IttesaaI-Journal of Connecting Discourses
Volume 1, Issue 2, 2024
ISSN (E): 3105-5257
ISSN (P): 3105-5494
DOI: https://doi.org/10.64984/ijcd.1.2.2024.01
https://journal.ehya.com.pk/ijcd/

Article QR

The Pursuit of Reason and Certainty in Epistemology: A Comparative Study of Abū Ḥāmid al-Ghazālī, René Descartes and Karl Popper

Ismail Saleh Lubis
Liepzig University, Germany
Email: ismails1994@gmail.com

Received: May 18, 2024
Revised: August 21, 2024
Accepted: September 04, 2024
Published: 20-December-2024

Citation: Lubis, Ismail Saleh. "The Pursuit of Reason and Certainty in Epistemology: A Comparative Study of Abū Ḥāmid al-Ghazālī, René Descartes and Karl Popper." *Ittesaal Journal of Connecting Discourses* 1, no. 2 (2024): 01-15. https://doi.org/10.64984/ijcd.1.2.2024.01

Abstract

Abū Ḥāmid al-Ghazālī, René Descartes and Karl Popper are towering figures though separated by centuries, traditions and cultures, – the similarities in their skeptical approaches have long intrigued scholars. The trio turned to the method of doubt in the pursuit of certainty in epistemology. Each thinker, faced with the prevalence of error and uncertainty in human beliefs, undertook a profound examination of knowledge, casting into doubt received opinions and the reliability of ordinary cognition. They aimed to secure an indubitable foundation for truth (with the exception of Karl Popper). Yet, the methods they employed, the ultimate resolutions they reached, and the philosophical implications of their skepticism diverge in important ways, reflecting their distinct historical contexts and philosophical goals. The introductory section of the current study will enumerate: 1) al-Ghazālī's journey from skepticism to mystical certainty; 2) Descartes skeptic journey that leads him to seek refuge in rationalist metaphysics. 3) Popper as a modern science philosopher to ascertain knowledge without certainty. The next sections will provide a detailed comparative reflection of Major epistemological themes of the trio. The paper shall conclude by analyzing which epistemological view among the three is most effective in 21st century onwards by contrasting their critiques on epistemology over time.

Keywords: Epistemological certainty, Falsifiability, Cartesian doubt, *Kashf* (Divine Illumination), Critical Rationalism

Introduction

One of the profound questions in the history of Philosophy till this date is regarding the nature and truth of knowledge. In this epistemological pursuit, Abū Ḥāmid al-Ghazālī (1058-1111), René Descartes (1596-1650) and Karl Popper (1902-1994) contributed a great deal by offering unique frameworks rooted in their historical, religious, and cultural contexts. Each one of them initiates their study with doubt; however, there ideas radically diverged when they moved forward from doubt to truth.[1].

[1]See Kamal-e-din Khashoggi, "Inverting the Void: A Comparison of al-Ghazālī and Descartes," (Master's thesis, Boston University, 2016).

1.1. Al-Ghazālī: From Skepticism to Mystical Certainty

Al-Ghazālī was the 11th-century Persian-Muslim scholar, theologian, jurist and mystic in the Islamic Golden Age, writing well before modern European philosophy. He lived in a deeply religious milieu and engaged with Islamic theology and philosophy (e.g., *kalām*, Sufism), famously documenting his journey in Deliverance from Error (c. 1100 CE).[2]

He began his epistemological journey with a deep crisis of doubt. In his autobiographical work *Munkidh min al-Dalal* (Deliverance from Error), he began to question the reliability of sense perception and reason.[3] Ghazālī begins by rejecting *taqlīd* (blind acceptance of authority) and tests the two pillars of knowledge: sensory experience and rational intuition. Finding sensory data unreliable (illusions like the moving shadow or tiny stars prove the senses can mislead), he "resolves to rely on Pure Reason." But then, in a thought experiment, even reason is cast into doubt by imagining a higher faculty (as reason is higher than senses).[4] He inquired as to what is the foundation of truth if sensory experience is unreliable as it may deceive us; and reasoning can lead to conflicting conclusions (can be witnessed in Greek Philosophy)? Henceforth, al-Ghazālī not only criticized Aristotelian metaphysics in his famous work *The Incoherence of the Philosophers*, but also refuted rationalism and the doctrine of necessary causality.[5] He also rejected Islamic philosophers like Avicenna who were influenced by Greek philosophy.[6] For example, fire doesn't necessarily cause burning: only God wills such events. Instead of causality, he gave the doctrine of occasionalism, where all cause-effect relationships are mere habits of divine will.[7] After rejecting philosophy, he sought refuge in Islamic mysticism (*Sufism*). According to him, although reason is practical and have uses but it is limited. Hence, the ultimate knowledge neither comes from sensory perception nor logic or reason; rather it comes through an inner spiritual experience granted by Allah. He termed this divine illumination as *kashf* whose path lies in the heart that can be awakened by faith and divine will.[8]

1.2. Descartes: The Rationalist's Quest for Certainty

René Descartes was a 17th-century French philosopher- mathematician often considered the "Father of Modern Philosophy." Writing during the Scientific Revolution and the decline of Scholasticism, he sought a new foundation for knowledge in works like *Meditations on First Philosophy* (1641).[9]

Like al-Ghazālī, he went with the method of doubt. In his famous work, *Meditations on First Philosophy*, he recounts that he can reject all beliefs including sensory experience and

[2]Frank Griffel, *Al-Ghazali's Philosophical Theology* (New York: Oxford University Press, 2009), 19-49.
[3]Griffel, *Al-Ghazali's Philosophical Theology,* 97-104.
[4]Griffel, *Al-Ghazali's Philosophical Theology*, 111-119.
[5]See Michael E. Marmura, *The Incoherence of the Philosophers: A Parallel English-Arabic Text* (Provo, Utah: Brigham Young University, 2000).
[6]Amy Sky, "Moving in Mystical Ways: The Dialectic of al-Ghazali and Ibn Rushd in Islamic Epistemology," *HiPo: The Langara Student Journal of History and Political Science* 5 (2022): 9-14.
[7]Griffel, *Al-Ghazali's Philosophical Theology*, 124-127; 150-157.
[8]See Achmad Khudori Soleh, Erik Sabti Rahmawati, Humaida Ghevira Syavia Camila, and Hasyma Tazakka Furqona, "The Truth on Al-Ghazali Perspective," *International Journal of Innovative Research in Multidisciplinary Education* 2, no. 9 (2023): 431-439.
[9]See Andre Gombay, *Descartes: Blackwell Great Mind Series*, ed., Steven Nedler. (Blackwell Publishing: Australia, 2008), 1-10.

mathematics.[10] Descartes deliberately filters beliefs by certainty: if any belief can be doubted, he sets it aside. He begins with easy targets (sense beliefs – since sometimes senses deceive, as in optical illusions or dreams) and then escalates the doubt (e.g., "evil demon" hypothesis that absolutely everything perceived or imagined might be false). His method is hyperbolic: he exaggerates possible doubt to ensure that whatever survives this process is truly indubitable. Thence forward, '*Cogito, ergo sum* (I think, therefore I am) became his modus operandi, since he can doubt everything except the fact that he is doubting.[11] From this self-evident truth, Descartes rebuilds a system of knowledge based on clear and distinct ideas.[12] This procedural skepticism (outlined in *Meditation I*) is applied step-by-step to demolish all uncertain beliefs and find a secure foundation. He developed his epistemological thought on foundationalism as he sought to ground knowledge in absolutely certain first principles.

For Descartes, the mind is the seat of knowledge independent of the body; and through rational introspection, truth can be discovered. Consequently, he believes that reason have power to attain metaphysical truths about the external world, the self and the God.[13] While al-Ghazālī rejected reason in favor of faith, Descartes utilized reason in order to prove and support faith.[14] His famous ontological and causal arguments for the existence of God are extensively used to prove the existence of God.

1.3. Karl Popper: Knowledge without Certainty

Karl Popper (1902-1994) was an eminent and influential philosopher of science. He was an intellectual writer of modern science who has vast contribution in the fields of Philosophy of Science, Epistemology and Political Philosophy.

He took significantly a different approach from both al-Ghazālī and Descartes. He refuted the Cartesian method of Descartes on the account that for him certainty is merely an illusion. No matter a theory is plausible, it still remains probable to falsify it. Since, no theory can ever be proven true, so he rejects epistemology based on foundationalism. According to Popper, the growth of science is solely possible through a process of conjectures and refutations.[15]

> Facts cannot prove a theory to be true, but they can show it to be false. And once shown to be false, a theory comes to represent a genuine contribution to knowledge: we can state what is not true much more definitively than we can state what is true, and consequently, refuted statements are valuable. They are not useless (as the traditional view holds); for Popper the refutation of a theory represents a real advance in scientific knowledge which should be celebrated.[16]

[10]René Descartes, *The Philosophical Writings of Descartes,* Vol. II, trans., John Cottingham, Robert Stoothoff, and Dugald Murdoch (New York: Cambridge University Press, 1985), 35.

[11]See René Descartes, *The Philosophical Writings of Descartes.*

[12]See Andre Gombay, *Descartes: Blackwell Great Mind Series,* 108.

[13]According to Descartes, God is the Ultimate source of Truth since a perfect being cannot mislead and be deceptive. See Kamal-e-din Khashoggi, "Inverting the Void: A Comparison of al-Ghazālī and Descartes."

[14]See Tamara Albertini, "Crisis and Certainty of Knowledge in Al-Ghazālī (1058-1111) and Descartes (1596-1650)," *Philosophy East and West* 55 (1), (2005): 1–14. https://doi.org/10.2307/4487933

15See Karl R. Popper, *Conjectures and Refutations: The Growth of Scientific Knowledge*. (London; New York: Routledge, 1963).

[16]Phil Parvin, ed., *Major Conservative and Libertarian Thinkers Series: Karl Popper,* Vol. 14 (London: The Continuum International Publishing Group Ltd, 2010), 37.

He was a strong critique of inductive reasoning.[17] He proved the flaws of inductive reasoning through probability. He claimed that instead we ought to use principle of Falsifiability[18] as good scientific theories risk falsification. They invite rigorous testing and may be disproved by a single counter-example. it is interesting to note that Popper neither tried to build his epistemology on a certain foundation like Descartes; nor he deemed necessary the role of Divine certainty like al-Ghazālī. To him, truths are always tentative, provisional and are subject to improvement. He is strong supporter of an open society where ideas are constantly critiqued, debated, and tested.[19]

Prior to Popper, epistemologists believed that knowledge is justified true belief. Although, Gettier's critique led to number of theories that revolves around justificationism, Popper rejected justificationism as well. He defined objective knowledge as knowledge existing independently of belief, stored in books, theories, and culture; and that knowledge grows through criticism, not justification.[20]

2. Comparative Reflection on Major Themes

The comparative Analysis of major epistemological themes in al-Ghazālī, Descartes and Popper is based on themes and aspects. the minor themes are discussed in the table below; whereas, the major themes are reflected in detail in later section.

Table 1. Comparative Analysis of minor epistemological themes in al-Ghazālī, Descartes and Popper

Themes	al-Ghazālī	Rene Descartes	Karl Popper
Path of Doubt	For al-Ghazālī path of doubt leads to spiritual Enlightenment	it leads to certainty & discovering truth	for Popper it is an ongoing scientific progress.
Principle of Causality	Occasionalism refers to an ad hoc view that God is the only true cause; and created beings or events merely serve as "occasions" for God's action.[21] For al-Ghazālī, God is the foremost	Descartes believe in mechanical causation	Falsifiable causal models.

[17]inductive method refers to deriving laws from repeated observations

[18]Fallibilism is the view that all knowledge is uncertain and open to revision. Whereas, falsification refers to a standard of evaluation of putatively scientific theories, according to which a theory is genuinely scientific only if it is possible in principle to establish that it is false. See https://iep.utm.edu/fallibil/

[19]See Karl R. Popper, *The Open Society and Its Enemies* (New One-Volume Edition. Princeton: Princeton University Press, 2013).

[20]In here, he elaborated this idea in his theory of the three Worlds: 1) physical objects; 2) Mental states (consciousness); and 3) Objective knowledge (for instance, theories, ideas, mathematics). See his lecture in Karl Popper, *Three Worlds* (Ann Arbor: University of Michigan, 1979).

[21]Jason Jordan, "Occasionalism," *Internet Encyclopedia of Philosophy*, (2022), https://iep.utm.edu/occasion/

Themes	al-Ghazālī	Rene Descartes	Karl Popper
	principle of Causality [22]		
Role of Reason	reason is valuable but limited	reason is central and an ultimate tool in achieving certainty	Popper believed in Critical Rationalism (reason through criticism). He refers to rationality not in terms of certainty but rather as the willingness to expose ideas to criticism.
Stance on Truth	Revealed and spiritual truth	Clear and distinct ideas[23]	Always provisional. Though they are objective but never certain
Stance on scientific knowledge	Limited, Skeptical of causality	Skeptical but sought rational certainty for natural science	Popper rejected inductivism.[24] He asserted that there is no logical justification for assuming the future will resemble the past.[25] Therefore, scientific knowledge is evolving, empirical and critical in nature. Just like Darwin, his evolutionary model consists of conjectures, refutation and survival. This is a trial-and-error approach to knowledge that upholds that ideas that survive criticism and testing are kept, but they remain provisional.

[22]Griffel, *Al-Ghazali's Philosophical Theology,* 124-127.

[23]See Andre Gombay, *Descartes: Blackwell Great Mind Series*, 110.

[24]Inductivism refers to the belief that general laws can be derived from repeated observations. For example, the traditional inductive view is that 'The sun has risen every day, therefore it will rise tomorrow as well.' See Anthony O'Hear, ed., *Karl Popper: Philosophy and Problems* (New York: Cambridge University Press, 1995), 45, 103, The problem of induction is identified in detail by David Hume's. [Peter Millican, "Hume on Reason and Induction: Epistemology or Cognitive Science?" *Hume Studies* 24 (1), (1998): 141–59. https://doi.org/10.1353/hms.2011.0088.]

[25]Anthony O'Hear, ed., *Karl Popper: Philosophy and Problems*, 45-58.

The following section will discuss major comparative themes:

2.1. Methodology

Al-Ghazālī started his inductive reasoning by doubting sources of knowledge one by one. Al-Ghazālī's methodology is existential and therapeutic. He used introspective skeptical reasoning to progressively undermine certainty in all standard epistemic sources. Al-Ghazālī's narrative is one of human impotence and the necessity of divine rescue. Al-Ghazālī explicitly denies that he can defeat skepticism through reason; only Allah can save him from solipsistic doubt. Descartes would never say he cannot defeat skepticism by human reason – indeed the whole point of his project is to do exactly that, using reason aided by God's grace in a more implicit way.

Comparatively, in modern terms, Descartes' skepticism is methodological and didactic.[26] During his quest to acquire foundational knowledge he willingly adopted Cartesian Method (Systematic methodical doubt).[27] But Descartes never loses confidence in reason's ability to find truth, his narrative is one of triumphalist restoration of knowledge by one's own cognitive power (a power he believes is God- given, yes, but it operates through natural light).[28]

Whereas, Popper upholds that inductive reasoning is flawed. He argued that "no rule can ever guarantee that a generalization inferred from true observations, however often repeated is true".[29] Hence instead of verification (as traditional theorists believed) science advances through falsification.

2.2. Source of Knowledge

For al-Ghazālī knowledge is gained by spiritual experience or Divine illumination (*kashf*).[30]

The source of knowledge for Descartes is Rationalist metaphysics. In sum, he resolves doubt through self-evident reason (*cogito ergo sum*); and then theological verification (God as guarantor of truth).

However, for Popper Critical Rationalism and analytic philosophy are the sources of knowledge. According to him, there's no such thing as certainty; and only tentative knowledge is possible. He embraced fallibilism—the belief that all human knowledge is inherently uncertain and provisional; and we can never possess absolute truth. Knowledge grows through error correction and critical discussion.

2.3. Role of God

The role of God is central and active cause of everything. For al-Ghazālī, God is not only the source of truth but the agent who dispels skepticism. Human efforts alone failed to overcome doubt; certitude came "from the divine liberality" as a light in the heart.[31] Moreover, in Ghazālī's epistemology God continuously plays a role via prophecy or inspiration – the "higher faculty" that

[26]Janet Broughton, *Descartes's Method of Doubt* (Princeton, NJ: Princeton University Press, 2003).
[27]Kamal-e-din Khashoggi, "Inverting the Void: A Comparison of al-Ghazālī and Descartes."
[28]See René Descartes, *The Philosophical Writings of Descartes.*
[29]See Phil Parvin, ed., *Major Conservative and Libertarian Thinkers Series: Karl Popper,* 36-47*;* and Brendan Shea, "Karl Popper: Philosophy of Science," (2011), https://philpapers.org/archive/SHEKPP-3.pdf
[30]Achmad Khudori Soleh, et.al., "The Truth on Al-Ghazali Perspective," 431-439.
[31]Syed Rizwan Zamir, "Descartes and Al-Ghazālī: Doubt, Certitude and Light," *Islamic Studies* 49, (2), (2010): 219-251.

can validate what reason cannot. In his view, God's guidance (through prophets or mystical unveiling) is the ultimate criterion of truth, needed to ground even rational knowledge. This aligns with his theological perspective: God's perfection ensures that what is revealed or illumined by God is real knowledge, whereas purely human faculties remain uncertain without this divine anchor.

According to Descartes, Role of God is crucial but philosophical in nature. It paves the way for absolute truth and existence. Descartes invokes God as a guarantor of knowledge's reliability. In *the Meditations*, after establishing his own existence and reasoning towards God's existence, he argues that a perfect, benevolent God would not deceive us by making our fundamental rational faculties faulty. Thus, when Descartes clearly and distinctly perceives something (e.g. that the angles of a triangle sum to 180°), God's non- deceptive nature ensures those perceptions are true.[32] God in Descartes' system is not accessed via sudden illumination, but through rational proof; yet once proven, God plays a key epistemic role, underwriting the truth of clear and distinct ideas and dispelling the "evil demon" possibility.[33] For him, the trust in God is what ultimately allows science and reason to proceed with certainty.) It is interesting to note that Descartes' intervention of God to validate reason; and need of reason to prove His existence led to an important critique known as 'Cartesian circle' (will be discussed in later sections).

Although role of god is not central to epistemological theory of Karl Popper as he claimed that "a theory that explains everything explains nothing."[34] But Popper's principle of falsifiability segregates science from pseudo-science.[35] According to him, if a statement or theory can be tested and potentially proven false then it is scientific. For instance, 'All metals expand when heated' can be falsified, hence it is scientific. On the contrary, if a statement or theory cannot be falsified, then it is metaphysical or pseudoscientific. For instance the claim that 'God exists' is not falsifiable so it is non-scientific.[36] Yet, all metaphysical claims are meaningful in other domains.[37]

2.4. Scope and Nature of Skepticism

In Ghazālī's thought, radical (universal) skepticism, albeit temporary, can be witnessed. Ghazālī first questioned sensory beliefs, and then even rational intuitions, allowing that "beyond the perception of reason, another judge" might exist. He entertains a scenario where all human knowledge could be illusory relative to a higher reality (e.g. the perspective of God or prophets), thus nothing in ordinary experience is immune to doubt. His skepticism is all-encompassing – senses and reason – leading to a brief but profound epistemic crisis.

Descartes skepticism is Hyperbolic in nature. He extends doubt as far as possible. He systematically doubts the evidence of senses (since they sometimes deceive) and even basic logical or mathematical truths under the hypothesis of an all-powerful deceiver.[38] This global skepticism (albeit methodical and provisional) means no belief – about the external world or even simple

[32]See Andre Gombay, *Descartes: Blackwell Great Mind Series,* 105-109.

[33]Gombay, *Descartes: Blackwell Great Mind Series,* 47-70.

[34]See Karl R. Popper, "Reason or Revolution?" *European Journal of Sociology/Archives (Européennes de Sociologie*) 11, no. 2 (1970): 252-262.

[35]Imre Lakatos, "Science and Pseudoscience," *Philosophical Papers* 1 (1978): 1-7.

[36]Karl R. Popper, *Conjectures and Refutations: The Growth of Scientific Knowledge* (New York: Routledge, 1963).

[37]Likewise, he asserted that Freudian psychoanalysis and Marxism cannot be falsified so they are not scientific. [Karl R. Popper, *Conjectures and Refutations: The Growth of Scientific Knowledge*].

[38]See René Descartes, *The Philosophical Writings of Descartes.*

arithmetic – is initially beyond question. Descartes' doubt is universal in scope, serving as a tool to test which beliefs can withstand the most extreme doubt. However, Popper claimed that even our best theories could be wrong.[39]

2.5. Epistemological Implications

2.5.1. Al-Ghazālī

- Limitations of reason: al-Ghazālī concluded that sensory and rational faculties alone are insufficient for ultimate knowledge. They are conditional and dubitable.
- Faith in divine illumination: To him, true certainty comes from a supra-rational source (*kashf*) Thus, giving rise to an epistemology that is both fallibilist as well as mystical about ordinary knowledge.
- His approach influenced Islamic thought by emphasizing the harmony of reason and faith (faith in spiritual experience of God) ultimately completing the knowledge quest.

2.5.2. Descartes

- He laid a foundation for modern knowledge and rationalism.
- Descartes laid the foundation of Enlightenment epistemology. By identifying the thinking self as the foundation of knowledge, he shifted the philosophical focus to the subjective certainties of the mind. His insistence that knowledge must be built on indubitable beliefs led to a new standard of rational clarity in philosophy.
- His reliance on divine guarantee to secure knowledge reflects a transition within a rational system.
- Epistemologically, his methodical doubt inaugurated the modern foundationalist approach (building knowledge from self- evident truths).

2.5.3. Popper

- fallibilism (scientific theories can be falsified instead of verified)
- critical rationalism
- Falsifiability can be use as demarcation criteria to segregate science from pseudo-science)

2.6. Influence/ Legacy

- al-Ghazālī left his foot marks in Islamic theology and Sufism .
- Enlightenment and modern rationalism is forever indebted to Descartes. His legacy gave rise to the Cartesian rationalism; and highlights epistemological problems that has influenced famous empiricist verse rationalist debate in later philosophical debates. Spinoza, Leibniz, Hume, and Kant are to name a few.
- Popper's epistemology has greatly influenced science, politics and education:
- In science it encourages testability and openness to refutation.
- It promotes critical thinking, questioning, and active engagement in education.
- In Philosophy, he adopted critical rationalism; and rejected traditionally acclaimed inductivism and justificationism

[39]Brendan Shea, Brendan, "Karl Popper: Philosophy of Science," (2011).

- He favors democratic values, freedom of speech, and open societies in political domain, while opposing totalitarian ideologies.
- Culturally, Popper legacy is visualizes as a symbol of intellectual humility, openness, and rational critique

It is rather interesting to see that al-Ghazālī as a Muslim theologian culminates knowledge in spiritual union with the Divine; and Descartes envisioned his rationalism on indubitable self and supported his claims by God's perfection. Hence, both utilized two different approaches and methods leading to similar resolutions. Contrarily, Karl Popper deconstructs both their epistemologies that lead to certainty; and instead advocates for a fallibilism of scientific ideas that can be tested but they are neither final nor certain. According to him all knowledge is provisional and certainty is impossible.

3. A Comparative Critique of Descartes, al-Ghazālī and Popper With Respect to Their Epistemological Beliefs

Along with appreciation, each thinker invites number of criticisms. However, we will narrow down those critiques in terms of their epistemological beliefs only. Following table is description of weaknesses in their epistemological theories.

Table 2. Critique on al-Ghazālī, Descartes and Popper

Critique	Description
On Al-Ghazālī	● Critics argued that al-Ghazālī heavily relies on *Kashf*_ a mystical experience that cannot be validated as it is subjective in nature. This lack of verification entails that neither it can be authoritative nor it can be tested or critiqued. ● By prioritizing divine illumination (or mystical intuition) over reason, al-Ghazālī fell in the pit of epistemological relativism for what is true for one mystic may not be true for another. This epistemological relativism will fail to provide any universal standard for knowledge. ● He used Reason inconsistently throughout his theological approach: for he legitimized rational arguments when it supports orthodoxy in *Tahafut al Falasafa*, but rejected it when it challenges it. This means that al-Ghazālī manipulated reason to turn the argument in his favor.[40] ● His vehement opposition to philosophy undermines rational growth of philosophy and science in the Muslim World. This opposition to reason and philosophy in particular was challenged by Averroes in his book *The Incoherence of the Incoherence*.[41] However, due to strong hold of political position of al-Ghazālī Averroes work was banned.[42] In the closing of

[40]T. Ibrahim, N. V. Efremova, "On Averroes' Response to al-Ghazali's Critique of Philosophy," *Minbar. Islamic Studies* 13 (2), (2020): 379, (In Russ.) https://doi.org/10.31162/2618-9569-2020-13-2-

[41]Simon Van Den Bergh (trans.) *Averroes's Tahafut Al-Tahafut: (The Incoherence of the Incoherence).* Volumes I and II (Cambridge: Gibb Memorial Trust, 2008); Surni Kadir, "Comparative Study of Al-Ghazali Thought and Ibn Rushd in the Perspective of Islamic Theology," *International Journal of Health, Economics, and Social Sciences (IJHESS)* 6, no. 3 (2024): 895-903.

[42]Surni Kadir, "Comparative Study of Al-Ghazali Thought and Ibn Rushd in the Perspective of Islamic Theology," 895-903.

Critique	Description
	Muslim Mind, al-Ghazli's contribution is considered top notchin hindering philosophical and scientific development.[43] ● Al-Ghazālī considered *Kashf* as the highest form of knowledge. However, he was unable to offer any clear method to distinguish between divine illumination, hallucination, delusion, or satanic inspiration. Moreover, how an ordinary Muslim's divine illumination is different from Prophetic revelations. Conversely, how one can assert that Prophetic revelations were not indeed satanic and/ or manmade in nature?
On Descartes	● Critics argued that Descartes (*Cogito*) is inclined towards solipsism[44]. It becomes difficult to prove later on that anything beyond mind exists. ● British empiricists (like John Locke, Berkeley, and David Hume) argued that Descartes downplayed the importance of empirical experience in the acquisition of knowledge.[45] They argued that the mind starts as a blank slate (*tabula rasa*). While sensory experiences may be fallible, but the sheer skepticism of sensory knowledge is impractical and extreme.[46] AS the practical science heavily relies on empirical investigation and data. ● Descartes' epistemological belief falls in the pit of fallacy of circular reasoning (also known as Cartesian Circle) when he introduced concept of God.[47] Consider the following argument derived from Descartes' philosophy: "I know God exists because I perceive it clearly and distinctly; I trust clear and distinct ideas because God guarantees their truth[48] Hence God exists. ● The segregation of *res cogitans* (thinking substance) and *res extensa* (extended substance) creates the mind-body dualism.[49] The quest as to how these two interacts remained unresolved and exposed major criticism to mind-body dualism. ● In addition, critics argued that Descartes failed to provide any standard that could offer guarantee to the clarity or distinctness of an idea. The notion that just because it is perceived "clearly and distinctly" is rather vague and subjective.
On Popper	● The role of auxiliary hypotheses (as emphasized by the Duhem-Quine thesis[50]) complicates the falsifiability model.

[43]Also see critique of George Makdisi (1920-2002) and Fazlur Rahman (199-1988) in this regard. See Robert R. Reilly, *The Closing of the Muslim Mind* (Open Road Media, 2014).

[44]Solipsism is an extreme form subjective idealism that refers to the idea that only one's own mind is sure to exist. "Solipsism," *Encyclopedia Britannica*, 2020, https://www.britannica.com/topic/solipsism.

[45]Akdogan, "Ghazali, Descartes, and Hume: The Genealogy of Some Philosophical Ideas," 487–502.

[46]Syed Rizwan Zamir, "Descartes and Al-Ghazālī: Doubt, Certitude and Light," 219-251.

[47]Broughton, *Descartes's Method of Doubt,* 146-150; 175.

[48]See Andre Gombay, *Descartes: Blackwell Great Mind Series*, 110.

[49]Broughton, *Descartes's Method of Doubt,* 72-82.

[50]According to this thesis, no scientific theory is tested in isolation. When predictions fail, it's often unclear whether the core theory is at fault or some auxiliary assumption. This weakens the clean idea of falsification.

Critique	Description
	● Popperian theory neglects the role of confirmation which is essential in practice. Critics argued that this may be too extreme as science does rely on supportive evidences.[51] ● Focuses solely on empirical sciences, neglecting religious, moral, and aesthetic forms of knowing. ● Likewise, various scientific theories (like evolutionary biology, cosmology, or social sciences) may not be strictly falsifiable but they still contribute in the scientific knowledge. Critics argue that such theories may still be scientific despite not yielding precise falsifiable predictions. This leads to the problem that the criteria of falsifiability can be manipulated.[52] As some scientific theories cannot be falsified and may termed as pseudoscience[53]; while some pseudoscientific claims if structured properly to be falsified can be termed as scientific. This leads to the problem of demarcation where although falsifiability is considered impactful yet it remained insufficient for distinguishing science from pseudoscience in all cases.[54] The problem of demarcation remains a persistent problem in philosophy of science during 20th century. ● Popper's model is rigid when it comes to severe testing. However, Thomas Kuhn and Paul Feyerabend counters that practical science often involves paradigm adherence, dogmatism, tradition instead of constant refutation.[55] ● According to Thomas Kuhn and Imre Lakatos, Popper's commitment to critical rationalism and objective is extremely rigid as it fails to take into account the historical, social, and psychological contexts in which science occur.[56]

4. Epistemological Relevance in Modern Era

The relevance of these eminent thinkers in modern day depends on the traditional context and the criterion as to which source of knowledge is being pursued. In al-Ghazālī we can find spiritual and fundamental-Islamic narrative; and Descartes narrative is scientific and Western. Whereas,

[51]For instance, the Bayesian tradition offers a probabilistic model of belief revision which Popper dismisses but which has proved influential. M. Hammerton, "Bayesian Statistics and Popper's Epistemology," *Mind* 77, no. 305 (1968): 109-112.

[52]Janet Stemwedel, "Drawing the Line between Science and Pseudo-Science," *Scientific American* (2011), https://faculty.knox.edu/fmcandre/science_vs_pseudoscience.pdf

[53]Karl R. Popper, "Science as Falsification," *Conjectures and Refutations* 1, no. 1963 (1963): 33-39.

[54]See Sven Ove Hansson, "Defining Pseudoscience and Science," *Philosophy of Pseudoscience: Reconsidering the Demarcation Problem* (2013): 61-77.

[55]See Joseph e Agassi, *Popper and His Popular Critics: Thomas Kuhn, Paul Feyerabend and Imre Lakatos* (Springer, 2014); and Martinus Tukiran, "How Management Science Obtains Empirical Truth: A Review of Karl Popper's Critical Rationalism and Criticism of Thomas Kuhn and Imre Lakatos," *Philosophia: International Journal of Philosophy* 25, no. 2 (2024): 232-252.

[56]See Nicholas Maxwell, "Popper, Kuhn, Lakatos and Aim-oriented Empiricism," *arXiv preprint arXiv:1208.5219* (2012).

Popper's epistemic beliefs are purely philosophical and interdisciplinary. The following table is a comparative narrative as to who is more relevant in modern times.

Table 3. Comparative Narrative as per Relevance in the Current Era

Criterion	Al-Ghazālī	Rene Descartes	Karl Popper
Philosophical Influence	Owing to its orthodox nature, it is still studied in the Islamic World (specifically among conservatives and fundamentalists). Conversely, his skepticism toward philosophical science is seen as regressive in a modern secular context (specifically among radical Muslims).	He laid the foundation of modern Western philosophy. His argument of *Cogito* (thinking self) remains central in philosophy, psychology, Brain in the VAT and Artificial Intelligence. It invokes discussions in regarding problems of mind-body dualism, personal identity, and epistemic certainty.	He is extremely influential in philosophy of Science. He has altered the way in which scientists and philosophers perceive absolute certainty; invokes the importance of positive power of criticism to progress.
Religious/Spiritual Insight	Chiefly based on Mystical experience of divine illumination (*Kashf)*	Rationalist metaphysics leading to the problem of mind-body dualism	----
Ad hoc of Occasionalism	Fully relied on God as an actual cause of every thing	Partially relied on Cartesian occasionalism to resolve problem of mind-body dualism.[57]	----

[57]Jason Jordan, "Occasionalism," *Internet Encyclopedia of Philosophy* (2022), https://iep.utm.edu/occasion/

Scientific Application	----	To some extent	Vast applicability in philosophy of science
Objectivity and Public Testing	----	To some extent	Yes through falsification
Practical Relevance Toda	It is most relevant in spiritual, religious, and Islamic intellectual traditions, offering insights into the limits of reason and the necessity of divine guidance.	Though foundational, is less practically relevant today and primarily serves as a historical cornerstone for modern philosophy	It is most relevant today in science, education, and public reasoning, where falsifiability, critical thinking, and error correction are crucial.

Note: {* In this table, (---) means that the criteria is not applicable for the relevant thinker}

In closing, comparing these thinkers on the basis of their epistemologies was an interesting feat. In my opinion, in modern times Karl Popper's view is more relevant as compares to Al-Ghazālī and Descartes. This is mainly because of two reasons:

a) Ever since Popper's introduction to falsification method in philosophy of science there is no advocate of attaining certainty in Knowledge. Contemporary philosophy of science is treading by collaborating Popper's ides with Kuhn's paradigms, research programs of Lakatos and Bayesian epistemology in order to achieve a comprehensive understanding of knowledge.[58]

b) In the millennium, the importance of scientific knowledge supersedes spiritual knowledge. Hence, despite the shortcomings of his theory as seen in Table 2, his revolutionary epistemological ideas remain foundational in refining the philosophy of science.

In contrast, Descartes epistemology is a precursor to modern rationalism that stimulated the empiricist-rationalist debate. However, due to his ambiguous views, he has introduced lasting tensions within epistemology. His views are of slight importance today. Similarly, al-Ghazālī attempted to synthesize reason, faith and intuition derived from philosophy, theology and mysticism. But in doing so, he created contradictions and opens his thought to critique. Although his views are still studied among Islamic mystics; but it too have little significance in current times.

Nonetheless, all three of them were popular and influential in their own times owing to their significant contributions in Islamic theology, rational metaphysics and philosophy of science respectively.

[58]Richard C. Jeffrey, "Probability and Falsification: Critique of the Popper Program," *Synthese* 30, no. 1/2 (1975): 95-117; Nicholas Maxwell, "Popper, Kuhn, Lakatos and Aim-Oriented Empiricism," *arXiv preprint arXiv:1208.5219* (2012).

Bibliography

Agassi, Joseph. *Popper and His Popular Critics: Thomas Kuhn, Paul Feyerabend and Imre Lakatos*. Springer, 2014.

Akdogan, Cemil. "Ghazālī, Descartes, and Hume: The Genealogy of Some Philosophical Ideas." *Islamic Studies* 42 (3), (2003): 487–502. https://doi.org/10.2307/20837288.

Albertini, Tamara. "Crisis and Certainty of Knowledge in Al-Ghazālī (1058-1111) and Descartes (1596-1650)." *Philosophy East and West* 55 (1), (2005): 1–14. https://doi.org/10.2307/4487933.

Broughton, Janet. *Descartes's Method of Doubt*. Princeton, NJ: Princeton Univ. Press, 2003.

Descartes, René. *The Philosophical Writings of Descartes.* Vol. II, translated by John Cottingham, Robert Stoothoff, and Dugald Murdoch. New York: Cambridge University Press, 1985.

Griffel, Frank. *Al-Ghazālī's Philosophical Theology*. New York: Oxford University Press, 2009.

Gombay, Andre. *Descartes: Blackwell Great Mind Series.* edited by Steven Nedler. Blackwell Publishing, 2008.

Hammerton, M. "Bayesian statistics and Popper's epistemology." *Mind* 77, no. 305 (1968): 109-112.

Hansson, Sven Ove. "Defining Pseudoscience and Science." *Philosophy of Pseudoscience: Reconsidering the Demarcation Problem* (2013): 61-77.

Ibrahim, T., and N. V. Efremova. "On Averroes' Response to al-Ghazālī's Critique of Philosophy." *Minbar. Islamic Studies* 13 (2), (2020): 378-400. (In Russ.) https://doi.org/10.31162/2618-9569-2020-13-2-378-400.

Jeffrey, Richard C. "Probability and Falsification: Critique of the Popper Program." *Synthese* 30, no. 1/2 (1975): 95-117.

Jordan, Jason. "Occasionalism.". *Internet Encyclopedia of Philosophy*, 2022. https://iep.utm.edu/occasion/

Kadir, Surni. "Comparative Study of Al-Ghazālī Thought and Ibn Rushd in the Perspective of Islamic Theology." *International Journal of Health, Economics, and Social Sciences (IJHESS)* 6, no. 3 (2024): 895-903.

Khashoggi, Kamal-e-din. "Inverting the Void: A Comparison of al-Ghazālī and Descartes." Master's Thesis, Boston University, 2016.

Lakatos, Imre. "Science and Pseudoscience." *Philosophical Papers* 1 (1978): 1-7.

Marmura, Michael E. *The Incoherence of the Philosophers: A Parallel English-Arabic Text*. Provo, Utah: Brigham Young University, 2000.

Millican, Peter. "Hume on Reason and Induction: Epistemology or Cognitive Science?" *Hume Studies* 24 (1), (1998): 141–59. https://doi.org/10.1353/hms.2011.0088.

Maxwell, Nicholas. “Popper, Kuhn, Lakatos and Aim-Oriented Empiricism.” *arXiv preprint arXiv:1208.5219* (2012).

O'Hear, Anthony, ed. *Karl Popper: Philosophy and Problems.* New York: Cambridge University Press, 1995.

Parvin, Phil, ed. *Major Conservative and Libertarian Thinkers Series: Karl Popper*. Vol. 14. London: The Continuum International Publishing Group Ltd, 2010.

Popper, Karl R. *After the Open Society: Selected Social and Political Writings.* Edited by Jeremy Shearmur and Piers Norris Turner. Canada: Routledge Taylor and Francis Group, 2008.

—. *The Open Society and Its Enemies*. New One-Volume Edition. Princeton: Princeton University Press, 2013.

—. *Conjectures and Refutations: The Growth of Scientific Knowledge*. New York: Routledge, 1963.

— . *Three Worlds*. Ann Arbor: University of Michigan, 1979.

—. “Reason or Revolution?” *European Journal of Sociology/Archives (Européennes de Sociologie*) 11, no. 2 (1970): 252-262.

—. “Science as Falsification.” *Conjectures and Refutations* 1, no. 1963 (1963): 33-39.

Reilly, Robert R. *The Closing of the Muslim Mind*. Open Road Media, 2014.

Shea, Brendan. “Karl Popper: Philosophy of Science.” (2011), *Internet Encyclopedia of Philosophy*, https://philpapers.org/archive/SHEKPP-3.pdf

Simon Van Den Bergh (translator)., *Averroes’s Tahafut Al-Tahafut: (The Incoherence of the Incoherence).* Volumes I and II. Cambridge: Gibb Memorial Trust, 2008.

Sky, Amy. “Moving in Mystical Ways: The Dialectic of al-Ghazālī and Ibn Rushd in Islamic Epistemology.” *HiPo: The Langara Student Journal of History and Political Science* 5 (2022): 9-14.

Soleh, Achmad Khudori., Erik Sabti Rahmawati, Humaida Ghevira Syavia Camila, and Hasyma Tazakka Furqona. “The truth on Al-Ghazālī Perspective.” *International Journal of Innovative Research in Multidisciplinary Education* 2, no. 9 (2023): 431-439.

“Solipsism” 2020. *Encyclopedia Britannica*. https://www.britannica.com/topic/solipsism.

Stemwedel, Janet. “Drawing the Line between Science and Pseudo-Science.” *Scientific American* (2011), https://faculty.knox.edu/fmcandre/science_vs_pseudoscience.pdf

Tukiran, Martinus. “How Management Science Obtains Empirical Truth: A Review of Karl Popper's Critical Rationalism and Criticism of Thomas Kuhn and Imre Lakatos.” *Philosophia: International Journal of Philosophy* 25, no. 2 (2024): 232-252.

Wilson, Margaret Dauler., and Ted Honderich. *Descartes*. London: Routledge, 2016.

Zamir, Syed Rizwan. “Descartes and Al-Ghazālī: Doubt, Certitude and Light.” *Islamic Studies* 49, (2), (2010): 219-251.