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The Historical Turn of Skepticism in Modern Philosophy

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Abstract:

The nascent forms of skeptical philosophy emerged within the Sophist school between the fourth and fifth centuries BCE, championing a discourse rooted in individualism, which posits that knowledge originates from the self. They contested the existence of absolute knowledge and embraced doctrinal skepticism in their philosophical discourses. The vanguard of this movement adopted a decidedly antagonistic stance towards all forms of certain knowledge, an audacity that catalyzed intellectual engagement among philosophers. Socrates initiated his philosophic endeavors by challenging the Sophist assertions, while Aristotle devised a methodological framework to organize thought based on logical principles aimed at rectifying the skeptics' misconceptions regarding the validity of thought.

Skepticism has perennially permeated philosophical inquiry throughout its history. By the seventeenth century, philosophical paradigms employing methodological skepticism as a means to attain certainty began to surface. Knowledge, according to these paradigms, is not merely inherited through tradition or intellectual subservience but necessitates profound critique that delves into the core of issues for comprehension. Such understanding is attainable only through the application of methodological skepticism as the foundational approach to certain knowledge. This perspective continued to evolve, finding resonance in contemporary philosophical and scientific discourses, notably manifesting in the concept of relativity.

Keywords: Skepticism, Philosophy, Knowledge, Science, Methodology, Doctrine.

1. Introduction:

The philosophical landscape is densely populated with diverse intellectual currents and epistemic theories that span the entire gamut of philosophical inquiry. Some of these currents and theories pertain to the intellectual construction of certain knowledge, whether through rational deduction or empirical evidence, while others explore the questioning of all knowledge claiming absolute certainty. Invariably, the stream of skepticism runs through the annals of philosophical research,

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often emerging from societal crises. As a philosophical doctrine, skepticism has actively contributed to the formulation of substantial philosophical theories.

Skepticism first materialized within the Sophist philosophy, predicated on a profound doubt of all knowledge, irrespective of its source. The truth, from this perspective, is not an immutable absolute but a variable entity that fluctuates according to individual perception and temporal context. No knowledge is definitive; rather, all purported knowledge is subject to doubt, originating from the human condition—humankind being the measure of all things, a radical notion articulated by Protagoras that heralded a new epoch of skeptical inclination rejecting the certainties of existence. Knowledge, thus, becomes relative, contingent upon the individual's sensory experiences.

This brand of skepticism, known among the Sophists as doctrinal skepticism—or skepticism for its own sake—drew upon the intellectual curiosity of Greek philosophers, notably Socrates, who vehemently opposed the Sophists' propositions. His intense desire to overhaul the ideologies embedded in young minds by the Sophists was pivotal. Aristotle furthered this intellectual revolution by establishing principles for cogent reasoning and curtailing philosophical sophistry. He upheld standards of truth for verifiable knowledge, which significantly diminished the perceived value of doctrinal skepticism, relegating it to a more pathological than epistemological status.

In modern philosophical discourse, skepticism has evolved to emphasize a methodological aspect, focusing not on doubt per se but on the pursuit of certain knowledge. This methodological skepticism, esteemed in the formulation of numerous modern philosophical doctrines, owes much to figures like Descartes, who, at the forefront of this era, posited skepticism as an essential precursor to methodical certainty. In this research paper, I explore the pivotal philosophical milestones of the skeptical tradition, addressing both the skepticism exercised by Christian apologists against rational and scientific knowledge to affirm the certainty of religious doctrine, as exemplified by Michel de Montaigne, and the methodological skepticism that serves as a foundational step toward rational knowledge, as advocated by René Descartes. This paper also considers Francis Bacon’s view of skepticism as a methodological imperative required by empirical inquiry. Throughout the modern era, it becomes apparent that philosophical currents and doctrines invariably incorporate a dimension of skepticism in their propositions. What role, then, has skepticism played in shaping philosophical theories in the modern period?

2. Skepticism as a Defense of Religion

During the onset of the Renaissance in Europe, a cadre of rationalist thinkers, prominently featuring Erasmus (1469-1536), initiated a critical reassessment of Christian theology[1]. This period marked the scrutiny and subsequent rejection of Christian doctrines and the authoritative interpretation of the Scriptures, which had previously been deemed immutable and eternally certain by the Church. This institution had historically dismissed the role and authority of rational thought. In reaction to this intellectual upheaval, a cohort of skeptics arose to defend the tenets of Christianity. Their defensive strategy involved leveraging skepticism about human reason and knowledge to reinforce

[1]Zidan, M. (1979). *Nadhariyat al-Ma'rifah 'indMufakkiri al-Islam waFulasifat al-Gharb al-Mu'asirin* (Theory of Knowledge Among Islamic Thinkers and Contemporary Western Philosophers). Dar al-Nahda al-Arabiya, Beirut, 1st edition. P, 33

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the certainty provided by faith, positing that religion alone could offer true guidance and a path to happiness. Prominent among these figures were Michel de Montaigne (1532-1592) and Pierre Charron (1541-1603).

Michel de Montaigne, an ethicist, employed his skeptical perspective to advocate for Christianity, persistently querying, "What do we know?" His skepticism did not equate to agnosticism[2]; rather, it acknowledged the potential for knowledge while affirming the legitimacy of universal doubt[3]. Montaigne critiqued the adequacy of reason, viewing it as an inherently flawed instrument incapable of accessing true knowledge, primarily because it relied on the sensory experience. He argued that knowledge derived from the senses was inherently suspect, riddled with potential errors, and therefore an unreliable foundation for rational understanding. Consequently, reason, when dependent on the sensory experience, cannot be trusted as a means of uncovering truth. The senses themselves, he contended, are deceptive and limited in scope. Thus, he concluded, reliance on reason is untenable, and there is no empirical science but merely conjectures by misled intellects; nothing can be conclusively verified upon rigorous examination. Montaigne posited that the most credible philosophies are those which acknowledge our fundamental ignorance, particularly about the natural world. He noted historical shifts in scientific paradigms, such as Copernicus's challenge to Ptolemy, suggesting the possibility of future overturns in accepted knowledge. Thus, he argued, we delude ourselves into thinking we possess knowledge when we derive conclusions from flawed premises, and the mechanism of science fails to deliver certainty, reinforcing that our understanding never truly grasps truth.

Pierre Charron, a disciple of Montaigne, echoed these sentiments, emphasizing that any knowledge originating from the senses is inherently flawed and insisted that ultimate truths are beyond human reach, residing instead in the divine realm. Charron urged skepticism towards commonly accepted beliefs and advocated for a distrust in human nature, which he viewed as innately flawed by evil and ignorance. He argued that the only true certainty available to humanity is that which comes through faith and religion, which are essential for establishing societal order and ethical behavior. Reason, no matter its achievements, cannot attain certainty and should not contend with religious doctrine, which intrinsically embraces skepticism about human-derived knowledge.

Mensel (1820–1879), a notable Christian cleric, defended religious doctrines by advocating skepticism towards the absolutism of rational knowledge. He argued for the epistemic relativity of

[2]**Agnosticism** refers to a spectrum of philosophical schools that question the cognitive capacities of the human mind, positing that the true essence of reality remains fundamentally unknowable. Proponents of agnosticism argue for a suspension of judgment concerning all matters, predicated on a pervasive skepticism towards any claims of certainty or definitive knowledge.

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scientific knowledge to ensure that it does not conflict with divine revelation. By challenging the absolutist claims of rationality, which he asserted are intrinsically limited, Mensel posited that faith should guide our acceptance of concepts that transcend our intellectual grasp[4].

He maintained that scientific facts are inherently relative, being products of human endeavor, whereas religious truths, having their origins in the divine, are absolute. Mensel contended that human reason is fundamentally incapable of independently generating knowledge; it requires the foundational truths offered by revelation. He argued that apparent contradictions within religious discourse are not a product of divine revelation but emerge from the finite nature of human reasoning. For Mensel, the absolute is represented solely by the divine, encapsulated in the concept of God, while all human interactions are inherently relative, shaped by the pervasive skepticism that characterizes the rational pursuit of knowledge.

3. **Skepticism as a Defense of Reason**

René Descartes is emblematic of the rationalist thrust in modern philosophy. It is noteworthy that skepticism in the modern era is deeply intertwined with Cartesian philosophy, wherein skepticism serves as the preliminary stage of Descartes' philosophical inquiry. The pursuit of truth requires the individual to subject all propositions to rigorous skepticism, as extensively as possible. Descartes' repudiation of asserted absolutes does not entail an agnostic suspension of judgment, as seen in classical skepticism, where doubt is often exercised merely for its own sake and is accompanied by perpetual indecision. Instead, his objective is to scrutinize knowledge claims rigorously so that, if they withstand such scrutiny, they can be adopted with confidence.

Descartes articulates this stance, stating, "I was not emulating the skeptics, who doubt solely for the sake of doubting and ostentatiously display their indecisiveness; rather, my entire endeavor was aimed at achieving certainty, eschewing the unstable foundations prevalent everywhere in search of a more solid, definitive ground."[5]

This statement highlights that methodological skepticism is indispensable for achieving epistemic certainty, establishing it as the initial step in the acquisition of knowledge. Descartes began his epistemological journey by doubting sensory perceptions, subsequently extending his skepticism to the conceptual realm encountered in states of wakefulness. Considering that one perceives non-existent entities in dreams, he provocatively questioned whether the waking state might essentially

[3]Abdel Ghaffar, M. (1981). Lima al-Falsafa? (Why Philosophy?). Mansha'at al-Nashir, Alexandria.P, 151
[4]Karam, Y. Tarikh al-Falsafa al-Haditha (History of Modern Philosophy). Dar al-Qalam, Beirut, Lebanon. P,339

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be another form of dreaming. He further extended his skepticism to the axioms of mathematics, previously deemed self-evident, upon recognizing their vulnerability to error through potential logical fallacies.

Accordingly, the foundational rule of Cartesian methodology stipulates: "I resolved to accept as true only what I clearly knew to be such; thus, I aimed to avoid hastiness and prejudgment, admitting into my judgments only what appeared so clear and distinct to my mind that I had no reason to doubt it."[6] Regardless of the method's logical coherence, whether deductive or inductive, it invariably yields knowledge that is at best probable. Descartes' skepticism is specifically directed at judgments, not perceptions, as any idea or mental representation remains exempt from evaluative judgment until it is definitively classified as true or false.

4. Skepticism and Empiricism

Francis Bacon (1561-1626) charted a novel path in skepticism, launching a rigorous critique against medieval philosophy and Aristotelian methodologies in the study of nature. Advocating for an inductive research method to achieve certain knowledge, Bacon critiqued the prior reliance on deductive reasoning based on axiomatic truths, asserting, "Every assertion, no matter its origin, must undergo observation and experimentation. Starting with belief in some truths invariably leads to doubt, whereas initiating with skepticism and suspicion inevitably results in discovering truth and certainty."[7]

This philosophy resonated with Pierre Gassendi (1592-1655), who diverged from his predecessors by proposing that the resolution to skepticism lay not in rejecting or fervently embracing theology, but rather in pursuing empirical scientific investigation to discern the essence of natural phenomena[8]. Gassendi marked a significant philosophical shift, reorienting skepticism from abstract philosophical debates to concrete empirical scientific studies, recognizing the utility of skepticism in empiricism as it fosters a deeper understanding of nature through methodical observation and experimentation, thus rendering skepticism a pragmatic tool in scientific discourse.

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[5]Al-Rabie, M. (1982). Mushkilat al-Dawr al-Dikarti (The Problem of Cartesian Doubt). Al-Sharika al-Wataniyya li al-Nashr wa al-Tawzi', 2nd edition.P, 27
[6]Descartes, R. (1985). Maqal 'an al-Manhaj (Discourse on the Method). Translated by Mahmoud Muhammad al-Khudayri, reviewed by Muhammad Mustafa Hilmi. Al-Hay'a al-Misriyya al-'Amma lil-Kitab, 3rd edition.P, 190
[7]Najib Mahmoud, Z. Qissat al-Falsafa al-Haditha (The Story of Modern Philosophy). Majd Printing, Publishing and Translation, Cairo.P, 68
[8]Edwards, P. (Editor). Al-Mawsu'ah al-Falsafiyah (The Philosophical Encyclopedia), Vol. 5 "Mazhab al-Shakk" (The Skepticism Doctrine).P, 449

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John Locke (1632-1704) extended this empirical skepticism by rejecting innate ideas and promoting religious tolerance. He conceived of the mind as a 'tabula rasa', or blank slate, progressively inscribed by experiences[9]. Locke argued that since mental capacities are constrained and shaped by sensory experiences, human knowledge is inherently relative, and consequently, so is truth. This relativity underscores the probabilistic nature of human knowledge and the omnipresent potential for error.

David Hume (1711-1776) advanced these ideas further, positioning himself as the first empiricist to adapt empirical sensibilities to a skeptical framework, challenging the Cartesian rationalist approach. Hume contended that experience forms the bedrock of all knowledge, with so-called rational knowledge fundamentally rooted in sensory perception. He adopted a radically skeptical stance on the possibility of securing any truths, famously noting, "Even when we experience cause and effect, our conclusions drawn from such experiences are not founded on reasoning or any intellectual advancement."[10]

. According to Hume, causality does not stem from any rational or logical necessity; rather, "the analysis of a cause does not by necessity contain the presence of its effect as one of its elements, nor does the analysis of an effect necessarily involve its cause."

In critiquing the rationalist theory of causation, Hume argued against the inherent and necessary principle of causality presumed by rationalists to reside within the mind. He contested the view that causality is an a priori, innate principle, elucidating that our presumed natural predisposition to believe in causality arises only through experiential triggers and is not inherent in sensory experience itself. This perspective positions causality as an a priori principle. However, Hume challenged this notion, rejecting the presupposed logical connection between cause and effect based on presumed intrinsic and a priori necessity.

Hume argued that causality does not rest on logical or rational necessity. Analyzing a cause does not inherently necessitate the existence of its effect, nor does deconstructing an effect inherently imply its cause. This separation indicates that causal events are distinct from their outcomes, permitting the logical acceptance of one and the rejection of the other. He contended that such relationships do

[9]Ayoub, A. (2009). Al-'Ilm wa al-Falsafa al-Urubiyya al-Haditha min Kopernik ila Hume (Science and Modern European Philosophy from Copernicus to Hume). Dar al-Farabi, Beirut, 1st edition. P, 224
[10]Hume, D. (2008). Mabahith fi al-Fahm al-Bashari (An Enquiry Concerning Human Understanding). Translated by Musa Wahba. Dar al-Farabi, Beirut, 1st edition. P, 58

not reveal any inherent logical necessity; thus, the notion that every event must have a cause is a presumption grounded in sensory experience and the impressions derived from the external world.[11]

Hume's analysis posits that the relationship between consistently co-occurring events fosters habitual mental associations. This habituation arises from the regular and repeated sequence of events within our sensory perception, where the observation of one event leads us to anticipate another. Here, necessity is experiential or psychological, but this habitual linkage does not substantiate that every event in the physical or psychological realms has a causal basis. Sensory impressions proceed autonomously, without necessitating causation, rendering the realm of impressions as the sole reality accessible to us, thereby obscuring our access to the intrinsic nature of the world.

In essence, Hume suggests that attaining knowledge of mental constructs where causality reveals logical necessity is unfeasible. He states, "The human mind is but a succession of ideas, and it is imprudent to assert any certainties, as every opinion we hold is merely probable and susceptible to contradiction and refutation."[12] This perspective, enduring in its influence on both philosophers and scientists, casts doubt on all scientific laws and the inductive method, due to the inherent incapacity to justify the universality of laws. Hume's critique underscores that we lack empirical justification, which could serve as a benchmark to validate scientific laws extrapolated from a limited set of observed events. Consequently, assertions that the future will mirror the past and present cannot be empirically validated. Thus, all our knowledge, emerging from sensory experiences, lacks a compelling rational foundation. Inductive reasoning presupposes an order within nature that remains unprovable through logical deduction; the empirical proposition that "the sun will rise tomorrow" could be denied without logical contradiction because its negation is equally plausible to the mind[13]. Therefore, we cannot definitively prove the falsehood of the first claim or the veracity of the second, as such beliefs are merely habitual, without empirical proof. This implies that theories merely reflect our impressions of nature rather than its true essence, and knowledge based on habit cannot establish a scientific foundation as it remains perpetually open to falsification. Hence, there is no viable basis for discussing scientific knowledge predicated on skepticism, despite the prevailing belief in a natural world characterized by consistent events, which ostensibly supports the universality of scientific laws. Yet, defending this belief is untenable as long as it is predicated on habitual assumptions.

Immanuel Kant (1724-1804) responded to Hume's skepticism with his critical philosophy, which sought to reconcile empiricism and rationalism. Awakened by Hume's scrutiny of causality, Kant remarked that it "first interrupted my dogmatic slumber and gave a completely different direction to

[11]Abdel Qader, M. (1985). Mushkilat al-Falsafa (Problems of Philosophy). Dar al-Nahda al-Arabiya, Beirut.P, 19.
[12]Najib Mahmoud, Z. Qissat al-Falsafa al-Haditha (The Story of Modern Philosophy). Majd Printing, Publishing and Translation, Cairo. P, 267
[13]Benasser, B. (1999). Al-Istidlalwa al-Bina' (Argumentation and Structure). Research on the Characteristics of Scientific Mentality, Dar al-Aman, Rabat. P,199

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my research in the field of speculative philosophy."[14] Kant asserted that the only verifiable truths accessible to human understanding are confined to the phenomenal world—that which can be empirically observed and substantiated. Conversely, the realm of 'noumena' or 'things-in-themselves' eludes such empirical scrutiny and thus remains inherently unknowable, confined to the metaphysical domains of freedom, immortality, and the divine. In this framework, Kant posits that the human intellect is limited, unable to transcend its empirical bounds to grasp the absolute nature of things. This limitation necessitates a philosophical approach that acknowledges the inherent relativity of human knowledge, steering clear of the rationalist quest for absolute, transcendent truths.

Immanuel Kant asserts that the inherent truths of objects, or their noumena, elude human comprehension. He argues that human cognition is fundamentally limited and lacks the capacity to discern these underlying essences. Kant posits that while we can perceive the phenomena—the outward appearances of things—their essential nature, which delineates their true characteristics, remains obscured. Thus, all human knowledge is inevitably subject to skepticism concerning its authenticity.

Kant critiques the rationalist endeavor that strives to attain knowledge of the absolute, transcending empirical evidence. He contends that it is conceptually infeasible to affirm the existence of any entity without reference to empirical experience. This perspective emancipates the mind from the confines of absolutism, facilitating an engagement with reality based on a relativistic viewpoint. Furthermore, Kant is skeptical of knowledge derived solely from sensory input without the intellectual synthesis provided by the active mind. The intellect, through its array of concepts, systematically organizes and interprets the fragmented sensory data.

5. From Skepticism to Relativity

While the term "skepticism" is primarily linked with philosophical discourse, "relativity" predominantly bears scientific implications. Nevertheless, both concepts serve a fundamentally similar purpose: they challenge the premise of certainty. Skepticism has historical roots extending back to the Sophists within philosophical tradition. In contrast, the notion of relativity was more distinctly formulated by William Hamilton (1788-1856), who advocated for what he termed "conditioned thinking" — the perspective that all knowledge is inherently relative.

[14]Von Fraunhofer, J. (1997). Al-'Aqlaniyya (Rationalism). Translated by Mahmoud Munqid al-Hashimi. Center for Civilizational Development, Aleppo, Syria, 1st edition.P, 97

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Hamilton articulated relativity through three primary dimensions: firstly, it involves a relation between two terms that are juxtaposed in judgment; secondly, it encompasses the relationship between a cognizant subject and an object of knowledge, wherein each element circumscribes the other; thirdly, it manifests in the relation between a substance and its attributes, such that the substance is apprehended through its attributes, and the attributes are understood in their relation to the substance. This includes attributes that are either intrinsic to the substance or external, such as time and space[15].

Hamilton argued that these relational dynamics are essential to all cognitive processes. Neglecting these relational frameworks would lead to the obliteration of meaningful knowledge, as all epistemic constructs rely on the principle of relativity, and are incompatible with absolutist interpretations. Consequently, any perceived entity is inherently conditioned and, thus, relative. Absolutes, falling within the unconditioned realm, elude human perception. What enters our perceptual field is invariably conditioned or relative, apprehended objectively through established cognitive conditions. In any intellectual endeavor, we inevitably contextualize an entity in relation to another, which serves as a precondition for understanding.

Hamilton's thesis posits that the notion of the absolute is philosophically untenable, and no origin can be comprehended except as being conditioned by another entity. Hence, the quest for absolute knowledge is futile; our understanding is limited to knowing relationships rather than entities in isolation. The knowledge of natural phenomena, therefore, is feasible only through the modalities of our consciousness. There exist no absolute truths, only various states of awareness. Thus, things in themselves—whether engaged through rational thought or empirical inquiry—remain fundamentally unknowable.

In the modern era, skepticism has evolved, especially with the advent of relativistic approaches in philosophy and science. Antoine Cournot (1801-1877) interpreted skepticism as a methodology for understanding phenomena that are dependent upon human observers, whereas phenomena external to human perception remain sources of skepticism. According to Cournot, knowledge is confined to objective relationships and proportions; however, these are predominantly probabilistic and thus incapable of yielding certainty. Humans interact with phenomena within their experiential realm, apprehending them from perspectives pertinent to their practical interests, without accessing their

[15]Karam, Y. Tarikh al-Falsafa al-Haditha (History of Modern Philosophy). Dar al-Qalam, Beirut, Lebanon. P, 337

inherent, absolute truths. This perception extends to understanding entities in terms of their mutual relations[16].

Cournot posits that verification occurs through the alignment between ontological existence and cognitive processes. The efficacy of a scientific theory depends on this alignment: the more logically phenomena are interconnected within a theory, the more successful the theory. Additionally, the broader the theory's applicative scope, the greater its probabilistic validity. In Cournot's view, relativity pertains to the relationship between knowledge and the object of knowledge, contrasting with Immanuel Kant's notion of relativity, which frames the known object in relation to the cognitive capabilities of the observer.

F.H. Bradley (1846-1924) argues against the possibility of absolute truth or complete falsehood. In his view, a proposition deemed false does not exclusively affirm falsehood but gravitates towards truth through subsequent corrections and modifications. Such propositions never attain absolute truth, as absolute veracity exceeds our finite cognitive capabilities. Rather, truth is bounded within limits where a proposition can achieve a certain degree of veracity that brings it closer to actuality. Bradley's perspective underscores the inherent limitation of human cognition: absolute knowledge remains elusive, and what we ascertain is inherently relative and defined within specific contexts[17].

Henri Poincaré (1854-1912) contended that it is a misconception to deem any theory as definitively accurate, since no theory is intrinsically true in an absolute sense. Theories are inherently transient, continually subject to modification and displacement by subsequent theories that challenge and potentially nullify their predecessors. Thus, in scientific discourse, theories are not evaluated based on their truth or falsity per se, but rather on their suitability or appropriateness. This approach contradicts the realist doctrine, which asserts a direct correspondence between scientific knowledge and objective reality. Poincaré emphasized that scientists merely uncover laws that exist independently within nature—laws that manifest objectively, irrespective of the observer's cognition.[18]

Poincaré's analysis of scientific theory rests on principles and mental models that are abstracted from reality. However, these principles are essentially constructs defined by scientists and do not convey empirical data directly. Consequently, they are neither inherently true nor wholly reflective of reality. Similarly, mental representations modeled after reality are mutable and do not bear

[16]Ibid, P.367
[17]Tawfiq, M. (2003). Nazariyat al-Sidq 'ind Bradley (Bradley's Theory of Truth). Mansha'at al-Ma'arif, Alexandria, P. 11
[18]Al-Meloudi, S. (2007). Al-Wahda wa al-Ta'addud fi al-Fikr al-'Ilmi al-Hadith (Unity and Multiplicity in Modern Scientific Thought). Dar al-Tanweer for Printing, Publishing and Distribution, Beirut, P. 122

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absolute truth, as they are subject to interpretative variability. This indicates that intellectual representations can depict natural phenomena in diverse forms; therefore, principles are fluid definitions that establish a conceptual framework, and mental representations are variable reconstructions of reality. According to Poincaré, the sole constancy lies in the relationships among natural phenomena, which serve as evidence of the external world's objectivity. Nonetheless, this objectivity is imperfect, prompting ongoing efforts to refine and diversify these conceptual frameworks and representations[19]. Despite such endeavors, the fundamental truths of nature remain perpetually elusive, compelling scientists to pursue merely approximate models of reality. Thus, Poincaré eschews absolutism and extremity in epistemology, acknowledging the scientific merit inherent in all methodological approaches.

Moreover, the contemporary advancements in science, particularly within the domains of mathematics and physics, have fostered new concepts closely aligned with the notion of relativity. The advent of non-Euclidean geometries marked a pivotal shift in modern mathematical research, introducing the possibility of doubting the certainty traditionally associated with mathematical science. No longer is Euclidean geometry the singular paradigm dominating mathematical inquiry; rather, a plurality of geometric frameworks exists, each governed by its own logical structure aimed at achieving coherence between premises and conclusions.

In physics, Albert Einstein's Theory of Relativity, emerging in the early twentieth century, revolutionized numerous established scientific concepts. This paradigm shift was propelled by novel experimental findings that defied explanation under classical physical laws. As noted by Joseph Bochenski, the advent of new physics has led to several critical discoveries, including the theory of relativity, which has instigated profound skepticism regarding the validity of many scientific conclusions previously regarded as axiomatic and immune to doubt in classical physics[20].

Contemporary physics research has made significant discoveries about the interactions between light and electrons, notably that the speed of light remains invariant, irrespective of the observer's velocity. These findings have precipitated a fundamental revolution in physical concepts, exemplified by the advent of modern physics with its cornerstone theories of relativity and quantum mechanics. These frameworks have profoundly challenged and altered many foundational concepts

[19]Jabri, M. A. (No date). Al-Manhaj al-TajribiwaTatwir al-Fikr al-'Ilmi, Vol. 2 (The Experimental Method and the Development of Scientific Thought). Moroccan Publishing House, Casablanca, P. 102
[20]Muhammad Ali, A. (1985). Muqaddimat fi al-Falsafa (Introductions to Philosophy). Dar al-Nahda al-Arabiya, Beirut, P. 200

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that were once firmly entrenched in the scientific and philosophical communities, including ideas pertaining to determinism, and scientific notions of matter, motion, and gravity.

Scientific inquiry has led to numerous experiments aimed at deciphering the laws of nature. In 1905, Albert Einstein, influenced by empirical evidence, articulated two pivotal truths about the natural world: first, the speed of light, as measured, remains constant regardless of whether the source of the light or the observer is moving; second, absolute velocities are unmeasurable—only velocities relative to other objects are determinable[21]. These insights marked the inception of what is now known as Einsteinian relativity, which replaced the classical notion of absolute, universal time with a concept of time that is relative and specific to the observer.

Einstein effectively dismantled the traditional absolute concepts of time, space, and mass, positing that nothing in the universe possesses attributes of absolute rest or stasis, nor can any description of the universe claim absolute truthfulness. Instead, he proposed a universe inherently defined by relativity, where, for example, an object that appears stationary relative to a stationary observer will seem to move at an equivalent speed in the opposite direction if the observer starts moving[22]. Consequently, the speed of any object can vary when measured from different coordinate systems, and thus no measurement can claim absolute accuracy but is instead contingent upon the coordinate system utilized. In this theoretical landscape, all measurements within the natural world are valid solely within their respective coordinate systems, with the speed of light being the only constant across all frames of reference.

Einstein's theory further demonstrated that the laws of nature are not static but vary with motion: clocks moving at high velocities tick slower compared to those at rest, and at the speed of light, they would cease to move altogether. Similarly, an object increases in length as its speed decreases and theoretically reaches zero length at the speed of light, while its mass escalates towards infinity. This theory also established the relativity of simultaneity, illustrating that time itself is a variable dependent on the observer's frame of reference[23].

The advent of relativity theory introduces profound modifications to our understanding of time and distance, indicating that traditional metrics for measuring objects do not retain absolute accuracy due to the variability of the time of measurement. This insight leads to alterations in local time units or the relativity of temporal measurements, the relativity of velocities relative to the observer, and a

[21]Friedrich, G. B. and David, G. A. (No date). Usus al-Physics (Fundamentals of Physics), Vol. 5, dedicated to modern physics. Translated by Saeed al-Jaziri and Amin Sulaiman. International Cultural Investment, Cairo, P.986
[22]Al-Alawi, H. (2005). Al-'Alam bayn al-'Ilm wa al-Falsafa (The World between Science and Philosophy). Arab Cultural Center, Casablanca, 1st edition, P. 83

consistent correlation between mass and velocity. Specifically, an object's mass increases with its velocity, approaching infinity as it nears the speed of light.[24]

The philosophical ramifications of this theory are significant, starting with the dissolution of absolute constructs. Time and space are no longer perceived as distinct entities; rather, they converge into a unified four-dimensional continuum. This conceptual shift has substantial implications: the traditional notion of historical time, understood as a singular, unidirectional flow, is supplanted by multiple temporal sequences that are observer-dependent. Thus, the absolutism that once underpinned physical science has been dismantled, particularly following the debunking of the ether concept. Consequently, scientific laws are now understood as relative—not because they lack precision or certainty, but because each scientific truth is contingent upon other truths.

Conclusion:

The preceding analysis underscores that skepticism is an intrinsic aspect of philosophical thought throughout its history. Skepticism serves as the cornerstone of philosophical inquiry, with many theories emerging from the interrogation of established knowledge. This critical stance has become a defining feature of modern philosophy, signifying the preliminary move towards a skeptical approach. The discord among philosophical theories in the modern era has invariably led to questioning their legitimacy.

The principal aim of philosophical engagement is the pursuit of truth, which cannot be realized through mere adherence to tradition or passive acceptance. Rather, it necessitates a profound exploration into the essence of phenomena, achievable only via skeptical inquiry. Increased skepticism enhances clarity and facilitates the philosopher's progression towards authentic knowledge acquisition. This methodology has been adopted by numerous philosophers. For instance, Al-Ghazali utilized skepticism as a critical tool in his examination of Muslim philosophers who revived Greek philosophical traditions. His objective was to expunge any inaccuracies and contradictions to Islamic theology from these philosophical revivals. Similarly, Descartes embraced skepticism as a systematic tool to attain certainty, positioning it as the foundational principle of his methodology. He committed to accepting no claim as truth without substantiating evidence, thereby eschewing precipitate judgments and scrutinizing propositions through a skeptical lens. Despite the advancements in human knowledge, its scope remains inherently limited and relative. There are no

[23]Abdul Rahman, M. M. (1983). Einstein. Awaidat Publications, Beirut, 1st edition, P.74
[24]Abdel Qader, M. (1985). Mushkilat al-Falsafa (Problems of Philosophy). Dar al-Nahda al-Arabiya, Beirut, P. 194

immutable, universally accepted truths; skepticism is a methodological stance that drives the pursuit of deeper understanding, whether in philosophical or scientific contexts.

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