect, which entails the formation of the being from within, and from Nietzsche the idea is to discover a subject capable of accessing the clearest and most authentic reality possible, in which he does not have to hide his way of thinking when it comes to making his interpretations. Thirdly, the focus will be on Foucault's approach to *parrhesía*, which is decisive, since it is part of an ambitious project that seeks to explain the relations between power, truth, and subjectivity.

Documentary research with qualitative-descriptive analysis will show that it is no coincidence that today's Western states insist on calling themselves democrats, as the Greeks did. For this reason, it is necessary to have the courage to tell the truth again -a concrete, specific, clear and punctual truth, not a transcendent truth- to a community that most likely will not want to hear it.

Parrhesía[1] and good citizenship

It is common for those who study or have studied philosophy to first focus on the reconstruction, analysis and often the confrontation of the ideas proposed in the early periods of antiquity when the individual started thinking from a more subjective point of view (Hadot, 2006). At the beginning, only theories that seemed abstract and out of place for the feelings and thoughts of ordinary people were evident, since they left aside the main idea that proposes that philosophy should be understood basically as a way of living, in which appear a set of spiritual practices

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and exercises that can lead the human being to have a better future, by highlighting the path that can lead him to reach maximum virtue (ἀρετή, *aretḗ*) ideal of every man, not only in antiquity but also in the present time. However, it is necessary to understand that it is not up to philosophy to show a way to reach an end, nor does it represent that end in itself; on the contrary, it represents a way of constantly questioning oneself about the different questions that have surrounded the existence of the human being during the recurring of the material history and even beyond, in the mental and spiritual aspects.

Both in antiquity and in contemporary times, in Philosophy and in any other aspect of life, man has wandered in search of what represents the supreme good, which therefore has a teleological character, since it directs him to achieve a specific purpose that is always seen as improvement, either of happiness as in Epicurus, Aristotle and Bentham, or perfection as in Plato or Hegel, or duty as in Kant or Dworkin: all of them are variants of what the Greeks knew as virtue (*ἀρετή*, aretḗ). However, to reach this state, it is necessary that as Michel Foucault says following Aristotle in *Nicomachean Ethics* 1140a et seq. the individual manages to be as prudent (*Φρόνησις, phronēsis*) as possible. Such prudence becomes with the time a call to understand, as Fornet et al. (1984) said that the limits of what should be said and what should be done depending on the context, even more so because for different circumstances, parts of the story have been cautiously silenced or eliminated.

Depending on the context, it is then a matter of recognizing one's own limits in order not to transgress those spaces that may eventually generate disagreements between individuals of the same community or with other communities. In fact, there are certain moments, especially in public life, and particularly in politics, in which truth acquires a preferential place within the space-time. What happens in the political space when avoiding a disagreement is equivalent to deceiving the interlocutor, who most of the time is an opponent? Or, on the contrary: what happens when disagreement is sought because it is a tactic of concealment of the truth, understood as *what should be publicly known?* And even more: what happens when the truth is absolutely necessary even though it is not prudent to tell it, both for the one who is harmed by the concealment and for the one who dares to pronounce it as if to lift a veil that covers something undoubtedly shameful, reproachable or criminal? It is then that practices as ancient as that of *parrhesía* (παρρησία) appear in the panorama to give society a better vision of what the action of speaking frankly means.

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 163-189.

In the wide range of possible topics to address within the studies of ancient philosophy, *parrhesía* occupies a unique place because it is both a fundamental concept in ancient thought and a term not sufficiently explored today, at least in relation to other classic terms in this area, such as *phronesis* understood as "practical wisdom" in the Aristotelian framework and related to why one decides to act in some way rather than another and *areté* seen as virtue. Considering the latter, it is recommended to conduct some considerations about *parrhesía* and the importance that daring to speak the truth was acquiring through time, and how this was transformed in a way that ended up having a degradation and degeneration due to manipulations that put it at the service of the purely intentional and instrumental, until reaching what is known today as post-truth.

When sensitive matters are brought to light, they are almost automatically rejected by people who are not prepared to assimilate the consequences of such frankness. Socially, it has been learned that it is better to remain silent when one does not have the physical and moral guarantees to freely exercise the right to speak, to say what one has to say, what is necessary. It is necessary to understand the social and temporal context in order to decide to speak, without provoking any kind of rupture within the environment in which one is working. In this way, it is evident that when something cannot be discussed, it is because there are certain limits that must be respected, certain constraints that cannot be evaded or certain limitations that cannot be remedied, i.e., because they are truths that, although they are perceived by some, if they were to be exposed in any way to those who, either by calculation, naivety or stupidity, are blind to the evidence, could affect in various ways a wider group of people or the very one who is exposed with the speech. As José Martí says:

> Thus, there are many things that are true, even if they are not seen. There are crazy people, of course, and they say that what you see with your eyes is only true, as if anyone could see the thought, or the affection, or what the father is talking about inside his gray head when he is working, and has enough money to buy horses like silk or velocipedes like light for his son! (Martí, 1997, pp. 112-113).

The word *parrhesía* (*παρρησία*) can be etymologically decomposed into *παν,* meaning "everything" and *ρησις* or *ρημα* which can be translated as "speech". Thus is feasible to state that etymologically *parrhesía* means "speech about everything", or simplified, "to say everything". To find its first appearance in Greek literature, it is necessary to go back to

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 163-189.

the middle of the 5th century B.C., specifically, to what is written in some texts by Euripides. In these, the ancient Greek mentioned *parrhesía* as the inherent right of every Greek citizen to speak about matters concerning the polis. It is in the tragedy Hippolytus that the word *parrhesía* appears, as Euripides (1960):

> FEDRA: [...] This, indeed, is what is killing me, my friends, the fear that one day I may be caught dishonoring my husband and the children I bore; may they, free to speak frankly [parrhesía] and in the prime of life, dwell in the illustrious city of Athens, enjoying a good name for their mother's sake! Surely it enslaves a man, however resolute in spirit, to know the faults of his mother or father (p. 420).

From that frankness, as the term *parrhesía* is usually translated, the first interesting detail that can be derived is that *parrhesía*, being a right of the Greek citizen, implied at the same time a set of exclusions. Neither slaves, nor foreigners, nor women, for example, could exercise this freedom, since they were not considered citizens with full rights within the polis. Note that the term *parrhesía* was understood in a clearly political sense, according to Foucault (2010), since in that context it constituted the legitimate right of the Greek citizen to actively influence, through the greatest frankness, the ups and downs of the city.

But from the Greek context we can understand an even broader meaning of *parrhesía*. The meaning given to this term will be later presented and will not be limited to the exercise of a political right, but will become a consistent practice of telling the truth, the whole truth, without holding anything back, no matter how uncomfortable this situation may be for the other person. In this sense, the one who tells the truth, by saying everything without concealment, is not talking completely about everything that comes to his head, rather, telling everything is understood as the subject's aim to affect the other as much as himself, i.e., through the discourse the person seeks the transformation of the other and of the self. It can be understood that truth, in this sense, is not something that the individual possesses and the other does not. In the exercise of *parrhesía*, understood as an existential practice of full frankness, both the one who exercises *parrhesía* and the one who listens to it know the truth. The point lies in the effects produced by such practice, as expressed by Thoreau (2014) when he states:

> But in such cases one must be very vigilant to avoid acting out of obstinacy or undue respect for the opinion of others. What must be understood is that by acting in this way one is doing what one ought to do and what corresponds to the moment (p. 51).

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 163-189.

Parrhesía is by antonomasia, a modality of life studied and adopted since ancient Greece, which etymologically refers to "the activity of saying everything: *pan rhema Parrhesiázestai* is to say everything" (Foucault, 2010, p. 28). The first to propose this art in antiquity and in turn were considered as founders were Antisthenes (445-360 BC) and Diogenes of Sinope (400-325 BC), who thought it was essential that the truth had no barriers to access determined by social status, economic or political power. Both thinkers belonged to the school of the Cynics, in which they tried to encourage the need for and importance of speaking the truth regardless of the consequences that this would have on their lives or on the lives of others. All this, as expressed by Asuaje (2014) with the ultimate goal of freeing from social ties and being able to reach the point of sincerity in their existence.

The Cynics promoted this practice in Greece, putting on the table the importance of investigating what is true and saying it openly in front of those who were affected by it, without taking into consideration that it could be labeled as rude or even worse transgressor of the divine, human and/or citizen laws (Soto, 2014), which determined -and still do- the order of a community. The person who engaged in this practice centuries later was called *Parrhesiastés*, the subject who fearlessly told the truth, as expressed by Foucault (2010), in any space, even risking his own integrity, his own life. The Cynic school, founded by Antisthenes in the 4th century B.C., represented in the best way the spirit of *parrhesía* understood as a way of being, as an existential exercise. Frankness is no longer conveyed through words, but life itself, in its random daily life, becomes a constant and risky daring to speak the truth, in the context in which it must appear.

The cynic, equated with a dog, lay on every corner of the polis, lying in the street; he was barefoot and ragged, subverting social conventions without any modesty whatsoever. The personification of the Cynic school, and, by extension, of the fiercest *parrhesía*, was the aforementioned Diogenes of Sinope. *Parrhesía* was, is and will be freedom, in the words of Foucault (2010) and above all freedom of speech, for the only law that matters is that which is in harmony with nature; all other laws are futile.

Famous is his anecdote with Alexander the Great, collected by Diogenes Laertius: "When he was sunbathing on the Skull, Alexander stood before him and said: "Ask me whatever you want". And he answered: "Do not overshadow me" (Laercio, 2007, p. 38).

Parrhesía is in this moment a provocation, but also a manifestation of a continuity between an inner truth and its external display. Dio-

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 163-189.

genes of Sinope, like the rest of the Cynics, by embodying the exercise of *parrhesía* with such fidelity, ended up being existentially consistent with what he said. Among those considered great philosophers and also a great *parrhesiastés* is the figure of Socrates, who was constantly confronting the Athenians in the street, pointed out by Foucault, (2004) saying what he saw as truth and inviting them to take care of themselves through the cultivation of wisdom, truth and the perfection of their souls, since, in the words of the same author (2010) it was essential for a correct care of oneself (*Epiméleia heautou*).

It was essential to begin by having a free soul, which for the Greeks, especially the Cynics, was achieved through the correct use of *parrhesía*2, and it was in an attempt to encourage this practice that Socrates in his dialogue with Alcibiades -a personage of the Athenian elite who sought in the philosopher the teacher who would guide him to be a good ruler- tried to make him see how before being a worthy leader, he had to dedicate a space to take care of himself, and for this purpose it was necessary to be transparent, a situation that was achieved through the exercise of *parrhesía*, which as a result made man a better person (Plato, 1871), not only for the development of his own being, but also as a fundamental gear within a given social group.

For Socrates, referred to by Plato (1871) "every man who takes care of his body, takes care of what belongs to him, but not of himself" (p.186), that is why he who is not capable of taking care of himself, will hardly be able to lead others on the path of righteousness or truth. However, the exercise of *parrhesía* can lead to dire consequences, as it happened to Socrates, who met his death for speaking sincerely and critically in front of the sophists, "by inciting citizens to take care of themselves, in their reason, truth and soul, through *zétesis (inquiry), exétasis (examination of the soul) and epiméleia (care of oneself)*, to practice virtue" (Soto, 2014, p.16).

In accordance with the above, a new group of philosophers known as the Epicureans emerged, for whom *parrhesía* is deeply connected to self-care, to such an extent that it was considered by Foucault (2004) as "a technique of spiritual guidance for the education of the soul" (p. 52). This was a modality that gradually evolved within the same philosophical schools, but with the same purpose: to turn man into a better citizen, by making himself a better person, so that he could be a real contributor to the society to which he belonged.

Parrhesía should then be understood as a dialogue or a debate aimed at finding a common truth. As already mentioned, the one who

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practices *parrhesía* already possesses, deep within himself, the truth and the only thing he does is to state it boldly and regardless the possible consequences that such an act may have, not only for the subject but also for his environment. A paradigmatic example of *parrhesía* is provided by Plato, who in his letter VII narrates his encounter with Dionysius, tyrant of Syracuse. Together with Dion, a young politician related to Dionysius, he undertakes the mission of implanting in Syracuse his ideas about the State, virtue and justice.

However, Plato did not seek to reach agreements with Dionysius or to engage in a fruitful dialogue. Plato exercised *parrhesía*, i.e., he spoke his truth, a truth whose content sprang from his own being, to be exposed regardless of the context, for he spoke that truth, even in the knowledge of the uncontrollable consequences it might entail. In fact, the political and social environment surrounding Dionysius ended up influencing him in such a way that what Plato said to him was assumed in the worst way, resulting in a total failure. Plato sought to influence the tyrant of Syracuse so that the truth would unfold, starting from the implementation of certain principles considered necessary for a good, just and virtuous government. In the end, Plato was risking his own life. By stating without holding anything back, what he considered to be true about what was considered to be the best government, suffering terrible reprisals from a tyrant with great power. There is an asymmetry between the one who exercises *parrhesía* and the one who listens to him, and for this reason the element of risk is inherent to the mode of being of *parrhesía*, which allows the subject to be neither unfinished in his acting nor in his saying.

Thus, *parrhesía* has a double dimension. On the one hand, there is an external space, in which there is freedom of speech of the one who exercises *parrhesía*. On the other hand, there is an internal dimension that consists of the truthfulness of the attitude, which can also be understood as recognizability and authenticity in his way of being in the world, where what is being expressed is in accordance with the way it is done. Thus, whoever practices *parrhesía* uses freedom to speak frankly and tell the truth, the truth that goes hand in hand with his transformation and the possible transformation of those who listen to him. It can be affirmed that *parrhesía* contains a courageous commitment to truth, aimed at the general improvement of a given community. However, it is not easy to lead others on the path of righteousness and truth, and even more so from the exercise of *parrhesía*, since it can easily lead to dire consequences, such as the death of the parrhesiasta. It is very important to keep in mind that he is a critic of politics because he has an interest in his

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 163-189.

community and not because he aspires to power. This is a very important aspect if we bear in mind that post-truth is a thing of the powerful or of those aspiring to power, as will be seen later in this paper.

As Montaigne said in his Essays:

> It is to the truth the lie a cursed vice. We are not men, nor are we bound to one another except by words. If we knew all its horror and transcendence, we would persecute it with blood and fire, with much greater motive than other sins. I believe that boys are ordinarily punished without just cause, for innocent mistakes, and that they are tormented for thoughtless actions lacking importance and consequence. Lying alone, and somewhat less stubbornness, seem to me to be the faults that should be combated at all costs: both things grow with them, and since the tongue has taken that false direction, it is a pilgrimage the work it costs and how impossible it is to bring it to the right path; whereby it happens that we commonly see people lie who in other respects are excellent, who have no inconvenience in incurring in this vice (Chap. IX).

Truth in Christianity and Nietzsche's Relativism

It is understood from the above that *parrhesía* as the importance of knowing and telling a particular truth that obeys the concrete political situation, not only goes hand in hand with the physical aspect, but also it involves the spiritual aspect which relates to the formation of the being from within. Therefore, and giving even more sense to the theme of truth within history and which transcended to a spiritual plane, the idea of a superior God who dwells in that spiritual space and who sends his prophets to earth to promulgate the truth related to a life after the material one will emerge centuries later. As Nietzsche (2003) states, such doctrines came with ideas of "sacrifice of all independence, of all freedom of spirit, of all fierceness and at the same time a servility" (p.78), in favor of the neighbor, much more praiseworthy if it is at the cost of the own tranquility of the one who acts as a servant. Good and evil also appeared as the foundation on which the ideology of Christianity was founded, hand in hand with the punishment or retribution that for the actions of man in his daily life -in reality- will be obtained in the afterlife, related to the philosophical idea related to truth brought from ancient Greece.

Truth ceased to be a "tangible" concept in reality, and became an element that manifested itself in another dimension different from the one that can be seen and touched, which can only be accessed after the

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 163-189.

passage of death. It will therefore be thanks to what will later be known specifically as Christianity, by which man ceases to worry about himself and focuses his existence on the complacency of a god, who is in the beyond, which will allow not to separate the idea of transcendence from the human being.

In the face of the finitude of the body, the promise of a glorious eternity becomes the highest value, but, paradoxically, in order to fulfill this objective, the individual must satisfy as little as possible his own aspirations or desires. Truth would therefore no longer be understood in the Greek sense of unveiling, but rather in the biblical sense of devotion and loyalty. Such devotion will be reflected in the figure of its prophets, as transmitters of the divine message, in the case of the Old Testament; and in the New Testament it will be condensed in the figure of the person of Jesus. The apostle John mentions it in the prologue of his Gospel: "[...] grace and truth have come to us through Jesus Christ" (John 1:17), and it will be through him that grace and truth will be given to the subject as a gift and revelation of God's love.

The discipline by which this type of thinking is established in the subject will be known as "Christian morality". If ethics is the discipline by which the use of reason is regulated, morality will be considered, from Christianity, as a theological discipline, which guides the subject in his good actions from faith. This guide is based on norms or values, as an expression of an agreement of the subject with the society to which he belongs, since it must be emphasized that group welfare will always be more important than personal welfare. Then, when the benefit of others is sought over one's own, the renouncing subject acquires a value that will be compensated in a life full of glory in the hereafter, where there is a superior being who sees all and judges all.

By showing that there is a being superior to the human being, all weakness is justified in the latter through guilt, sickness, poverty, everything that has to do with suffering. Even so, the human being will have to seek the mercy of that superior Being, through a servile action and absent of all vanity. It will be the teachings of Jesus that will determine the guide of this morality, since he said "I am the way, and the truth and the life", and the behavior of the Christians is directed from it.

Christian morality can only be understood from faith, since this is the one that sustains the belief in a being and a life of which there can be no proof in the reality of the subject. The one that gives conscience of what is good or bad, but at the same time pretends to be too benevolent, promoting the forgiveness of the enemy, satisfying the one who misbe-

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 163-189.

haves, basically, the one that incites to turn the other cheek, instead of looking for one's own complacency.

Contrary to these ideas, Friedrich Nietzsche presented a critique of Christian morality and what is to be understood as truth or true:

> [...] we believe that morality, in the sense it has had until now, i.e., the morality of intentions, has been a prejudice, a precipitation, a provisionality perhaps, a thing of a rank similar to astrology and alchemy, but in any case something that has to be overcome (Nietzsche, 2003, p. 62)

Christian morality was the decadence of the subject and of belief, all thanks to the fact that it is concerned with preserving a well-being that, according to its assumptions, can only be acquired after death, taking for granted that this will be the reality of the subject and not the one he is living at the moment, in the words of Nietzsche (1967):

> […] the master of morality sets himself up as the master of the end of life; he invents a second life for it, and by virtue of this artifice he takes our old and ordinary life out of its old and ordinary corner (p.18).

Hand in hand with these ideas will be a religion that dominates from fear and the needs created in its followers, founding "truths" at their convenience. It will be now, more than ever, when it is evident that the power of possessing the truth will be for the one who is able to impose his way of thinking, not for the one who worries about obtaining and disseminating it, as proposed by *parrhesía*. For Nietzsche (1967), Christian morality was the way to the creation of a false morality, since it forces the subject to deny his reality and his own integrity, in order to assume that which others impose on him as real and true.

Therefore, Nietzsche (1967) proposed that the human being returned to take care of himself, leaving behind all the ideas implanted from the ecclesiastical power, within which stands out the idea of a world in decadence, where everyone as a flock must be happy with their lot and help the weakest, leaving aside any idea of improvement and complacency of their being, in their reality.

For the German philosopher, "Man must be concerned about his life; what he knows must allow him to continue living and growing, otherwise it would be meaningless" (Giraldo, 2008, p.134). In addition to living in the dichotomy between good and evil, the human being has disrupted these values and therefore is alien to the truth. He criticizes that what is evil in Christianity becomes enjoyment, the symbol of redemption to be well in the hereafter, almost disappearing the essence of the individual.

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 163-189.

According to Giraldo (2008), it is necessary, to relate this action to the morality of the slave, who is weak and incapable of changing his situation, either because it pleases him or because he does not want to see beyond. Man must return to the idea of the ancient philosophers, of the cultivation of being from his own existence with strong and dominant morals, which stand out among others, without feeling that he is acting badly.

Morality was related to the domination of a culture, i.e., whoever is not within the norm is treated as seditious and to the same extent repressed and rejected by the community he belongs to (Giraldo, 2008). This leads the individual to take extreme positions, either he is inside or he is outside, there is no intermediate position. And although there are no middle positions, there are no certain truths either; because what for one is true and defends it to death, for the other there may be another completely different version. For example, for Nietzsche, God should represent the best of that culture, and with all the variables, he should not only symbolize goodness, because that would show a lack of interest in the future (Giraldo, 2008). He thinks that religion makes the individual feel inferior and that should not be the ideal of the human being, who should strive to be superior, embracing everything that is within the possibilities of the intellect, while maintaining the responsibility he learned from having to appear before a superior being, as expressed by Giraldo (2008). He must overcome everything that seems to be deceitful, in the manner of Nietzsche (1984):

> Abstracting from all theology and the war that is waged against it, it follows that the world is neither good nor bad, neither the best nor the worst, and that these ideas of good and bad have no meaning except in relation to men and even then are not justified: we must renounce the conception of the injurious and panegyrist world (p.41).

The intention of Nietzsche (1984) is that the subject can access the clearest and most authentic reality possible, in which he does not have to hide his way of thinking when making his interpretations, because the truth will be equally subject to the perspective from which it is described. Therefore, this remains being problematic because the differences in the ways of thinking and seeing things permeated by a previously acquired culture that can lead the subject to different paths to the reality that can perceive.

This same philosopher refers to ideas proposed by Kant (2007), who began with the concern for the knowledge of the *thing itself*, showing the limitations to access knowledge and how it is difficult for the subject to appropriate the concept of truth, because every notion com-

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 163-189.

ing from the scientism of this era was becoming a manipulative reason, which leads, in the words of Giraldo (2009) to "(....) the impossibility of knowing with our reason the object itself, and the possibility of error in the interpretation of what reality is" (p.55), i.e., despite possessing the reason that allows him to understand what he sees, man must also use his subjectivism and empiricism -this is what Kant says- to interpret what he perceives through the senses.

One can only have knowledge of that which one can see, feel, experience, or in Kant's (2007) way, of that which enters into the categories of time and space; the objectivity of the real will therefore be obtained by means of sensibility and understanding. Therefore, the knowledge of the subject, according to Kant (2007), does not have access to reality, because it will always be limited by its subjectivity.

Likewise, Nietzsche (1984) also wants to highlight the change that occurred in the nineteenth century in the way the environment that surrounds the subject is considered, being more objective and certain. It is known that questioning each thing that surrounds the subject has been present since man began to think and question his existence, however, there have been few who have been concerned with understanding how some things that seem to be something, in reality are not. This scarcity of subjects who question what is given to them as reality is due to the inheritance of the western metaphysical tradition, strongly criticized by Nietzsche.

Western culture dedicated in previous centuries to create false values that seek the negation of life itself, identified by Nietzsche as nihilism (Segura, 1986). To be more accurate in his affirmation, he proposes to demolish these values, which make the subject think of a reality that transcends the human -both to explain its origin and its demise- in a purely spiritual field, alien to what he can perceive; and to build a new perspective, where the individual is master and lord of his reality.

In spite of the fact that in the 19th century, scientific trends such as positivism arose, through which it was sought to know the world as it is, validating the methods with which truth is sought to be obtained, all this effort to favor rationality did not provide the tools to acquire the truth, but rather to improve the method by which it is manipulated, since things are not known as they are, but simply remain in determining how the subject relates to them. For Nietzsche, in the words of Martínez (1999) what science does is to transform the world so that it appears to be authentic, maintaining the duality proposed by metaphysics, of good-bad, true-false.

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 163-189.

The schools and their intellectuals were the only ones considered to know the truth, of which they will only present "[...] to the public the use, and keep for themselves the key" (Kant, 2007, p. 34) and just as in the critique of Christian morality, it was evident that whoever held the power, was the one who was able to dominate the truth and print with his trace the way of thinking that best suits him.

As a critique of the dominant rationalism, these philosophers were concerned with the importance of reflecting and being aware of the real scope of their processes, which are increasingly alien to the individual as such. The fact that a premise comes as a decree from a certain discipline, does not oblige the subject to take it as real or true, just because it has been determined from reason and much less if it has been established with the intention of dogmatizing, to make believe that there is an absolute truth to which the common subject is not worthy of accessing.

A proposal of Nietzsche (1984) to compensate all this criticism to morality and rationality is to see that the subject does not have an ultimate goal and for this reason will be willing to see what really happens around him, for the pleasure of knowing the new, will not be wary of anything (Nietzsche, 1984), he will only have his arms open to what the day after day wants to offer him. The common subject must also understand the reality that is evident to him, therefore, there will always be ideas, disciplines, trends, that will try to help him on this path; the important thing here is that the subject is willing to investigate in depth.

Hence, the subject will have to overcome the ideas of good and evil that are in his conscience when acting, since, according to Nietzsche (1984), good and evil depend on a particular situation, and, therefore, are not absolute categories. This means that, according to the experiences, knowledge, in short, the perspective of each one, will determine whether something is positive or negative, all to the extent that the subject is affected. This is known as Nietzsche's relative morality. There are no general laws that can be applied to all people indistinctly, everyone will perceive the world at his convenience; this means, that there are no absolute truths either, these are also relative. Discourse is accepted or rejected according to the individual.

However, this posture will imply that the subject will not have an objective access to reality, since he only takes what is important to him and values it according to a personal scale. This subject begins to question the relationship between thinking and being, looking at reality from his own perspective, not as an established fact but, expressed by Martínez (1999) "as a creation demanded by the being through which he expresses

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 163-189.

himself as being-interpreted" (p. 40). This will be understood as perspectivism and was articulated by the German philosopher at different levels.

The first refers to the biological and basic basis of all human beings, their relationship with nature, i.e., the interests, needs and survival conditions. This would be known as the intuitive man, the one who goes with the evolution of the world, without being subject to social guidelines. It is shown that man, as stated by Nehamas (1985) is not separated from nature and is rather totally immersed in it; therefore, the subject must be open to the fact that the flow of life is constant, blind and irrational.

The second level is related to rational man (Nietzsche, 1996), who is governed by concepts and is constantly systematizing what he has around him, logically from the individual perspective; for him every metaphor will be a concept, because that will be what puts him on a higher level than the animals. According to Nietzsche, in the words of Nehamas (1985): "Facts are precisely what do not exist, only interpretations" (p. 42); therefore, although the inclination to want to know things as they are is still in force, these will be taken as true to the extent that they serve the subject for his survival.

With the latter, it is evident that there are moments in which both levels of perspectivism will agree along the way. Nietzsche tried to explain this in his essay *On Truth and Lies in a Non-moral Sense*

> […] the one anguished before intuition, the other mocking abstraction; the latter is as irrational as the former is unartistic. Both crave to dominate life: the latter knowing how to face the most imperious needs through foresight, prudence and regularity; the former without seeing, as a "hero overflowing with joy", those needs and taking as real life disguised as appearance and beauty (Nietzsche, 1996, p. 36).

Even if one level dominates the other, there will be times when they need each other to understand and cope with the world ahead.

Thus, it is not only a matter of how reality is seen, but also on the way it is lived. For this reason, Nietzsche (1984) also established the existence of two types of human morality, a lower group of those who will always resent life (slave morality); and another group of superiors, who will determine their being from within and not from what they receive from the environment (master morality). The next level of perspectivism would be linked to the particularity of each individual as a member of one or another group. There, each instinct, impulse and force that defines him as a subject and puts him in conflict with others is highlighted

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 163-189.

(Romero Cuevas, 2015). The truth will not then be determined by each subject, but will be influenced by his environment and culture.

We are passing from an era in which an absolute, eternal and universal truth is proclaimed, where the subject transcends from the physical to the spiritual, and therefore never ceases to exist; to a new vision of life, in which man is considered as such, for being a plurality of instincts and impulses which will determine the truth that inspires him according to the impulse that dominates him at each moment. Truth will cease to be absolute, dominant and permanent, and will become plural and changing. From this philosophy, it will be proposed that the truth is not only dictated from the will of power that only pretends to impose it as dogma; rather it is expected that the truth is constructed by the individual from his characteristics and the relationship with his social group.

It will be important that when a precept is to be taken as true, it is analyzed from the context in which it arises. Only in this way can it be taken as such or rejected at its root, thus giving meaning and significance to existence. However, that which is taken as not true should not be considered an error either, but rather as the possibility of: "[...] an appropriation relevant to our action of certain aspects of the structure of the real" (Romero Cuevas, 2004, p. 137). Each truth will be possible to the extent that it serves certain needs, it will make sense according to the conditions of life within which it is represented, so that there will hardly be a single truth.

For Nietzsche (1996), truth was subject to a determined perspective, "a multitude of metaphors, metonymies and anthropomorphisms in movement, in short, a set of poetically and rhetorically enhanced, transferred and embellished relations, which after prolonged use seem fixed, canonical and obligatory to people" (p.23), i.e., to the extent that this truth is useful for those who promulgate it, it will be taken into account by those whom it also affects, either positively or negatively, converted into a set of collectively validated concepts, thanks to the reiterative use of language.

In contrast to this approval, there is the figure of the lie. When the subject abuses the conventions granted to an element or concept, changing them in an interested and provocative way, when discovered, he will be excluded by society and tainted by distrust.

However, one should not think that in the environment of the subject everything revolves around truth or lie in an exclusive way, since according to Nietzsche (1996), the designations of language are arbitrary and it will never be possible to arrive at an adequate and pure truth. Since, as mentioned above, things are designated to the extent that the subject has a relation with them:

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 163-189.

> We say that a man is honest. Why has he acted so honestly today, we ask. Our answer usually is: because of his honesty. Honesty! Certainly we know nothing at all of an essential quality called honesty, but we do know numerous individual actions, therefore, dissimilar, which we equalize forgetting the dissimilarities, and, then, we call them honest actions; in the end we formulate from them a *qualitas occulta* with the name of "honesty" (p. 24).

It will therefore be to the extent that a convention affects a subject and his community, that it will be taken by him as true. Truth is transformed into a concept that is managed around the convenience, the pleasure and the vision of the one who transmits it and of the one who perceives it. Although it may seem that Nietzsche promotes a prefiguration of post-truth, it is necessary to clarify that, far from this, what he seeks is to abandon the certainties of Christian dogmatism in both epistemology and morality.

Truth as an element of self-care in Foucault

In contemporary times, it will be seen that there are not many studies by philosophers on the problem of *parrhesía*. Perhaps the lack of systematization of this term in the works of the great classical thinkers such as Socrates or Plato, as well as its subversive and uncomfortable character, have relegated it to a secondary place in the Western philosophical tradition. Although the term has not been widely studied, there have been interesting approaches to it, some of which are extremely enriching because of the dialogue they establish between antiquity and the present. In the following, we will briefly discuss three authors who, each in his own way, take up the concept of *parrhesía*.

Carlos García Gual, in his book *La secta del perro. Vidas de los filósofos cínicos*, states the figure of the cynic: "These are good times for cynicism, unbeatable times for sarcasm as a critical form" (2005, p.1). García Gual tries to find in those cynical characters, marginalized by the Western philosophical tradition, a revulsive that could serve as an alternative to the current civilization, so frenetic and decadent at the same time.

Certainly, in trying to rescue the cynics, *parrhesía* appears ineluctably. García Gual emphasizes *parrhesía* as the unabashed way of saying everything that characterizes cynical philosophers, where institutionalized norms are questioned, since perhaps the *establishment* needs a jolt to straighten its crooked paths of corruption and lies.

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 163-189.

Rather than blind obedience to externally imposed norms or allowing oneself to be influenced by the opinions of others, *parrhesía* should allow self-government through the internalization and externalization of truth. García Gual (2005) says:

> The conquest of freedom is the goal of this practical wisdom. That true wisdom gives the power to govern oneself, freeing oneself from the alienation of *dóxa* and *nomos* to use frankness of speech, *parrhesía*, and unconcern with conventional values, *adiaphoría*, is the fundamental affirmation of Diogenes (p. 40).

Michel Foucault in contemporary times is who studies *parrhesía* in depth. In the last years of his life, he turned his intellectual work towards the topic of self-care. *Parrhesía* would be a practice privileged to achieve certain visible effects within the framework of self-care. The *Foucauldian* analysis of *parrhesía* is considerably vast. In fact, the last course at the *Collège de France* taught between 1983 and 1984, was entitled *The Courage of Truth* and was devoted almost entirely to the problem of *parrhesía.*

To summarize, Foucault (2010) defines *parrhesía* as:

> […] the courage of the truth in the speaker who assumes the risk of saying, in spite of everything, all the truth he conceives, but it is also the courage of the interlocutor who accepts to receive as true the offensive truth he hears [...] Parrhesía establishes, then, a strong, necessary, constitutive bond between the speaker and what he says, but it opens the bond under the form of risk between the speaker and his interlocutor. After all, in fact, the person to whom one addresses always has the possibility of not listening to what is said (pp.32-33).

The latter has some important elements to highlight. In the first place, risk appears again as an inseparable characteristic of *parrhesía.* Daring to speak the truth, without hiding anything, implies a risk for the one who exercises this practice, which can range from the interlocutor not listening to the truth, to death itself. Secondly, there is an interesting relationship between subject and truth, because the one who exercises parrhesía is linked experientially to what he is saying. Truth produces a series of transformations in the subject, who, at the same time, through certain practices of the self, manages to endow his enunciation of truth with veridiction.

In his various studies in which, like Socrates and the Epicureans, he also discusses the importance of prudence and self-care, Foucault refers to aspects of *parrhesía* that show it as a practice related to the fact of "saying everything, but adjusted to the truth: saying everything truth-

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 163-189.

fully, not hiding anything of the truth, telling the truth without masking it with anything" (2010, p. 29). Hence, it is no longer just a matter of talking for the sake of talking in order to harm the opponent and benefit oneself, but rather to be able to rectify behaviors that improve the quality of life of society in general, even if interpersonal relations or even one's own existence are put at risk.

In this aspect, Foucault focuses on the relationship of *parrhesía* and democracy, thanks to which citizens can speak, give their opinion and participate in decisions -currently everyone can exercise such rights, in Ancient Greece it was only exclusive to those who belonged to the elite- the "saying-truth" (*Parrhesía παρρησία*) and the value of the struggle to carry out the ideals, although he also considers the problem of the manipulation of discourse to persuade. By this he means that within the practice of truth-telling, in the words of Giraldo (2016) there are several aspects that converge, the political one, the one of truth and courage.

Foucault's approach to *parrhesía* is decisive, because it is part of an ambitious project that seeks to explain the relationship between power, truth and subjectivity. The influence that those who exercise *parrhesía* can have in the political and social spheres is overwhelming. The structures that administer institutionalized power reject the contumacious truth of *parrhesía*. Foucault seeks to generate small spaces of resistance to the machinery of institutionalized power, taking the constitution of a free and courageous subjectivity as a starting point. This means that, in order to transform society, the individual must first transform himself. And according to Foucault, it is there where *parrhesía* comes into play.

It is not a matter of not saying things, but rather of being sensible when doing so, keeping in mind what effects this action can produce both in the one who tells the truth and in the one who listens to it. This *parrhesía* or truth-telling, as defined by Edgar Garavito (1986), should not be confused either with an act of teaching, i.e. "it is not telling the truth to someone who does not know the truth, nor does its direction seek to inform a student who is ignorant of the truth" (p. 43), since, within this practice, both the truth-teller and the listener are aware of it and its effects. Nor should this modality be considered as a way of persuading the other through rhetoric or by means of some intentionality. For Garavito (1986), *parrhesía* is, above all, "an edge in which telling the truth implies above all a risk, a death, the danger of losing one's life" (p. 43).

In a world guided by consumerism, bureaucracy and the media, *parrhesía* stands as a sincere commitment to the truth and as an opportunity for self-transformation in order to contribute to the construction

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 163-189.

of a better world. Nowadays, there is a direct relationship between truth and subjectivity, in other words, people say what is convenient and how it is convenient, considering both the speaker and the listener, which inevitably affects the correct exercise of *parrhesía*. On many occasions it is impossible to execute this exercise in the way that philosophers like Diogenes practiced it in Ancient Greece; on the contrary, we must understand that, although the information comes from part of the *parrhesiastés* of the context or the receiver, one is not completely prepared to this truth and if one does so, the consequences instead of supporting self-care are detrimental to it, even to the point of deconstructing the subject's own identity.

Conclusions

The non-paradoxical return to parrhesía *as* epimeleia heautou *or self-care*

What can be concluded from this conceptual itinerary that became an apparently questionable historical return due to the time elapsed? How to legitimize this journey of more than two thousand four hundred years without having to turn it into a chronology?

This is a double question that challenges the applied method, since the exploration began with a contemporary author, but the subject was, from the very beginning, Greek, or rather, Athenian. Then it crossed Christianity in a paradoxical dialogue with the polemical but unavoidable objections of Nietzsche, and it closed with a return to the Greek theme, making explicit the fundamental differentiating element: the concern for self-care. However, the question remains open as to whether this is a historical return without conceptual relevance. The return is historical, but its conceptual relevance is unquestionable because an archeology, a genealogy, a reconstructive deconstruction, a perspectival redescription, which enriches the current problem, have been carried out.

First, it was pointed out that the *parrhesía* of the good citizen is that of the one who dares to say what is necessary when it must be said, and regardless of the risk or the consequences for his own person: he puts the good of the community before his own, not in the manner of the martyr or the prophet, but in that of the member of the community who openly says what others fail to recognize, or do recognize, but prefer to remain silent for political correctness, convenience or cowardice.

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 163-189.

Later, truth became an epistemological problem to which Christian dogma responded: truth is nothing other than the correspondence of the idea impressed in the soul with the reality of the world created by God.

Not the reality of the senses, because their changing and random forms lead to error, but the reality that reason, being divine, was able to contemplate by way of transcendence. The possibility of raising objections was eclipsed because it was tantamount to doubting, and doubting is sinful when it is God who has solved the problem. All that remained to be done was to give all possible limpidity to the soul and to the means of contemplation of truth. The changeable appearances of the world were due to the imperfection of the senses and certainty was attained through intellectual exercise. Transcending was necessary to find truth, and it was something that could only be achieved through an exercise of detachment, of asceticism.

On this matter, Nietzsche will only be in charge of giving voice to the tensions and impulses generated since the sixteenth century and that warned the confusion and contradiction of the planning of the problem of knowledge when it was reduced to the simple contemplation of the divine creation as divine, i.e., devoid of all the concerns provoked by the mutable, the perishable and the finite. The objection is in the problem of knowledge, but it took very little time to influence ethics, which is what interests Nietzsche, and politics, which is what allows the return to the paradoxical and necessary figure of the *parrhesiasta*.

The third moment is *parrhesía* rediviva, i.e., the return to the Greek approach in which daring to speak the truth is nothing other than possessing the courage to be concerned about oneself. The alternative to the recalcitrant individualism in which post-enlightenment practices fell into is this *epimeleia heautou*, which is, at the same time, a question for the truth of oneself that is not answered from the epistemological but from the ethical-aesthetic. It is an effort to coin a truth that is meaningful for the person who knows and admits himself as belonging to an extended community with which he shares the same fears and the same aspirations. This is the only way in which one can speak of restlessness and self-care: necessarily passing through the *parrhesiasta* veridiction.

Now, the question that can be posed here is a provocative one, insofar as it questions the whole approach, the genealogical reconstructive method employed, and the conclusion proposed. Hence, how reasonable is it to find that the best alternative with respect to the being capable of truth is none other than the return to *parrhesía* as restlessness and care of the self? The method seems to have generated a conceptual approach that

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 163-189.

may fall into derision, inoperativeness or mere repetition with the displaced context, so that this proposal would be qualified as irrelevant for daring to speak the truth again as a commitment of an ethical character.

However, the simplicity of the answer is as clear as it is forceful: it is reasonable and necessary because the problem of Athenian democracy is the same as that of today's state democracies. It is the same crisis, the same manipulations, the same ethical and political bankruptcies. The *parrhesiasta* also needs the aesthetic display associated with the *epimeleia heautou*. It is necessary to be capable again of daring to speak the truth insofar as the punctual, concrete, specific problems in which democracy begins to lose itself are pointed out again. Because it is well known how the drift towards tyrannies and totalitarianisms undermines it from within. That is why it is a non-paradoxical return, and one could even call it a recurrent return. The topicality of the Greek theme only warns that the ethical-political of the 21st century shares the same problem with the Athens of the 5th century B.C., and that it has the same solution at hand. The disturbing question that remains is whether it will end up falling into the same cynical practices that ruined it. Cynicism and post-truth seem to force us to answer affirmatively.

Notes

1 This term will be understood from the meaning of the action of speaking.

2 Later Michel Foucault will argue that the exercise of speaking the truth without limitations required, among other things, an attitude in relation to the environment, in addition to a care based on the look that others have on one, i.e., one must be concerned about oneself by being vigilant of what one thinks and taking charge of one's own actions (1987, p. 35).

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Teaching philosophy in adolescents based on their interests and concerns

Enseñanza de la filosofía en adolescentes a partir de sus intereses y preocupaciones

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Abstract

This work is based on the interest in finding didactic strategies to promote philosophical disquisition in adolescents from the framework of their own motivations. We start from assuming that, based on their concerns, the students' reasoning has a clear philosophical nuance. The aim is to explore the ordinary questions these young people have about the oddities of the world, and about themselves, as the necessary basis for building a philosophy teaching project that is shaped from their own voice. The exercise was carried out with young people from five preparatory schools in the city of Guadalajara, Mexico, for this we used the art of deliberation as a tool, because it puts reasoning and the word into play. We find that their concerns are related to their life project, their identities, sexuality, insecurity, among other things, i.e., controversial issues to practice with adolescents the art of thinking. In addition, we believe, based on the issues that concern them, that the conditions are in place to develop their rhetorical and argumentative capacity. Finally, from their interrogations and interpellations, it is possible to think about the construction of an agenda for the teaching of philosophy in our schools, defining problems and topics of interest from the adolescent's world and life.

Keywords

Adolescent, interest, everyday life, teaching, philosophy, thinking.

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Resumen

Este trabajo parte del interés por encontrar estrategias didácticas para propiciar la disquisición filosófica en las y los adolescentes desde el marco de sus propias motivaciones. Partimos de suponer que, a partir de sus preocupaciones, los razonamientos del estudiantado tienen un claro matiz filosófico. El objetivo es explorar las preguntas ordinarias que estos jóvenes tienen sobre las rarezas del mundo, y sobre sí mismos, como la base necesaria para construir un proyecto de enseñanza de la filosofía que se configure desde su propia voz. El ejercicio se realizó con jóvenes de cinco escuelas preparatorias en la ciudad de Guadalajara, México, para lo cual utilizamos como herramienta el arte de la deliberación, porque pone en juego el razonamiento y la palabra. Después de delibrar con los y las estudiantes encontramos que sus inquietudes se relacionan con su proyecto de vida, sus identidades, la sexualidad, la inseguridad, entre otras cosas; es decir, asuntos polémicos para practicar con las y los adolescentes el arte del pensar. Asimismo, a partir de los temas que les preocupan, creemos que están dadas las condiciones para desarrollar su capacidad retórica y argumentativa. Finalmente, desde sus interrogaciones e interpelaciones, es posible pensar en la construcción de una agenda para la enseñanza de la filosofía en nuestras escuelas, definiendo problemas y temas de interés desde el mundo y de la vida adolescente.

Palabras clave

Adolescente, interés, vida cotidiana, enseñanza, filosofía, pensamiento.

Introduction

Ferry (2007) states that one cannot explore the world in which we live without philosophy, because it provides us with the tools necessary to think about our existence and to subject things to thoughtful criticism that we must change in order to live in a happier world. Given its relevance in our lives, the concern to continue cultivating it, particularly among children and young people, remains relevant, hence the interest in finding strategies for new generations to take an interest in it. It seems reasonable to think that basic education is decisive to be passionate about philosophy, because our children and adolescents possess a natural talent to elaborate questions about the world they are discovering (Thomson, 2002; Jaspers, 2003). In 2007, UNESCO declared the importance of teaching philosophy at all educational levels, including preschool and primary school, i.e., *the age of discoveries*. Thus, UNESCO considers that childhood and adolescence are key ages to initiate the art of thinking, i.e., it is in the phase when they begin to be aware of the world around them and to use their imagination to elaborate and establish a more orderly and enlightened life project; this awareness and this imagination are potentiated through reflection in its philosophical sense. However, on a more didactic level, it would be necessary to determine more precisely which are the questions and themes that we can use to initiate a philosophical disquisition with them.

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In this way, their interests and motivations become a challenge for teachers, and for all those concerned in learning philosophy, generating an interesting dialog in relation to the problem of their teaching (García & Varguillas, 2015). Since their own interests are the point of origin, the teaching of our discipline cannot consist in showing and explaining the set of historically developed philosophical doctrines. On the contrary, as Porta and Flores say (2017) philosophy is an experience that must be lived; for this reason, the idea is to explore the ordinary questions that children and adolescents have about the oddities of the world, and about themselves, as the necessary basis for building a philosophy teaching project that is set from their own voice. If questions are more essential than answers in philosophy, as Jaspers (2003) argues, then the following questions can be raised as a starting point in the work: What are the questions that are significant for adolescents and at the same time may have a deeply philosophical character? How do they commit to their beliefs and assessments? These questions must be explored from their own experiences; hence, the aim of this paper is to investigate what type of topics are interesting for adolescents, which questions emerge from their deliberations, and analyze the radicality of their concerns and interests as a possibility to awaken and cultivate philosophical reflection in them. The objective of our work should be understood as a preliminary step to think, in the medium term, of didactic strategies for teaching philosophy to adolescents. As Ferry says, "it is rather a matter of making possible a spontaneous discovery of philosophical ideas" (2007, p. 16) already present in the thought of our adolescents, reason for which it is an appropriate age for philosophical questioning (UNESCO, 2009). Consequently, as noted above, the idea of tracing questions that concern adolescents is that they are essential for the construction of their thinking, beliefs, and values, i.e., for the formation of their personality and the shaping of a citizenship "open to the world" (UNESCO, 2011, p. 18) with a clear humanist view.

Undoubtedly, their own concerns may be oriented toward philosophical reasoning, for example, when they try to justify some of their beliefs about the problems that surround them and to those who react in their daily lives. Thus, when young people are aware of the nature of their problems, are amazed at them and their implications, and take turns at the solutions that humanity has given them, a firm step is required to discover them, to discover the others and, at the same time, to reason about the ideas that should be discussed and those that must be discarded if they harm human beings and every living being. In other words, if we get our adolescents to discover their own radicality in the classroom, that of

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others and of life in general, we would be creating in them a philosophical attitude. Necessarily, from their concerns, the students ask a series of questions that have a clear tone of philosophical reflection. This nuance cannot be ignored, as it is the very foundation for thinking about more systematic and relevant strategies on the teaching of philosophy.

For this reason, the methodological interest of speaking with high school students, of giving them the opportunity to explore as an indispensable exercise to develop their skills of reflection and justification, which, in turn, are necessary conditions for decision-making in the affairs of their world. This work presents both a theoretical and methodological base that serves as a basis for pointing out some results that we group into categories that arbitrarily have constructed, which are interrelated because the topics of the discussion, besides keeping an order and a relationship between them, were always around the same object-theme.

Theoretical frame

Asking is key in philosophy; in its origins, Greek thinkers, for example Socrates, attribute it a fundamental value as a guide to search for truth. In this sense, Muñoz (2013) considers that well-formulated questions are a possibility of finding the knowledge within us. For this reason the idea that: "The philosophical question enquires for the philosophical sense of the present from which it is formulated" (Espinel & Pulido, 2017). This means that knowledge has its origin in the concerns and doubts that we generate in our daily basis. Thus, it can be said that philosophical questions are not the exclusive matter of specialists who face theoretical problems of a high level of abstraction, far from the real and everyday existence of people. Rather, we must draw up living questions (Sane, 2011) related to the challenges of the world. As Heidegger says, "We ask ourselves, here and now, for us" (1999, p. 7). It is therefore in present, that which amazes us and leaves us perplexed, where philosophical questions arise.

To ask in philosophy is a task that extends to the limits of the agent, i.e., it is not exhausted in a first answer, as the respondent is not satisfied with it: "Philosophical questioning, then, does not satisfy the first attempt of response, but is essentially constituted in the re-questioning" (Cerletti, 2008, p. 24). This condition of the philosophical question motivates the interrogator to establish a dialog with his peers to clarify the doubts that arise from the constant question and re-question about the issues: knowledge about the world, freedom, identity, fate, justice, etc. These issues, as Blackburn (2001) says, arise naturally in men and women.

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 217-238.

On the other hand, the nature of the questions in philosophy also leads to examine whether we really know the things we believe to know and what are the reasons we must sustain that belief. This task, as already said, was the nucleus of the life of Socrates, who made questioning a permanent exercise in direct relation to his way of life: "Socrates loved to expose the limits of what others really understood, as well as to question the postulates on which he built his life" (Warburton, 2013, p. 8).

This idea, because of its paradoxical character, can be questioned in relation to our work: What makes a question become a philosophical question? Following Cerletti (2008), it can be said that it is the intentionality of the interlocutor that makes a question philosophical. Why? Because through the questions, the agent shows his commitment and interest in finding rational and justified answers. The philosophical question discovers, unhides and reveals what the world is and what the human being is, as part of the world (Heidegger, 1999). These intentions and the unease to know are inexhaustible sources, as long as the human being is alive. This is what interests us: starting from the interests of the interlocutors and making them discover that the idea of philosophy is already in them, in their attitude. This attitude presupposes the discursive rules formulated by the teacher for the teaching of philosophy, since it depends, to a great extent, on them that students find meaning to the subjects that arise as the object of deliberation.

From the above, there is a need to meet two conditions: That discussions and criticism be focused on the current problems that affect them; and that the terminology used be accessible, particularly when the audience is made up of a group of young learners. In this regard, Pombo (2018) points out:

> If teaching, like writing, is primarily a work in and about language, i.e., a discursive practice, will it not be forced, in this perspective, to understand that teaching (philosophy) is not only to make explicit what is already thought but to find the word necessary to think what only with it is allowed to think? What to teach (philosophy) is not a second moment in the face of the development of reflexive elaboration? (p.187).

It is important to say that although philosophy integrates questions as well as logical analysis and argumentation in its work, these elements can lead to confusion for beginners, especially when it comes to adolescents due to their abstract nature and the use of a specialized lexicon. For this reason, we reiterate that reflection must begin with the problems at hand. Let us not forget that philosophy has a dimension of action that

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 217-238.

goes beyond being a merely speculative exercise, as Zangaro (2013) says. Hence the suggestion to start from their circumstances, where vital practices and experiences are reproduced, often mediated by institutions, such as the school itself, for example. What it is all about is the use of tools to cultivate philosophical thought. In this sense it must be aimed at a didactic of philosophy. We are convinced that philosophy, like any discipline, also invokes didactics for its teaching. Revenga (2014) points out that didactics in philosophy have a mediating task between the contents of the discipline and how those contents are recreated in the classroom. This reasoning leads us to emphasize that a didactic applied to philosophy has several tasks: 1) understand the nature of those who learn, their conditions and their world 2) imagine the improved ways of teaching the discipline and for this it uses the most significant strategies to do so, and 3) know the context where the task is concretized. These three actions form a methodological guideline and cause a radical reflection on the didactics of philosophy. We are convinced that philosophy, like any discipline, also invokes didactics for its teaching. Thus, when we approach how to teach adolescents, for example, it is normal that questions arise about how to do so, which conflicts arise as Paul (2016) said, while recognizing their interests to be able to imagine a didactic on what and how to encourage reflection in young people. What is the benefit? The balance that we can obtain, in trying to provoke a philosophical attitude with this proposal, is that their reasoning forms in the adolescents their relationship with others, their capacity for deliberation. Thus, what concerns them must be analyzed, enriching the development of their ideas, and reinforcing their positions, affecting, to a greater or lesser extent, their actions.

Likewise, Broncano (2019) proposes that if we want to teach philosophy to young people, we must listen to them to bring philosophy closer to adolescents, must go to schools to meet them and let our imagination into play. Positively, the school is a fundamental space for the life experiences of young people; it is there that they have the greatest openness to question about issues and problems that interest them.

Methodology

Nature of the Study. Considering our objectives, the study is part of a qualitative paradigm. According to epistemological and methodological approaches, this model proposes a flexibility degree in the treatment of the object of research (Ragin, 2007), an appropriate characteristic of our

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 217-238.

work, since one of its purposes is to give voice to people within a given context. In the qualitative approach, following Hernández et al. (2014), reality is defined through the interpretations of research participants regarding their own mediations. Because of its scope, the study is exploratory because the information obtained from the reality being investigated is preliminary in nature, providing the basis for further studies or for suggesting assertions or postulates (Strauss & Corbin, 2016). According to its nature, the work does not meet representative criteria, since the idea was to promote the dialog with small groups of participants on their concerns, ideas and interests about the world they inhabit. On the other hand, we must know that the concerns of these participants are mediated by the context in which they are. This implies the possibility that the concerns of young people in urban settings may not be the same with the concerns of young people in other contexts, for example, rural or indigenous.

People. In qualitative research, sampling decisions are directed at individuals or groups who promise greater ideas and relevant information (Maxwell, 2019). From this epistemological perspective, our research focuses on adolescents who attend high school in the city of Guadalajara, Mexico. The starting point is that high school is a space of socialization where young people learn to socialize with peers, play their convictions and share their way of seeing the world and life. Also, according to Piaget (1990) it is at this age when adolescents firmly examine ethical models and questions about rules and beliefs. On the other hand, it is at this educational level that students, in our country, reflect on philosophical topics related to the citizenship of young people and their own knowledge; likewise, ethical disquistions are addressed on the main social problems of society. In addition, philosophical discussions have a special emphasis on this age, because students discuss about the different problems that interest them and based on them, they assume and practice a series of norms, ideas and values and examine what is happening around them. It is also true that they are invited to be the thinkers and actors of the current situation with a view to the future (Goucha, 2011). For this reason, the high school becomes the ideal space to deliberate and fulfill the objectives of research. The work was carried out *in situ* with students of the first semester of five high schools; five deliberative groups were formed, made up of eight adolescents, four men and four women.

Working technique. The art of good deliberation, proposed by Aristotle (2012), was the τέχνη to engage in dialog with adolescents. Deliberation brings into play two central capabilities in the human condition: Reason and word. If we think with words, as Berlin says (1993), then the

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 217-238.

examination of words is at the same time the examination of our thinking. Indeed, thoughts depend on words, how and why we express them: i.e., words materialize our thinking, our intentions, and our feelings. This thought-word relationship is exercised as the core of deliberation always considering two basic aspects: the inter-subjective recognition of the different positions of the participants and the specific situations that guide the decision-making to act in the world. As a vehicle of philosophical discussion, deliberation allows the students to recognize that postures must be supported with reasons. This may include agreement or disagreement over their beliefs about problematic issues arising from their daily lives, but that deliberation leads them to discover how committed they are to their positions, while valuing the different possibilities of thinking about the same topics. This is precisely one of the tasks involved in the practice of philosophy: the determination of how responsible we are with our attitudes toward knowledge (Thomson, 2002).

In this case, knowledge was not based on discussing the various philosophical currents with our interviewees, as is done at the universities, but we start from their own circumstances, from their concerns, from their very being. It allowed to de-hide those issues that arouse interest, curiosity, and unease to be debated in a broader and deeper way. At the beginning, our questions were general, but then questions gradually deepen the topics but always related with the initial questions. The generic nature of the questions was intended so they would begin to deliberate and think on subsequent issues.

Strong ideas are obtained from their narratives that are constant among the participants; secondary ideas are derived from these but are strongly linked to the first ones. Thus, from the analysis of the information produced in the deliberations it was possible to trace three broad categories that, operationally, synthesize their interests: the life project, sexuality and identity. The following subcategories are derived from these three subcategories: future, love, death, life, and social norms. As can be seen, these subjects consider different cognitive dimensions: ethics, aesthetics and, in some cases, epistemology itself. This condition does not necessarily mean to expect for a good response (Tozzi, 2011). In the corpus of narratives that illustrate the results, the different categories and subcategories are mixed, with the intention of emphasizing the eloquence adolescents express their passion on the subject. It should be emphasized we only present some of them in this work due to the space.

The results arise from discussions with only five deliberative groups. Thus, they depend on the subjectivity of a small group of inter-

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viewees and on the mediations that we make of their value, i.e., the scope of our study is limited by our own interpretation. This double technical limitation would explain the fragmentary nature of the presentation of the results that we present below.

Results

Interests and concerns of adolescents

In relation to the inner world	In relation to the outside world
-Life project: Questions about the future Happiness Death *-Identity:* Knowing about yourself, Questions about yourself Friendship *-Sexuality:* Knowledge of the body Protection in sexual relations Love	*-Insecurity:* Self-care Violence in its various forms and manifestations Dissolution of values *-Care of the environment:* The importance of nature Animal rights *-Technology:* Truth and falsity of information on the Internet Friendships on social networks

Life project. One of the issues that show the interests of adolescents is related to the idea of having a life path that allows them to build their existence. As well as the ways they consider appropriate to do so, what is the importance they give to their life project? What meanings do they attribute to it? Below are presented some of their judgments:

> E: There are issues that concern adolescents What issues would these be?
> M1: Preparation for the future, because many times they tell you that you will make decisions alone and it is your problem; because if I ask, What am I going to study? They should teach us at school to think about how I will do in the future. We are only prepared with the subjects and you decide what you are going to study, but you do not know very well what is the most convenient career, which careers you can get into, which ones can help you, which ones you can be better at. As my partner said, "Develop our creativity."
> E: Are you talking about a life plan or project?
> M1: Yes. As I say, to know ourselves more to know what we are good at; as a psychological profile, to know what we like and what we don't, and to follow a life plan.
> E: Why is the life plan so important for a teenager?

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 217-238.

M2: Because right now we do not know what we want to be; right now we have dreams like wanting to be pop stars, or wanting to be one of the world's singers, being artists or sportsmen, but maybe in the future that is no longer fashionable, or he is no longer cool and will no longer benefit us. Because right now we are at the trends and we cannot know the trends that will come in the future.
E: There?
H2: Well, because that's what you'll do in the future, what you'll do all your life, it's what you'll do day by day, and if you don't choose well, it can be both tragic and boring, because technically in your whole future you'll be like that.
E: So, the life plan is somehow linked to the future, but why should you care about the future?
H4: Well, because it is to see beyond, as my peer said, what you are going to dedicate yourself to, and it is not the same as dedicating yourself to something you don´t like but something you do with pleasure (Deliberative Group 4).

In another group, disquisitions have similar connotations:

Why having a life plan?
H1: To find out what I want for me in the short and long term. So, if you would talk a little more about the life plan in each of us, it would be an orientation of what we can do when we are adults, in terms of our career.
M1: To know what I really want to dedicate to, to know what I want to do every day without getting tired. Because there are many people who choose one thing just for money, without seeing how much it can affect, as it also affects mentally.
H4: To improve as a person
E: You?
H2: To be able to support a family myself, not depend on someone else, be myself, who I want to be, live as one day I wanted to live.
(Deliberative Group 3).

In a third group, discussion occurs like this:

E: So, have you pictured yourself in the future?
H1: Yes, many times. But as I tell you, that cannot be all. I say that the most typical thing for a person is to see himself as an adult, with money and things like that. Let's say it this way: Futile and worldly things; it would be nice if they talk to us about something else, how do you see yourself, do you look happy? with a family or single? You now.
M7: I say that life is a moment, and you have to do whatever you want, because there will be a point where you will not be able to take seriously every decision you want, but also try to be happy (Deliberative Group 2).

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 217-238.

By reflecting on these answers, when adolescents refer to the life project, they naturally open themselves to the world, as Jaspers (1985) says: they argue why they should think about the future facing the uncertainty of the present, they are concerned about what they are about to live (Madriz, 2006). The deliberation on the life project of these adolescents is related to foresight their existence, which constitutes a resource to face the contingencies of daily life. Thus, we can infer that there are questions of universal, philosophical curiosity: Why are we so interested in the future? why is it so important to think about what you are about to live? why is life uncertain? The responses rehearsed by the young people of the five deliberative groups, with their different nuances, show that they think passionately about what is to be, to become, reflecting on an end (Rodríguez, 2010), expressing in its own way that socratic impetus we speak of which can be summed up as a philosophical passion for life. It is in this scenario where the school must give itself enough time to listen to them and encourage them in the construction of that life project that they seek to materialize in the future.

Identity. The importance of having a life project enabled adolescents to ask themselves another of their concerns: Personal identity. If thinking about what we will be in the future, it is also normal to ask what we are in the present. The search for identity implies an opening to the world, a discovery. "Who am I?" "who are you?" are radical questions in the human being, so seeking their answers is irreversible. This implies the recognition of others, because it is in relation to them, with their qualities and attributes, that it is possible to reaffirm the unique and the unrepeatable, through processes of acceptance and opposition to the common and repeatable. Thus, those who also seek to build and insert themselves into the world from their singularity, are indispensable. Jaspers said (1985, p. 22): "But I only exist in the company of my neighbor; alone, I am nothing". However, their ideas essentially appeal to a clear interest in knowing themselves and the way in which their life will be:

> What are you interested in?
>
> M5: In knowing who I am or what characterizes me, because if you see most students have the same characteristics. In certain ways we look alike, but one of the most important things is knowing what makes me special, things that make me exactly different from people.
>
> E: So, would you like to be treated with issues that have to do with your identity? M1: Yes, because, as she says, it is not the same thing that you tell yourself: "You belong to that group", to be told: "You are like that". You have a certain presence, in a certain way, in your person; because

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> many times we classify ourselves as the nerd, the popular, when you are more things, not only what they say.
> (Deliberative Group 3).

Another group has similar concerns:

> E: So, have you wondered who they are?
> M1: Yes.
> H2: Yes.
> E: And what have been the answers?
> M3: I think you never get to know a person; I think theirs is a lot in this age, because it is the age where you have the most doubts, it is the age in which you have to know who you are going to be and who you are. These are very constant questions.
> H4: Because there is some time when you reflect and ask yourself why you exist, what for, and what is the reason of this life.
> E: Others…
> H2: At our age, many look for someone to be equal to him, to identify with another person, and to look for stereotypes.
> E: But don't these stereotypes bind you to a model that doesn't respond to their characteristics?
> H3: If, for example, in movies, when the main character is a bad guy, it attracts all the girls and so on, one who sees that type of movie is attracted to that kind of stereotype: that boy is popular and I want to be like him.
> H4: Mostly because that is one of the biggest problems, because normally a teenager has no ideas for the future, he will be putting them up, and the society that he sometimes spreads to is stealing, drugs, problems, violence, and that causes problems of both self-esteem and identity (Deliberative Group 1).

The interest in these young people in the construction of their identities, in knowing who they are and in what they are different from their peers, is not beyond the search of any young man to take care of himself, to clarify his condition of being individual and unique. The human, as Quaknin (2006) argues, is in the personality. Similarly, contact with oneself is a first step in the dialog with that other which has common attributes and interests; recognizing such qualities, each adolescent is concerned to define and see himself, to model both his character and his body, what Williams (2013) calls the *one-to-one relationship*.

Sexuality. One topic emerged with special interest for both genders due to biological and social reasons: Sexuality. This subject cannot be disassociated from the two previous ones, because we notice that, as it is deliberated from a concern, new questions emerge from it, thus subordi-

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nating one another. Thus, the idea of sentimentally relating to someone in the future emerges as a central element of the life project. Moreover, thinking about identity also implies thinking about the body, since the body itself, as Williams (2013) asserts, is a necessary condition of personal identity. It is therefore a question of analyzing how the interests of these adolescents are connected in topics. This mysterious character of sexuality responds to the very nature of the body, as Morales (2011) says, it is that symbolic place where the condition of enigmatic beings happens, but at the same time of sentient people:

> E: Now that you came up with sexuality, what topics of sexuality would you like to talk about?
> M4: More like practices. How contraceptives or things like that are used.
> M2: Or as dynamic, because you may learn faster by doing an activity instead of listening. And it would be easier to get information because there are three types of learning; perhaps some can learn them by reading alone, or those who listen without seeing them, but there are many who need to practice it in order to learn and understand it well.
> E: Why is it so important to talk about sexuality?
> M4: To know, to prevent.
> H3: I would say that, mainly because in adolescence what the teenager is looking for is to experiment, to know, and at the moment you do not know how it happens, but you do. And even if you know the information, then in full action, is not the same.
> H1: You know the theory, but not the practice.
> E: Is there a difference?
> H2: Well, it would be part of my point of view: How to do things, because they only tell you how to prevent it. But even when something bad happens to you, it's when you realize it. But why waiting for something bad to happen to you, if you can prevent it through planning, have all the financial means needed to keep a baby (Deliberative Group 3).

In another group, discussions took the following tone:

> E: Out of the issues that interest you, which would be topics for girls and which for boys?
> M1: I think we should generalize because I have been in situations… For example, in primary school they talked about menstrual pads and men were not part of it, and they lack information.
> M2: Yes, they were told to get out of the living room because they would only talk to the girls, when they will also have to know, because when they have a partner, they will have to go and buy everything.
> E: Do men and women care about the same problems?
> H1: Sometimes not.

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M3: For example, we have mood swings from menstruation or things like that, and if we're talking in a class about it, they would get bored. But as it is information they will know, even if they get bored.
E: So, it would take more classes for them to know your body?
M4: Yes, of course.
M3: And everyone should be listening.
(Deliberative Group 5).

As observed, the adolescent lives sexuality as something unprecedented and experiences it with intensity in each of the parts of the body; from this feeling arises the interest to know not only the bodily exteriority, but also the possible joys of his/her partner or companion. Following Alberoni (1991), we can say that sexuality is the vehicle by which life explores the boundaries of the possible, the horizons of the imaginary and nature: The nascent state. Thus, adolescent living is linked to the game of sexuality: Body, affections, eroticism, reproduction.

Love. When deliberating about sexuality, concern for things about love arose. In their concerns a series of questions and answers originated, thus shaping a rhetoric that places them fully in the time and space of the other (Duch & Melich, 2012). In our society, love is born as a universal law that puts the human being in motion. Plato already in his dialog *The Banquet* showed the magnificence of love in the life of every person. In this way, for young people, love is projected as an extraordinary experience to which they will soon be invited; for them it is conceived as a source of inspiration to give meaning to the world:

E: What other topics?
M1: Relationships.
E: What kind?
M1: Well, it happens that you like someone, but you don't know what it is, if it's a simple crush, because you don't know if it's love.
E: Would you like to be told about love?
M2: Yes, as you see, pregnancies are a big problem today in girls, because there are people in their homes who do not give them enough love. And they leave their house, and any boy tells them a nice thing that makes them feel special. And get impress with the boy, or are with him and give everything for him, when it really is not what the boy felt. And they fall into that precisely because they lack attention, you could say, because if you lack attention in the family, you'll want to get it on the street.
E: So why is it important for teens to talk about love?
H1: Normally, because it is the stage in which it starts, it is the first time in which you are supposed or think you are in love. As my partner said, it is usually a problem with pregnancies, which… what we teenagers

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> look for sometimes because of lack of love from the family, we look it in someone else, because someone feels incomplete or doesn't feel capable enough. And when looking for someone else, because normally in adolescence, you don't get to give anything.
> E: Do you believe that human beings in general can live without love?
> H2: Well, it may be possible but in a sad way. I don't think a person without love can be happy.
> M3: A very boring, very monotonous life: You get up, prepare breakfast, eat, go to school, come back, do homework… and if you don't have the love or affection of someone, it would be very boring.
> M1: There are people who are very self-centered, for example me. I can see myself in the mirror and say that I love myself; but there are people who can't do that and that is when they need the affection of someone else. Or someone says "I love you" to feel alive, to feel that they have a reason to exist (Deliberative Group 2).

As can be seen, the need for love starts in the minds of these young people, with the expectation that they will soon be experiencing this mystery. Despite their young age, the experiences that love awaits are too human, so they could hardly escape their influence. It is an engine that grows in their spirit, power that will soon elevate to the delights of another body. This desire to possess another body is one of the scales of love, as Plato points out at the banquet; bodily appetite, as he says, is a seed that is born and blossoms in the dimension of spirit (Reale & Antiseri, 2004). We have to use the expression of Octavio Paz (2001), the flame of love is kindled in this age, reason for which it is a subject of interest for every teenager.

Insecurity. In contrast, and at the same time cohabiting with love, violence is another of the experiences that have accompanied the human being. In the case of Mexican society, we can all relate with violence, directly or indirectly; it has become so present that even adolescents, who previously seemed alien to it, are now also victims. Today, violence is expressed in a variety of ways (García-González, 2019), many of which are standard practice, generating a feeling of insecurity from which no one can escape. How do young people experience this feeling of fear and insecurity? These are some narratives:

E: What other concerns do you have? What topics would you like to discuss in your classes if you had to choose?

> M1: I guess insecurity, whether between peers or outside, because a classmate was assaulted on the first day of school, and the authorities did almost nothing about it. The teacher realized and simply took him to the nursing, and the next day everything was normal.
> E: What aspects do you think a teenager should know about safety?

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H1: Questions of assaults or how to identify when people can kidnap you.
H3: Well, I think they should also teach you not to have as much value to things, because things happen to us because of insecurity

m2: Learning to identify that person who sometimes looks suspicion, and instead of making him trust and getting closer to him, leaving the place. We had been told that when you see that they are behind you, that you shout someone's name, even if it is no one, so that they are frightened… things like those (Deliberative Group 2).

In another group, the issue of insecurity is addressed as following:

E: What are some concerns you have when you come to school?
H1: Perhaps insecurity.
E: Why insecurity?
H1: Well, the simple fact of… like us, who attend in the afternoon, it is very dark when we finish classes and the problem is that there is more insecurity at night, like the case of harassment, robberies and other things.
M1: For example, that there is not much lighting, because sometimes when we go out there are almost no lights. And as I need glasses right now, I hardly see and stumble.
E: What else about this topic?
H2: Transportation
E: How?
H2: Sometimes it takes a lot, at least it takes me a lot of time (Deliberative Group 5).

In relation to this topic in one of the groups a young man expresses said:

H1: Society is getting worse and worse.
E: Why do you say so?
H1: In the case of people psychologically speaking, for example, recently cartels killed a family in the United States by confusing them. Also, we are destroying the planet because of pollution, and we do nothing to stop it (Deliberative Group 4).

Certainly, adolescent narratives about violence are passionate. This passion can be a starting point for reflecting on the human condition, capable of producing beauty in the world, but also of committing cruelties The moral and ethical implications of the problem of violence are evident; that is why it is important for young people to be aware of it. Adolescents can glimpse ethical categories such as evil through deliberate action. The cultivation of moral judgment would make it possible to distinguish evil and cruelty (Lara, 2009); thus, it is a good exercise to sensitize adolescents to the importance of building a moral and educated society.

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Reflections

Beyond the adjectives that simplify the judgments of adolescents, we find that their interests and concerns are not linear; instead, they seem like a hurricane. However, we can observe that the life project emerges from their narratives as particularly attractive from a philosophical and pedagogical point of view. For any person, the construction of a life project is full of questions; these are valuable conditions for the exercise of philosophical deliberation and, therefore, for the elaboration of a philosophy teaching project.

It is therefore reasonable to think that adolescents, as they begin to live a life by being aware of it, seek ways to do so by trying to find meaning to their reality that they are spontaneously confronting. In this search, they question their existence, their identities, and their fears, among other dimensions. If Jaspers (1985) is right to say that we are harbored by a world conscience, the construction of a life project is a valuable opportunity to captivate these young people in the exercise of philosophy, through their problems and issues, many of which have been and are widely discussed in this discipline. The basic questions that any young man asks—what am I going to do with my life? what do I want for my future? — these are questions that, although they arise from the individual being, they do not reduce themselves; discovering them requires questioning others, the world, society, and its values. If they understand the life project of others, they can become more critical of their own ideas and more tolerant toward the views of their peers, as simple as they may be perceived. This is the basis of the ethical questioning of our existence, as Socrates proposed.

Naturally, in this early age, when thinking about a life project and manifesting itself around it, friendship, recognition of the other, coexistence, are cultivated, as well as the rights of others and a set of values that adolescents refer to as fundamental to discuss at school. In a strict sense, for this group of adolescents, to manage a life plan as an end is to draw an imaginary route that allows to build and reconstruct their existence, examining the ideal means to do so in the best way. This concern is a clear sign that, at that age, they are thinking about their future. This scenario represents a good time for them to put their intellect and sensitivity into play, teaching themselves to give and ask for reasons in any matter. With the life plan, the young student dimensions himself, becomes aware that only he can build the foundations of his own future; at the same time, when he contrasts his ideas with his peers, he discovers that there are coincidences and differences. Now, building the project of life involves

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 217-238.

narrating who we are (Larrosa, 2013) in a present; this narrative, which involves a here and now, opens the possibility of future, i.e., the possibility of imagining the future as another horizon to live. From an Aristotelian point of view, it can be said that "deliberate human action always looks to an ultimate or supreme purpose" (Rodríguez, 2010, p. 89). In these conditions, deliberation occurs, philosophically speaking, not only about life as the ultimate end, but also about the aporia of time, from its phenomenal existence to its metaphysical conception (Jullien, 2005), this topic was widely discussed by Aristotle, St. Augustine, Bergson, Heidegger and other great philosophers.

Likewise, their concerns about the life project includes a topic that is also essential to them: Identity. "Who am I?" "What makes me different from others?" And "What things are valuable to me and not to others?" these are common questions framed in cultural configurative practices of the world, deepening the knowledge of themselves. We know that the concept of identity is historical: Before, the self was thought of as a substance, a metaphysical concept that shifted thanks to the contributions of Locke (Braustein, 2008). Today it has connotations in which our adolescents participate, and which should be analyzed given its different uses. With this historical background context, it is important to discuss with them that identity involves, first, a process of introspection and, second, the recognition of others who play an essential role in the construction of their life: Family, school, and friends. To some extent, young people recognize that the search for their individuality, for an original identity, is linked to an ethical cause, since every project of life is aimed at becoming part of the world that is dwelt and desired. This helps achieving two things: 1) not to get caught up in mere appearance and 2) to look not only at themselves, but also at others.

Thus, the interest of adolescents can be understood as a plot with different topics, each of which, in turn, will relate with other issues: future, love, self and violence, etc. These are part of a series of topics that, given their universal character, are the focus of philosophical reflection. However, perhaps any of the interests of young people, related to their self and the world around them, can serve as a starting point for them to start the path of philosophy, emphasizing only that honesty and method are basic premises of a philosophical attitude (Rivero, 2015). This idea already traces the role of teachers: to limit ourselves to generating the conditions for adolescents to cultivate their creativity, the power of their thought and their sensitivity to connect with life and to let them start, in this way, their adventure for the spectacle of philosophy.

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 217-238.

Conclusions

Some concerns common to adolescents have been included in this paper, which can be a starting point for thinking about how to cultivate a philosophical attitude in them. One premise for them to be interested in philosophy is the recognition of their condition. Since many of their interests are related to ethical dilemmas, their deliberation could be an opportunity to develop their intellect and sensitivity to crucial issues in the social aspect; for example, marijuana legalization, sexual discrimination, the dilemma of love, adolescent abortion, and gender-based violence. Any human situation can become an ethical dilemma, according to certain circumstances (Rivero, 2015). These dilemmas are relevant because they relate to their own experiences, and they are as real as the decisions they make (Cohen, 2005). But teens also have other kinds of interests. Cultivating the narrative can be a good alternative for speaking and writing about their role in life, about the future, because the story, as Avilés and Balladares (2015) argue, has a particularly pedagogical and formative formation.

In other words, by exercising the oral and written narration of their thoughts and feelings, they develop their rhetorical and argumentative capacity, and they examine the problems related to morality and aesthetics. Is it not clear that the time has come to give them small lessons in philosophical doctrines to gradually reinforce their perspectives in an argumentative way? The answer is yes, with the condition of not attempting to replace their ideas dogmatically. This is how adolescents begin to value our principles, learn from others, and begin to make clearer and more obvious judgments about their beliefs and about the moral practices of society. Nussbaum (2015) notes that as children grow up, and through storytelling, they learn more complex traits such as moderation, perseverance, righteousness, and dignity. This is precisely one of the objectives of cultivating a philosophical attitude in adolescents. Although these reflections are modest, they share the concern of many colleagues to construct an agenda for the teaching of philosophy, defining problems and topics of interest to and from our adolescents, and thinking about the configuration of a didactic.

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Ambiguity in the educational technology category

Ambigüedad en la categoría tecnología educativa

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Abstract

This article is theoretical and is developed from the perspective of epistemology and philosophy of education, focused on higher education. It is structured in three sections: the first shows some theoretical criteria regarding ambiguity; the second is an approach made to the course of the technology category and the imprecision in its theoretical use, and the third shows the educational technology category and the ambiguity that exists in it and in its use, as well as some of its causes. The aim is to analyze the ambiguity in the educational technology category. The methodology used is Documentary, consisting of the critical study of texts. The main results are conformation of general ideas around theoretical studies about ambiguity; theoretical elaboration, from an epistemological perspective based on the ambiguity in the categories technology and educational technology. It is concluded that a positive view has been displayed around ambiguity, but it has not eliminated its negative charge; ambiguity is not consubstantial to the technology category, it is due to the extraordinary expansion of its definition; In the educational technology category, the ambiguity typical of the technology category is present, in addition to that provided by the *educative* adjective.

Keywords

Ambiguity, category, knowledge, technology, educational technology, high education.

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Resumen

Este artículo es teórico y se desarrolla desde la perspectiva de la epistemología y la filosofía de la educación, centrándose en la educación superior. Está estructurado en tres epígrafes: el primero muestra algunos criterios teóricos en torno a la ambigüedad; el segundo es un acercamiento al decurso de la categoría tecnología y a la imprecisión en su empleo teórico; y el tercero aborda la categoría tecnología educativa y la ambigüedad que existe en ella y en su utilización, así como algunas de sus causas. El objetivo es analizar la ambigüedad en la categoría tecnología educativa. La metodología utilizada es la documental, consistente en el estudio crítico de textos. Los principales resultados son: conformación de ideas generales en torno a los estudios teóricos acerca de la ambigüedad; elaboración teórica, desde una perspectiva epistemológica, en torno a la ambigüedad en las categorías tecnología y tecnología educativa.

Se puede decir que en torno a la ambigüedad se ha desplegado una mirada positiva, pero no ha borrado su carga negativa; la ambigüedad no es consustancial a la categoría tecnología, se debe a la ampliación extraordinaria de su definición; en la categoría tecnología educativa está presente la ambigüedad propia de la categoría tecnología además de la que le aporta el adjetivo educativo.

Palabras clave

Ambigüedad, categoría, conocimiento, tecnología, tecnología educativa, educación superior.

Introduction

Interest in technology is increasing every day, with the attention given to its sustained development and refinement, to its wide and varied use and to its influence on society and culture in all respects and from the same roots, with benefits ranging from the simplification of historically complicated and difficult actions to the achievements of purposes that some years ago were chimeric. Every day, advances are more innovative, and the scope is more extended. In turn, it can arouse specific interests, with very specific aims and perspectives, including epistemological, which can be due to the essence of the category, the concepts and conceptions about it, the precision achieved in its formulation and use, and among many others, the emergence and development of other categories and concepts related to or with certain common relationships, such as educational technology.

Both categories are commonly used and are related to a variety of seemingly unrelated things. They can refer to tools, processes, components, methods, pathways, computer programs, or all of this, or even something else according to circumstances or individual reasoning. The use of a single word to refer to a variety of facts and objects is a saving of language, but it can also be an attack on precision. There is ambiguity in the use of the technology, as mentioned by Quintanilla (1998).

This term refers to the quality of ambiguous, i.e., when language can be understood in various ways and have different interpretations. In certain contexts, it may be valuable, as in some works of art, but this is

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not exactly the case in the construction of knowledge, where the desire to achieve the greatest possible precision prevails, because it can create doubts or confusion and although a positive role in cognition, since it stimulates ideas and theoretical debates, also, as Cupani (2018) emphasizes, it gives the impression of failure. It is worth noting that an interest in accuracy does not mean the ultimate in accuracy, because "exact knowledge not forced is a symptom of the true, and true knowledge does not always have an empirically accurate data as an example" (Martínez, 2010, p. 68). Moreover, this text is not permeated by the spirit of modernity condemned by Romero Moñivas (2016), as for "in the logical-mathematical, philosophical and scientific field the presence of ambiguities and contradictions is a black spot in research" (p. 38) but having a moderate or open position in the face of imprecision does not mean that order, since coherence and clarity in epistemological aspects are denied or neglected. It does not mean to go from one extreme to the other; it is not leaving the way to disorder, to vagueness.

On that basis, the aim of this paper is to analyze the ambiguity in the educational technological category. This purpose was based on the following scientific problem: Does ambiguity occur in the educational technological category as happens in the technology category? Consequently, ambiguity exists in the educational technological category, but with some specificities.

This topic is important from an epistemological perspective. One of the issues of epistemology is, as Maletta (2009) emphasizes, the transmission of knowledge, so that it may be known and used; for this reason, language is very important, as well as the precision that is transmitted through words.

The technological development and its multifaceted presence in human life are the defining characteristics of the era that has been making its way since the middle of the twentieth century. Thus, the importance of every scientific work, any theoretical elaboration or applied research that moves in this thematic universe, as happens with this article whose background aims to encourage debates on ambiguity, specifically that which takes place in the use of the categories of technology and educational technology. The latter is of great importance because it is directly present in the education of the new generations; however, its value is much greater when it comes to the university, because of the increasingly comprehensive scope of higher education in society and culture; the relations between the three are consolidated and raised to levels never seen before and with possibilities still unsuspected.

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 239-265.

Over the last few decades, new technology, particularly information and communication, has motivated an increasing number of specialists in higher education to use them in this type of activity and, in turn, to carry out scientific research around them, from where numerous contributions to theory and practice have been obtained. Recent technology has become a path that, with a glaring acceleration, has been opening to the eyes of teachers and students, who have understood that its use is inevitable. It is increasingly less likely that educational spaces and their actors will be on the sidelines of technological resources, especially when their consequences include the fading of the boundaries between the outside and the inside of educational institutions, the modification of the configurations of the classrooms and classes, the alteration of the role of teachers and students, as well as the possibility of speaking of academic modalities where the assimilation and production of knowledge respond to a different logic; this is largely due to the possibility of establishing remote communication (synchronous and asynchronous) and the alteration of basic concepts, including space and time.

Advanced technology has been a constant in academic institutions because there have always been professors interested in perfecting their work and they have used many advances they have found promising for achieving their purpose; the presence of technology in this area is remarkable today, not only because it favors the processes of these institutions, but because it is an essential part of those involved in the process. However, although it would be very difficult, human beings could live again without the current technology and without it, it would also be possible to educate and teach.

The importance of the subject starts from the object of study, and its specificity is at the center of a task that humanity needs to know: To understand. One way to get closer to this ideal is to increase the accuracy of language, of communication, for a world as dynamic as the one that is opening up the way, the points that are added to concepts are not enough. Coherence does not have to disappear, nor does ambiguity subdue.

This article is totally theoretical, developed with the use of the documentary methodology, consisting of the critical study of texts and the analysis of written information. It is structured in three sections: the first shows some theoretical criteria about ambiguity; the second is an approach to the technology category and the imprecision in its theoretical use; and the third addresses the category of educational technology and the ambiguity that exists in it and its use, as well as some of its causes. The bibliography used is mostly recent and deals with the conceptual core

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 239-265.

of the work; it is remarkable by its inciting character, the *Technique and culture* article by Miguel Angel Quintanilla.

A look at ambiguity and the studies about it

The word ambiguity comes from the Latin verb *ambigere*. Pera (2010) says that it is composed of *ambi*: on both sides and *agere*: to address. In the Spanish language it has three meanings, all very related to each other: as for language, which can be understood in various ways and give reason to doubts, uncertainty or confusion; as for a person, who, with his words or behavior, does not clearly define his attitudes or opinions; as for uncertain, doubtful. According to Aliaa Abd Al-Aziz Al-Sharif (2008), this phenomenon was called *α΄μφιβολι΄α* (amphibolia) in Greece and Rome, along with the Greek term *ambiguitas*.

Ambiguity is a linguistic situation typical of certain sentences that have various meanings. Something is ambiguous when it can be interpreted in more than one sense. From the point of view of language, Pera (2010) defined ambiguity as "the fact that a word may have several different meanings" (p. 6). In linguistics, it is associated with polysemy and the existence of more than one meaning in everyday speech, which is due to the interest of attention among other causes, a phenomenon that, according to Nerlich and Chamizo (1999), is called intentional ambiguity.

Two ways of ambiguity stand out in this specialty: polysemic and absolute. Aliaa Abd Al-Aziz Al-Sharif (2008) states that the former is observed when a form can be interpreted in different ways, because it is associated with more than one sense; it is the result of an insufficient context or a situation of unexplicit communication and occurs "when some concepts acquire a series of connotations over time, which vary with changing circumstances" (p. 334). The same asserts that the second mode takes place "when the linguistic context does not dissolve the ambiguity of a lexical element, and therefore, one has to resort to the intervention of the extralinguistic context, i.e., to the situation and the context" (p. 316).

Ambiguity has attracted attention not only in the context of linguistics. Although in some texts it is used with the common meaning and there are no reflections about it, for which the understanding around it must be obtained from the written context, as happens in the texts of Santibáñez and Vergara (2008), Alcalá Galán (2010), in other works, not always linguistic, there are broad and deep theoretical ideas, which are developed from two perspectives: negative and positive, which will be discussed below.

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 239-265.

In studies of science, ambiguity is often seen as a negative quality, because precision and clarity prevail as inviolable principles. In this regard, Di Bitetti (2012) notes that "the ambiguous use of scientific and technical terms can create conflicts of understanding within the scientific community" (p. 137); thus, it is associated with confusion and is the result of the lack of an adequate operational definition of terms and concepts, which leads to a limited and weak theoretical basis. Similarly, it is the case in some studies on finance, for example, Corso (2015), relates it to the lack of information in certain operations.

There are economic studies, such as González Álvarez (2004), that use 'Causal Ambiguity' category to refer to the possibility within the reach of a company so that others do not imitate it. Although this result is positive, the category is associated with disability, uncertainty, ignorance. As can be seen in the text by González and Nieto (2007), it is intended that competitors perceive a high level of imprecision, guaranteeing protection against imitation and favoring results, showing the basic indetermination arising from the nature of the connections between actions and results.

The negative aspect is observed in some studies of bioethics; for example, Pardo Caballos (2010) understands it as lack of clarity and precision, as confusion; and refers to the inner ambiguity of the principles of bioethics, which is seen between the objectivity and subjectivity of what is wrong, and the external ambiguity, which takes place in the principles of bioethics as long as these principles are given meaning in accordance with hypocratic ethics; this author relates it to ethical relativism and skepticism. Similarly, Díaz Fúnez et al. (2016) develop a series of ideas about 'role ambiguity' such as the absence of clearly formulated information on performance expectations, goals, duties, authority, responsibilities, obligations and other working conditions related to the performance of the role; it occurs when employees perceive a lack of clarity in the activities needed to perform well; they ensure that performance is reduced and job satisfaction is altered in work contexts with high levels of role ambiguity.

The positive approach to the category, according to the texts consulted, is because the word ambiguity takes the meaning of uncertainty and hence relates to certainty. This perspective is mostly seen in certain socio-political and cultural studies.

The text of Rottenbacher and Molina (2013) is an example of sociopolitical studies, in criticizing the simplistic paradigm; they start from epistemic motivations and condemn the interest of possessing knowledge about the world that is simple, structured and unambiguous; their position is that they see this paradigm linked to dogmatism and intolerance

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 239-265.

of imprecision and uncertainty, as well as to the cognitive needs of order, structure and closure, in turn, they associate it with political conservatism and cognitive rigidity, which, according to them words, are manifested, first and foremost, in the aforementioned intolerances; hence, they relate intolerance to ambiguity to diverse socio-cultural attitudes, such as heterosexism and political conservatism.

Similarly, Pera (2010) affirms that until the 20th century, ambiguity had been a pejorative and disqualifying concept in the West, but that the relations of culture with ambiguity are complex and sometimes positive, because culture implies ambiguity, both the concept of it, as well as the phenomenon that it alludes to and points to artistic language, because, in his view, the ambiguity that the author introduces in his work, is that "with his wealth in meanings, with his rupture of the dominant logical discourse, and with his capacity to stimulate diverse interpretations, the one that can be 'the unexpected' from the point of view of aesthetic values" (p. 76).

Pera (2010) affirms that to understand culture, it is needed to accept and analyze its intrinsic ambiguity, which reflects the infinite ambiguity of the world. He argues that this statement is basic to the point that it can be said that "we are now immersed in the age of cultural ambiguity, as a consequence of its growing complexity, as well as the multiplicity of speeches that try to interpret and dominate it" (p. 76) and that "new information technology is imposed in this type of culture, in which the infinite ambiguity of the interpretations demands the forceful and continuous application of critical thinking, so as not to be lost definitively in confusion and chaos" (p. 77).

Pera (2010), considers that it is different when it comes to the relation ambiguity-knowledge, although he considers that if ambiguity is denied, the foundations for education and scientific research in freedom are destroyed (of course, if ambiguity is understood as doubt and uncertainty, not as darkness or confusion). In turn, he argues that because accurate knowledge is not possible, one must prepare to live "with uncertainty and ambiguity. Because all knowledge derived from human models for world research—including reasoning—is necessarily, and in the strict sense, to a greater or lesser extent, ambiguous" (p. 77). Nevertheless, he assures that "in the field of human behavior and coexistence, in societies that are increasingly heterogeneous and conflictive, in which it is necessary to narrow down ambiguities and to have functional certainties" (p. 77).

López López and Vargas Hernández (2012), also explain their considerations whose framework is the organizational processes; based on

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 239-265.

the theory of organized anarchies, they use the concept of ambiguity to express the complex relationships that occur around and within organizational processes. In the light of the theory of organized anarchies, the decision loses its linear character and is judged as a complex process of loosely coupled relationships between problems, solutions, and participants. Hence, their assertion that an organized anarchy "lacks clarity and coherence in the objectives it intends, and how it intends to achieve them, as well as who is or are the decision-makers, the latter called the constant flux of participants in the decision-making process" (p. 50).

In studies on religion, Gómez (2017) argues that religious ambiguity is part of reality, because it is interpreted in a religious and non-religious way, moreover, it promotes diverse and incompatible interpretations; thus, he differentiates intellectual and experiential ambiguity. In the first case, he argues that it is possible to defend rationally incompatible positions, because there are different types of evidence to appeal and different interpretations that can be legitimately adopted, and different positions are equally well justified. In the second case, he points out that this is due to the fact that reality allows the creation of different models of organization and conceptual schemes; there is a dynamic and relational process that never ends between the latter and reality, that reality is ambiguous, because it is not composed of objects ordered in a fixed structure, nor of unalterable concepts, since the systems of concepts and reality are mutually configured.

As seen, there is a diversity of criteria surrounding ambiguity, but it must be clear that opposing and, at the same time, wanting as much clarity and precision as possible does not mean seeking rigid thinking, neither closed or schematic and much less allied to political, social or cultural positions retrograde, exclusive or prone and contrary to humanism. Order, coherence, and many other categories associated with them are not harmful by essence; the dose of its consumption can alter its quality.

The technology category: Some considerations

Since the last three decades of the last century, humanity has been immersed in the development of technology, which although it covers the improvement of existing technology, it stands out for the creation of others, of the most diverse variety, with properties never achieved before. Their presence and action have been extended throughout life, first because of their ability to solve problems and their functionality. Its development

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 239-265.

encourages reinterpretation around various issues, including life and human beings, as well as the links between the natural and the artificial, the technological and other types of creation, and between all this and the human, which is difficult in a world where "Nature and culture are practically indiscernible" as mentioned by Tilleria Aqueveque (2020: 88) and which Casquier Ortiz points out (2018) "the life of the human being is so modified that the extraordinary is becoming ordinary" (p. 94). Additionally, the reflections, past and present, are also the subject of reassessments.

The word technology has a Greek origin and consists of the term *techne* (art, craft, technique, skill) and the element *logía*, which is usually translated into Spanish as a treaty or study; on this basis, it can be deduced that it literally means treatise or study of the techne, but the matter is not simple; as happens with many meanings, it carries with a theoretical meaning supported by philosophical foundations and the characteristics of the time that serves as a framework.

The word technology in Spanish is polysemic and complex because it has several meanings, among them, dealing with technical matters, set of theories and techniques that allow the practical exploitation of scientific knowledge, language proper to a science or art, set of instruments and industrial procedures.

When used in certain circumstances words such as in the context of science and cognition are often referred to as categories, as they are primarily a function of the development and acquisition of knowledge. The technology category, based on the characteristics of the word technology, previously stated, economizes language because it expresses various ideas, but the recipient must infer the transmission of the information to which it is alluding; therefore, it damages the accuracy of the message and makes it ambiguous.

The origins of the technology category are in the studies that were developed in Antiquity, especially the philosophical studies, where the texts of Plato and Aristotle are discovered. According to Medina (1995) *techne* was for both "true but contingent knowledge (…), which could never reach the category of theoretical knowledge, necessarily true and immutable (…)" (p. 181). According to Osorio (2011), with the category techne Plato refers to human activities that can be spoken or reasoned, which are based on simple experience and are a routine way of doing, although they are not spontaneous or unconscious. So, at least since Plato, *techne* is associated with material production that relates to the world in a practical way, and differs from episteme: abstract knowledge, result of deep reflections. As for Aristotle, Medina (1995) assures that he under-

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stands it as a capacity for action based on practical knowledge; it depends on a perception or reasoning about what must be done and that separates the productive techniques and the human capacities that it considers superior: the discursive and theoretical ones. According to what can be understood of these two authors, the common thing between both philosophers is in the practical component, which should have been transmitted to the word technology.

As for that word, Osorio (2011) points out that the 18th century is very important because the dictionary "The new world of English words" is published in 1706, where technology is defined as "description of the arts, especially the mechanics" (p. 20). It maintains its relationship with practice, but in the scope of theory. At the end of this century, in Germany and France technology was understood in connection with technique, i.e., with the practical elaboration of little or no theoretical composition, but the relationship was not as empirical, but rather rational. It was used as a reference for engineering schools, technical journals, industry rationalization and, above all, because it connected science and technology. Moreover, he points out that until the 19th century it maintains this sense, precise and clear, which corresponds to the structure of the word, and it was in the 20th century that the precision changed, since it is defined as industrial science in the Webster dictionary of 1909, and as "the totality of the means employed by people to provide for the objects of material culture" in 1961 (p. 22). In turn, he assures that in 1970 the scholar of these subjects L. Winner defines technology in more than one sense, and includes the devices, the methods, skills and procedures used for the accomplishment of tasks, the varieties of social organization related to technical social devices and the rational-productive sphere. There are authors, such as Cueva Gaibor (2020), who consider that "technology corresponds to digital devices that can be connected with a computer or with the internet" (p. 341).

While the content of the Technology category is constantly changing and enriching, as can be the case with many other categories, it is also stabilized. Today, when used, it is often referred to as a whole, covering artifacts, tools, instruments, and procedures (industrial and those that allow practical use), as well as scientific knowledge about it. It refers to the whole process that goes from the production of a product to its consumption, because it includes packaging, transportation, storage, distribution, as well as knowledge (with the consequent theoretical elaboration) and the practice that made all this possible. Technology is universal comparable in extent and internal heterogeneity with another category: culture.

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 239-265.

The technology category has been accompanied by diversity of criteria; if, for example, Agazzi (1996) conceives technology as "a way of living, of communicating, of thinking, a set of conditions by which man is widely dominated, much more than having them at his disposal" (p. 141), Quintanilla (1998) understands it as "a set of scientifically-based knowledge that makes it possible to describe, explain, design and apply technical solutions to practical problems in a systematic and rational way" (p. 50), and Foucault (1990) use it in a varied way that becomes inaccurate. Examples may be more recently disseminated considerations, such as those of Carvajal Villaplana (2017) who refers to it by mentioning three characteristics: a) solve a practical problem or satisfy a need, b) novelty and c) efficiency, while Freyre et al. (2019) by using the category support their reflections on types of technology, which can be understood to do so to give more precision and clarity to ideas.

Technology is not all that a human being uses to develop life, but a type of human creation to a higher degree. There is no need to attack its breadth and reduce it to any of its components to gain concreteness in the category and remove ambiguity, or at least mitigate it; this characteristic is valuable, as is its heterogeneity; it needs to be adjusted.

Technology is the scientific system composed of procedures (including organizational and skill variants), artifacts (instruments, tools) and considerations about the two components above, focused on the scientific optimization of human activity (practical, cognitive, valuative and communicative). In the category, its scientific condition is decisive. In this sense, I agree with Quintanilla (1998), but I do not limit technology to knowledge, it includes everything that has already been mentioned.

Conceived in this way, technology can find its own problems and can seek for solutions through procedures arising from its broad and dynamic premises. It does not mean that technologists do not turn to science, including social and humanistic sciences.

To study it more deeply and not to get lost in the ambiguity resulting from its breadth and heterogeneity, an effective way of doing it is through approaches, as suggested by Quintanilla (1998) or observing it, according to Eslava (2019). It can also be observed from a cultural perspective, as recommended by Peña and Otálora (2018), who emphasize their educational essence and conceive it in a universal, integrative, and complex way, giving rise to knowledge, interpretations, and senses, that take the name of technological knowledge. This idea is enriched if considering that "every technological novelty is a new way of reading, studying and writing reality" (Caéros, 2019: 9).

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 239-265.

Regarding these ideas, it is worth considering the criterion of Rubio Barrios and Esparza Parga (2016) who claim that technology "cannot be assumed as a means, since it is possible to find its proof in itself" (p. 16), with it the human being can achieve greater satisfactions than those offered by nature.

The Educational Technology Category and Ambiguity: An Epistemological Look

The strong, varied, and dynamic links between knowledge and higher education are steadily growing; this characteristic propitiates the establishment and consolidation of multiple relationships between it and epistemology, a philosophical specialty dedicated to studying knowledge in general, although in not few occasions its object of study is framed in scientific knowledge and science. Since the end of the last century, this discipline has strengthened by the importance and timeliness of its content, its conclusions, and recommendations, all of which acquire a much greater meaning in universities. Institutions are great receivers and diffusers of knowledge, its use is continuous, but at the same time institutions stand out for their capacity and quality to store it, and they produce it in greater quantity and diversity.

The value of the relationships between epistemology and higher education is recognized by many scholars for various purposes. Hence, the existence of a considerable number of texts in this regard. Among those consulted for this article is Cardenas (1991), who argues the value of these studies and the need to increase them. He notes that one of the subjects least studied by teachers is the epistemological status of pedagogy; Perafán Echeverri (2004) and Aldana de Becerra (2008) insist on the urgency of giving more attention to the epistemological conceptions of teachers; Senior Martínez (2016), as well as González and Fernández Aquino (2018), emphasize that sciences generate philosophical-epistemological problems around which it is necessary to open spaces of critical debates on epistemology to be aware of the importance of assuming paradigms that incorporate social dimensions in the understanding of knowledge. The Cuban philosopher Guadarrama González (2018) calls for the teacher to differentiate results and methods in the process of knowledge-making, to enable it to pass on alternative attitudes to new generations; Artigue (2018) alludes to some aspects of the relationship between epistemology and didactics, and Martínez Sánchez and Galindo

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 239-265.

Albores (2019), emphasize the inclusion of epistemological discussions in educational programs of all branches.

As can be seen, the epistemological perspective is related with higher education and thus stands as a theoretical basis from which technology and specifically educational technology can be analyzed.

If the current technological changes and innovations have covered life in so many manifestations and the tendency to increase is apparent, it is inferred that the field of education is also in the same influence. In the educational framework, its use is significant accompanied by specificities given by the historical moment, the context, and the level. Such permanence is due to an essential reason: throughout the history of humanity, the intention of the professor has been to optimize work to obtain better results. For this reason, the tendency has prevailed to insert the human achievements that contribute to the performance of their objectives; as Aguilar Gordon (2011) asserts, it is not possible to categorically separate human being, education, and technology.

In education, especially since the most recent decades, when technology is mentioned it is often thought of as cutting-edge advances but without mentioning, at least to a fair extent, that its use has had stages and that its presence in the classrooms is not recent, since it has had space, for example, the radio receiver, the gramophone, the projector, the tape recorder, the television, almost since its emergence, even though its presence was not always intense, or massive.

The real concern in educational institutions is the use of cutting-edge technology, especially digital ones, and with it the task is no longer to decide whether or not to use them, but to think about how to use them, what the benefits are, what to discard and what to maintain, what to reconvert and how, which is not a simple work, because education meets many demands, ranging from the characteristics of each student to the politics of the country.

In education, the reference to technology continues and a lot is mentioned next to another very close category: 'Educational technology'; but this, although it has its specificities because it is educational, it is also technology and the ambiguity that has been explained must be present in it.

There is a peculiarity of the educational technology category, and it is because of the ambiguity of the word 'educational'. This adjective is often used with more than one meaning; one of them refers to what is related to or belongs to education and what it serves to educate; but in another sense it means 'what educates'. In the latter, imprecision is possible, because it can be thought that this technology has an educational

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 239-265.

function, as happens with the categories of educational work and educational task, which are educational, i.e., they educate.

Presumably, teachers do not allow themselves to be caught by this ambiguity, but it has concerned more than one scholar, such as Liguori (2000), who stresses that "the problem of new technology in education (…) cannot be based solely on technical problems (…) the debate must also be centered on the ideological, political and ethical problems that it entails" (p. 127). Additionally, Salas Madriz (2002) and Sancho Gil et al. (2015), warn that educational technology cannot guarantee becoming an efficient tool in education, since it depends on several factors, including the conception that supports the educational task and the pedagogy that is employed.

For all the above, greater attention should be given to the existence of an educational project and a pedagogical approach, as Luján Ferrer and Salas Madriz (2009) asserted, it is not possible for technological equipment and tools to produce or promote meaningful learning processes since they are not a "mechanical know-how" (p. 27), or as Prendes and Serrano (2016) and Aguilar Gordón and Chamba Zarango (2019) claim, they are not the magic solution to the problems of education, although they act on the behavior of human beings, but their simple incorporation into educational processes does not guarantee their quality.

The above reflections should not be confused with technophobia: fear and rejection of technology, nor with technologatry, which indicates that the use of technology is "the most direct and effective way of achieving the solution of all the problems of education" (Litwin, 2005, p. 13). As Romero Monivas (2016a) points out, there must be clarity and precision regarding the knowledge, education, and society in which technology is framed. It is not superfluous to say that extreme positions are reductionist, and neither justifies the possibilities of technology, its scope, or limits.

The educational technology category began to be used in the United States in the 1960, according to Luján Ferrer and Salas Madriz (2009), although in the same text they say that the use of the media in educational tasks after the Second World War was already mentioned. This corresponds to the information provided by Salas Madriz (2002) who points out that it has its origin in the years 1950 as a field of education in that country, and he points out that the category 'educational technology' is in the relations between education and the media that developed significantly in the 1950. Thus, there is still no ambiguity in it, although this was present in the technology category since the beginning of the 20th century.

Educational technology was originally associated with advances in computer manufacturing and military self-teaching devices, as well as the

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 239-265.

development of individual differences in learning, which was supported by behaviorism, psychological current through which much attention is given to observable behavior and to the interaction of individuals with the surrounding environment, which since the decade of 1950 was led by the American psychologist Barrhus Frederic Skinner (1904-1990), who was very interested in the technofication of teaching and was known for his theoretical and methodological contributions to the use of the technologies that were emerging.

Although these theoretical positions have been strongly positioned for many years in the conception of education and its work, since the 1980 the influence of other theorists has increased, especially three psychologists: The American David Paul Ausubel, the Swiss Jean Piaget and the Soviet Liev Vigotsky (this order does not indicate importance or degree of influence), each one with its specificities and differences with the other two—which is not the subject of analysis this time. All three actively conceived the student and emphasized the teacher's guiding character.

The expansion and diversification of the theoretical framework contributed to the ambiguity of educational technology. Litwin (2005) points out that this theoretical framework had an impact on the ideas surrounding educational technology and began the deployment of its reconceptualization through different theoretical positions: In some they were associated with the technological means produced for education, others stressed the limitations of their origin or opposed artifactual conceptions and linked them to pedagogical projects that included sociopolitical criticism and awareness raising to achieve human emancipation. Thus, regarding the category, a huge number of ideas developed through diverse approaches and with different theoretical foundations were deployed, which enriched the theory around it, but increased its ambiguity.

The ambiguity in the educational technology category is due to the diversity of conceptions and definitions about it. Luján Ferrer and Salas Madriz (2009) show some of the ideas pertaining to the last four decades of the 20th century, reaching the following generalizations in this paper: in the decade of the 60 its conception as a body of technical knowledge related to the conduct of education to improve it stands out. Here is the opinion of Freyre Roach et al. (2019), who say that the category of hogs can be understood from the perspective of using something (technology) in a specific context (education) and that technology "is used to make the teaching-educational process or teaching and learning more efficient" (p. 257).

Following Luján Ferrer and Salas Madriz (2009), in the 70 and 80, the way to understand it is emphasized as the systematic application of

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 239-265.

scientific knowledge to the solution of educational problems, as a set of techniques accompanied by practical knowledge at the service of education. In the 90 the integrative way of seeing it and the innovative pedagogical conception prevailed, according to which educational technology was understood as a complex process given by the connections between devices, procedures and a specific curriculum that encouraged the active participation of the student, led to the creation of differentiated learning environments, and promoted the development of skills, not only the traditional ones, but also those demanded by the new times.

Today, at the beginning of the third decade of the fast-paced century, when it comes to educational technology, the ideas and practices of Skinner and his followers usually do not come to mind first, but technology (with all the breadth mentioned above), as a system that serves as tools or instruments in education and that is based on philosophical, scientific, educational paradigms, on the characteristics of culture and society, as well as of the policy that governs in the latter, from where many of its traits, objectives and trends are determined.

But such a system has not come to be understood precisely, either it is seen as a whole or only some of its components are taken. It is on this basis that there is a variety of conceptions about it. Such a situation, while enriching the theory about educational technology and adding scientific polemics, also increases the ambiguity of the category. It is worth emphasizing that this reflection is not due to the purpose of achieving uniformity of criteria, or forming a single or uniform thought, or even reaching a consensus, let alone stating a unanimous opinion, what is being sought is the clarity and the concretion of the educational technology category.

The ambiguity in the use of the reference category can also be found with another nuance; a subject with a strong presence in the Hispanic world is named with it: Educational Technology, whose field of action, according to Cabero Almenara (2016), is "the design of learning situations, and more specifically of mediated situations" (p. 24). However, the problem is not in the name, but in the fact that this field of action is not always used fairly, because there are two variants with the same name which, when looked at carefully, constitute two similar subjects, because they have the technology-education relationship as their core and because they have strong community links to essential content; but it is in the latter that, in turn, the difference between the two takes place, because it is not perceived from the same angle, nor with the same purpose, so the distinction is given not only by the presence of one or the other matter, but also because of the priority given to them and the scope they achieve.

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 239-265.

The attention in one of these variants is on the technological aspect, while in the other is in the pedagogic and the philosophical-social, although in both, the technological aspect and the educational aspect are not absent. Likewise, Area Moreira (2009), says that the subject has evolved between two visions, one that equates to the means and instructional resources (fundamentally audiovisual), and the other that is considered a field of study to design and control scientifically the teaching processes.

An example of the variant that focuses on the technological aspects is the teaching program of Martín (2014), whose thematic axes are epistemological and political debates around educational technology; knowledge in networks and scientific social networks; technology in educational systems, high technological environments: classrooms and their new configurations: enlarged classrooms, mobile digital classrooms, personal learning environments; teaching with technology. It is worth mentioning two investigations; the first one is that of Javier Ballesta Pagán and Raúl Céspedes Ventura (2015) who carried out a scientific investigation in several Spanish universities to locate the presence of the basic and mandatory subjects of the area of Educational Technology in the courses of pedagogical formation; from the information they offer, it can be deduced that ICTs stand out in this teaching computer instruction and knowledge. The other research by Carlos E. George Reyes (2018), focused on the programs of the Master in Educational Technology, and after studying it he provides a series of data, among them, the tendency of training in the discipline of Educational Technology is to master digital applications and to abandon the pedagogical structures to use technology efficiently. This tendency can also be found in a text by Valverde Berrocoso (2015).

Regarding the variation where the pedagogic and philosophical-social aspects stand out, it should be mentioned the teaching program of Area Moreira (2009), formed by the following topics: the use of digital technology in educational institutions and the redefinition of the contents of the curriculum; the training of students as users of new technology and of the culture around them that is produced and disseminated; the basic goal of non-formal education should be to enhance democratic access and participation in the new communication networks of groups and communities, which in one way or another are at the margin of technological evolution; revision of occupational training in the light of the new social and occupational requirements driven by the new technologies.

The truth is that when only the subject is mentioned, i.e., its content is not exposed, even if it is minimal, there is no precision capable of showing which variant is present. The ambiguity is glaringly clear.

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 239-265.

Causes of such a phenomenon can be found in the history of discipline. Area Moreira (2009) maintains that Educational Technology in its evolution as a discipline went through five stages, the first dating from the 1940s and 1950s and was linked to the US military formation, while the second is from the 1960s and was based on behaviorism and considered the audiovisual media as its center. At this time, in the words of García Valcárcel (2002), "it was related to the use of technological instruments for teaching (teaching machines and other devices)" (p. 70) and the efficiency of teaching was given priority. Trujillo Saínz (2012) says that at the end of the sixties, the pretense of overcoming the vision of this as the introduction of hardware in education took force and was seen with a renewing approach, with the intention of improving education, although García Valcárcel (2002) argues that "the technocratic perspective was the dominant paradigm in the 1960s and 1970s" (p. 71). As can be seen, the origin of the subject is centered on technology, although the attention extends to the use given in education.

The third stage referred to by Area Moreira (2009) coincides with the 1970s. The author stands out the prevalence of a technical-rational approach to the design and evaluation of teaching, although Trujillo Sainz (2012) says educational technology "is configured as the science of the design of teaching, as the operational application of a set of disciplines (psychological, curricular and philosophical) to improve and increase the effectiveness of teaching processes" (p. 4), which, according to him, is the result of the passage from a reductionist conception (which led the subject to focus on the means) toward a vision that turned it into a scientific discipline suitable to regulate instruction.

The fourth stage exposed by Area Moreira (2009) corresponds to the 1980s and 1990s. Among its characteristics the author emphasizes that the subject was given the incipient interest in the applications of digital technologies and the crisis of the technocratic perspective on teaching from previous years. Trujillo Sainz (2012) notes that such teaching was characterized by "self-recognition of the crisis within Educational Technology; the absence of defined signs of identity; the professional disorientation of educational technologists; the lack of application and incidence in schools of Educational Technology" (p. 6).

The fifth stage mentioned by Area Moreira (2009) begins with the 21st century and is characterized by theoretical eclectic and the influence of post-modern theses, to which Trujillo Saínz (2012) refers that today's great technological development has attracted the attention of researchers and teachers to technology and its effects on education and culture

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 239-265.

as a whole, favoring that the subject has been "a focus of attention or program of research and teaching clearly identifiable in the international pedagogical community that brings together different areas of the Social Sciences" (p. 6); although, as he states in the cited text "they are the relationships or interactions between information and communication technologies and education in multiple levels and fields of action" (p. 6); therefore, "it should be considered as an educational intellectual space whose object of study would be the socio-cultural effects and implications for education that information and communication technologies possess" (p. 6).

Its prevalence from the technological component and the strength of the pedagogic to be imposed in its configuration and development originates from this subject. But it should not be forgotten that it is linked to technology from its origin and, as Torres Cañizález and Cobo Beltrán (2017) consider, nor should it be lost sight of the fact that the field of educational technology reaches the scope of the pedagogical (theoretical and practical) work through the use technology. On the other hand, as Correa Padilla (2017) assures, although this subject has advanced, it remains a long way to go, due to its complexity and extension.

In the last ten years, there are authors who say that Educational Technology is the discipline centered in the study of technological means and resources at the service of teaching and learning processes for formative purposes, where information and communication technologies (ICT) play a leading role; for example, Jimenez Saavedra (2014) believes that it deals with "the study of media and information and communication technologies" (p. 136). According to Torres Cañizález and Cobo Beltrán (2017), the number of technological tools has multiplied to dynamize school environments and promote the development of new competencies, and a few focus on technology and its effective use in the teaching-learning process. Likewise, George Reyes (2018) affirms that there prevails "the didactic and pedagogical strategies that allow to make the school settings more dynamic and to generate the digital skills necessary to incorporate the student in the knowledge society" (p. 31), while Cueva Gaibor (2020) points out that ICTs are not only tools in the service of education, but also part of its object of study.

In the first decade of the present century, Area Moreira (2009) assured that for years it was intended to reformulate Educational Technology so that it was a pedagogical intellectual space whose object of study were the media and the technologies of information and communication as forms of representation, dissemination and access to knowledge and

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 239-265.

culture in the different educational contexts, and that the subject had a multidisciplinary theoretical basis, with diverse epistemological spaces. A few years later, some authors argue that when consolidating this characteristic, it was imperative that the discipline Educational Technology study the teaching and transmission processes of culture, technologically mediated, in different educational contexts and that it be conceived, as suggested by Ballesta Pagan and Céspedes Ventura (2015) as "the study and ethical practice of promoting learning and improving performance through the creation, use and organization of technological processes and resources" (p. 134) and that it was necessary to develop a critical vision regarding educational technology in the training of future educators, including, as recommended by Correa Gorospe et al. (2015), the development of a collective critical awareness of the control, privacy and manipulation of technological resources.

Although an approach to the articles dealing with the subject indicate that there are teachers who consider the subject Educational Technology as the presence of computer science in education. According to Cueva Gaibor (2020) content is less important than the mechanisms by which it is accessed, created, and collected for an increasing number of teachers, but for some teachers the distinctive thing in it are not only the digital resources in the school, but also the theoretical constructions regarding the study of teaching and learning in social contexts enriched with ICTs. It is worth mentioning a text from the beginning of this century by García Valcárcel (2002), specifically his statement: "Educational technology should not be combined with educational information technology, although it should occupy an important space in educational technology programs" (p. 72); he states it is dedicated not only to applied aspects, such as the design of means and materials, curricula and proposals to solve teachers' problems, but also to "reflect and theorize what the media represent for teaching from a communicative and social didactic point of view" (p. 84). According to his opinion, it was necessary to work on theoretical bases that integrated the contributions of the social sciences, especially regarding the relations between technology, society, culture, and education.

That criterion can be found more recently. According to Suárez Guerrero et al. (2016), the Pedagogical Vision of Educational Technology should not be reduced to responding to what to learn, as this is a change in the conception of the teaching-learning process and is inserted into formal and informal spaces of education through didactic materials. Hence, as recommended by Arteaga Paz and Basurto Vega (2017), the focus should always be in the quality of education.

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 239-265.

The question of how to see the Educational Technology subject has a scientific meaning because it has been accompanied by an interesting debate that can be very helpful, but besides this meaning, the controversy shows ambiguity takes different and very specific nuances when it comes to the subject and the area of knowledge.

The topic continues to get the attention of scholars from various perspectives. Castañeda et al. (2020) refer to the "current identity crisis" of educational technology, highlighting "the need for a more current and nuanced concept of what technology is" (p. 240) because they consider that one of the main problem in this area of knowledge is "the poor conceptualization of technology" (p. 243), they also mention the need to redefine the field of study of Educational Technology (p. 240); although Mujica (2020) emphasizes as a positive quality that "the term educational technology is inclusive, living, polysemic and contradictory" (p. 20), there is ambiguity in the adjectives polysemic and contradictory. Castañeda (2021), on the basis of his recognition that educational technology "is a field of research and practice in which diverse actors and interests converge" (p. 2), states that "the processes of using technology in education or directly of educational digitization are tangled" (p. 4), indicating that some aspects of technology and of educational technology "in teaching practices have not yet been satisfactorily addressed" (p. 4).

Ambiguity is not something bad that should be removed, but if efficient work is to be carried out, it is advisable to understand the concepts used and, therefore, to eliminate or at least reduce it; if these purposes are impossible, for certain reasons, to be aware of their existence is a good step in optimizing any work. Technology will continue to develop, at least for a good time, perhaps longer than can be expected, and, at the same time, the fact and the concepts, definitions and ideas that are formed and developed in relation to the category will continue to be complex. In correspondence, the technology applied to education will be incorporated in such a way that it may be unnecessary to mention it separately, but in the meantime, it is necessary to be clear, which affects the richness of the language, and avoid a single word to refer to such a wide-ranging and varied phenomenon that can lead to avoidable confusion.

Conclusions

A positive view of ambiguity has now been developed based on one of the meanings of this word: uncertainty. From this point of view, ambiguity

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 239-265.

is taken into account as an opposition to the purpose of achieving total certainty in the process of knowledge; however, the word has not lost the other part of its meaning: that it can be understood in various ways or admit different interpretations, reason for which it is viewed in a derogatory way in scientific work. This latter position maintains its validity and actuality as its dialectical opposite: precision, has not ceased to be one of the essential characteristics of scientific knowledge.

Ambiguity is not inherent in the category of technology, i.e., its structure, but depends on its concept. A wide variety of objects and facts have been incorporated into its definition, extending its meaning and thus its imprecision. In order to eradicate it or at least reduce it, it is essential to be aware that technology is a scientific system of elaboration, application and reasoning. Technology results must have their own names and, if they do, they should be used appropriately.

The educational technology category is basically linked to the formation of an area of knowledge and a subject. The ambiguity in it is because it took it directly from the category Technology, which is a component of its structure, but it is due not only to that, but also to the fact that the educational adjective provides a certain amount of imprecision. The ambiguity in the educational technology category is extended when it is used to name an area of knowledge and a subject, where it can have practical consequences, especially organizational.

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Sophia 33: 2022.

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Quality referents in Ecuadorian higher technological education

Referenciales de la calidad en la educación tecnológica superior ecuatoriana

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Abstract

The quality in technological higher education is better characterized by the training of students' capacities than by the levels reached in accountability or institutional management. By virtue of the specialized literature, there have been two major approaches that have characterized the issue of quality in Higher Education in the last decades. From an administrative perspective, the commitment has been directed to quality management; and from social studies perspectives the focus was on promoting the institutional culture. In this framework, the study aims to characterize the quality references underlying the evaluation models of the Higher Technological Institutes in Ecuador from 2010 to 2020, to make visible the need to rethink public policies from the State and strengthen the agency of institutes. To achieve this objective, the theoretical instruments of policy analysis were used through a review of documentary information that allowed reinterpreting the concept of quality. Finally, as a conclusion, the study determined that the prevailing concept of quality in the evaluation models of the IST was adjusted to the acquisition of high levels of excellence and did not include the discussion of the nature of the technical and technological training relative to the transformation of students' abilities.

Keywords

Quality, education, institutes, technology, models, evaluation, policy.

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Resumen

La calidad en la educación superior tecnológica se ha caracterizado mejor por la formación de las capacidades del estudiantado que por los niveles alcanzados en la rendición de cuentas o en la gestión institucional. En virtud de la literatura especializada han existido dos grandes enfoques que caracterizaron la temática de la calidad en la Educación Superior en las últimas décadas. Desde una perspectiva administrativa, la apuesta fue por la gestión de calidad, y desde los estudios sociales fue la promoción de la cultura institucional. En este marco, el estudio buscó caracterizar los referentes de la calidad subyacentes en los modelos de evaluación de los institutos superiores tecnológicos en el Ecuador desde el 2010 al 2020, para visibilizar la necesidad de replantear las políticas públicas desde el Estado y fortalecer la agencia de los institutos. Para alcanzar este objetivo se utilizó el instrumental teórico del análisis de las políticas a través de una revisión de información documental que permitió reinterpretar el concepto de la calidad. Finalmente, a modo de conclusión, el estudio determinó que el concepto de calidad preponderante en los modelos de evaluación de los IST se ajustó a la adquisición de altos niveles de excelencia y no incluyó la discusión de la naturaleza de la formación técnica y tecnológica relativa con la transformación de las capacidades de los y las estudiantes.

Palabras clave

Calidad, educación, institutos, tecnológicos, modelos, evaluación, política.

Introduction

Quality in higher technology education has characterized more by the training of students' abilities than by levels achieved exclusively in accountability or institutional management. The claim is irreverent with the worldwide standardized proposal that Higher Education Institutions are ranked in terms of quality by criteria of efficiency and free market. As mentioned by Boni and Gasper (2011) quality in recent decades has "focused on competitiveness and efficiency" (p. 94).

Two major programs are developed in higher education worldwide. A university program that lasts from five to six years and is carried out in universities, and short programs that offer degrees from two to three years performed in technological institutes. The World Bank (2021), in its study on short higher education programs, identifies a variety of country-specific designations, for example "technical and technological programs, technical careers, technical higher education courses, technological courses, technical-professional courses, professional careers, and technology higher education courses" (p.1). In this context, the empirical object of this article is the short higher education programs, which in Ecuador is called Technical and Technological Training. Analyses of the quality of higher education in most countries and especially in Ecuador focus on universities as a field of analysis and as the central spaces in knowledge management in society.

Technological institutes are a key element in the management of knowledge and innovation. The abandonment of quality reflection in

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higher technological education is mainly evidenced by being new institutions. For example, when reviewing the reports of the international seminars held in 2008 by the National Secretariat of Planning and Development to address the transformation of higher education in Ecuador, they refer exclusively to universities or polytechnical schools (SENPLADES, 2009). In addition, the Quality Assurance Council (CACES) held the Second International Forum on Quality Assurance in Higher Education between November 29 and 30, 2017 in Quito, in which representatives of universities, polytechnics and higher institutes participated; however, in the publication that contains 14 academic articles, none directly addresses the problem of the nature of quality in technical and technological training (Cerbino et al., 2019). The authors argue that the scant reflection on the importance of technical and technological training is related to the structure of public policy on vocational training.

In line with this research, two research projects carried out in Ecuador stand out. The first conducted by Aguilar and Heredia (2019) addressed from the philosophical perspective the entry of business logic into the management of universities through the rhetoric of quality. From philosophy they recover the sense of quality from an Aristotelian position as quality. Quality education "must guarantee work, free action, as well as the expansion of vital forces and the integral formation of a project of human well-being" (p. 84). The other paper carried out by Gómez et al. (2017) addressed the learning and implications of the institutional evaluation process of the higher technological institutes. They define quality as an element "inherent and closely linked to the context and scenarios in which HEI exists" (p. 60). Specifically, the principle of the Ecuadorian system of higher education is to be the basis for the integral development of the country, through the production, dissemination, and application of new knowledge. From this perspective, the higher technological institutes are obliged to contribute to the achievement of this end by implementing a relevant and quality educational proposal. Relevance must be understood from its social dimension, strengthening its social link through research and production of new knowledge for innovation and sustainability, overcoming the traditional conception that technical and technological education is to meet exclusively the requirements of the world of work and production. On the other hand, quality must be seen from a multidimensional perspective, emphasizing the quality of learning and the transformation of the environment on the part of the students. In short, relevance and quality are two sides of the same coin. The problem that guides the research is the characterization of the ap-

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proaches that have determined the quality of higher technological education in Ecuador. In this context, the article proposes a characterization of the quality of technical and technological training based on the documents from the public policy on external evaluation.

The article was structured in the following sections. First, an analysis of public policy studies was made from a cognitive paradigm. Then, the main references of quality in higher education were reviewed. The following section presented the configuration of quality in higher education in the Latin American context. Subsequently, the institutional framework that characterized the dynamics of the technological institutes in Ecuador was addressed. In the last sections, work was done on the references that structured the quality evaluation models of the institutes.

Public policies from referents

The study of public policies involves identifying the underlying definitions of the State and society of these policies in their design and implementation process. Reinoso (2014) in an analysis of public policies distinguishes three macro-approaches to understand the complex research and variables in this field. In a socio-central approach, relations between the State and society are determined by social classes, social structure, or interest groups (Poulantzas, 2001; Dahl, 2008). In a state-centric approach, the State has autonomous power in its relationship with society to determine the design and course of policy implementation (Mann, 1997; Skocpol, 2011 [1989]). Finally, a relational approach characterized by a state both as an actor and a place in close articulation with society (Hall, 1993; Evans, 1996; Repetto, 2000). The research captures a relational perspective in the sense that policies are agreements generated between state and social actors. The course of the configurative character of a policy is best observed in a long historical journey.

According to Pressman and Wildavsky (1998), policy implementation processes should be seen as a constant process of redefining objectives, content, actors, and resources. The analysis of public policies is intended to understand actors, values, and interests that, despite the agreements formally established in the design of the implementation process, many of the actors differ in their patterns of action and in the ways in which resources are used. In other words, Majone and Wildavsky (1998) identify a double process, the design configures the policies but not in their entirety. Policies are continuously transformed by implementation operations. They indicate that implementation does not configure all policies either, even though policies can take great forms during the

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deployment process, but policy outcomes would not be separated from the original ideas, either. Fontaine (2015) in his book *Analysis of Public Policies: Concepts, Theories and Methods* argues that cognitive approaches are among the analytical approaches. In our research this approach helps to understand the social constructions, perceptions and values that explain the behavior of state or social actors in the policy implementation process. Yves Surel (2008) in his study on policies as paradigms distinguishes four elements that make up the cognitive universe: General metaphysical principles, hypotheses, methodologies, and instruments, i.e., a paradigm contains a set of social representations legitimized by its actors, who see in them their reference, but also their framework of action. The second element, concerning hypotheses and laws, relates to the rules of action that guide the actions of the actors. A third element is the methodology that establishes a form of relationship between state and social actors in the creation of policies. Finally, every paradigm includes "a conglomeration of cognitive and practical elements that structure the activity of a system of actors that make it coherent and durable" (p. 52).

Another concept used to define the construct of values and representations is the referential. According to Muller (2010), public policy is a representation of the reality on which one wants to intervene. The set of images that structure the framework of action of the actors that confronts the solutions and defines the proposals for action is called referential. In other words, the referential would be defined as an image of the social reality constructed by the actors in a political relationship that produces tangible effects. The research uses the theoretical and methodological tools of the cognitive approach to explain the referents that determine the quality, problematization, norms, methodology and instruments of a higher technological institution. This effort is a new path in the studies of higher education policies in Latin America and specifically in Ecuador. According to Perrotta (2019) in his challenge of generating a Latin American quality assurance system, he argues that a technical rhetoric of accreditation and institutional evaluation of higher education institutions has been established in the last decades in Latin America from a perspective of suspicion and distrust about the State as responsible for providing public education or coordinating the system.

Quality referents in higher education

The problem is to characterize quality referents in higher education in general and particularly in higher technological education. The proposal

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 267-295.

of the researchers before carrying out the documentary analysis of the evaluation models implemented in the institutes is to briefly review the approaches that have nuanced the debate on quality in higher education. Characterizing quality in higher education is a complex task, as Skolnik (2010) states that efforts to ensure quality must cease to be seen as a strictly technical process and should be best viewed as a political process. The political character of quality is not seen exclusively by the coexistence of various actors but by the positional character of the actors that determine the various ways of interpreting quality. Regarding the political configuration of quality, Plá (2019) says that it should be understood as a set of principles, norms, methods and instruments not so much to guarantee social justice but to "the production of inequalities that distribute social goods on the basis of individual merits" (p. 20). This critical stance fits in with what Flores and Villarreal (2021) call the performance society in their research on the subjective transformations of the parallelogram of power in today's societies. This society "produces subjects of performance, i.e., entrepreneurs of themselves" (p. 196). In short, in quality it is necessary to recognize the political process of its configuration, but at the same time the prefigurative character in the management of the institutions so that they assume quality as an exclusive individual responsibility for both its merits and its failures.

In order to reduce the complexity of analysis and to enable an understanding of quality, analysis is divided into three approaches: Business, cultural and philosophical. The business approach helps to ensure that higher education institutions must be managed from the strategies and processes that companies have undertaken to remain competitive in the market, but at the same time they have ensured survival in the complexities of today's society. According to Hughey (1997) the question is raised about what can higher education learn from business and industry? The author's answer is found in the description of business strategies of higher education institutions such as technological innovation, quality management, emphasis on the client, the work of motivated teams, lifelong learning and fundamental adjustment to norms and ethics. The main elements of a company's management are customer satisfaction and profitability. Similarly, institutions of higher education are called to focus on students as clients and on efficiency.

Gutiérrez (2010) in his book *Quality and Productivity* makes a brief review of quality in business management. Quality as inspection, statistical quality control, quality assurance, total quality and systematic improvement. In a first phase the concern was to increase inspection lev-

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els under standards. The review was conducted in 100% of the products to guarantee that the products met the attributes required by the customer. A second phase, as Gutiérrez (2010) argues through Walter Shewhart's contributions, helped to the scientific basis of quality, and regarding the statistical application, the inspection of the products was carried out to samples and not to all the products. Deming (1900-1993) as a disciple of Shewhart applied the principles of administration such as planning, doing, checking and acting (PHVA cycle) to Japanese companies, and observed improvements in their processes. This approach addresses process improvement rather than product or output improvement. In a third phase, quality was viewed from an economic cost point of view. In other words, a product of poor quality has high costs and therefore a collective responsibility for quality needs to be set up. In order to generate commitment to quality, lifelong learning and strong motivational processes are necessary. In a fourth phase, total quality emerged as a proposal to ensure quality and standardize quality systems, with this objective the ISO-9000 standards were created. These standards articulated the spaces to consolidate a global movement to generate a quality management system. Finally, quality became a strategic issue, a competitive advantage, and a big business. In this context, organizations were seen as systems that integrated several interdependent components and processes. Within this framework, the management of an organization focused on improving the performance of the processes of each of its components. In summary, efforts from the quality management approach have generated the greatest impact on the administration of Higher Education Institutions. It would be unthinkable for higher education institutions to be managed without mechanisms and procedures to ensure quality, such as information systems, control reports of the implementation degree of planning.

On the other hand, a second approach to quality assurance aims to generate cultural changes from the direction of members of the educational community. According to Reinoso-Avecillas (2015), culture cannot be reduced to a "fact made, but to the way in which it is carried out as a criticism of objectivist positions that ignore the action and the actor and subjectivists for overshadowing the impact of structures on the day-to-day interrelationships of actors" (p. 68). While the management approach opted for improvement strategies focused on results and client satisfaction, the commitment to the culture of quality implies a relevance of the actors in the transformation of the institution. As Yorke (2000) argues, improving the quality of a higher education institution is not focused on product inspection and customer satisfaction, but on the

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 267-295.

outcome of an institutional learning process. This approach focuses its analysis on the role of academics in leading the task of developing a culture of quality. Yorke (2000) proposes some guidelines for strengthening institutional learning, such as: the development of a collective vision and strategy, the establishment of a sense of urgency in quality, the creation of a competent team to guide the work of the institution, the increase in mechanisms and levels of direct communication between the actors of the institution to guide the efforts in change, the shared commitment to the development of actions developed in the framework of creativity and innovation and not of mere obligation, and finally, celebration of the quality project components.

The quality culture approach makes some criticism of the management model focused on quality management. First, the management model generated its interventions, mechanisms and policies from the business and industrial sectors, but the realm of academia is not limited to the mere application of processes that produce products in accordance with social needs. Institutions of higher education are focused on addressing student transformation processes and abilities. Second, the management model is based on a suspicious approach that not all higher education institutions generate good quality education, nor does it produce the requirements of clients. In this context, as Yorke (2000) argues, quality must be seen as moral commitment, a necessary condition for managing higher education institutions. In a 2014 manifesto of higher education academics from Ecuador led by Arturo Roig (2014) on evaluation models, they say that quality should integrate "relevance to society, participation, co-government and democratic administration of institutions, such as the democratization of knowledge and the building of social capacities for civic coexistence among critical people" (p. 4). In addition, management models bet on compliance with requirements and a homogenization not only of quality practices but also of the senses. For example, in a study by Hernández-Guitrón et al., 2018) on the implementation of 21 quality systems at the Autonomous University of Baja California in Mexico, it was determined that 17 systems were certified under ISO Standard 9001:2008, but paradoxically "only in two cases processes related to teaching and research are included" (p. 103). This means the confusion between accreditation and quality. On the one hand, Roig (2014) argues that accreditation "is a process that presents the minimum standards that a university must meet to be considered a university" (p. 4). These indicators can be reduced to a checklist by the government bodies established by law, but quality requires a commitment from academ-

Sophia 33: 2022.

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 267-295.

ics, it is the result of a deliberate process, collective discussion of the relevance and active participation of the actors. Finally, as Han (2017) said "The society of the 21st century is no longer disciplinary, but a society of performance. Nor are its inhabitants already called subjects of obedience, but subjects of performance. These subjects are entrepreneurs of themselves" (p. 25).

Finally, from a philosophical analysis, the authors maintain that the educational quality is present in the discourses of the rulers, in the different norms and languages of the agents that make up the educational institutions; nevertheless, they maintain their polysemic and multidimensional character. According to the studies conducted by Harvey and Green (1993) and Harvey (1998), five versions of quality were identified: (a) quality as an exceptional condition, i.e. as exclusive to certain institutions or as exceeding certain standards; (b) quality as perfection or consistency that refers to the reduction of the probability of defects until their elimination; c) quality as a fit for purpose, where educational services are measured by customer satisfaction; d) quality as the delivery of value for money that refers to the efficiency in the use of economic resources; e) quality as transformation that refers to the continuous process of student transformation. In this framework, the four versions are reduced to a managerial approach to quality, and as will later be observed, it determines the hegemonic discourse of quality in higher education. The article is committed to restoring quality as an element that reflects the nature of higher education institutions and where we should focus. In this context, the focus is on the learning of students, the development of their abilities and their commitment to the transformation of the environment.

The theoretical postures of educational quality at the higher level are at the table of the debate, but in Latin America and Ecuador it is the states and governments that have defined the quality of managerial logic to exercise political control. A series of procedures and mechanisms arise from this conception to look for quality assurance and evaluation. Quality is closely linked to excellence, a category traditionally accepted as inherent in higher education.

According to Harvey (1998), the concept of quality from a dialectical transformative approach must overcome excellence, good value for money and the suitability for an objective. Educational quality cannot be reduced to compliance with external parameters or standards, hence the emphasis on the purpose of higher education, which consists in transforming the life experience of students through their improvement and empowerment. Only by looking at this educational purpose will quality

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 267-295.

become a strategy and not an end. Regarding the variety of notions of quality, teachers, students, managers, and other actors must take a position that is not exactly homogeneous, rather, it is aimed at restructuring the models of quality management and problematizing the principles of the socio-political aspect that sustained a culture of quality.

In order to conceive educational quality as a process involving several internal actors, Elken and Stentaker (2018) propose the notion of "quality work", where "the notion of quality is much more dynamic and is the result of the coordination and communication of the actors within the specific institutional context" (p. 9). Educational institutions legally conceived as democratic and emancipatory spaces are governed under hierarchical and limited managerial logics, where values, beliefs and multiple interests of all their agents come into play. Pragmatism is one of the essential characteristics of quality work, but it is not reductionist or alienating, rather it interrelates academic ideals, values and standards with all the instrumental processes of quality management. From this perspective, quality is built with and from its actors and seeks the reason of its actions rather than the simple compliance with regulations and standards imposed by external entities.

The configuration of educational quality in Latin America

Plá (2019), in one of his works on educational quality, masterfully summarizes the contribution of the two authors considered the pioneer in educational quality, those who established conceptual guidelines that were later assumed by public and private bodies throughout the planet. First, the New Zealand philosopher and pedagogue Clarence E. Beeby, who published his book *The quality of education in developing Countries* in 1966. In this work, Beeby conceived education as a policy that was present in all human activities, as well as in institutional structures, with the mission of opening possibilities for cultivating people's capacities. In this work, Beeby established the levels of educational quality: the classroom, the relation of education with the economic development of the community and social criteria. Another technical pillar in the expansion of the concept of educational quality is the American Philip H. Coombs, who published a book entitled *World Crisis of Education* in 1968. In this book Coombs 1986 [1968] described the critical state of education through a diagnosis and proposed the lines for future educational policies at the global level. According to his proposal, specialists must overcome five challenges: a) the modernization of the teaching administration; b) the

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 267-295.

modernization of the teaching staff; c) the modernization of the educational process; d) the modernization of the strengthening of educational finances; and e) the emphasis on informal education.

The ideas of these two thinkers, called by many critics as functionalists of the stage of educational planning and development, will be present in Latin America and the Caribbean and will influence the design of educational policies in technical education. From these proposals, the paradigm of educational quality has been created with the conditional support of multilateral financing organizations such as the World Bank and the United Nations Educational, Scientific and Cultural Organization (UNESCO). These entities complement each other in their visions and have developed articulating actions to contribute to the achievement of educational quality through two paradigms: Equity and inclusion. At the Regional Conference on Higher Education held in Cuba in 1996, prior to the World Meeting, it was recognized that development, democracy, and peace go hand in hand and assumed sustainable human development as a paradigm. This conference also established regional trends in higher education, among which were highlighted the persistent inequality despite the expansion of enrollment, a restriction on state investment in this sector, the multiplication and diversification of entities that offer tertiary technical education and the growing offer of private education.

Tünnermann (2010) analyzed the challenges of Higher Education in a series of conferences around the world, which were discussed deeply at the World Conference in Paris in 1998. The agreements established at this meeting were evaluated periodically and in 2008, in the Declaration of the Regional Conference on Higher Education in Latin America and the Caribbean held in Colombia, emphasis was placed on the creative and sustainable articulation of public education policies in higher education that reinforce their social commitment, quality, relevance and autonomy.

Through strategic alliances with UNESCO and other so-called multilateral agencies, the World Bank became one of the essential actors in discussing economic development and its impact on the formulation and implementation of public policies in the educational and other social areas, especially in our region. Domenech (2007) says that one of the bases for understanding the paradigms of higher education and technical education in Latin America and the Caribbean is to review the effects of the structural adjustment application that was dictated by the Washington Consensus and Post-Consensus at the end of the twentieth century. The proposals of global financial institutions were based on strong criticism of the welfare state. The main criticisms were the high level of

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inefficiency, bureaucratization, and centralism; likewise, education systems were seen as inefficient, ineffective, and unproductive. Therefore, the project proposed by the World Bank involved the reduction of the state and the expansion of the market; in education, the emphasis was on decentralization and privatization.

Thus, it can be inferred that there are two predominant paradigms in the formulation and execution of educational policies, specially at the higher technical level. Tünnermann (2010) reflects and presents these paradigms, first a humanist paradigm with emphasis on relevance. This model is evidenced in its programs aimed at meeting the sustainable development goals approved by the United Nations in 2015. This paradigm is also observed in the principles established by the World Conference on Higher Education in 1998, as well as the emphasis on responsible and academic autonomy of these institutions to contribute to the creation of a culture of peace, based on development with equity, justice, respect for human rights, solidarity, and democracy. On the other hand, there is the economistic paradigm whose primary agent is the World Bank, an organization that, taking advantage of its capacity and economic power, has become the main financing source for educational programs, but also its support extends to the fields of advice and research. According to Domenech's (2007), the World Bank:

> Education is essential to economic growth and poverty reduction, as it enables human capital to be raised through quality and outreach investments specifically targeted at the poor, but also through the systemic reforms needed to provide sustained benefits (p. 12).

Since the 1960s, the United States has strengthened its intervention in Latin America, supported by the Organization of American States, and the Inter-American Development Bank has implemented the Alliance for Progress. Arias (2009) noted that the development strategy assumed that states and governments adapted their structures, laws and systems to the technical recommendations of international organizations. Moreover, the economic credits granted by the great world power should be earmarked exclusively for infrastructure and to cover the basic needs of poor populations. A percentage of these credits were invested in education, mainly at the basic levels and in supplementary programs for populations in rural sectors. The educational quality was in the background because the aim was to massify a curriculum that contributes to maintaining order and security, the main postulate of this intervention.

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 267-295.

To complement foreign intervention in the political, social, and cultural configuration, we must mention the establishment of military dictatorships, which were welcomed by the new world power and used repression and death to maintain order and security. In the case of Ecuador, Paz and Miño (2010) assured that both the military junta in the 1960s and the military dictatorship in the 1970s, while distancing themselves from these alienating and repressive pedagogies, contributed to the consolidation of the development model. Technical training education policies focused on specific technical schools were established because access to higher education was a privilege for certain people.

As mentioned by Arcos (2008), legal reforms in the educational field from 1950 to 1990 focused on access and expansion of enrollment, but from the 90 onwards, the reforms focus on quality with the support of funding agencies such as the World Bank and the Inter-American Development Bank, emphasizing inclusion and equity; however, the crisis, which worsened from 1996 to 2006, opaque all quality reform initiatives. The State that guaranteed the right to quality education became a problem and the privatization of education increased. However, starting in 2006, with Rafael Correa in presidency (2007-2017), education policies became a priority with the formulation of a new development plan and the adoption of a new constitution, and quality became one of the main principles guiding the new legal and structural reforms at all levels.

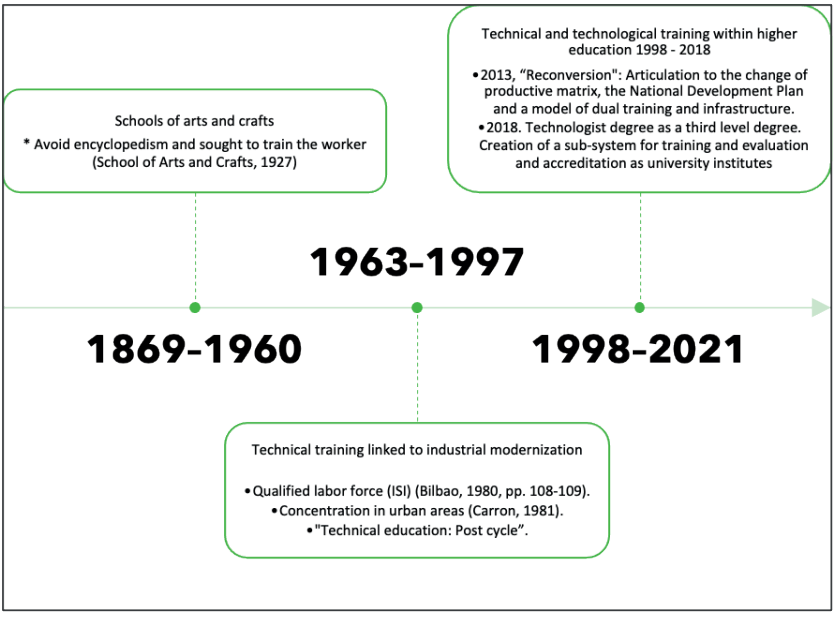
Institutional framework of higher technological training

Higher technological training has had different epistemological and teleological views linked to historical conditions which determined the quality criteria within the national education systems. This section describes the evaluation criteria of the evaluation models of the higher technical and technological institutes implemented in Ecuador in the last decade, as well as the actors and institutional framework of organizations that determined the guidelines for these models.

Higher technological training in Ecuador had several names: Craft training, technical education, and now higher technical and technological training (see figure 1).

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 267-295.

Figure 1
Timeline for technical and technological training in Ecuador (1869-2020)



Tomaselli (2018) and Reinoso (2019) show that technical-professional training in the 20th century went through three phases related with the state configuration of each historical epoch. The first steps of technical-vocational training were found in the arts and crafts schools, created under the government of President García Moreno in 1869 under the name of Catholic Protectorate. This new institution contributed to the development of the emerging industrial sector. At the end of the 19th century the schools were run by religious orders (Presidencia de Ecuador, 1927, p. 1). The Salesian Congregation (1896) in the teaching program of the workshops determined that the aims were the promotion of religious education and the "technical, artistic or industrial instruction of young workers, mainly taken from the poor class" (p.1). In addition to the objectives focused on the teaching processes of a trade, the teaching program had the additional purpose of contributing to the interest and progress of the nation. The workshops offered degrees of teachers in art or craft in a period of five years. The final evaluation included requirements that the student must demonstrate, such as good behavior, the faculty to teach others for a period of five months, the works executed and a validation of knowledge (Congregación Salesiana, 1896). As for Mosquera and Reyes

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 267-295.

(2011) since the middle of the 19th century many private and public entities in Latin America were forced to create schools of arts and crafts as synonymous of progress and social integration. As stated, the School of Arts and Crafts was in force until 1926, when it became part of the Faculty of Sciences of the Central University of Ecuador. In this same period another entity was created, the Technical Central, which in 1977 became the Superior Central Technical Institute and in 1996 was Higher Technological Institute. In addition, the creation of various technical educational institutions, among which the institutes of science, higher schools, polytechnics, recognized technical colleges, among others, were highlighted. According to Quishpe (2012), these institutions were created under the guidance of the State and religious orders, and all responded to the needs of practical and technical training, especially of poor young people who had to be integrated into work.

A second phase, the technical-professional training, was developed within the development approach of the Ecuadorian State. As Reinoso (2014) argues, between 1963-1981, a development era characterized by the role of the State in the design and implementation of the policies considered education as human capital for the economic development of the country. As mentioned by Bilbao (1980), the demand for skilled labor was aligned with development policies based on the Import Substitute Industrialization (ISI) model. According to Carron (1981), the concentration of the population in urban areas increased with the growth of the industrial sector. In the field of education, the Education and Culture Act was approved in 1977, and a two-year post-baccalaureate was created for the first time in three major branches: technical and technological, arts and pedagogy, from which the higher technical institutes, the institutes of the arts and the normal institutes emerged. In order to observe the effects on the organization of technological institutions, it is necessary to revise the Education Act of 1983, which established technical-professional training as a specialization dedicated to the training of technical and technological professionals. Technical colleges with specialization offered "degrees of practical, technical, or any other denomination in the respective specialization, which are different from the degrees offered by universities and polytechnical schools" (Art. 13). In other words, intermediate professional degrees were created between high school and third level degrees as engineers or graduates. However, between 1989 and 1998, the highest number of higher institutes originated were 117, while between 1979 and 1988 there were only 16 and between 1999 and 2007 only 51 (CEAACES, 2014).

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 267-295.

With the latter, we can argue that the system of technical education in Latin America originated in High schools, and different changes were made from the infrastructure and equipment to legal reforms from the Central State. This fact is seen in the commitment that the States made in 1990 to reform the curricula of their schools in order to eliminate the gaps in the development of skills.

Finally, a third phase originates with the insertion of technical training and technology in Higher Education. In the 1998 Constitution, they became part of the higher education system, under the supervision of the National Council for Higher Education (CONESUP). With the issuance of the Organic Law of Higher Education of 2000, CONESUP was ratified to create and suppress higher technological institutes; likewise, the Ministry of Education had the power to propose the creation of these public institutes. Thus, the law established that the institutes should be placed under the administrative and financial responsibility of the Ministry of Education and, academically, under the responsibility of CONESUP. It was also stated that technical careers would last two years and technological careers three years; the National Evaluation System was also established in order to guarantee educational quality and continuous improvement. Finally, with the Constitution of 2008, changes were made, which are still in force. On the one hand, the higher education system was linked to the National Development Plan, and as regards the creation of higher education institutions, it was subordinated to quality assurance and planning agencies; they also established a five-year period to evaluate all institutions of higher education. The reforms of the Higher Education Law in 2018, considered technical and technological degrees to be third level degrees. In short, the historical configuration of technical-professional training is evident as subalternative. Higher education was considered the training that students receive in the Universities and Polytechnic Schools. The aim beyond the scope of this article is to review the historical development of the regulations that favor or not the technical-professional training and the actors that mobilize within a specific political and social scenario.

With technological training as a higher education, it was intended that new professionals acquire analytical skills, knowledge development and the strengthening of critical thinking. As Perazzo (2017) indicates, there are not boundaries between technology and science in a knowledge society, characterizing technological training as

> (…) a) To train professionals to research and develop technologically in order to create, innovate, and adapt; b) To contribute to the moderniza-

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 267-295.

> tion and competitiveness of the productive system and to the social and cultural development of the nation; c) To implement new production technologies in the design and creation of new methodologies; d) To develop scientific technological capacity, and e) To generate intellectual capacities, with high levels of conceptualization, abstraction, logical reasoning and modeling of reality (p. 10).

In view of this scenario and based on the new legal framework that governs the country since the adoption of the 2008 Constitution, educational quality became essential to overcome the developmentalism and achieve the *sumak kausay* or good living. Despite this, the concept of educational quality seems to be related to the business vision, as stated by Vázquez (2015):

> Taking up the business practice that establishes the quality of a product or service through inspections and tests designed based on the standards of what the market expects, the quality of education was mechanically associated with the evaluation, understood to be not as part of the teaching-learning process, but as a measurement of results through standardized instruments (p. 9).

One of the relevant aspects contemplated by the Organic Law of Higher Education (LOES) (2010) in Ecuador is the evaluation and accreditation to achieve the desired educational quality. Regarding educational quality, Article 93 of the LOES notes: "The principle of quality consists in the constant and systematic search for excellence, relevance, optimal production, transmission of knowledge and development of thought through self-criticism, external criticism, and permanent improvement (art. 93). This Law is very clear when pointing out that quality must be evaluated to determine the status of institutions and their careers, through the collection and systematization of quantitative and qualitative data that give way to the diagnosis of components, functions and processes. This evaluation will be ongoing, i.e., all institutions must undergo an accreditation process, which corresponds to a quality certification after they have met international quality guidelines, standards and criteria.

On the basis of this Act, the Council of Higher Education (CES) and the Council for the Evaluation, Accreditation and Quality Assurance of Higher Education (CEAACES) were established as bodies governing the Higher Education System. Likewise, since the approval of the National Secretariat of Higher Education, Science, Technology and Innovation (SENESCYT), it was the governing body of public policy at the higher level and the entity responsible for the coordination between the Government

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 267-295.

and higher education institutions. With this legal basis, all the processes to evaluate and evaluate universities and technical institutes were implemented and the results were not encouraging. According to Cortés and Villafuerte (2017), the results of the evaluation of 219 technical and technological institutes carried out between 2014 and 2016 determined that the quality of these entities is low because only 47 were certified. What is most striking is that out of the 47 evaluated institutions, 40 are private, six public and one co-financed. In addition, most certified institutes are in zones 8 and 9, in the largest cities of Guayaquil and Quito, and the most critical point is that the careers offered by these certified entities are linked to only three sectors (services, business administration and law), of the 14 prioritized by the State for the transformation of the productive matrix.

In addition to this evaluation and certification process in 2014, Fiszbein et al. (2018) assure that SENESCYT implemented the project for the conversion of Higher Technical and Technological Education in Ecuador, observing the goals of the National Development and Good Living Plan 2013-2017. This project aimed at expanding enrollment at the technical education level and at raising the level of enrollment in relation to university education; to achieve this end, the construction and physical and academic conversion of forty technical and technological institutes at the national level was done. These institutes should have a specialized approach in some of the areas identified as strategic in order to achieve the change in the productive matrix and a territorial approach, i.e., their careers had to respond to the needs of the human talent of that place or region where the institution was located. To conduct this plan, the State invested 308 million and managed financial support from the World Bank to reach 53 000 students by 2018.

SENESCYT, as the governing body of the public policy of higher education, endeavored to enforce legal mandates; for this reason, the forty technical and technological institutes mentioned above created new careers in accordance with the strategic sectors prioritized in the Development Plan; these careers were implemented under the dual modality. Espinoza (2020) says that the dual modality is not the mere combination of study and work or simply a preprofessional practice; in this case, the company becomes co-responsible for the training and academic instruction, contributing to the development of work skills in the student, through the manipulation and insertion in the productive processes. In December 2019, the pact for dual education was signed and the Plan of Education and Technical and Vocational Training was launched. In the same event, SENESCYT informed that 9895 students of technical and

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 267-295.

technological level were registered, taking advantage of the 573 agreements signed between public and private institutes and enterprises.

According to Morales (2018), from 2011 to 2018 were evaluated "23 Higher Pedagogical Institutes, 5 Higher Intercultural Pedagogical Institutes, 15 Higher Institutes of Arts and Higher Conservatories, 221 Higher Technical and Technological Institutes, 5 Higher Technical and Technological Institutes with distance modality" (p. 3). SENESCYT reported that by December 2019, 238 technical and technological institutes were still legal: 98 are public and 140 are private, where 1132 careers are offered, of which 296 belong to public academic centers.

This evaluation process generated criticisms and was rejected by various sectors and actors of the higher education system by arguing that the models implemented to evaluate and certify institutions of higher education were results-focused rather than processes-focused and did not consider the reality and context of the institutions evaluated. Additionally, the purely regulatory and even punitive character aimed at achieving educational quality, but stagnated certification. In view of this scenario, the National Assembly considered reforming the Organic Law on Higher Education, arguing that the goal of higher education is quality assurance.

Among the most important reforms carried out to the LOES, Heredia (2018) highlighted the modification of some bodies, for example, CEAACES would be replaced by CACES and the categories of universities and the distinction of universities devoted to teaching and research would be eliminated. In addition, in this new Law, the educational and arts institutes are part of the institutions of technical and technological training; in the same way, the third level, the technical-technological and the fourth technical-technological level were established.

Quality assessment models of higher technological institutes

Rama (2015) says that the different systems of technical training in Latin American countries were characterized by informality and low quality, without academic rigor, and were extremely instrumentalist and argued that:

> Technical and technological training corresponded to training processes for low-wage jobs, which offered studies with strong practical components of technical level of 2 years or less, with low levels of regulation, quality control and public resources (p. 18).

However, Sevilla and Dutra (2016) argue that the best contributions of technical training are in countries that have generated a system

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of higher technical and professional education parallel to the university, such as Colombia, Mexico, Brazil, Chile and Peru.

The analysis of this research focuses on the higher technological institutes. The choice of higher technological institutes as the subject of this article is based on two reasons. The first is substantive, where higher education studies have been linked with university studies. In other words, to speak of higher education is to speak of universities. In this context, theoretical reference helps us to have better capacities to understand the challenges of higher education in Ecuador and how to address the problems of the territories and the productive and social sector. The other is more operational with access to documentary sources of the evaluation processes of higher institutes.

Some conceptual clarifications are required before carrying out the study of the evaluation models implemented in the institutes in the last decade in Ecuador. Since the beginning of the evaluation processes in Ecuador, the concept of quality has been the structuring principle of the analysis processes of the technical and technological training system, i.e., the underlying meaning of quality is determined in some way by the criteria and indicators of the evaluation models. Follari (2019) explains that the evaluation processes, through their models, have established a certain hierarchy of the institutes and do not allow us to reflect on the possibility that each institution has to adjust its processes and move forward according to its structural conditions, territorial conditions and capacities. The definition of the quality of technical and technological institutes has been subservient in the theoretical discussion. The implementation of the evaluation models of the institutes was carried out after the evaluation of the universities. Finally, according to the National Council for the Evaluation and Accreditation of Higher Education of Ecuador (CONEA) in its report in 2009, the origin of private and public higher institutes is in secondary education, and this involved many institutions that had neither the conditions, nor the resources, and often not students.

The research focused on the evaluation models of the higher technological institutes to measure quality from 2008 to 2021. The models, criteria, emphasis, and institutions that govern it will be characterized in this framework.

Evaluation model of the Higher Institutes CONEA 2007. The first institutional evaluation of the technological institutes started in 2007 by CONEA. The evaluation process had two phases: The first was a self-evaluation process and a second phase consisted of the verification of information under a model, which was conceptualized as systemic and integrated four functions:

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 267-295.

Teaching, Research, Community Link and Administrative Management. Eight areas were identified from the functions. In total, 96 standards were configured. The standards were defined by CONEA (2007) as qualitative and measurable elements that objectively express the desirable level against which the indicators are contrasted. However, the participation of the institutes was voluntary and out of the 270 registered only 15 were incorporated into the self-assessment phase and only one completed the process.

Assessment model of the 14 mandates of the Technological Institutes. The National Constituent Assembly (2008) on July 22, 2008, through the mandate 14, decided "to determine the academic and legal situation of all educational institutions under its control on the basis of compliance with its provisions and the norms that are in force in the country in terms of higher education". It created a definition of an evaluating state (Krotsch, 1995; Rama, 2005) or recently of a certification state (Solanas, 2019). Since 2008, the State assumed an important role in the management and direction of higher education institutions. This was centralized and focused on the management of public institutes by the Executive Secretariat of Higher Education. CONEA (2009) was responsible for the development of the final report. The criteria used for evaluating higher education institutions in 2008 were: academy, students, research and management. However, only three criteria were considered for the technological institutes: teaching, students and administration. Some characteristics of this process were supported by the political agenda of the government and sought to consolidate a perspective of an evaluating State (Rama, 2005; Krotsch, 1995), but also sought to align higher education institutions with the development objectives of Ecuadorian society.

The evaluation model used by CONEA (2009) was multi-criteria to assess quality as a multidimensional concept.

> This multi-criterion decision theory in the performance evaluation of HEI (…) sought to ensure acceptable consistency levels of analysis with the help of consistency control tools and techniques; and on the other hand, transparency in the evaluation process, ensuring clarity in the assumptions of the analysis method in the interpretation of the information and was multi-criteria in the formulation of conclusions (p. 7).

In order to identify the quality approach used in this evaluation model, it is necessary to review the quality concept presented by CONEA in 2003. Quality is:

> Set of factors that affect vocational training, the way of knowledge production, the construction of moral and ethical values and their social

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> dissemination, based on the achievement of objectives and goals set forth in the vision, mission and institutional plan (p. 7).

The quality of higher education would be identified by factors or criteria and each criterion would have indicators or standards. As CONEA established in its 2009 report, the criterion is a model that allows establishing preferential relationships between the objects of evaluation or alternatives. Indeed, the criteria will determine whether or not certain relationships should be prioritized by the institutes. Although this research model implemented by CONEA did not aim at institutional certification but rather to diagnose the academic performance and legal status of the higher institutes, in one way or another it cataloged the evaluated institutions with a certain quality.

The structuring of institutes of the research model of CONEA focused on assessing performance according to criteria. However, it allowed the evaluation to be closer to the reality of the institutes. The evaluation divided the institutes into industrial, agricultural, administrative, pedagogic, conservatories and arts. Additionally, it allowed to generate comparison processes between the institutes and to orient them to find their references in others of the national level. This research model of the academic situation of the institutes prioritized the resources and the conditions that an institution has to offer technical and technological training processes.

Evaluation model of the learning environment of CEACCES Higher Technical and Technological Institutes 2014. The 2014 model was built by CEAACES (2015) and collected several elements of the 14-mandate evaluation model. First, the assessment of institutes was understood as a vaguely structured problem and therefore required a multi-criterion decision method. Second, the model was conceived of an arborescent type, i.e., that lower hierarchical levels can be seen as a means of reaching a higher hierarchical level. This model established five criteria: Relevance, Curriculum, Quality of Teaching, Infrastructure and Institutional Environment. In addition, it set up a total of 50 indicators, of which 34 were quantitative and 16 qualitative. Hence, being more important the quantitative indicators, we can define that quality assessment focused on reviewing the resources and basic conditions that a technological institute should have to offer the quality of higher education. This evaluation process, unlike the previous one, established a ranking of institutions due to their performance. As results, private institutes have better performance levels than public institutes.

This evaluation model of institutes is framed and supported in the Organic Law of Higher Education (LOES) of 2010. The definition

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 267-295.

of quality as the search for excellence established a condition for ranking institutions. In this sense, quality was conceived as an exclusive principle of certain institutions while most did not achieve optimal performances. In this sense, the administrative vision of quality contradicts the perception that institutes should implant. The notion of principles implies that all institutions must ensure quality.

The principle of quality has other characteristics with the reform to the LOES in 2018, in art. 93. The first is the collective search for a culture of quality. This search is not only an individual effort by the institutions but is a responsibility of the higher education system. Additionally, another characteristic is the balance between the substantive functions, and it uses relevance and inclusion as referents of quality, among other principles.

In this context, it is evident that the evaluation model of higher institutes in the evaluation process of 2020, promoted by the Council for Quality Assurance of Higher Education, sought to reorganize, and conform to the reforms of the LOES. This restructuring involved moving from five to six criteria: organization, teaching, research, relation with society, resources and infrastructure and students. These criteria look for a more qualitative approach and for identifying the processes of the institutes to determine their level of performance. Out of the 32 indicators, 21 are qualitative and 11 are quantitative.

Challenges for technical and technological training in Ecuador

Superior technological training has had several challenges. First, its valuative character, conceptualized as training for work, but the social conditions of finding a job are increasingly complex in societies such as Latin American with poor productive sectors and fragile democracies. This challenge included setting up higher education systems where technical training is included and is related to the innovation processes of the productive sector and contributes directly to development objectives. Another of the challenges is political, where the responsibility of the States must be in relation to the configuration of a quality vocational training system. This involved guaranteeing infrastructure, laboratories, and workshops, establishing a professional career of teachers and consolidating territorial innovation systems. The challenges also include the academic field. Teaching and learning activities cannot be reduced to institutional classrooms but must be extended to real work scenarios. An educational process is required that prioritizes practical action and the application of knowledge, accompanying the development of quality

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learning. This challenge implies the cooperation between the business, social, productive and academic sectors.

Conclusion

Quality is a category that is fully adjusted to the productive field and is associated with products with certain characteristics; however, this category was included in education and the States were adapting policies in order to respond to the new complex needs of society. Decisions in pursuit educational quality were nuanced and conditioned by different actors and interests, limiting government entities to the exercise of their regulatory power.

In the course of the evaluation models of the higher technological institutes, one of the relevant findings is the concept of quality suited exclusively to the acquisition of high levels of excellence. In other words, the evaluation models of the higher institutes have adjusted quality to the efficiency and effectiveness of the institutional processes. However, they did not consider that the construction of quality is not only responsibility of the institution but a collective responsibility of the higher education system. In this context, quality is not only a result of the processes but also a structural condition of higher education institutions. In order to achieve quality, the traditional purely administrative vision must be eliminated, and a vision of quality aligned with relevance, inclusion and diversity must be implemented.

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Editorial guidelines / *Normas editoriales*

Publication guidelines in «Sophia»

ISSN: 1390-3861 / e-ISSN: 1390-8626

1. General Information

«Sophia» is a scientific publication of the *Salesian Polytechnic University of Ecuador,* published since January 2006 in an uninterrupted manner, with a fixed biannual periodicity, specialized in Philosophy of Education and its interdisciplinary lines such as Epistemology, Deontology, Aesthetics, Critical Studies, Hermeneutics, Axiology, Ontology, Philosophical Anthropology, Sociology, Philosophical Analytics, among others, all linked to the field of Education.

It is scientific journal, which uses the peer-review system, under double-blind review methodology, according to the publication standards of the American Psychological Association (APA). Compliance with this system allows authors to guarantee an objective, impartial and transparent review process, which facilitates the publication of their inclusion in reference databases, repositories and international indexing.

«Sophia» is indexed in (**SCOPUS**) Emerging Sources Citation Index (**ESCI**) from Web of Science; in Scientific Electronic Library Online (**SciELO**); in the Scientific Information System (**REDALYC**); in the directory and selective catalog of the Regional Online Information System for Scientific Journals of Latin America, the Caribbean, Spain and Portugal (**LATINDEX**), in the Matrix of Information for the Analysis of Journals (**MIAR**), in Integrated Classification of Scientific Journals (**C.I.R.C**), in the Academic Resource Index (**Research Bible**), in the Ibero-American Network of Innovation and Scientific Knowledge (**REDIB**), in the Portal for the dissemination of scientific production (**Dialnet**); in Latin American Bibliography in Journals of Scientific and Social Research (**BIBLAT**); in the Directory of Open Access Journals **DOAJ** and in repositories, libraries and specialized catalogs of Latin America.

The journal is published in a double version: printed (ISSN: 1390-3861) and digital (e-ISSN: 1390-8626), Spanish and English, each work being identified with a DOI (Digital Object Identifier System).

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 299-315.

2. Scope and policy

2.1. Theme

Original contributions in Philosophy of Education, as well as related areas: Epistemology, Deontology, Aesthetics, Critical Studies, Hermeneutics, Axiology, Ontology, Philosophical Anthropology, Sociology, Philosophical Analytics,... and all interdisciplinary related disciplines with a philosophical reflection on education

2.2. Contributions

«Sophia» publishes critical studies, reports and proposals, as well as selected state-of-the-art literature reviews related to Philosophy of education. Accepting also results of empirical research on Education, written in Spanish and/or English.

The contributions can be:

- **Reviews**: 10,000 to 11,000 words of text, including charts and references. Justified references would be specially valued. (current and selected from among 70 works)
- **Research**: 8,000 to 9,500 words of text, including title, abstracts, descriptors, charts and references.
- **Reports, studies and proposals:** 8,000 to 9,500 words of text, including title, abstracts, charts and references.

2.3. Characteristics of the content

All works presented for publication in «Sophia» must comply with the characteristics of scientific research:

- Be original, unpublished and relevantAddress issues that respond to current problems and needs
- Address issues that respond to current problems and needs
- Contribute to the development of scientific knowledge in the field of Philosophy of Education and its related areas
- Use adequate, clear, precise and comprehensible language
- Not have been published in any medium or in the process of arbitration or publication.

Depending on the relevance of the article, it will be considered as special contributions and will occasionally be published:

- Works that exceed the stated extent
- Works that do not correspond to the subject of the reflection foreseen for the respective issue

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 299-315.

2.4. Periodicity

«Sophia» has a biannual periodicity (20 articles per year), published in January and July and counts by number with two sections of five articles each, the first referring to a **Monographic** topic prepared in advance and with thematic editors and the second, a section of **Miscellaneous**, composed of varied contributions within the theme of the publication.

3. Presentation, Structure and Submission of the Manuscripts

Texts will be presented in Arial 12 font, single line spacing, complete justification and no tabs or blank spaces between paragraphs. Only large blocks (title, authors, summaries, keywords, credits and headings) will be separated with a blank space. The page should be 2 centimeters in all its margins.

Papers must be submitted in a Microsoft Word document (.doc or .docx), requiring that the file be anonymized in File Properties, so that the author/s identification does not appear.

Manuscripts must be submitted only and exclusively through the OJS (Open Journal System), in which all authors must previously register. Originals sent via email or other interfaces are not accepted.

3.1. Structure of the manuscript

For those works that are empirical investigations, the manuscripts will follow the IMRDC structure, being optional the Notes and Supports. Those papers that, on the contrary, deal with reports, studies, proposals and reviews may be more flexible in their epigraphs, particularly in material and methods, analysis, results, discussion and conclusions. In all typologies of works, references are mandatory.

A. Empirical research

Its purpose is to contribute to the progress of knowledge through original information, following the IMRDC structure: Introduction (objectives, previous literature). Materials and methods, Analysis and Results, Discussion, integration and conclusions. Following the criteria set by UNESCO, it is these types of scientific texts are also called as: "original memories"

The recommended structure, especially in works that include empirical research, is the following:

1) Title (Spanish) /Title (English): Concise but informative, in Spanish on the first line and in English on the second. A maximum of 85 characters with spaces are accepted. The title is not only the responsibility of the authors, changes being able to be proposed by the Editorial Board.

2) Identification data: Of each of the authors, organized by priority. A maximum of 3 authors will be accepted per original, although there may be excep-

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tions justified by the topic, its complexity and extent. Next to the names must follow the professional category, work center, email of each author and complete ORCID number. Aspects that must be included in the Cover Letter, must also be uploaded to the OJS system of the journal, in the Metadata section and /or in a word document attached to the file containing the work proposed for the evaluation.

3) Abstract (Spanish) / Abstract (English): It will have a minimum length of 210 and a maximum of 220 words in Spanish; and 200 and maximum 210 words in English. The abstract will describe concisely and in this order: 1) Justification of the topic; 2) Objectives; 3) Methodology; 4) Main results; 5) Main conclusions. It must be impersonally written "This paper analyzes...". In the case of the abstract, the use of automatic translators will not be accepted due to their poor quality.

4) Keywords (Spanish) / Keywords (English): A maximum of 6 keywords must be presented for each language version directly related to the subject of the work. The use of the key words set out in UNESCO's Thesaurus and of the journal itself, located in the following link: https://sophia.ups.edu.ec/tesauro_sophia.php, will be positively valued.

5) Introduction and state of the issue: It should include the problem statement, context of the problem, justification, rationale and purpose of the study, using bibliographical citations, as well as the most significant and current literature on the topic at national and international level..

6) Material and methods: It must be written so that the reader can easily understand the development of the research. If applicable, it will describe the methodology, the sample and the form of sampling, as well as the type of statistical analysis used. If it is an original methodology, it is necessary to explain the reasons that led to its use and to describe its possible limitations.

7) Analysis and results: It will try to highlight the most important observations, describing them, without making value judgments, the material and methods used. They will appear in a logical sequence in the text and the essential charts and figures avoiding the duplication of data.

8) Discussion and conclusions: Summarize the most important findings, relating the observations themselves with relevant studies, indicating contributions and limitations, without adding data already mentioned in other sections. Also, the discussion and conclusions section should include the deductions and lines for future research.

9) Supports and acknowledgments (optional): The Council Science Editors recommends the author (s) to specify the source of funding for the research. Priority will be given to projects supported by national and international competitive projects. In any case, for the scientific evaluation of the manuscript, it should be only anonymized with XXXX for its initial evaluation, in order not to identify authors and research teams, which should be explained in the Cover Letter and later in the final manuscript.

10) The notes (optional) will go, only if necessary, at the end of the article (before the references). They must be manually annotated, since the system of footnotes or the end of Word is not recognized by the layout systems. The

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numbers of notes are placed in superscript, both in the text and in the final note. The numbers of notes are placed in superscript, both in the text and in the final note. No notes are allowed that collect simple bibliographic citations (without comments), as these should go in the references.

11) References: Bibliographical citations should be reviewed in the form of references to the text. Under no circumstances should references not mentioned in the text be included. Their number should be sufficient to contextualize the theoretical framework with current and important criteria. They will be presented alphabetically by the first last name of the author.

b. Reviews

Literature reviews are based on the analysis of major publications on a giveLiterature reviews are based on the analysis of major publications on a given topic; Its objective is to define the current state of the problem and to evaluate the investigations carried out. Its structure responds to the phases of the theme/problem, contributions of researchers or teams, changes in theory or main theoretical currents; unsolved problems; current and future trends (Giordanino, 2011). According to UNESCO, this type of work is also known as "recapitulative studies"

1) Title (Spanish) /Title (English): Concise but informative, in Spanish on the first line and in English on the second. A maximum of 85 characters with spaces are accepted. The title is not only the responsibility of the authors, changes being able to be proposed by the Editorial Board.

2) Identification data: Of each of the authors, organized by priority. A maximum of 3 authors will be accepted per original, although there may be exceptions justified by the topic, its complexity and extent. Next to the names must follow the professional category, work center, email of each author and complete ORCID number. Aspects that must be included in the Cover Letter, must also be uploaded to the OJS system of the journal, in the Metadata section and /or in a word document attached to the file containing the work proposed for the evaluation.

3) Abstract (Spanish) / Abstract (English): It will have a minimum length of 210 and a maximum of 220 words in Spanish; and 200 and maximum 210 words in English. The abstract will describe concisely and in this order: 1) Justification of the topic; 2) Objectives; 3) Methodology; 4) Main results; 5) Main conclusions. It must be impersonally written "This paper analyzes..." In the case of the abstract, the use of automatic translators will not be accepted due to their poor quality.

4) Keywords (Spanish) / Keywords (English): A maximum of 6 keywords must be presented for each language version directly related to the subject of the work. The use of the key words set out in UNESCO's Thesaurus and of the Journal itself will be positively valued.

5) Introduction: It should include a brief presentation of the topic, the formulation of the purpose or objective of the study, the context of the problem and the formulation of the problem that is proposed, the presentation

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 299-315.

of the idea to be defended, the justification explaining the importance, the relevance of the study; the methodological framework used, and finally, a brief description of the structure of the document. In the justification it is necessary to use bibliographical citations as well as the most significant and current literature on the subject at national and international level.

6) Body or development of the document: It implies putting into practice throughout the text, a critical attitude that should tend towards the interpellation, in order to attract the attention of the topic and the problem treated. The writer must generate in the reader the capacity to identify the dialogical intention of the proposal and to promote an open discussion.

7) Conclusions: Objectively state the results and findings. Offer a vision of the implications of the work, the limitations, the tentative response to the problem, the relations with the objective of the research and the possible lines of continuity (to fulfill this objective it is suggested not to include all the results obtained in the research). The conclusions should be duly justified according to the research carried out. The conclusions may be associated with the recommendations, evaluations, applications, suggestions, new relations and accepted or rejected hypotheses.

8) Bibliography: It is the set of works used in the structuring of the scientific text. It should include only the reference of the works used in the research. Bibliographical references should be ordered alphabetically and conform to the international APA standards, in their sixth edition.

3.2. Guidelines for references

Periodic Publications

Journal article (author): Valdés-Pérez, D. (2016). Valdés-Pérez, D. (2016). Incidencia de las técnicas de gestión en la mejora de decisiones administrativas [Impact of Management Techniques on the Improvement of Administrative Decisions]. Retos, 12(6), 199-2013. https://doi.org/10.17163/ret.n12.2016.05

Journal Article (Up to six authors): Ospina, M.C., Alvarado, S.V., Fefferman, M., & Llanos, D. (2016). Introducción del dossier temático "Infancias y juventudes: violencias, conflictos, memorias y procesos de construcción de paz" [Introduction of the thematic dossier "Infancy and Youth: Violence, Conflicts, Memories and Peace Construction Processes"]. Universitas, 25(14), 91-95. https://doi.org/10.17163/uni.n25.%25x

Journal article (more tan six authors): Smith, S.W., Smith, S.L. Pieper, K.M., Yoo, J.H., Ferrys, A.L., Downs, E.,... Bowden, B. (2006). Altruism on American Television: Examining the Amount of, and Context Surronding. Acts of Helping and Sharing. Journal of Communication, 56(4), 707-727. https://doi.org/10.1111/j.1460-2466.2006.00316.x

Journal article (without DOI): Rodríguez, A. (2007). Desde la promoción de salud mental hacia la promoción de salud: La concepción de lo comunitario en la implementación de proyectos sociales. Alteridad, 2(1), 28-40. (https://goo.gl/zDb3Me) (2017-01-29).

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 299-315.

Books and Book Chapters

Full books: Cuéllar, J.C., & Moncada-Paredes, M.C. (2014). El peso de la deuda externa ecuatoriana. Quito: Abya-Yala.

Chaprter of book: Zambrano-Quiñones, D. (2015). El ecoturismo comunitario en Manglaralto y Colonche. En V.H. Torres (Ed.), Alternativas de Vida: Trece experiencias de desarrollo endógeno en Ecuador (pp. 175-198). Quito: Abya-Yala.

Digital media

Pérez-Rodríguez, M.A., Ramírez, A., & García-Ruíz, R. (2015). La competencia mediática en educación infantil. Análisis del nivel de desarrollo en España. Universitas Psychologica, 14(2), 619-630. https://doi.org.10.11144/Javeriana.upsy14-2.cmei

It is prescriptive that all quotations that have DOI (Digital Object Identifier System) are reflected in the References (can be obtained at http://goo.gl/gfruh1). All journals and books that do not have DOI should appear with their respective link (in their online version, if they have it, shortened by Bitly: https://bitly.com/) and date of consultation in the indicated format.

Journal articles should be presented in English, except for those in Spanish and English, in which case it will be displayed in both languages using brackets. All web addresses submitted must be shortened in the manuscript, except for the DOI that must be in the indicated format (https://doi.org/XXX).

3.3. Epigraphs, Figures and Charts

The epigraphs of the body of the article will be numbered in Arabic. They should go without a full box of capital letters, neither underlined nor bold. The numbering must be a maximum of three levels: 1. / 1.1. / 1.1.1. A carriage return will be established at the end of each numbered epigraph.

The charts must be included in the text in Word format according to order of appearance, numbered in Arabic and subtitled with the description of the content.

The graphics or figures will be adjusted to the minimum number required and will be presented incorporated in the text, according to their order of appearance, numbered in Arabic and subtitled with the abbreviated description. Their quality should not be less than 300 dpi, and it may be necessary to have the graph in TIFF, PNG or JPEG format.

4. Submission Process

The receipt of articles is permanent, however, considering that the publication of the Sophia Journal is bi-annual, the manuscripts must be sent at least one period before the date stipulated in the corresponding Call.

The manuscripts must be sent through the OJS (Open Journal System) system of the journal, for which it is necessary that the author previously registers in

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the respective space (enter in the following link: http://sophia.ups.edu.ec/index.php/sophia/user/register, complete the form and follow each of the suggested steps).

The two documents that must be sent are:

1) Presentation and cover (Use official model), which will appear:

Title. In Spanish in the first line, in letter Arial 14, with bold and centered, with a maximum of 85 characters with space. In English in the second line, in letter Arial 14, in italics and bold.

Full names and surnames of the authors. Organized in order of priority, a maximum of 3 authors are accepted per original, although there may be exceptions justified by the topic, its complexity and extent. Each name must include the name of the institution in which he/she works as well as the city, country, email and ORCID number.

Abstract (Spanish) It will have a minimum length of 210 and a maximum of 220 words. It must include 1) Justification of the topic; 2) Objectives; 3) Methodology; 4) Main results; 5) Main conclusions. It must be impersonally written "The present paper analyzes..."

Abstract. Summary with all its components, translated into English and in cursive. Do not use automatic translation systems.

Keywords (Spanish): 6 standardized terms preferably of a single word and of the UNESCO and the Journal's Thesaurus separated by commas (,).

Keywords. The 6 terms above translated into English and separated by comma (,). Do not use automatic translation systems.

In addition, a statement must be included (using a template called: Presentation) in which it is explained that the submitted manuscript is an original contribution, not sent or being evaluated in another journal, confirmation of the signatory authors, acceptance (if applicable) of formal changes in the manuscript according to the norms and partial transfer of rights to the publisher. This document must be signed and recorded through the OJS system, in the section: "Complementary files".

2) Manuscript totally anonymized, according to the guidelines referred in precedence.

All authors must register with their credits on the OJS platform, although only one of them will be responsible for correspondence.No author can submit or have in review two manuscripts simultaneously, estimating an absence of four consecutive numbers (2 years).

5. Publication interval

The interval between receipt and publication of an article is 7 months (210 days).

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Normas de Publicación en «Sophia»

ISSN: 1390-3861 / e-ISSN: 1390-8626

1. Información general

«Sophia» es una publicación científica de la Universidad Politécnica Salesiana de Ecuador, editada desde junio de 2006 de forma ininterrumpida, con periodicidad fija semestral, especializada en Filosofía de la Educación y sus líneas interdisciplinares como Epistemología, Deontología, Estética, Estudios Críticos, Hermenéutica, Axiología, Ontología, Antropología Filosófica, Sociología, Analítica Filosófica... vinculadas al ámbito de la educación.

Es una revista científica arbitrada, que utiliza el sistema de evaluación externa por expertos (*peer-review*), bajo metodología de pares ciegos (*doble-blind review*), conforme a las normas de publicación de la American Psychological Association (APA). El cumplimiento de este sistema permite garantizar a los autores un proceso de revisión objetivo, imparcial y transparente, lo que facilita a la publicación su inclusión en bases de datos, repositorios e indexaciones internacionales de referencia.

«Sophia» se encuentra indexada en (**SCOPUS**) Emerging Sources Citation Index (**ESCI**) de Web of Science; en Scientific Electronic Library Online (**SciELO**); en el Sistema de Información Científica (**REDALYC**); en el directorio y catálogo selectivo del Sistema Regional de Información en Línea para Revistas Científicas de América Latina, el Caribe, España y Portugal (**LATINDEX**), en la Matríz de Información para el Análisis de Revistas (**MIAR**), en Clasificación Integrada de Revistas Científicas (**C.I.R.C**), en Academic Resource Index (**Research Bible**), en la Red Iberoamericana de Innovación y Conocimiento Científico (**REDIB**), en el Portal de difusión de la producción científica (**Dialnet**); en Bibliografía Latinoamericana en Revistas de Investigación Científica y Social (**BIBLAT**); en el Directorio de Revistas de Acceso Abierto **DOAJ** y en repositorios, bibliotecas y catálogos especializados de Iberoamérica.

La revista se edita en doble versión: impresa (ISSN: 1390-3861) y electrónica (e-ISSN: 1390-8626), en español y en inglés, siendo identificado además cada trabajo con un DOI (Digital Object Identifier System).

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, .

2. Alcance y política

2.1. Temática

Contribuciones originales en materia de Filosofía de la Educación, así como áreas afines: Epistemología, Deontología, Estética, Estudios Críticos, Hermenéutica, Axiología, Ontología, Antropología Filosófica, Sociología, Analítica Filosófica,... y todas aquellas disciplinas conexas interdisciplinarmente con una reflexión filosófica sobre la educación.

2.2. Aportaciones

«Sophia» edita estudios críticos, informes, propuestas, así como selectas revisiones de la literatura (*state-of-the-art*) en relación con la Filosofía de la Educación, aceptando asimismo trabajos de investigación empírica, redactados en español y en inglés.

Las aportaciones en la revista pueden ser:

- **Revisiones:** 10.000 a 11.000 palabras de texto, incluidas tablas y referencias. Se valorará especialmente las referencias justificadas, actuales y selectivas de alrededor de unas 70 obras.
- **Investigaciones:** 8.000 a 9.500 palabras de texto, incluyendo título, resúmenes, descriptores, tablas y referencias.
- **Informes, estudios y propuestas:** 8.000 a 9.500 palabras de texto, incluyendo título, resúmenes, tablas y referencias.

2.3. Características del contenido

Todos los trabajos presentados para la publicación en «Sophia» deberán cumplir con las características propias de una investigación científica:

- Ser originales, inéditos y relevantes
- Abordar temáticas que respondan a problemáticas y necesidades actuales
- Aportar para el desarrollo del conocimiento científico en el campo de la Filosofía de la Educación y sus áreas afines
- Utilizar un lenguaje adecuado, claro, preciso y comprensible
- No haber sido publicados en ningún medio ni estar en proceso de arbitraje o publicación.

Dependiendo de la relevancia y pertinencia del artículo, se considerarán como contribuciones especiales y ocasionalmente se publicarán:

- Trabajos que superen la extensión manifestada
- Trabajos que no se correspondan con el tema objeto de la reflexión prevista para el número respectivo

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, .

2.4 Periodicidad

«Sophia» tiene periodicidad semestral (20 artículos por año), publicada en los meses de enero y julio; y cuenta por número con dos secciones de cinco artículos cada una, la primera referida a un tema **Monográfico** preparado con antelación y con editores temáticos; la segunda, una sección de **Misceláneas**, compuesta por aportaciones variadas dentro de la temática de la publicación.

3. Presentación, estructura y envío de los manuscritos

Los trabajos se presentarán en tipo de letra Arial 12, interlineado simple, justificado completo y sin tabuladores ni espacios en blanco entre párrafos. Se separarán con un espacio en blanco los grandes bloques (título, autores, resúmenes, descriptores, créditos y epígrafes). La página debe tener 2 centímetros en todos sus márgenes.

Los trabajos deben presentarse en documento de Microsoft Word (.doc o .docx), siendo necesario que el archivo esté anonimizado en Propiedades de Archivo, de forma que no aparezca la identificación de autor/es.

Los manuscritos deben ser enviados única y exclusivamente a través del OJS (Open Journal System), en el cual todos los autores deben darse de alta previamente. No se aceptan originales enviados a través de correo electrónico u otra interfaz.

3.1. Estructura del manuscrito

Para aquellos trabajos que se traten de investigaciones de carácter empírico, los manuscritos seguirán la estructura IMRDC, siendo opcionales los epígrafes de Notas y Apoyos. Aquellos trabajos que por el contrario se traten de informes, estudios, propuestas y revisiones sistemáticas podrán ser más flexibles en sus epígrafes, especialmente en Material y métodos; Análisis y resultados; Discusión y conclusiones. En todas las tipologías de trabajos son obligatorias las Referencias.

a. Investigaciones empíricas

Su objetivo es contribuir al progreso del conocimiento mediante información original, sigue la estructura IMRDC: Introducción (objetivos, literatura previa), Materiales y métodos; Análisis y Resultados; Discusión, integración y conclusiones. Siguiendo los criterios planteados por la Unesco, es este tipo de textos científicos se llaman también como: "memorias originales"

La estructura recomendada, especialmente en trabajos que incluyen investigaciones empíricas, es la siguiente:

1) Título (español) / Title (inglés): Conciso pero informativo, en castellano en primera línea y en inglés en segunda. Se aceptan como máximo 85 caracteres con espacio. El título no solo es responsabilidad de los autores, pudiéndose proponer cambios por parte del Consejo Editorial.

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, .

2) Datos de Identificación: Nombres y apellidos completos de cada uno de los autores, organizados por orden de prelación. Se aceptarán como máximo 3 autores por original, aunque pudieren existir excepciones justificadas por el tema, su complejidad y extensión. Junto a los nombres deberá incluirse, el nombre de la institución en la que trabaja así como la ciudad, el país, el correo electrónico y número completo de ORCID de cada autor aspectos que deberán constar de modo obligatorio en la Carta de Presentación, además deberán ser cargados en el sistema OJS de la revista, en la sección Metadatos y/o en un documento word adjunto al archivo que contiene el trabajo que se propone para la evaluación.

3) Resumen (español) / Abstract (inglés): Tendrá como extensión mínima de 210 y máxima de 220 palabras en español; y de 200 y máximo de 210 palabras en inglés. El resumen describirá de forma concisa y en este orden: 1) Justificación del tema; 2) Objetivos; 3) Metodología y muestra; 4) Principales resultados; 5) Principales conclusiones. Ha de estar escrito de manera impersonal "El presente trabajo analiza...". En el caso del abstract no se admitirá el empleo de traductores automáticos por su pésima calidad.

4) Descriptores (español) / Keywords (inglés): Se deben exponer máximo 6 términos por cada versión idiomática relacionados directamente con el tema del trabajo. Será valorado positivamente el uso de las palabras claves expuestas en el Thesaurus de la UNESCO y en el de la propia revista localizado en el siguiente enlace: https://sophia.ups.edu.ec/tesauro_sophia.php

5) Introducción y estado de la cuestión: Debe incluir el planteamiento del problema, el contexto de la problemática, la justificación, fundamentos y propósito del estudio, utilizando citas bibliográficas, así como la literatura más significativa y actual del tema a escala nacional e internacional.

6) Material y métodos: Debe ser redactado de forma que el lector pueda comprender con facilidad el desarrollo de la investigación. En su caso, describirá la metodología, la muestra y la forma de muestreo, así como se hará referencia al tipo de análisis estadístico empleado. Si se trata de una metodología original, es necesario exponer las razones que han conducido a su empleo y describir sus posibles limitaciones.

7) Análisis y resultados: Se procurará resaltar las observaciones más importantes, describiéndose, sin hacer juicios de valor, el material y métodos empleados. Aparecerán en una secuencia lógica en el texto y las tablas y figuras imprescindibles evitando la duplicidad de datos.

8) Discusión y conclusiones: Resumirá los hallazgos más importantes, relacionando las propias observaciones con estudios de interés, señalando aportaciones y limitaciones, sin redundar datos ya comentados en otros apartados. Asimismo, el apartado de discusión y conclusiones debe incluir las deducciones y líneas para futuras investigaciones.

9) Apoyos y agradecimientos (opcionales): El Council Science Editors recomienda a los autor/es especificar la fuente de financiación de la investigación. Se considerarán prioritarios los trabajos con aval de proyectos competiti-

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vos nacionales e internacionales. En todo caso, para la valoración científica del manuscrito, este debe ir anonimizado con XXXX solo para su evaluación inicial, a fin de no identificar autores y equipos de investigación, que deben ser explicitados en la Carta de Presentación y posteriormente en el manuscrito final.

10) Las notas (opcionales) irán, solo en caso necesario, al final del artículo (antes de las referencias). Deben anotarse manualmente, ya que el sistema de notas al pie o al final de Word no es reconocido por los sistemas de maquetación. Los números de notas se colocan en superíndice, tanto en el texto como en la nota final. No se permiten notas que recojan citas bibliográficas simples (sin comentarios), pues éstas deben ir en las referencias.

11) Referencias: Las citas bibliográficas deben reseñarse en forma de referencias al texto. Bajo ningún caso deben incluirse referencias no citadas en el texto. Su número debe ser suficiente para contextualizar el marco teórico con criterios de actualidad e importancia. Se presentarán alfabéticamente por el primer apellido del autor.

b. Revisiones

Las revisiones de literatura se basan en el análisis de las principales publicaciones sobre un tema determinado; su objetivo es definir el estado actual del problema y evaluar las investigaciones realizadas. Su estructura responde a las fases del tema/problema, aportes de investigadores o equipos, cambios en la teoría o las corrientes teóricas principales; problemas sin resolver; tendencias actuales y futuras (Giordanino, 2011). De acuerdo con la UNESCO, este tipo de trabajos se conocen también como: "estudios recapitulativos"

1) Título (español) / Title (inglés): El título del artículo deberá ser breve, interesante, claro, preciso y atractivo para despertar el interés del lector. Conciso pero informativo, en castellano en la primera línea y en inglés en la segunda línea. Se aceptan como máximo 85 caracteres con espacio. El título no solo es responsabilidad de los autores, también los Miembros del Consejo Editorial puede proponer cambios al título del documento.

2) Datos de Identificación: Nombres y apellidos completos de cada uno de los autores, organizados por orden de prelación. Se aceptarán como máximo 3 autores por original, aunque pudieren existir excepciones justificadas por el tema, su complejidad y extensión. Junto a los nombres deberá incluirse, el nombre de la institución en la que trabaja así como la ciudad, el país, el correo electrónico y número completo de ORCID de cada autor aspectos que deberán constar de modo obligatorio en la Carta de Presentación, además deberán ser cargados en el sistema OJS de la revista, en la sección Metadatos y/o en un documento word adjunto al archivo que contiene el trabajo que se propone para la evaluación.

3) Resumen (español) / Abstract (inglés): Tendrá como extensión mínima de 210 y máxima de 220 palabras en español; y de 200 y máximo de 210 palabras en inglés. El resumen describirá de forma concisa y en este orden: 1) Justificación

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, .

del tema; 2) Objetivos; 3) Metodología; 4) Principales resultados; 5) Principales conclusiones. Ha de estar escrito de manera impersonal "El presente trabajo analiza...". En el caso del abstract no se admitirá el empleo de traductores automáticos por su pésima calidad.

4) Descriptores (español) / Keywords (inglés): Se deben exponer máximo 6 términos por cada versión idiomática relacionados directamente con el tema del trabajo. Será valorado positivamente el uso de las palabras claves expuestas en el Thesaurus de la UNESCO y en el de la propia revista.

5) Introducción: Deberá incluir una presentación breve del tema, la formulación del propósito u objetivo del estudio, el contexto de la problemática y la formulación del problema que se propone enfrentar, la presentación de la idea a defender, la justificación que explica la importancia, la actualidad y la pertinencia del estudio; el marco metodológico utilizado, y finalmente, una breve descripción de la estructura del documento. En la justificación es necesario utilizar citas bibliográficas así como la literatura más significativa y actual del tema a escala nacional e internacional.

6) Cuerpo o desarrollo del documento: Implica poner en práctica a lo largo de toda la exposición, una actitud crítica que deberá tender hacia la interpelación, a efectos de concitar la atención del tema y el problema tratados. El escritor deberá generar en el lector la capacidad de identificar la intención dialógica de la propuesta y propiciar en él una discusión abierta.

7) Conclusiones: Expone de manera objetiva los resultados y hallazgos; ofrece una visión de las implicaciones del trabajo, las limitaciones, la respuesta tentativa al problema, las relaciones con el objetivo de la investigación y las posibles líneas de continuidad (para cumplir con este objetivo se sugiere no incluir todos los resultados obtenidos en la investigación). Las conclusiones deberán ser debidamente justificadas de acuerdo con la investigación realizada. Las conclusiones podrán estar asociadas con las recomendaciones, evaluaciones, aplicaciones, sugerencias, nuevas relaciones e hipótesis aceptadas o rechazadas.

8) Bibliografía: Es el conjunto de obras utilizadas en la estructuración del texto científico. Deberá incluir únicamente la referencia de los trabajos utilizados en la investigación. Las referencias bibliográficas deberán ordenarse alfabéticamente y ajustarse a las normas internacionales APA, en su sexta edición.

3.2. Normas para las referencias

Publicaciones periódicas

Artículo de revista (un autor): Valdés-Pérez, D. (2016). Incidencia de las técnicas de gestión en la mejora de decisiones administrativas [Impact of Management Techniques on the Improvement of Administrative Decisions]. *Retos, 12*(6), 199-2013. https://doi.org/10.17163/ret.n12.2016.05

Artículo de revista (hasta seis autores): Ospina, M.C., Alvarado, S.V., Fefferman, M., & Llanos, D. (2016). Introducción del dossier temático "Infancias

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, .

y juventudes: violencias, conflictos, memorias y procesos de construcción de paz" [Introduction of the thematic dossier "Infancy and Youth: Violence, Conflicts, Memories and Peace Construction Processes"]. *Universitas, 25*(14), 91-95. https://doi.org/10.17163/uni.n25.%25x

Artículo de revista (más de seis autores): Smith, S.W., Smith, S.L. Pieper, K.M., Yoo, J.H., Ferrys, A.L., Downs, E.,... Bowden, B. (2006). Altruism on American Television: Examining the Amount of, and Context Surronding. Acts of Helping and Sharing. *Journal of Communication, 56*(4), 707-727. https://doi.org/10.1111/j.1460-2466.2006.00316.x

Artículo de revista (sin DOI): Rodríguez, A. (2007). Desde la promoción de salud mental hacia la promoción de salud: La concepción de lo comunitario en la implementación de proyectos sociales. *Alteridad, 2*(1), 28-40. (https://goo.gl/zDb3Me) (2017-01-29).

Libros y capítulos de libro

Libros completos: Cuéllar, J.C., & Moncada-Paredes, M.C. (2014). *El peso de la deuda externa ecuatoriana.* Quito: Abya-Yala.

Capítulos de libro: Zambrano-Quiñones, D. (2015). *El ecoturismo comunitario en Manglaralto y Colonche.* En V.H. Torres (Ed.), Alternativas de Vida: Trece experiencias de desarrollo endógeno en Ecuador (pp. 175-198). Quito: Abya-Yala.

Medios electrónicos

Pérez-Rodríguez, M.A., Ramírez, A., & García-Ruíz, R. (2015). La competencia mediática en educación infantil. Análisis del nivel de desarrollo en España. Universitas Psychologica, 14(2), 619-630. https://doi.org.10.11144/Javeriana.upsy14-2.cmei

Es prescriptivo que todas las citas que cuenten con DOI (Digital Object Identifier System) estén reflejadas en las Referencias (pueden obtenerse en http://goo.gl/gfruh1). Todas las revistas y libros que no tengan DOI deben aparecer con su link (en su versión on-line, en caso de que la tengan, acortada, mediante Bitly: https://bitly.com/ y fecha de consulta en el formato indicado.

Los artículos de revistas deben ser expuestos en idioma inglés, a excepción de aquellos que se encuentren en español e inglés, caso en el que se expondrá en ambos idiomas utilizando corchetes. Todas las direcciones web que se presenten tienen que ser acortadas en el manuscrito, a excepción de los DOI que deben ir en el formato indicado (https://doi.org/XXX).

3.3. Epígrafes, tablas y gráficos

Los epígrafes del cuerpo del artículo se numerarán en arábigo. Irán sin caja completa de mayúsculas, ni subrayados, ni negritas. La numeración ha de

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, .

ser como máximo de tres niveles: 1. / 1.1. / 1.1.1. Al final de cada epígrafe numerado se establecerá un retorno de carro.

Las tablas deben presentarse incluidas en el texto en formato Word según orden de aparición, numeradas en arábigo y subtituladas con la descripción del contenido.

Los gráficos o figuras se ajustarán al número mínimo necesario y se presentarán incorporadas al texto, según su orden de aparición, numeradas en arábigo y subtituladas con la descripción abreviada. Su calidad no debe ser inferior a 300 ppp, pudiendo ser necesario contar con el gráfico en formato TIFF, PNG o JPEG.

4. Proceso de envío

La recepción de artículos es permanente, sin embargo, considerando que la publicación de la Revista Sophia es semestral, el envío de los manuscritos deberá efectuarse al menos un período antes de la fecha estipulada en la Convocatoria correspondiente.

Los manuscritos deberán remitirse a través del sistema OJS (Open Journal System) de la revista, para lo cual es necesario que el autor se registre previamente en el espacio respectivo (ingrese en el siguiente link: http://sophia.ups.edu.ec/index.php/sophia/user/register, complemente el formulario y siga cada uno de los pasos que se sugieren).

Los dos documentos que deben ser enviados son:

1) Carta de presentación o Cover letter (usar modelo oficial), en la que aparecerán:

Tìtulo. En castellano en la primera línea, en letra Arial 14, con negrita y centrado, con un máximo de 85 caracteres con espacio. En inglés en la segunda línea, en letra Arial 14, en cursiva y con negrita.

Nombres y apellidos completos de los autores. Organizados por orden de prelación, se aceptan como máximo 3 autores por original, aunque pudieren existir excepciones justificadas por el tema, su complejidad y extensión. Junto a cada uno de los nombres deberá incluirse, el nombre de la institución en la que trabaja así como la ciudad, el país, el correo electrónico y número de ORCID.

Resumen. Tendrá como extensión mínima 210 y máxima 220 palabras. El resumen describirá de forma concisa y en este orden: 1) Justificación del tema; 2) Objetivos; 3) Metodología; 4) Principales resultados; 5) Principales conclusiones. Ha de estar escrito de manera impersonal "El presente trabajo analiza...".

Abstract. Resumen con todos sus componentes, traducido al inglés y en letra cursiva. No utilizar sistemas de traducción automáticos.

Descriptores. Máximo 6 términos estandarizados preferiblemente de una sola palabra y del Thesaurus de la UNESCO y de la propia revista, separados por coma (,).

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, .

Keywords. Los 6 términos antes referidos traducidos al inglés y separados por coma (,). No utilizar sistemas de traducción automáticos.

Además, se deberá incluir una: **Declaración** (usar modelo denominado: Presentación) en la que se explica que el manuscrito enviado es una aportación original, no enviado ni en proceso de evaluación en otra revista, confirmación de las autorías firmantes, aceptación (si procede) de cambios formales en el manuscrito conforme a las normas y cesión parcial de derechos a la editorial. Este documento deberá ser firmado y consignado a través del sistema OJS, en la sección: **"Ficheros complementarios".**

2) Manuscrito totalmente anonimizado, conforme a las normas referidas en precedencia.

Todos los autores han de darse de alta, con sus créditos, en la plataforma OJS, si bien uno solo de ellos será el responsable de correspondencia. Ningún autor podrá enviar o tener en revisión dos manuscritos de forma simultánea, estimándose una carencia de cuatro números consecutivos (2 años).

5. Intervalo de publicación

(El tamaño y estilo de la letra tal como se encuentra el numeral 4 (Proceso de envío)

El intervalo comprendido entre la recepción y la publicación de un artículo es de 7 meses (210 días).

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, .

Indications for External Reviewers of «Sophia»

The **Board of External Reviewers of «Sophia»** is an independent collegiate body whose purpose is to guarantee the excellence of this scientific publication, because the blind evaluation - based exclusively on the quality of the contents of the manuscripts and carried out by experts of recognized International prestige in the field - is, without a doubt, the best guarantee for the advancement of science and to preserve in this header an original and valuable scientific production.

To this end, the **Board of External Reviewers** is made up of several scholars and international scientists specialized in **Education**, essential to select the articles of the greatest impact and interest for the international scientific community. This in turn allows that all the articles selected to publish in «**Sophia**» have an academic endorsement and objectifiable reports on the originals.

Of course, all reviews in «**Sophia**» use the internationally standardized system of double-blind peer evaluation that guarantees the anonymity of manuscripts and reviewers. As a measure of transparency, the complete lists of reviewers are published on the official website of the journal http://Sophia.ups.edu.ec/)

1. Criteria for acceptance/rejection of manuscript evaluation

The editorial team of «**Sophia**» selects those that are considered more qualified in the subject of the manuscript from the list of reviewers of the Board of Reviewers. While the publication requires the maximum collaboration of reviewers to expedite the evaluations and reports on each original, acceptance of the review must be linked to:

a. **Expertise**. Acceptance necessarily entails the possession of competences in the specific theme of the article to be evaluated.
b. **Availability**. Reviewing an original takes time and involves careful reflection on many aspects.
c. **Conflict of interests**. In case of identification of the authorship of the manuscript (despite their anonymity), excessive academic or family closeness to their authors, membership in the same University, Department, Research Group, Thematic Network, Research Projects, joint publications with authors... or any other type of connection or conflict / professional proximity; The reviewer must reject the publisher's invitation for review.
d. **Commitment of confidentiality.** Reception of a manuscript for evaluation requires the Reviewer to express a commitment of confidentiality, so that it cannot be divulged to a third party throughout the process.

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 316-325.

In the event that the reviewer cannot carry out the activity for some of these reasons or other justifiable reasons, he/she must notify the publisher by the same route that he/she has received the invitation, specifying the reasons for rejection.

2. General criteria for the evaluation of manuscripts

a) Topic

In addition to being valuable and relevant to the scientific community, the topic that is presented in the original must be limited and specialized in time and space, without excessive localism.

b) Redaction

The critical assessment in the review report must be objectively written, providing content, quotes or references of interest to support its judgment.

c) Originality

As a fundamental criterion of quality, an article must be original, unpublished and suitable. In this sense, reviewers should answer these three questions in the evaluation:

- Is the article sufficiently novel and interesting to justify publication?
- Does it contribute anything to the knowledge canon?
- Is the research question relevant?

A quick literature search using repositories such as Web of Knowledge, Scopus and Google Scholar to see if the research has been previously covered, may be helpful.

d) Structure

Manuscripts that refer to «Sophia» must follow the IMRDC structure, except those that are literature reviews or specific studies. In this sense, the originals must contain summary, introduction, methodology, results, discussion and conclusion.

- The **title, abstract, and keywords** should accurately describe the content of the article.
- The **review of the literature** should summarize the state of the question of the most recent and adequate research for the presented work. It will be especially evaluated with criteria of suitability and that the references are to works of high impact - especially in

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 316-325.

WoS, Scopus, Scielo, etc. It should also include the general explanation of the study, its central objective and the followed methodological design.

- In case of research, in the **materials and methods**, the author must specify how the data, the process and the instruments used to respond to the hypothesis, the validation system, and all the information necessary to replicate the study are collected.
- **Results** must be clearly specified in logical sequence. It is important to check if the figures or charts presented are necessary or, if not, redundant with the content of the text.
- In the **discussion**, the data obtained should be interpreted in the light of the literature review. Authors should include here if their article supports or contradicts previous theories. The conclusions will summarize the advances that the research presents in the area of scientific knowledge, the future lines of research and the main difficulties or limitations for carrying out the research.
- **Language**: It will be positively assessed if the language used facilitates reading and is in favor of the clarity, simplicity, precision and transparency of the scientific language. The Reviewer should not proceed to correction, either in Spanish or English, but will inform the Editors of these grammatical or orthographical and typographical errors.
- Finally, a thorough **review of the references** is required in case any relevant work has been omitted. The references must be precise, citing within the logic of the subject at study, its main works as well as the documents that most resemble the work itself, as well as the latest research in the area.

3. Relevant valuation dimensions

For the case of empirical research articles**,** «**Sophia**» uses an evaluation matrix of each original that responds to the editorial criteria and to compliance with the publication guidelines. In this sense, the reviewers must attend to the qualitative-quantitative assessment of each of the aspects proposed in this matrix with criteria of objectivity, reasoning, logic and expertise.

If the original is a review of the literature (status of the matter) or other type of study (reports, proposals, experiences, among others), the Editorial Board will send to the reviewers a different matrix, including the characteristics of Structure of this type of originals:

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 316-325.

STUDIES, REPORTS, PROPOSALS AND REVIEW	
Valuable items	**Score**
01. Relevancy of the title (clarity, precision and with a maximum of 85 characters).	0/5
02. They summarize (In an alone paragraph and without epigraphs, minimum / minimal: 210-220 words).	0/5
03. Introduction (brief presentation of the topic; formulation of the problem; it designs to defending or hypothesis to demonstrating; I target; importance of the topic; current importance; methodology; structure of the document).	0/5
04. Review of the bibliographical foundation (Beside using current bibliography to consider the incorporation of Sophia's documents).	0/10
05. Structure and organization of the article (argumentative capabilities, coherence and scientific redaction).	0/10
06. Original contributions and contextualized analyses.	0/5
07. Conclusions that answer to the topic, to the problem and to the raised aim.	0/5
08. Citations and references of agreement to the regulation and to the format requested by the magazine (Any document and author who consists in the section of bibliography must consist in the body of story and vice versa).	0/5
Maximun total	50 points

RESEARCHES	
Valuable items	**Score**
01. Relevancy of the title (clarity, precision and with a maximum of 85 characters).	0/5
02. They summarize (In an alone paragraph and without epigraphs, minimum / minimal: 210-220 words).	0/5
03. Introduction (brief presentation of the topic; formulation of the problem; it designs to defending or hypothesis to demonstrating; I target; importance of the topic; current importance; methodology; structure of the document).	0/5
04. Review of the bibliographical foundation (Beside using current bibliography to consider the incorporation of Sophia's documents). Methodological rigorous and presentation of instruments of investigation.	0/10
05. Structure and organization of the article (argumentative capabilities, coherence and scientific redaction). Analysis and results of investigation with logical sequence in the text. Presentation of tables and figures without duplicity of information.	0/10

Sophia 33: 2022.

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 316-325.

06. Original contributions and contextualized analyses of the information.	0/5
07. Discussion, conclusions and advances that answer to the topic, to the problem and to the raised aim.	0/5
08. Citations and references of agreement to the regulation and to the format requested by the magazine (Any document and author who consists in the section of bibliography must consist in the body of story and vice versa).	0/5
Total	50 points

4. Ethical issues

a. **Plagiarism***:* Although the journal uses plagiarism detection systems, if the reviewer suspects that an original is a substantial copy of another work, he must immediately inform the Editors citing the previous work in as much detail as possible.
b. **Fraud**: If there is real or remote suspicion that the results in an article are false or fraudulent, it is necessary to inform them to the Editors.

5. Evaluation of the originals

After the quantitative-qualitative evaluation of the manuscript under review, the reviewer may make recommendations to improve the quality of the manuscript. However, the manuscript will be graded in three ways:

a. **Rejection** due to detected deficiencies justified and reasoned with quantitative and quantitative assessment. The report should be longer if a score of less than 40 of the 50 possible points is obtained.
b. **Acceptance without review**
c. **Conditional acceptance** and therefore review (greater or lesser). In the latter case, it is necessary to clearly identify which review is necessary, listing the comments and even specifying paragraphs and pages suggesting modifications.

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 316-325.

Indicaciones para revisores externos de «Sophia»

El **Consejo de Revisores Externos de «Sophia»** es un órgano colegiado independiente cuyo fin es garantizar la excelencia de esta publicación científica, debido a que la evaluación ciega —basada exclusivamente en la calidad de los contenidos de los manuscritos y realizada por expertos de reconocido prestigio internacional en la materia— es la mejor garantía y, sin duda, el mejor aval para el avance de la ciencia y para preservar en esta cabecera una producción científica original y valiosa.

Para ello, el **Consejo de Revisores Externos** está conformado por diversos académicos y científicos internacionales especialistas en **Filosofía de la Educación**, esenciales para seleccionar los artículos de mayor impacto e interés para la comunidad científica internacional. Esto permite a su vez que todos los artículos seleccionados para publicar en «**Sophia**» cuenten con un aval académico e informes objetivables sobre los originales.

Por supuesto, todas las revisiones en «**Sophia**» emplean el sistema estandarizado internacionalmente de evaluación por pares con «doble ciego» (*doble-blind*) que garantiza el anonimato de los manuscritos y de los revisores de los mismos. Como medida de transparencia, anualmente se hacen públicos en la web oficial de la revista (www. http://Sophia.ups.edu.ec/) los listados completos de los revisores.

1. Criterios de aceptación/rechazo de evaluación manuscritos

El equipo editorial de «**Sophia**» selecciona del listado de evaluadores del Consejo de Revisores a aquellos que se estiman más cualificado en la temática del manuscrito. Si bien por parte de la publicación se pide la máxima colaboración de los revisores para agilizar las evaluaciones y los informes sobre cada original, la aceptación de la revisión ha de estar vinculada a:

a. **Experticia.** La aceptación conlleva necesariamente la posesión de competencias en la temática concreta del artículo a evaluar.
b. **Disponibilidad**. Revisar un original exige tiempo y conlleva reflexión concienzuda de muchos aspectos.
c. **Conflicto de intereses.** En caso de identificación de la autoría del manuscrito (a pesar de su anonimato), excesiva cercanía académica o familiar a sus autores, pertenencia a la misma Universidad, Departamento, Grupo de Investigación, Red Temática, Proyectos de Investigación, publicaciones conjuntas con los autores... o cualquier otro tipo de conexión o conflicto/cercanía profesional; el revisor debe rechazar la invitación del editor para su revisión.
d. **Compromiso de confidencialidad**. La recepción de un manuscrito para su evaluación exige del Revisor un compromiso expreso de

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 316-325.

confidencialidad, de manera que éste no puede, durante todo el proceso, ser divulgado a un tercero.

En caso que el revisor no pueda llevar a cabo la actividad por algunos de estos motivos u otros justificables, debe notificarlo al editor por la misma vía que ha recibido la invitación, especificando los motivos de rechazo.

2. Criterios generales de evaluación de manuscritos

a) Tema

La temática que se plantea en el original, además de ser valiosa y relevante para la comunidad científica, ha de ser limitada y especializada en tiempo y espacio, sin llegar al excesivo localismo.

b) Redacción

La valoración crítica en el informe de revisión ha de estar redactada de forma objetiva, aportando contenido, citas o referencias de interés para argumentar su juicio.

c) Originalidad

Como criterio de calidad fundamental, un artículo debe ser original, inédito e idóneo. En este sentido, los revisores deben responder a estas tres preguntas en la evaluación:

- ¿Es el artículo suficientemente novedoso e interesante para justificar su publicación?
- ¿Aporta algo al canon del conocimiento?
- ¿Es relevante la pregunta de investigación?

Una búsqueda rápida de literatura utilizando repositorios tales como Web of Knowledge, Scopus y Google Scholar para ver si la investigación ha sido cubierta previamente puede ser de utilidad.

d) Estructura

Los manuscritos que se remiten a «**Sophia**» deben seguir la estructura señalada en las normas de publicación tanto para las investigaciones empíricas como para revisiones de la literatura o estudios específicos. En este sentido, los originales han de contener resumen, introducción, metodología, resultados, discusión y conclusión.

- El título, el resumen y las palabras clave han de describir exactamente el contenido del artículo.

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 316-325.

- La revisión de la literatura debe resumir el estado de la cuestión de las investigaciones más recientes y adecuadas para el trabajo presentado. Se valorará especialmente con criterios de idoneidad y que las referencias sean a trabajos de alto impacto —especialmente en WoS, Scopus, Scielo, etc. Debe incluir además la explicación general del estudio, su objetivo central y el diseño metodológico seguido.
- En caso de investigaciones, en los materiales y métodos, el autor debe precisar cómo se recopilan los datos, el proceso y los instrumentos usados para responder a las hipótesis, el sistema de validación, y toda la información necesaria para replicar el estudio.
- En los resultados se deben especificar claramente los hallazgos en secuencia lógica. Es importante revisar si las tablas o cuadros presentados son necesarios o, caso contrario, redundantes con el contenido del texto.
- En la discusión se deben interpretar los datos obtenidos a la luz de la revisión de la literatura. Los autores deberán incluir aquí si su artículo apoya o contradice las teorías previas. Las conclusiones resumirán los avances que la investigación plantea en el área del conocimiento científico, las futuras líneas de investigación y las principales dificultades o limitaciones para la realización de la investigación.
- Idioma: Se valorará positivamente si el idioma utilizado facilita la lectura y va en favor de la claridad, sencillez, precisión y transparencia del lenguaje científico. El Revisor no debe proceder a corrección, ya sea en español o inglés, sino que informará a los Editores de estos errores gramaticales u ortotipográficos.
- Finalmente, se requiere una profunda revisión de las referencias por si se hubiera omitido alguna obra relevante. Las referencias han de ser precisas, citando en la lógica de la temática a estudiar, sus principales obras así como los documentos que más se asemejen al propio trabajo, así como las últimas investigaciones en el área.

3. Dimensiones relevantes de valoración

Para el caso de artículos de investigaciones empíricas, «**Sophia**» utiliza una matriz de evaluación de cada original que responde a los criterios editoriales y al cumplimiento de la normativa de la publicación. En este sentido los revisores deberán atender a la valoración cuali-cuantitativa de cada uno de los aspectos propuestos en esta matriz con criterios de objetividad, razonamiento, lógica y experticia.

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 316-325.

Para el caso de artículos reflexivos, estudios, revisiones de literatura (estado de la cuestión) u otro tipo de estudio (informes, propuestas, experiencias, entre otras), el Consejo Editorial remitirá a los revisores una matriz distinta, comprendiendo las características propias de estructura de este tipo de originales:

ESTUDIOS, PROPUESTAS, INFORMES Y EXPERIENCIAS	
Ítems valorables	**Puntaje**
01. Pertinencia del título (claridad, precisión y con un máximo de 85 caracteres).	0/5
02. Resumen (En un solo párrafo y sin epígrafes, mínimo/máximo: 210-220 palabras).	0/5
03. Introducción (breve presentación del tema; formulación del problema; idea a defender o hipótesis a demostrar; objetivo; importancia del tema; actualidad; metodología; estructura del documento).	0/5
04. Revisión de la fundamentación bibliográfica (Además de usar bibliografía actual considerar la inclusión de documentos de Sophia).	0/10
05. Estructura y organización del artículo (capacidad argumentativa, coherencia y redacción científica).	0/10
06. Aportaciones originales y análisis contextualizados.	0/5
07. Conclusiones que respondan al tema, al problema y al objetivo planteado.	0/5
0.8. Citaciones y referencias de acuerdo a la normativa y al formato solicitado por la revista (Todo documento y autor que conste en la sección de bibliografía debe constar en el cuerpo del artículo y viceversa).	0/5
Total máximo	50 puntos

INVESTIGACIONES	
Ítems valorables	**Puntaje**
01. Pertinencia del título (claridad, precisión y con un máximo de 85 caracteres)	0/5
02. Resumen (En un solo párrafo y sin epígrafes, mínimo/máximo: 210-220 palabras).	0/5
03. Introducción (breve presentación del tema; formulación del problema; idea a defender o hipótesis a demostrar; objetivo; importancia del tema; actualidad; metodología; estructura del documento).	0/5
04. Revisión de la fundamentación bibliográfica (Además de usar bibliografía actual considerar la inclusión de documentos de Sophia). Rigor metodológico y presentación de instrumentos de investigación.	0/10

Sophia 33: 2022.

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 316-325.

05. Estructura y organización del artículo (capacidad argumentativa, coherencia y redacción científica). Análisis y resultados de investigación con secuencia lógica en el texto. Presentación de tablas y figuras sin duplicidad de datos.	0/10
0.6. Aportaciones originales y análisis contextualizados de los datos.	0/5
0.7. Discusión, conclusiones y avances que respondan al tema, al problema y al objetivo planteado.	0/5
0.8. Citaciones y referencias de acuerdo a la normativa y al formato solicitado por la revista (Todo documento y autor que conste en la sección de bibliografía debe constar en el cuerpo del artículo y viceversa).	0/5
Total máximo	50 puntos

4. Cuestiones éticas

a. Plagio: Aunque la revista utiliza sistemas de detección de plagio, si el revisor sospechare que un original es una copia sustancial de otra obra, ha de informar de inmediato a los Editores citando la obra anterior con tanto detalle cómo le sea posible.
b. Fraude: Si hay sospecha real o remota de que los resultados en un artículo son falsos o fraudulentos, es necesario informar de ellos a los Editores.

5. Evaluación de los originales

Una vez realizada la evaluación cuanti-cualitativa del manuscrito en revisión, el revisor podrá realizar recomendaciones para mejorar la calidad del original. Sin embargo, se atenderá a la calificación del manuscrito de tres maneras:

a. **Rechazo** debido a las deficiencias detectadas, justificadas y razonadas con valoración cualitativa y cuantitativa. El informe ha de ser más extenso si obtiene menos de los 30 de los 50 puntos posibles.
b. **Aceptación sin revisión.**
c. **Aceptación condicionada** y por ende con revisión (mayor o menor). En este último caso, se ha de identificar claramente qué revisión es necesaria, enumerando los comentarios e incluso especificando párrafos y páginas en las que sugieren modificaciones.

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 316-325.

Protocol of Manuscript Evaluation for External Reviewers

Instructions

- The fulfillment of each one of the articles will be valued in agreement to the following protocol.
- The total sum of the articles will determine the approval or rejection of the article.
- The minimal puntaje in order that the article is approved will be of 44/50.

Article Details		
Date of submission for evaluation:	Date of return of evaluation:	Article code:
Title of the article to be evaluated:		
SECTION: REPORTS, STUDIES, PROPOSALS AND REVIEWS		
01.- Relevancy of the title (clarity, precision and with a maximum of 85 characters)	Mandatory comments:	
	Value from 0 to 5	
02.- They summarize (In an alone paragraph and without epigraphs, minimum / minimal: 210-220 words).	Mandatory comments:	
	Value from 0 to 5	
03.- Introduction (brief presentation of the topic; formulation of the problem; it designs to defending or hypothesis to demonstrating; I target; importance of the topic; current importance; methodology; structure of the document)	Mandatory comments:	
	Value from 0 to 5	
04.- Review of the bibliographical foundation (Beside using current bibliography to consider the incorporation of Sophia's documents).	Mandatory comments:	
	Value from 0 to 10	

Sophia 33: 2022.

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 326-329

05.- Structure and organization of the article (argumentative capabilities, coherence and scientific redaction)	Mandatory comments:	
	Value from 0 to 10	
06.- Original contributions and contextualized analyses	Mandatory comments:	
	Value from 0 to 5	
07.- Conclusions that answer to the topic, to the problem and to the raised aim	Mandatory comments:	
	Value from 0 to 5	
08.- Citations and references of agreement to the regulation and to the format requested by the magazine (Any document and author who consists in the section of bibliography must consist in the body of story and vice versa)	Mandatory comments:	
	Value from 0 to 5	
OBTAINED PUNCTUATION	Of the total of 50 predictable points, this assessor grants:	

REDACTED OPINION More detailed if the work does not get 44 points, to inform the autor (s). This text is sent verbatim to the autor (s) amonymously	

RECOMMENDATION ON HIS PUBLICATION IN SOPHIA			
Validation criteria	**Result**		
	Yes	**Yes, with conditions**	**No**
01. Widely recommended			
02. Recommended only if his quality is improved attending to the totality of the suggestions realized by the revisers			
03. His publication is not recommended			
PROPOSED CHANGES (In case of "Yes, with conditions")			

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 326-329

Protocolo de evaluación de manuscritos para revisores externos

Instrucciones

- El cumplimiento de cada uno de los ítems será valorado de acuerdo al siguiente protocolo.
- La suma total de los ítems determinará la aprobación o rechazo del artículo. El puntaje mínimo para que el artículo sea aprobado será de 44/50.

Datos del artículo		
Fecha envío evaluación:	Fecha devolución evaluación:	Código artículo:
Título del artículo a evaluar:		
SECCIÓN: ESTUDIOS, PROPUESTAS, INFORMES Y REVISIONES		
01.- Pertinencia del título (claridad, precisión y con un máximo de 85 caracteres)	Comentarios obligatorios:	
	Valore de 0 a 5	
02.- Resumen (En un solo párrafo y sin epígrafes, mínimo/máximo: 210-220 palabras).	Comentarios obligatorios:	
	Valore de 0 a 5	
03.- Introducción (breve presentación del tema; formulación del problema; idea a defender o hipótesis a demostrar; objetivo; importancia del tema; actualidad; metodología; estructura del documento)	Comentarios obligatorios:	
	Valore de 0 a 5	
04.- Revisión de la fundamentación bibliográfica (Además de usar bibliografía actual considerar la inclusión de documentos de Sophia)	Comentarios obligatorios:	
	Valore de 0 a 10	
05.- Estructura y organización del artículo (capacidad argumentativa, coherencia y redacción científica)	Comentarios obligatorios	
	Valore de 0 a 10	

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 326-329

06.- Aportaciones originales y análisis contextualizados	Comentarios obligatorios:	
	Valore de 0 a 5	
07.- Conclusiones que respondan al tema, al problema y al objetivo planteado	Comentarios obligatorios:	
	Valore de 0 a 5	
08.- Citaciones y referencias de acuerdo a la normativa y al formato solicitado por la revista (Todo documento y autor que conste en la sección de bibliografía debe constar en el cuerpo del artículo y viceversa)	Comentarios obligatorios:	
	Valore de 0 a 5	
PUNTUACIÓN OBTENIDA	Del total de 50 puntos previsibles, este evaluador otorga:	

OPINIÓN REDACTADA (Más detallada si el trabajo no tiene 44 puntos, para informar al autor/es) Este texto se remite textualmente al/los autor/es de forma anónima			
RECOMENDACIÓN SOBRE SU PUBLICACIÓN EN SOPHIA			
PUBLICABLE	**Resultado**		
	SI	**Sí, con condiciones**	**NO**
01. Ampliamente recomendado			
02. Recomendado sólo si se mejora su calidad atendiendo a la totalidad de las sugerencias realizadas por los revisores			
03. No se recomienda su publicación			
MODIFICACIONES PROPUESTAS (En caso de «Sí, con condiciones»)			

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 326-329

Checklist prior to sending the manuscript

1. CHECK OF THE MANUSCRIPT, PRIOR TO SENDING	
To facilitate the process of evaluation of the manuscript and to accelerate the report of its possible publication, a final self-review of the manuscript is advised, checking the following questions.	
COVER LETTER	
Title of the manuscript in spanish (maximum 85 characters).	
Title of the manuscript in english (maximum 85 characters).	
The two versions of the title of the manuscript are concise, informative and collect as many identifiable terms as possible.	
The abstract in spanish is included, in a single paragraph and without epigraphs (minimum / maximum: 210/220 words).	
The abstract in english is included, in a single paragraph and without epigraphs (minimum / maximum: 210-220 words).	
Abstracts in spanish and english respond in order to the following issues: justification of the subject, objectives, study methodology, results and conclusions.	
It includes 6 descriptors (in english and spanish) (only simple words, not phrases or combinations of words), with the most significant terms, and if possible standardized.	
The texts in english (title, abstract and descriptors) have been written or verified by an official translator or expert in this language (The use of automatic translators is prohibited).	
All the identification data of the authors are included in the order stipulated in the norms: identification and correspondence data, professional filiations, last academic degree...	
The first and last name of the authors has been normalized.	
Each author is identified with their ORCID code.	
The maximum number of authors is three, with the exception of those works that justify a higher but limited number of authors	
The author(s) have duly signed the letter of presentation of the article, which includes the partial transfer of rights and the declaration of conflict of interest.	
MANUSCRIPT	
It includes title of the manuscript, abstract, and keywords. All in spanish and english.	

Sophia 33: 2022.

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 330-335.

An introduction is included that in order contains: brief presentation of the subject; problem formulation; Idea to defend or hypothesis to prove; objective; Importance of the theme; relevance; methodology; structure of the document.	
The text is within the minimum and maximum extension: In the Review sections: 10,000/11,000 words of text (including references). In the research section: 8,000/9,500 words of text (including references). Reports, Studies: 8,000/9,500 words of text (including references).	
In case of research, the manuscript responds to the structure required in the guidelines (IMRDC).	
In the case of a report, study or review, the manuscript respects the minimum structure required by the guidelines.	
The review work includes three citations from three previous issues of Sophia Journal.	
The manuscript explicitly cites and cites the used sources and materials.	
The methodology described for the research work is clear and concise, allowing its replication, if necessary, by other experts.	
The conclusions follow on objective and problem raised are supported by the results obtained and presented in the form of a synthesis.	
If statistical analyzes have been used, they have been reviewed/contrasted by an expert.	
The citations in the text are strictly in accordance with the APA 6 regulations, reflected in the instructions.	
In case of use of final notes, it has been verified that these are descriptive and cannot be integrated into the general citation system. Footnotes are not acceptable.	
The final references have been rigorously reviewed and only those that have been cited in the text are included.	
The final references conform in style and format to the international standards used in Sophia.	
The number of references is according to the theoretical basis of the study carried out	
DOIs have been included in all References that carry it in the following format: doi: https://doi.org/XXXXXX	
All web addresses of references have been shortened with Google Url Shortner	
If figures and charts are included, they should provide additional and not repeated information in the text. Their graphic quality has been verified.	
The number of charts and / or figures does not exceed 6	
If the case, financial support is declared.	

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 330-335.

ASPECTOS FORMALES	
The rules have been strictly observed in the use of bold, capital letters, italics and underlines.	
Arial font, size 12 has been used.	
A single line spacing (1) has been used without tab.	
The epigraphs have been properly and hierarchically numbered in Arabic.	
Double spaces have been deleted.	
The typographic quotes « » (with alt + 174 and alt + 175 for opening and closing) have been used.	
Word dictionary for surface spelling has been used.	
The text has been supervised by external staff to ensure grammar and style.	
PRESENTATION	
Attached is a cover letter indicating originality, novelty of the work and section of the journal to which it is addressed, and if appropriate, informed consent of experimentation.	
The cover letter includes an attachment signed by all authors, being responsible for the authorship and giving the copyright to the publisher.	
The manuscript is uploaded to the platform in Word format and without authors identification	
ANNEXED DOCUMENTS	
Attached are the two attached documents: the cover letter and the manuscript.	
The accompanying documents and annexes have been published with Figshare.	

Sophia 33: 2022.

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 330-335.

Chequeo previo al envío del manuscrito

1. CHEQUEO DEL MANUSCRITO, PREVIO AL ENVÍO	
Para facilitar el proceso de evaluación del manuscrito y acelerar el informe de su posible publicación, se aconseja una autorevisión final del manuscrito, comprobando las siguientes cuestiones.	
DOCUMENTO PORTADA (Cover Letter)	
Se incluye título del manuscrito en español (máximo 85 caracteres).	
Se incluye título del manuscrito en inglés (máximo 85 caracteres).	
Las dos versiones del título del manuscrito son concisas, informativas y recogen el mayor número de términos identificativos posibles.	
Se incluye resumen en español, en un solo párrafo y sin epígrafes (mínimo/máximo: 210/220 palabras).	
Se incluye abstract en inglés, en un solo párrafo y sin epígrafes (mínimo/máximo 210-220 palabras).	
Los resúmenes en español e inglés responden ordenadamente a las siguientes cuestiones: justificación del tema, objetivos, metodología del estudio, resultados y conclusiones.	
Se incluyen 6 descriptores (en español e inglés) (sólo palabras simples, no sintagmas o combinaciones de palabras), con los términos más significativos, y a ser posibles estandarizados.	
Los textos en inglés (título, resumen y descriptores) han sido redactados o verificados por un traductor oficial o persona experta en este idioma (Se prohíbe el uso de traductores automáticos).	
Se incluyen todos los datos de identificación de los autores en el orden estipulado en la normativa: datos de identificación y correspondencia, filiaciones profesionales, último grado académico.	
Se ha normalizado el nombre y apellido de los autores.	
Cada autor está identificado con su código ORCID.	
El número máximo de autores es tres, a excepción de aquellos trabajos que justifiquen un número mayor limitado.	
El autor/es ha firmado debidamente la carta de presentación del artículo, en la que consta la cesión parcial de derechos y la declaración de conflicto de intereses.	
MANUSCRITO	
Se incluye título del manuscrito en español, inglés, resumen, abstract, descriptores y keywords	

Sophia 33: 2022.

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 330-335.

Se incluye una introducción que en orden contiene: breve presentación del tema; formulación del problema; idea a defender o hipótesis a demostrar; objetivo; importancia del tema; actualidad; metodología; estructura del documento.	
El trabajo respeta la extensión mínima y máxima permitidas: Sección de Revisiones: 10.000/11.000 palabras de texto (incluidas las referencias). Investigaciones: 8.000/9.500 palabras de texto (incluidas referencias). Informes, Estudios: 8.000/9.500 palabras de texto (incluidas referencias).	
En caso de investigación, el manuscrito responde a la estructura exigida en las normas (IMRDC).	
Si se trata de un informe, estudio o revisión, el manuscrito respeta la estructura mínima exigida en las normas.	
En los trabajos de revisión se incluyen tres citas de tres números anteriores de la Revista Sophia.	
El manuscrito explicita y cita correctamente las fuentes y materiales empleados.	
La metodología descrita, para los trabajos de investigación, es clara y concisa, permitiendo su replicación, en caso necesario, por otros expertos.	
Las conclusiones responden al objetivo y al problema planteados, se apoyan en los resultados obtenidos y se presentan en forma de síntesis.	
Si se han utilizado análisis estadísticos, éstos han sido revisados/contrastados por algún experto.	
Las citas en el texto se ajustan estrictamente a la normativa APA 6, reflejadas en las instrucciones.	
En caso de uso de notas finales, se ha comprobado que éstas son descriptivas y no pueden integrarse en el sistema de citación general. No se aceptan notas a pie de página.	
Se han revisado rigurosamente las referencias finales y se incluyen solo aquéllas que han sido citadas en el texto.	
Las referencias finales se ajustan en estilo y formato a las normas internacionales utilizadas en Sophia.	
El número de referencias está de acuerdo a la fundamentación teórica del estudio realizado	
Se han incluido los DOI en todas las Referencias que lo lleven con el siguiente formato: doi: https://doi.org/XXXXXX	

Sophia 33: 2022.

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 330-335.

Todas las direcciones web de las referencias han sido acortadas con Google Url Shortner	
Si se incluyen figuras y tablas éstas deben aportar información adicional y no repetida en el texto. Su calidad gráfica se ha verificado.	
El número de tablas y/o figuras no sobrepasa las 6.	
En su caso, se declaran los apoyos y/o soportes financieros.	
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Se adjunta carta de presentación indicando originalidad, novedad del trabajo y sección de la revista a la que se dirige, así como, en su caso, consentimiento informado de experimentación.	
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Cover Letter

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Title in Spanish: Arial 14 bold and centered.
Maximum 85 characters with spaces
Title in English: Arial 14 cursive. Maximum 805characters with spaces

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Abstract (Spanish)

Minimum 210 and maximum 220 words. It must include 1) Justification of the topic; 2) Objectives; 3) Methodology; 4) Main results; 5) Main conclusions. It must be impersonally written "The present paper analyzes..."

Abstract (English)

Minimum 200 and maximum 210 words. It must include 1) Justification of the topic; 2) Objectives; 3) Methodology; 4) Main results; 5) Main conclusions. It must be impersonally written "The present paper analyzes..." Do not use automatic translation systems.

Keywords (Spanish)

6 standardized terms preferably of a single word and of the UNESCO Thesaurus separated by commas (,).

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Keywords

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Resumen

Mínimo 210 y máximo 220 palabras. Debe incluir 1) Justificación del tema; 2) Objetivos; 3) Metodología; 4) Principales resultados; 5) Principales conclusiones. Ha de estar escrito de manera impersonal "El presente trabajo analiza..."

Abstract

Mínimo 200 y máximo 210 palabras cursiva. Debe incluir 1) Justificación del tema; 2) Objetivos; 3) Metodología; 4) Principales resultados; 5) Principales conclusiones. Ha de estar escrito de manera impersonal "El presente trabajo analiza..." No utilizar sistemas de traducción automáticos.

Descriptores

6 términos estandarizados preferiblemente de una sola palabra y del Thesaurus de la UNESCO separados por coma (,).

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Keywords

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PRESENTATION
Cover Letter

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The authors (s) certify that this work has not been published, nor is it under consideration for publication in any other journal or editorial work.

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Announcements 2021-2025 / *Convocatorias 2022-2025*

Announcements 2022-2025

Sophia 34
Philosophy, anthropology and education

Descriptors: Philosophical foundations of ethnography; Philosophical basis of cultural theories; Contributions of cultural and social anthropology to education; Philosophical foundation of dialogue between cultures; Interculturality, multiculturalism and education; The task of philosophy in intercultural dialogue; The thought of diversity and its educational importance; Global citizenship, cosmopolitanism and education; Ecosophy, culture and transdisciplinarity.

Generation of articles from representatives of philosophy prominent in the central theme and its implications in psychology, pedagogy or other disciplines.

Deadline for receipt of manuscripts: July 15, 2022

Publication date of this issue: January 15, 2023

Sophia 35
Philosophical currents and their impact on pedagogical orientations

Descriptors: Philosophy as the fundamental basis of pedagogical orientations. Idealism as the basis for the generation of pedagogical orientations; Rationalism as the foundation of pedagogical orientations; Empiricism as the basis of educational realism; Illustration as support of educational enlightenment; Other philosophical currents as the basis of theories or pedagogical orientations throughout history; Philosophical foundations of the new pedagogies; Philosophy of technology in the educational field; Philosophical basis of constructivism and other pedagogical theories; Ethical thinking and pedagogy; Philosophical critique of current educational models; Philosophy of dialogue and education; Hermeneutics and their contributions to the current pedagogy.

Generation of articles from representatives of philosophy prominent in the central theme and its implications in psychology, pedagogy or other disciplines.

Deadline for receipt of manuscripts: December 15, 2022

Publication date of this issue: July 15, 2023

Sophia 33: 2022.

Print ISSN:1390-3861 / Electronic ISSN: 1390-8626, pp. 346-351.

Sophia 36
Philosophical approach to learning as a cognitive process

Descriptors: Philosophical basis of learning; Learning as a cognitive process; Learning as a product and as a process of knowledge; Philosophical foundation of learning theories; Psychological and pedagogical foundations of learning; Philosophical foundations of multiple intelligences and education; Emotional intelligence and its impact on educational processes; Science and philosophy of human emotions: educational repercussions; Sense and meaning of cognitive processes; Memory, thought and language as the main cognitive processes of the human being; Cognitive processes and meaningful learning.

Generation of articles from representatives of philosophy prominent in the central theme and its implications in psychology, pedagogy or other disciplines.

Deadline for receipt of manuscripts: July 15, 2023

Publication date of this issue: January 15, 2024

Sophia 37
Physics, metaphysics and education

Descriptors: Philosophical reflections on the interpretation of physics; Metaphysics in the twenty-first century; History of physics and its educational approach; Relations between conceptions of physics in the history of philosophy; Problem of sense and truth in the philosophy of physics; Nature and implications of thermodynamics; Epistemology and guiding principles of current physical theories; Philosophical foundations of quantum mechanics; Philosophical implications of quantum theory; Philosophical implications of Newtonian physics; Philosophical implications of the theory of relativity; Pedagogical strategies in the teaching-learning of physics; Educational proposals to boost the understanding of physics; Philosophical implications of current theoretical physics.

Generation of articles from representatives of philosophy prominent in the central theme and its implications in psychology, pedagogy or other disciplines.

Deadline for receipt of manuscripts: December 15, 2023

Publication date of this issue: July 15, 2024

Sophia 33: 2022.

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Sophia 38
The inductive method in the humanities and pedagogy

Descriptors: Scientific activity and reflection on the method of knowledge; The inductive method in the social sciences; Induction, experience and action as the foundation of pedagogy; The methods of knowledge and learning in the humanities; Value and limits of the experimental method in the human sciences; Value and limits of pedagogical positivism; Reflections on the scientific method and implications in the learning processes; Applications of the inductive method in education; Usefulness of the inductive method for psychology; Pedagogical proposals of an inductive character in the human sciences.

Generation of articles from representatives of philosophy prominent in the central theme and its implications in psychology, pedagogy or other disciplines.

Deadline for receipt of manuscripts: July 15, 2024
Publication date of this issue: January 15, 2025

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Convocatorias 2022-2025

Sophia 34
Filosofía, antropología y educación

Descriptores: Fundamentos filosóficos de la etnografía; bases filosóficas de las teorías culturales; aportaciones de la antropología cultural y social a la educación; fundamentación filosófica del diálogo entre culturas; interculturalidad, multiculturalidad y educación; el quehacer de la filosofía en el diálogo intercultural; el pensamiento de la diversidad y su importancia educativa; ciudadanía global, cosmopolitismo y educación; ecosofía, cultura y transdisciplinariedad.

Generación de artículos desde representantes de la filosofía destacados en el tema central y sus implicaciones en la psicología, en la pedagogía o en otras disciplinas.

Fecha límite para la recepción de manuscritos: 15 de julio de 2022

Fecha de publicación de esta edición: 15 de enero de 2023

Sophia 35
Corrientes filosóficas y su incidencia en las orientaciones pedagógicas

Descriptores: La filosofía como base fundamental de las orientaciones pedagógicas. El idealismo como base para la generación de orientaciones pedagógicas; el racionalismo como fundamento de orientaciones pedagógicas; el empirismo como sustento del realismo educativo; la ilustración como apoyo del iluminismo educativo; otras corrientes filosóficas como base de teorías u orientaciones pedagógicas a través de la historia; fundamentos filosóficos de las nuevas pedagogías; filosofía de la tecnología en el ámbito educativo; bases filosóficas del constructivismo y de otras teorías pedagógicas; pensamiento ético y pedagogía; crítica filosófica a los modelos educativos actuales; filosofía del diálogo y educación; la hermenéutica y sus aportaciones a la pedagogía actual.

Generación de artículos desde representantes de la filosofía destacados en el tema central y sus implicaciones en la psicología, en la pedagogía o en otras disciplinas.

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Sophia 36
Enfoque filosófico del aprendizaje como proceso cognitivo

Descriptores: Bases filosóficas del aprendizaje; el aprendizaje como proceso cognitivo; el aprendizaje como producto y como proceso del conocimiento; fundamento filosófico de las teorías del aprendizaje; fundamentos psicológicos y pedagógicos del aprendizaje; fundamentos filosóficos de las inteligencias múltiples y educación; la inteligencia emocional y su incidencia en los procesos educativos; ciencia y filosofía de las emociones humanas: repercusiones educativas; sentido y significado de los procesos cognitivos; memoria, pensamiento y lenguaje como principales procesos cognitivos del ser humano; procesos cognitivos y aprendizajes significativos.

Generación de artículos desde representantes de la filosofía destacados en el tema central y sus implicaciones en la psicología, en la pedagogía o en otras disciplinas.

Fecha límite para la recepción de manuscritos: 15 de julio de 2023
Fecha de publicación de esta edición: 15 de enero de 2024

Sophia 37
Física, metafísica y educación

Descriptores: Reflexiones filosóficas acerca de la interpretación de la física; la metafísica en el siglo XXI; historia de la física y su planteamiento educativo; relaciones entre concepciones de la física en la historia de la filosofía; problema del sentido y de la verdad en la filosofía de la física; naturaleza e implicaciones de la termodinámica; epistemología y principios rectores de las teorías físicas actuales; fundamentos filosóficos de la mecánica cuántica; implicaciones filosóficas de la teoría cuántica; implicaciones filosóficas de la física newtoniana; implicaciones filosóficas de la teoría de la relatividad; estrategias pedagógicas en la enseñanza-aprendizaje de la física; propuestas educativas para dinamizar la comprensión de la física; implicaciones filosóficas de la física teórica actual.

Generación de artículos desde representantes de la filosofía destacados en el tema central y sus implicaciones en la psicología, en la pedagogía o en otras disciplinas.

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Sophia 38
El método inductivo en las humanidades y en la pedagogía

Descriptores: La actividad científica y reflexión sobre el método de conocimiento; el método inductivo en las ciencias sociales; inducción, experiencia y acción como fundamento de la pedagogía; los métodos de conocimiento y aprendizaje en las humanidades; valor y límites del método experimental en las ciencias humanas; valor y límites del positivismo pedagógico; reflexiones sobre el método científico e implicaciones en los procesos de aprendizaje; aplicaciones del método inductivo en la educación; utilidad del método inductivo para la psicología; propuestas pedagógicas de carácter inductivo en las ciencias humanas.

Generación de artículos desde representantes de la filosofía destacados en el tema central y sus implicaciones en la psicología, en la pedagogía o en otras disciplinas.

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