Contemporary Readings in Law and Social Justice
ISSN: 1948-9137, e-ISSN: 2162-2752
Vol 16 (01), 2024
pp. 2113 - 2124

Gnoseology and Epistemology as Philosophical Pillars in the Construction of Scientific Knowledge

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ABSTRACT: The primary objective of this work is to analyze, in an integrated manner, the philosophical foundations that underpin the construction of scientific knowledge, with a particular focus on key concepts such as gnoseology and epistemology. This exploration is carried out from a critical and reflective perspective aimed at understanding how the theoretical foundations that guide research practices in various fields of knowledge are configured.

To achieve this purpose, a methodological approach framed within the interpretative paradigm is adopted one that values subjectivity, context, and the co-construction of knowledge. In line with this perspective, a qualitative approach is favored, and the hermeneutic method is employed as the principal analytical tool for interpreting texts, theories, and relevant philosophical traditions.

The research strategy is structured through a systematic review of specialized literature, which allows for the identification, classification, and understanding of the main gnoseological and epistemological positions that have influenced the comprehension of scientific knowledge. From this process, a solid state of the art and a robust theoretical framework are developed, providing critical inputs for analyzing the theoretical, methodological, and axiological dynamics involved in the contemporary production of knowledge within the social sciences and other academic disciplines.

Keywords: research paradigms, positive, interpretive, socio-critical

Received: 28 April 2024 **Received:** 4 May 2024 **Accepted:** 13 June 2024

1. Introduction

This paper aims to provide an articulated analysis of the philosophical foundations that support the construction of scientific knowledge, with special attention to epistemology, epistemology, paradigms, and research approaches. From a reflexive perspective, the definitions, characteristics, and typologies of the theory of knowledge are examined, delving into the epistemological principles that guide research practice, as well as the objects of study and the contributions of representative authors in this field.

Likewise, various contemporary epistemological perspectives are explored, such as objectivism, subjectivism, holism, pragmatism, and interpretivism, assessing their implications for the production, validation, and understanding of scientific knowledge. Likewise, the types of reasoning used in research inductive and deductive are analyzed, recognizing their relevance in the logic of constructing theories and explanatory models.

The study also considers the main scientific paradigms: positivist, interpretive, and socio-critical, establishing their similarities, differences, typologies, and applications based on the methodological approaches and realities investigated.

The methodology adopted in the preparation of this chapter is part of the interpretive paradigm, with a qualitative approach and the use of the hermeneutic method. A systematic review is used as a research strategy, aimed at constructing a state of the art and a solid theoretical framework that allows for a critical interpretation of the philosophical and epistemic positions that underlie the processes of knowledge generation in contemporary science (Martínez et al. 2024; Salcedo et al. 2022).

2. Methodology

This academic reflection is developed within the interpretive paradigm, which, from an epistemological perspective, prioritizes a deep understanding of the meanings that individuals attribute to their practices, discourses, and sociocultural contexts. This paradigm recognizes the inherent subjectivity of knowledge, the importance of social interaction as a source of understanding, and the situated nature of knowledge, aspects that make it an appropriate methodological avenue for addressing complex phenomena in a critical and reflective manner (Martínez et al., 2024).

In line with this framework, a qualitative approach is adopted, oriented toward a comprehensive, inductive, and contextualized analysis of the selected academic sources. Far from pursuing the generalization of universal laws, this approach seeks to interpret the meanings constructed by scientific communities and explore emerging theories in the field of study. In particular, the semantic richness and conceptual diversity underlying academic discourses are valued, especially those that address the epistemological and gnoseological foundations of scientific knowledge (Martínez, 2010).

The methodological approach is based on the hermeneutic method, ideal for the critical interpretation of academic texts, theories, and paradigmatic positions, both classical and contemporary. Hermeneutics, conceived as a discipline oriented toward understanding and interpretation, provides analytical tools to unravel meanings, highlight conceptual tensions, and reconstruct arguments based on a deep and situated reading of documents. This method is especially relevant for the study of philosophical and epistemological categories, as it allows for the exploration of their ontological, methodological, and ethical implications within the process of knowledge production (Martínez et al., 2024).

As a research strategy, we use a systematic literature review, which allows us to identify, select, and rigorously analyze a representative corpus of relevant sources in the field of study. This review is aimed at constructing a solid and up-to-date state of the art, which serves as the basis for the development of the theoretical framework. In this regard, we not only aim to trace the historical and conceptual development of the research object, but also to critically interpret the predominant epistemological positions in contemporary science (Martínez et al., 2024; Salcedo et al., 2022).

3. Results

3.1. Gnoseology: Definition, Characteristics, and Typology

Gnoseology, also known as the theory of knowledge, constitutes a branch of philosophy that deals with the general study of human knowledge. This discipline is not limited to the analysis of a particular type of knowledge, but rather aims to understand the nature, origin, and conditions that make knowledge possible in a broad sense. It is particularly interested in the mechanisms by which human beings access knowledge, as well as the ontological, epistemic, and practical consequences derived from this process (Verneaux, 1999).

From the gnoseological perspective, the knowing subject has various sources of access to reality and truth, among which are perception, representation, concepts, judgment, common sense, and logical deduction. These elements constitute the fundamental pillars through which the experience of knowledge is configured. Unlike epistemology, which focuses specifically on the study of scientific knowledge and formal validation procedures such as hypotheses, laws, and principles, epistemology focuses on the philosophical analysis of knowledge in general, beyond the scope of specific sciences (Grondin, 1999).

3.1.1. **Characteristics of Epistemology**

According to the approaches of Verneaux (1999) and Grondin (1999), epistemology is characterized by approaching the study of knowledge from a broad, philosophical perspective. Its fundamental features

include the analysis of the various types of knowledge, their origins, and their connection to human nature. Unlike other disciplines that focus on specific areas of knowledge, epistemology deals with knowledge in general, without restricting itself to specific fields such as mathematics, chemistry, or biology.

Furthermore, this discipline distinguishes three main forms of knowledge: direct knowledge, which is obtained immediately through experience; the propositional, which involves statements that can be true or false; and the practical, related to know-how and action.

At the epistemological level, epistemology recognizes two essential paths to knowledge: reason and the senses, both considered legitimate but complementary sources.

Regarding its historical origin, epistemological reflection dates back to ancient Greek philosophy, particularly Plato's dialogue Theaetetus, where the question of what it means to know is first raised. One of the central problems addressed by this discipline is the justification of knowledge, that is, the examination of the conditions under which a belief can be considered valid and true.

3.1.1. Types of knowledge according to epistemology

Based on the challenges posed by the understanding of knowledge, various epistemological currents or positions have developed:

Dogmatism: From the dogmatic perspective, it is affirmed that human beings possess the capacity to attain certain, indisputable, and universal knowledge. This position denies the existence of a proper epistemological problem, considering that knowledge is accessible without questioning its foundations or conditions. It is based on complete trust in reason or experience, depending on the system, and starts from the premise that there are unquestionable truths that can be assumed without further justification (Defez et al. 2000).

Realism: Realism maintains that truth can be known through external reality, independent of the subject. This current affirms that the objective world exists and can be understood through observation and rational analysis. For realism, errors in knowledge are not structural, but incidental, attributable to flaws in perception or reasoning, but not to the impossibility of accessing the truth. In this sense, the idea that "the being of things" takes precedence over subjective interpretation predominates (Verneaux, 1999).

Skepticism: Skepticism represents a critical attitude that questions the possibility of achieving certain knowledge or absolute truths. Although it does not necessarily deny the existence of knowledge, it does question its validity, scope, and reliability. This position can take moderate or radical forms, and in many cases serves as a starting point for demanding greater rigor in the justification of knowledge. Skeptics maintain that every claim must be subject to examination and that many human beliefs are subject to error or interpretation (Grondin, 1999).

Criticism: Proposed by Immanuel Kant, the critical position is based on the recognition that knowledge can be achieved, but only if the conditions that make it possible are subject to analysis. Criticism does not immediately accept or reject knowledge; rather, it proposes a deep philosophical reflection on its foundations, limits, and mechanisms. Consequently, it is not about accepting dogmas or adopting an absolutely skeptical position, but rather about developing a critical attitude that allows us to distinguish between valid knowledge and unfounded beliefs (Defez et al. 2000).

Empiricism: Empiricism argues that all knowledge derives, directly or indirectly, from sensory experience. According to this school of thought, human beings know through perception, and knowledge is formed as a result of the accumulation of data from the senses. This conception has been central to the development of the modern scientific method and has greatly influenced contemporary epistemology. In empiricism, there are no innate ideas: all knowledge stems from direct contact with observable reality (Verneaux, 1999).

Rationalism: Rationalism, on the other hand, privileges reason as the primary and most reliable source of knowledge. Defended by René Descartes, it maintains that there are innate ideas in the human mind, and

that through the rigorous use of logical thinking, it is possible to reach universal truths, independent of sensory experience. This position considers that reason, by itself, can lead to true knowledge, and gives a central place to deduction and a priori principles (Grondin, 1999).

Idealism: Also developed by Kant, idealism is presented as a critical overcoming of both rationalism and empiricism. This doctrine maintains that the subject is not a passive recipient of reality, but an active agent who interprets and organizes knowledge. For idealism, knowledge is the result of the interaction between subject and object and cannot be understood as a simple reflection of reality, but rather as a construction mediated by mental categories and cognitive structures (Defez et al. 2000).

Constructivism: Constructivism posits that knowledge is not discovered but rather constructed by the subject through their interaction with the world. This position considers that the process of knowing involves a progressive elaboration of meanings, the result of the dialogue between experience and the mental schemas that are formed over the course of life. In this approach, knowledge is understood as an active construction, in which reason plays an integrative and adaptive role in the face of the challenges posed by the environment (Verneaux, 1999).

In conclusion, it can be said that epistemology offers a broad theoretical framework that allows for the exploration of the different ways in which human beings approach knowledge. Through these currents, from dogmatism to constructivism, multiple answers have been proposed to the fundamental question of how we know, what knowledge is, and what degree of certainty can be achieved. Each position presents a distinct vision of the relationship between subject and object, as well as of the legitimacy of human knowledge (Verneaux, 1999; Grondin, 1999; Defez et al. 2000).

3.2. Epistemology: Foundations, Object of Study, and Representative Authors

Epistemology is one of the fundamental branches of philosophy, dedicated to the critical analysis of scientific knowledge. Its name comes from the Greek epistḗmē (knowledge) and lógos (discourse, study, or science), which is why it is also often referred to as the "science of knowledge" (Defez et al. 2000; Verneaux, 1999). Its main focus revolves around the processes by which knowledge is generated, as well as the criteria that allow for the evaluation of its validity, justification, and scope.

3.2.1. Definition and object of study

Epistemology is concerned with investigating how knowledge is constituted, what its conditions of possibility are, and what mechanisms allow us to distinguish between legitimate knowledge and mere belief. It is not restricted to the accumulation of information, but rather focuses on the logical, historical, and methodological foundations that make the production of scientific knowledge possible (Truncellito, 2007; Waetofsky, 1973).

In general terms, its object of study includes:

- The historical, social, and objective context in which scientific knowledge arises, considering that all knowledge production is culturally and temporally situated (Bachelard, 1975).
- The criteria that define what knowledge can be considered scientific, distinguishing it from other forms of knowledge such as opinion, ideology, or myth (Ayer, 1965).
- Key concepts such as truth, justification, corroboration, falsifiability, hypothesis, and scientific rationality, which allow us to evaluate the soundness of a theory or proposition.

3.2.2. Prominent Representatives

Various thinkers have contributed to the development of epistemology, addressing the problem of knowledge from multiple perspectives:

- Rudolf Carnap, Otto Neurath, and Moritz Schlick were members of the Vienna Circle, promoting a form of logical empiricism that aspired to establish a verifiable and mathematical basis for scientific knowledge (Ayer, 1965).

- In parallel, Carl Hempel, David Hilbert, and Hans Reichenbach, members of the Berlin Circle, developed similar proposals, seeking a rigorous connection between formal logic and scientific methodology.

- Karl Popper, a critic of logical positivism, proposed falsificationism as the central criterion of scientific knowledge. For Popper, a scientific theory must be refutable to be considered valid, displacing the principle of verification (Waetofsky, 1973).

- Thomas Kuhn introduced a historical view of scientific development through the concept of paradigm, arguing that knowledge advances through scientific revolutions and not through linear accumulation. Imre Lakatos, for his part, developed sophisticated falsificationism, proposing research programs with hard cores protected by theoretical frameworks that evolve over time.

- From another perspective, Hans-Georg Gadamer proposed a hermeneutic epistemology, oriented toward the study of the humanities through interpretive dialogue, as opposed to the natural scientific model (Grondin, 1999).

- Paul Ricoeur, a phenomenologist and hermeneutic philosopher, integrated elements of epistemology with phenomenology, focusing on the understanding of phenomena and the symbolic mediation between the subject and knowledge.

3.3. Difference between Epistemology and Gnoseology

Although they are sometimes used as synonyms especially in Anglophone contexts—epistemology and gnoseology are not identical. Gnoseology undertakes the general study of human knowledge, addressing its origin, nature, and structure without limiting itself to any specific type of knowing. Epistemology, by contrast, focuses on scientific knowledge its conditions of validity and the methodological processes that underpin it (Verneaux, 1999; Grondin, 1999).

Despite this conceptual distinction, some authors particularly in the Anglo-American tradition consider that epistemology also covers the field of gnoseology or even that both are part of a broader category called the theory of knowledge (Bachelard, 1975; Truncellito, 2007). Ultimately, epistemology constitutes a fundamental field for understanding the processes of production, validation, and evolution of scientific knowledge. Its contributions are essential both to philosophy and to the empirical sciences, as it enables a critical reflection on the limits, scope, and foundations of human knowledge.

3.4. Epistemological perspectives:

This section analyzes various epistemological perspectives that have significantly influenced the construction of scientific knowledge and the development of contemporary research approaches. Among them are objectivism, subjectivism, holism, pragmatism, and interpretivism, each with its own contributions, internal tensions, and methodological possibilities. These currents offer comprehensive frameworks from which to approach the study of social and human reality, acknowledging both the diversity of approaches and the need for critical dialogue among them.
Building on the analysis of these epistemological currents, the discussion delves into fundamental concepts for research, such as objectivity and subjectivity understood not as mutually exclusive categories, but as complementary dimensions of knowledge. Objectivity is associated with the pursuit of impartiality and universality in the production of knowledge, whereas subjectivity refers to situated, experiential, and contextualized interpretations that enrich understanding of the phenomenon under study.

Likewise, the principal methods of reasoning used in research logic induction and deduction are examined. Both represent essential strategies in hypothesis formulation, theory validation, and the structuring of scientific thought, insofar as they enable movement between the particular and the general, and vice versa. Taken together, these pages offer an integrative view of the epistemological foundations that underpin research processes, fostering a critical and reflective understanding of knowledge in the social and human sciences.

3.4.1. Objectivism

Objectivism is a philosophical current that maintains the existence of an objective reality independent of human consciousness. From this perspective, knowledge does not depend on subjective perceptions or social constructions; rather, it can be attained through rational observation and the systematic use of reason. This approach assumes that the world exists as it is, with its own laws that can be discovered, understood, and explained through logical and empirical thinking (Verneaux, 1999; Bautista, 2021).

The most influential work of objectivism in contemporary philosophical thought has been attributed to Rand (1957), who systematically presents this doctrine in her work *Atlas Shrugged*. In that text, Rand configures objectivism as an integral philosophical system encompassing metaphysics, epistemology, ethics, politics, and aesthetics, articulating these fields under the guiding principle that reality exists independently of human consciousness and can be understood only through reason. From this perspective, knowledge is neither an arbitrary construction nor a mere subjective interpretation, but the result of a rational process that enables the human being to grasp the objective truth of the world. Consequently, individual freedom understood as the capacity to act in accordance with reality and one's rational interests emerges as a fundamental condition for the full realization of the individual.

In the ethical domain, objectivism opposes the traditional notion of altruism as a moral obligation and instead proposes an ethics of rational egoism, according to which each person must take responsibility for living for themselves, guiding decisions toward the conscious pursuit of their own well-being and self-realization. Far from promoting unsupportive or destructive individualism, this ethics defends the idea that rational and respectful coexistence among free individuals is possible if it is recognized that all share the capacity to reason and to act according to universal principles (Rand, 1957).

In her novel *Anthem* (1957), Rand develops an allegory critical of the risks of radical collectivism, portraying a dystopian society in which individuality has been completely annulled in favor of a homogeneous and oppressive social structure. Through the protagonist's emancipatory trajectory—who succeeds in reconstituting his identity by the autonomous use of reason—the author reinforces her central thesis: only when the subject recognizes their rational capacity and exercises their freedom responsibly is it possible to achieve a full and truly human life. Thus, objectivism presents itself not only as a coherent theoretical proposal, but also as a viable path toward authentic freedom and individual happiness, in open opposition to collectivist doctrines that subordinate the individual to externally imposed ends.

From an epistemological standpoint, objectivism upholds the validity of sensory perception and logical thought as reliable means to knowledge, opposing relativist or constructivist positions that deny the possibility of objective truth. As Verneaux (1999) explains, this position presupposes confidence in the capacity of the rational subject to apprehend reality and to formulate verifiable propositions about the world the foundation upon which scientific knowledge is built.

3.4.2. Subjectivism

Subjectivism is a philosophical doctrine that asserts that all forms of knowledge, as well as the criteria of truth, depend on the individual experience of the subject. From this perspective, there is no absolute or universal truth; rather, each human being interprets reality from their own frame of reference, which is shaped by perception, emotions, beliefs, personal history, and sociocultural environment (Bautista, 2021). This conception relativizes the objective value of knowledge and situates it within an essentially individual dimension.

Its roots go back to the Greek Sophists, particularly Protagoras (489–419 BCE), who held that "man is the measure of all things," an expression that encapsulates the subjectivist premise that each person establishes their own criteria of truth. This approach represented a break with philosophical thought that sought universal principles, proposing instead that what is true varies according to the subject and their context.

In the Modern Age, subjectivism was reformulated by thinkers such as David Hume (1711–1776), who denied the possibility of attaining absolute certainties, arguing that knowledge is constructed from sense impressions and mental habits. Later, Friedrich Nietzsche (1844–1900) radicalized this view by asserting that there are no facts, only interpretations, and that truth is nothing more than a social convention imposed by particular forms of power.

Despite its philosophical relevance, subjectivism has received various criticisms, especially from approaches that consider that the absence of objective criteria jeopardizes the possibility of establishing common agreements or valid rational judgments in the public, ethical, or scientific sphere. Such total relativization can lead to forms of epistemological nihilism, where every assertion is equally valid or invalid, hindering deliberation and consensus.

Nevertheless, subjectivism has had a significant impact on the social and human sciences, particularly on hermeneutic, phenomenological, and interpretive approaches, which recognize subjectivity as a constitutive dimension of knowledge. Methodologically, it has been key to the development of qualitative research, which values the subject's voice, the understanding of meaning, and situated experience as essential elements in the production of knowledge (Bautista, 2021).
In sum, subjectivism is a current that, while posing important theoretical challenges, has decisively contributed to revaluing the human and contextual dimension of knowledge, making it evident that every form of knowing entails an interpretive mediation from the subject's consciousness.

3.4.3. Holism

Holism is an epistemological and methodological perspective holding that phenomena must be understood in their entirety, considering not only their constituent parts but also the dynamic relations these parts establish among themselves and with the whole to which they belong. From this perspective, reality cannot be reduced to isolated elements; rather, it must be approached as a complex system in which each component acquires meaning only in relation to the context in which it is embedded (Bautista, 2021).

The term "holism" was coined by the South African thinker Jan Smuts in 1926, deriving it from the Greek *holos*, meaning "totality." However, the antecedents of this conception can be traced to the nineteenth century, when the first structural notions applied to the study of systems began to emerge. Later, during the first half of the twentieth century, holism was reinforced by the contributions of Ludwig von Bertalanffy (1901–1972), creator of general systems theory, and P. K. Anokhin (1898–1974), who introduced the concept of the "functional system," both interested in developing explanatory models based on the organization and functionality of living and social systems.

In the social and human sciences, the holistic approach has made it possible to overcome the limitations of positivist reductionism, favoring an understanding of social, cultural, and subjective processes as interrelated and historically situated phenomena. According to Bautista (2021), holism represents an essential foundation for qualitative research, as it enables the deep interpretation of meanings, practices, and structures in specific contexts, considering totality as a methodological and epistemological principle.

This approach has gained particular relevance in interdisciplinary contexts, where fragmented analysis proves insufficient to apprehend the complexity of contemporary phenomena. Consequently, holism promotes an investigative attitude that privileges interconnection, contextualization, and systematization, recognizing that knowledge is an emergent process of dialogue between the parts and the whole.

3.4.4. Pragmatism

Pragmatism is a philosophical current that originated in the United States toward the end of the nineteenth century, whose initial formulation is owed to the philosopher and logician Charles Sanders Peirce. He proposed pragmatism not as a closed doctrinal system, but as a method for clarifying ideas and orienting them toward their practical consequences. For this reason, pragmatism has given rise to diverse interpretations and developments, which makes it necessary to specify carefully the particular approach adopted when invoking this current (Bautista, 2021).

The term comes from the Greek *prâgma*, meaning "action" or "deed," although the conception Peirce had in mind was closer to the German Kantian term *pragmatisch*, which refers to what is empirical and contextual, as opposed to *praktisch*, which refers to action as an end in itself. From this perspective, pragmatism highlights the close relationship between rational thought and conduct, proposing that the value of ideas lies in their practical effects and their capacity to guide action.

Pragmatism was developed and reformulated by several influential thinkers, among them:

- **Charles S. Peirce (1839–1914):** Considered the founder of pragmatism, he was also a pioneer in logic and semiotics. His proposal centered on the function of thought as a guide to effective action and on the need to validate ideas through their observable consequences.

- **William James (1842–1910):** An American philosopher and psychologist, he is recognized for popularizing pragmatism and broadening its scope to include religious experience and radical empiricism. For James, the value of a belief lies in the practical effects it generates in a person's life, which introduced an existential dimension to classical pragmatism.

- **John Dewey (1859–1952):** A prominent educator and philosopher, he is one of the most influential exponents of pragmatism in education. His thought was characterized by the search for integration between theory and practice, promoting an instrumental conception of human intelligence in the service of solving social problems. His deeply democratic approach linked knowledge with ethical action, experience, and the transformation of society.

Taken together, these authors consolidated pragmatism as a plural current centered on the usefulness of thought, empirical verification, and the link between knowledge and social practice. In qualitative research, pragmatism has offered a flexible epistemological foundation suited to addressing complex problems from a situated, action-oriented perspective (Bautista, 2021).

3.4.5. Interpretivism

Interpretivism, as presented by Bautista (2021), is a methodological approach characteristic of qualitative research in the social sciences, particularly sociology. This current holds that human actions must be understood within the framework of the beliefs, norms, and values that govern the culture of the society in which those actions take place. Thus, the central purpose of interpretivism is not the identification of universal laws, but the interpretation of the meaning that individuals attribute to their behavior in specific social contexts.

Unlike quantitative methods, which work with numerically expressed data, interpretivism relies on qualitative data, typically represented through narratives, interviews, descriptions, or linguistic categories. This approach seeks to capture the depth of human experiences, emphasizing the symbolic, subjective, and contextual dimensions of social action.

From this perspective, interpretivists consider that social reality is constructed by people through their interactions and systems of meaning. Therefore, understanding an event or behavior entails accessing the subject's symbolic universe—that is, the interpretations that social actors themselves develop about their world. In this sense, knowing the norms, values, and beliefs that organize social life is key to understanding why people act in a given way.

In conclusion, interpretivism proposes situated knowledge centered on the subjective meaning of action and committed to recognizing cultural diversity and the multiple ways of understanding reality.

3.4.6. Objectivity

Objectivity, in its broadest sense, refers to the capacity to represent reality as it is, without distortions derived from personal prejudices, emotions, or individual preferences. According to Morales (2025), it is a quality that implies impartiality and neutrality, since it requires detaching the subject's judgment from any form of subjective inclination that would alter the description of facts or the interpretation of data.

Nevertheless, the practice of objectivity is complex, given that human beings tend to construct their worldview from their experiences, beliefs, ideologies, and cultural contexts. In this sense, although objectivity stands as an ideal of knowledge, its scope must be problematized, especially in the human and social sciences, where the influence of the subject is inescapable (Otero, 1992; Blanco, 1974). This notion applies to multiple domains—such as medicine, law, journalism, sport, and especially scientific research. In these contexts, objectivity enables the neutral presentation of facts and results, becoming an essential feature for the legitimacy and reliability of the analyses and conclusions derived from formal knowledge (Morales, 2025).

From a philosophical perspective, various authors have addressed the problem of objectivity:

- **David Hume (1980),** from British empiricism, maintained that all knowledge originates in sensory experience, which implies a constant mediation of individual perceptions. Although he does not deny the possibility of knowledge, he warns that our beliefs cannot be absolutely objective, since they depend more on mental habits than on rational certainties.

- **René Descartes (1904),** by contrast, proposed an ideal of objectivity based on reason. Through methodological doubt, he aspired to find universal, clear, and distinct truths, free from the errors of the senses. In his *Meditations on First Philosophy*, he laid the foundations of a rationalism that would profoundly influence the modern notion of scientific objectivity.

- **Immanuel Kant (1977)** offered a critical synthesis between empiricism and rationalism. In the *Critique of Pure Reason*, he argued that objective knowledge is not a simple copy of reality but the result of a constructive process in which both the object and the subject intervene. The former provides sensible content, while the latter organizes that content through *a priori* structures of the understanding, such as time and space. In this transcendental theory, objectivity is understood not as the elimination of the subject, but as the outcome of an intersubjective process that allows the universality of knowledge (Otero, 1992).

Thus, objectivity is not reduced to mere neutrality; it involves an active and critical elaboration of knowledge. In the scientific field, it remains a guiding principle, even while it is recognized that it is always mediated by theories, models, and interpretive frameworks. In disciplines such as sociology, this debate has been central to disputes between positivism and hermeneutic currents, which discuss the place of the subject in the production of knowledge (Blanco, 1974).

3.4.7. Subjectivity

Subjectivity can be defined, in general terms, as the set of perceptions, interpretations, evaluations, and emotions that shape the particular way in which each individual relates to the world. In other words, it constitutes the singular manner in which a person thinks, feels, experiences, and understands reality from their own interiority (Aquino, 2013). Unlike objectivity which appeals to criteria shared or verifiable independently of the subject subjectivity is profoundly influenced by personal history, culture, emotions, ideology, and life experiences.

This notion is especially relevant in the social sciences, philosophy, and education, since it recognizes that human knowledge and action are neither neutral nor impersonal. Every subject, as a cognitive and moral agent, interprets the world from a situated position, marked by their context and structures of meaning (*Diccionario Iberoamericano de Filosofía de la Educación*, 2016).
From an etymological point of view, the term "subjectivity" comes from the Latin *subjectus*, meaning "subjected" or "placed underneath." Originally, it referred to that which is subordinate to something else, and in grammar it designated the subject of the sentence, that is, the element linked to the predicate. This historical root makes it possible to understand that subjectivity alludes to what is closely tied to the human subject and therefore depends on their internal structure, in contrast with the objective or external world.

In this sense, subjectivity should not be conceived as a mere distortion of knowledge, but as a constitutive dimension of it. Far from being obstacles to knowing, subjective valuations can be rich sources of

understanding when they are recognized and analyzed critically. In education, for example, the subjectivity of the student and the teacher influences teaching-learning processes; hence, understanding it is key to approaching training from a comprehensive and contextualized perspective (Aquino, 2013).

Moreover, in the field of the philosophy of education, subjectivity has been a constant object of reflection, as it reveals the tension between recognizing the subject as a unique, creative, interpretive being and the need to establish common criteria for the transmission of knowledge. From this perspective, subjectivity appears as an inescapable dimension of all formative practice, which entails a profound understanding of the meanings that subjects construct in their relationships with knowledge, with others, and with themselves (*Diccionario Iberoamericano de Filosofía de la Educación*, 2016).

4. Discussion

A joint analysis of gnoseology and epistemology makes it possible to appreciate the richness and complexity of the foundations of human knowledge, especially in scientific and social contexts. Gnoseology, by addressing knowledge in its most general sense, offers a panoramic view of how subjects access reality, while epistemology rigorously delimits the conditions of validity of scientific knowledge (Verneaux, 1999; Grondin, 1999; Defez et al., 2000).

From a gnoseological approach, it is evident that knowledge is not univocal; rather, it takes multiple forms direct, propositional, and practical each with distinct ontological and methodological implications. The identification of various gnoseological currents such as dogmatism, skepticism, realism, empiricism, and constructivism reveals the plurality of positions regarding the origin, validity, and possibility of knowledge. For example, dogmatism, by denying the need for a critical justification of knowledge, stands in stark contrast to Kantian criticism, which proposes a thorough review of the mechanisms that make knowing possible (Defez et al., 2000).

Realism, by defending the existence of an objective truth accessible to the subject through reason, is situated in opposition to positions such as subjectivism and constructivism, which privilege interpretation and experience as the core constituents of knowledge (Verneaux, 1999; Grondin, 1999). In particular, constructivism has been highly relevant in education and in contemporary qualitative research, maintaining that knowledge is the product of a progressive construction between the subject and their environment. This perspective is key to understanding the interpretive turn in the social sciences, where the focus is no longer on "objective truth," but on the meaning that subjects attach to their practices.

Epistemology, for its part, provides fundamental tools for the analysis of scientific knowledge. Unlike gnoseology, it is not concerned solely with the question "What is it to know?" but also with "How is what is known scientifically justified?" In this regard, authors such as Popper (falsificationism), Kuhn (paradigms), and Lakatos (research programs) have established theoretical models that make it possible to understand the dynamics of transformation and validation of scientific knowledge (Waetofsky, 1973; Ayer, 1965).

In particular, the Popperian model introduces a significant rupture with the inductivist tradition by arguing that science does not advance by verifying hypotheses but by attempting to refute them. This view resonates with Kuhn's historical proposal, which argues that knowledge does not progress cumulatively, but through scientific revolutions that reconfigure interpretive frameworks (Bachelard, 1975). In contrast, logical positivism represented by Carnap or Schlick seeks formal and verifiable criteria to define what counts as valid knowledge (Ayer, 1965).

In the context of the human sciences, the hermeneutic perspectives proposed by Gadamer and Ricoeur have problematized the applicability of the criteria of objectivity and universality typical of the natural sciences, emphasizing the importance of context, interpretation, and language in the production of knowledge (Grondin, 1999).

This epistemological debate links directly to objectivist and subjectivist perspectives. Objectivism, in the line of Rand (1957) and Descartes (1904), maintains that it is possible to apprehend reality as it is, without distortion, through reason. However, this claim has been challenged by approaches such as subjectivism or interpretivism, which recognize that all knowledge is mediated by consciousness, emotions, and sociocultural context (Bautista, 2021; Aquino, 2013). Indeed, authors such as Nietzsche and Hume have held that truth is, in many cases, a convention or an expectation constructed from mental habits or structures of power (Aquino, 2013).

Pragmatism represented by Peirce, James, and Dewey proposes an interesting synthesis by suggesting that the value of knowledge should be measured by its practical consequences and its capacity to solve problems (Bautista, 2021). This stance is particularly useful for applied studies—such as education or organizational management—where knowledge is not reduced to theory, but acquires meaning in transformative action.

Finally, holism constitutes a methodological proposal that has gained ground in interdisciplinary research. In contrast to the analytical reductionism of classical positivism, holism argues that knowledge should capture the totality of relations that configure a phenomenon, integrating the structural, the cultural, and the subjective (Bautista, 2021). In this sense, it aligns with the complexity of today's social contexts and enables the articulation of diverse dimensions of analysis.

Taken together, the discussion between gnoseology and epistemology and among the different epistemological perspectives shows that knowledge cannot be reduced to a single theoretical framework. On the contrary, it requires a dialogical and critical approach that integrates different forms of knowing, recognizing their limits, scope, and foundations. As Verneaux (1999) and Grondin (1999) point out, every theory of knowledge is, at bottom, a reflection on the relationship between the human being and the world one that involves ontological as well as ethical, political, and practical questions.

4. Conclusions

The analysis developed here establishes that knowledge is not a univocal, neutral category universally shared, but a complex construction in which multiple factors ontological, epistemological, methodological, historical, and cultural intervene. Gnoseology, by addressing human knowledge from a general philosophical perspective, provides a theoretical platform for reflecting on the conditions of possibility of knowing. Its multiple currents from dogmatism to constructivism illustrate different answers to the question of knowledge and its validity.

Epistemology, for its part, offers a critical and specialized look at scientific knowledge. Far from being an abstract discipline, it enables interrogation of the assumptions underlying the production of theories, the selection of methods, and the recognition of valid knowledge in specific contexts. This approach is essential to avoid dogmatic or uncritical research practices.

The epistemological perspectives reviewed objectivism, subjectivism, holism, pragmatism, and interpretivism show that there is no single path to knowledge. Each contributes principles that, in certain contexts, may be more pertinent than others. The contemporary challenge, then, is to articulate these perspectives without absolutizing them, recognizing the legitimacy of different approaches as long as they are supported by theoretical coherence, methodological rigor, and ethical relevance.

In sum, understanding the differences and complementarities between gnoseology and epistemology as well as among the main currents of scientific thought is a fundamental exercise for every researcher. It is not merely a matter of choosing a paradigm or a perspective, but of developing critical awareness of the foundations of knowledge and its impact on social transformation, respect for diversity, and the production of meaningful, contextualized knowledge.

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