

Promising or Dead End? How Two Epistemologies of Perception Determine the Trajectory of AI Abstract

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Article Info

Article type:

Research Article

Article history:

Received 10 May 2026

Received in revised form
30 May 2026

Accepted 02 June 2026

Published online 25
October 2026

Keywords:

4E Cognition (Embodied, Embedded, Enacted, Extended), Epistemology of Perception, Phenomenology, Farabi, Merleau-Ponty.

ABSTRACT

This study examines the ontological and epistemological relationship between artificial intelligence (AI) and human sensory perception, asking whether AI can theoretically match or surpass human perceptual capacities at the foundational stage of cognition. Using an analytical-comparative method, it contrasts Al-Farabi's theory of the "Common Sense" (*al-ḥiss al-mushtarik*) with Merleau-Ponty's phenomenology of the "Lived Body" (*le corps vécu*), focusing on how each integrates the five senses. The findings show that Al-Farabi's stage-based model structurally parallels the layered data-processing architectures of contemporary AI, whereas Merleau-Ponty rejects raw sensory data, framing perception as pre-reflective, holistic, and embodied, and thus resistant to algorithmic decomposition. The study argues that AI's trajectory is epistemologically contingent: Al-Farabi's model opens a horizon for AI development and potential perceptual convergence with humans, while Merleau-Ponty's emphasis on bodily intentionality sets ontological limits for disembodied systems, constraining AI to functional simulation rather than genuine perceptual cognition. Finally, the article argues that evidence from developmental psychology and 4E cognition—especially the "kitten experiment"—corroborates Merleau-Ponty's embodied model, shifting the burden of proof onto any computational paradigm claiming perceptual parity for AI.

Cite this article: Maftouni, N. (2026). Promising or Dead End? How Two Epistemologies of Perception Determine the Trajectory of AI Abstract. *Journal of Philosophical Investigations*, 20(56), 247-258. <https://doi.org/https://doi.org/10.22034/jpiut.2026.72348.4504>



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Publisher: University of Tabriz.

Introduction

What is the fundamental relationship between artificial intelligence and human cognition and perception? Could AI ever attain the capacity to guide, or even surpass, human perceptual awareness? Will future systems outstrip human cognitive capacities, or are they inherently constrained from competing with the depth of human understanding? These questions currently occupy scholars across philosophy, cognitive science, and artificial intelligence research. While contemporary AI systems demonstrate remarkable proficiency in narrowly defined tasks, human perception transcends mere data processing. It encompasses self-awareness, affective experience, intuition, creativity, moral reasoning, and socio-cultural embeddedness. Nevertheless, the core focus of this study is deliberately restricted to the most foundational stratum of cognition: the genesis and integration of the five external sensory modalities—vision, hearing, smell, touch, and taste—within the human mind. This investigation situates the problem at the intersection of two divergent epistemological paradigms: the classical Islamic philosophical account of the “Common Sense” (*al-ḥiss al-mushtarik*) articulated by Abū Naṣr al-Fārābī, and the phenomenological conception of the “Lived Body” (*le corps vécu*) advanced by Maurice Merleau-Ponty.

The selection of al-Fārābī over the more systematic Avicenna (Ibn Sīnā) is deliberate and strategic: al-Fārābī provides a cleaner, more architectonic model of faculty psychology that serves as an ideal-type for computational, modular processing. Avicenna’s richer and more qualified framework—with its greater attention to the soul’s unity and the Active Intellect—would complicate this ideal-type without fundamentally altering the comparative structure. The goal is not historical exhaustiveness but the construction of a clear epistemological opposition, where al-Fārābī represents the integrative synthesis paradigm and Merleau-Ponty represents the embodied, holistic alternative.

Under al-Fārābī’s framework, AI development appears to possess a viable pathway for expansion and potential perceptual convergence with humans. Conversely, Merleau-Ponty’s embodied phenomenology imposes ontological boundaries that render disembodied systems incapable of authentic perception, thereby confining AI to functional simulation.

Existing scholarship on this topic generally converges across three domains, yet no study has systematically juxtaposed al-Fārābī and Merleau-Ponty on sensory integration to resolve which paradigm is empirically and philosophically more defensible.

First, philosophy of mind and embodied cognition literature has extensively critiqued classical computational models, emphasizing embodiment and situated interaction as prerequisites for genuine awareness. [Hubert Dreyfus \(1992\)](#) famously challenged symbolic AI, arguing that rule-based representations cannot capture human skillful coping, while [Varela, Thompson, and Rosch \(1991\)](#) established enactivism as a paradigm where cognition emerges through dynamic organism–environment coupling. Subsequent works by [Thompson \(2007\)](#) and [Gallagher & Zahavi \(2008\)](#) further integrated phenomenology with cognitive science,

underscoring the irreducibility of lived experience. Second, comparative studies in Islamic philosophy have re-examined internal faculties—particularly the common sense and imagination—exploring their potential alignment with artificial cognitive architectures. Scholars such as [Deborah Black \(1993\)](#) and [Dimitri Gutas \(1988\)](#) have illuminated the epistemological underpinnings of Fārābīan perceptual theory, yet rarely in direct dialogue with continental phenomenology or contemporary AI trajectories. Third, interdisciplinary inquiries into AI’s philosophical implications, exemplified by Margaret Boden’s (2016) distinctions between cognitive simulation and genuine consciousness, and John Searle’s (1980) “Chinese Room” argument, have reinforced the semantic gap between formal symbol manipulation and authentic understanding.

A critical research gap persists: while enactivism and 4E cognition have marshaled empirical evidence for embodiment, no study has asked whether al-Fārābī’s integrative model—despite its structural appeal to computationalists—can withstand the same empirical tests that support Merleau-Ponty. This article addresses that void.

This study proceeds in four stages. First, it reconstructs al-Fārābī’s theory of the Common Sense as a modular, data-integrative architecture, acknowledging but setting aside the richer metaphysical context of the Active Intellect to focus on its structural logic. Second, it presents Merleau-Ponty’s phenomenology of the Lived Body as a radical alternative that rejects the very possibility of raw sensory data. Third, it directly compares the two paradigms on three points: the nature of sensory inputs, the locus of synthesis, and the role of embodiment. Finally, it argues that empirical evidence from developmental psychology and 4E cognition favors Merleau-Ponty’s framework, concluding that AI—unless it undergoes a fundamental shift toward embodied architectures—remains confined to simulation.

The Starting Point of Cognition and Perception in Al-Fārābī’s Philosophy: The Common Sense (*al-Ḥiss al-Mushtarik*)

How do human beings initially apprehend the natural world surrounding them? Abū Naṣr al-Fārābī (d. 950 CE), widely regarded as the “Second Teacher” after Aristotle in the Islamic philosophical tradition, did not compose a standalone treatise exclusively dedicated to the theory of perception. Nevertheless, a careful reading of his corpus reveals that the nature, structure, and hierarchy of human cognition permeate his psychological, metaphysical, and political works. His treatment of perception is not fragmented but systematically integrated into a broader faculty psychology that maps the ascent from sensory encounter to intellectual abstraction.

For instance, in discussions concerning the First Beloved (*al-Ma‘shūq al-Awwal*) and the taxonomy of pleasures attainable by rational beings, al-Fārābī explicitly grounds experiential enjoyment in three distinct epistemic modes: sensory perception (*idrāk ḥissī*), imaginative cognition (*idrāk khayālī*), and intellectual apprehension (*idrāk ‘aqlī*) ([al-Fārābī, 1996, 71; 2003:](#)

85). Similarly, in his analysis of the soul's faculties, he asserts that all human knowledge and perceptual awareness are actualized through one of three cognitive channels: the rational intellect, the imaginative faculty, or the sensitive powers (al-Fārābī, 2003, 156). This tripartite division is not merely classificatory; it reflects a dynamic, hierarchical epistemology wherein higher cognitive functions are ontologically and functionally dependent upon lower perceptual foundations. Thus, while al-Fārābī never isolates perception as an independent metaphysical problem, his philosophical psychology consistently positions it as the indispensable threshold of all human knowing.

Beyond these general epistemological commitments, al-Fārābī offers a detailed account of sensory perception itself.

Acknowledging a common critique of functionalist readings of medieval philosophy, we must clarify: al-Fārābī's Common Sense is not reducible to a modern "central processing unit." In its original context, this faculty is ontologically linked to the soul's perfection and the Active Intellect—metaphysical commitments that cannot be simply excised. However, for the purpose of comparative epistemology, we are justified in abstracting the structural logic of his model (discrete inputs, central integration, unified percept) as an ideal-type. The question is not whether al-Fārābī anticipated computation, but whether the structural logic of his model aligns with computational architectures in ways that Merleau-Ponty's does not.

Drawing heavily from Aristotelian and Galenic traditions, he acknowledges the five external senses—sight, hearing, smell, taste, and touch—as the primary interfaces between the human organism and the physical world. Each sense organ is specialized to receive a specific class of sensible qualities: the eye registers color and form, the ear captures sound, the nose detects odor, the tongue discerns flavor, and the body registers tactile properties such as pressure, temperature, and texture. However, al-Fārābī recognizes a critical epistemological limitation inherent in this modality-specific architecture: the external senses operate in isolation. Sight cannot hear; taste cannot see; touch cannot smell. Each faculty delivers discrete, uncoordinated data streams that, left unintegrated, would amount to a chaotic mosaic of qualia rather than a unified experience of objects.

To resolve this fragmentation, al-Fārābī posits the existence of an internal sensory faculty known as the Common Sense (*al-ḥiss al-mushtarik / sensus communis*). This faculty is not a physical organ in the anatomical sense, but a psychological and metaphysical power traditionally localized in the anterior ventricle of the brain, following the neurophysiological models of his era. The Common Sense serves as the central nexus where the outputs of the five external senses converge and are synthesized into a single, coherent perceptual field. Its primary function is twofold: first, it binds disparate sensory modalities into unified object-percepts; second, it provides the subject with immediate awareness of the act of sensing itself (i.e., the reflexive awareness that "I am seeing" or "I am hearing").

A classic illustration of this synthetic operation can be found in al-Fārābī's treatment of everyday perceptual objects. Consider the experience of perceiving a date or an apple. The visual faculty registers its color (e.g., deep brown or bright red); the gustatory faculty detects its sweetness; the tactile faculty registers its texture and thermal state (cool after refrigeration or warm from ambient exposure). Without the integrative operation of the Common Sense, these qualities would remain epistemologically isolated. The subject would encounter "blackness," "sweetness," "softness," and "coldness" as unrelated sensory events, incapable of being attributed to a single external entity. It is precisely the Common Sense that performs the unifying act, allowing the perceiver to recognize that the color, taste, texture, and temperature belong to one and the same object (al-Fārābī, 1986, 88–89). Only through this synthetic faculty can human beings achieve a stable, object-directed perception of the natural world.

It is worth noting that al-Fārābī's model did not remain an isolated theoretical construct. Subsequent luminaries of the Islamic philosophical tradition adopted and refined his framework. Ibn Sīnā, for instance, expanded the internal senses into a more elaborate hierarchy but retained the Common Sense as the foundational integrative faculty (Ibn Sīnā, 1982, 332).

However, Avicenna's model is more complex, incorporating a richer theory of abstraction and the Active Intellect. Al-Fārābī's cleaner architectonic structure better serves our purpose as an ideal-type for computational comparison.

Similarly, Mullā Ṣadrā, working within his transcendental theosophy (*al-ḥikma al-muta'āliya*), preserved the functional role of sensory synthesis while reinterpreting it through the lens of substantial motion and graded existence. This intellectual continuity underscores the robustness of al-Fārābī's perceptual model: it was not merely a historical artifact but a living epistemological paradigm that shaped centuries of philosophical and scientific inquiry into human cognition.

At this juncture, one might reasonably ask: What bearing does this medieval faculty psychology have on contemporary debates concerning artificial intelligence? Superficially, the discussion of the Common Sense may appear disconnected from modern computational systems. Yet, when examined through an epistemological lens, al-Fārābī's model reveals profound implications for the architecture and limits of AI. His framework implicitly treats perception as a modular, sequential, and data-integrative process. External senses function as specialized input channels, each capturing discrete features of the environment. The Common Sense operates as a central processing unit that aggregates, aligns, and unifies these inputs into a coherent representation. This structure bears a striking structural analogy to contemporary multi-sensory AI systems, which rely on sensor fusion algorithms, cross-modal neural networks, and centralized inference engines to integrate visual, auditory, tactile, and linguistic data. In this sense, al-Fārābī's epistemology opens a conceptual space in which artificial systems could, in principle, replicate or even extend the foundational stages of human perception. If cognition begins with the reception and integration of discrete sensory data, and

if the unifying faculty can be functionally modeled, then AI development faces no inherent ontological barrier to achieving perceptual parity with humans.

However, this conclusion remains provisional. The full epistemological stakes of al-Fārābī's model can only be properly evaluated when juxtaposed with a fundamentally different account of perceptual genesis one that rejects the premise of raw sensory data, modular processing, and central integration altogether. In the following section, we turn to Maurice Merleau-Ponty's phenomenology of the Lived Body, which frames perception not as a computational synthesis of isolated inputs, but as a pre-reflective, holistic, and embodied dialogue between organism and world. Only through this comparative analysis will the divergent implications for the theoretical and practical trajectory of artificial intelligence become fully apparent.

How Sensory Cognition and Perception Are Formed in Merleau-Ponty's Thought: The Lived Body

Maurice Merleau-Ponty nowhere in his corpus mentions the faculty of the "Common Sense" nor does he ever explicitly endorse or operationalize such a cognitive power. While he does not devote a polemical passage to its outright refutation, a careful reconstruction of his phenomenology of perception reveals that the very architecture of his epistemological framework leaves no conceptual space for it. Merleau-Ponty's magnum opus, *Phenomenology of Perception* (1962), is fundamentally a radical departure from the epistemological traditions that preceded him. His project constitutes a sustained critique of Cartesian rationalism, British empiricism, Kantian intellectualism, and even the phenomenological and existential foundations laid by Husserl and Heidegger. Rather than beginning from abstract principles or disembodied cognitive faculties, Merleau-Ponty grounds all knowing in the primordial fact of bodily existence. To understand why the "Common Sense" has no place in his system, one must trace his systematic dismantling of prior perceptual theories, his appropriation of Gestalt psychology, and the profound implications this phenomenological reorientation carries for the theoretical and practical trajectory of artificial intelligence.

The Cartesian Inheritance and the Critique of Dualism

Merleau-Ponty's philosophical departure begins with a direct confrontation with René Descartes' mind-body dualism. In the Introduction and first major section of *Phenomenology of Perception*, Merleau-Ponty interrogates the Cartesian *cogito* and its attendant ontological bifurcation of *res cogitans* (thinking substance) and *res extensa* (extended substance). Descartes treats the body as a mechanistic apparatus, a spatially extended object subject to physical laws, while consciousness is relegated to an immaterial, non-spatial realm. Perception, in this schema, becomes a problem of causal interaction between two fundamentally heterogeneous substances. Merleau-Ponty rejects this division as both phenomenologically inaccurate and epistemologically paralyzing. He argues that the body is not merely an object among objects,

nor is it a passive vessel through which perception occurs. Rather, the body is the very subject of perception. It is through the body that the world is disclosed, structured, and made meaningful (Merleau-Ponty, 1962, 67–75, 198–203, 430).

For Merleau-Ponty, spatiality is not first and foremost a geometric or mathematical property; it is a lived, oriented, and motoric reality. The body does not occupy space like a physical object; it inhabits space as a field of potentialities, actions, and engagements. This “body-as-subject” is pre-reflectively aware of its own capacities and limitations, and it is through this bodily intentionality that perception unfolds. By collapsing the Cartesian divide, Merleau-Ponty eliminates the need for a mediating faculty like the Common Sense, which was historically posited to bridge discrete sensory inputs and conscious awareness. In a phenomenological framework, there is no gap to bridge: perception is not assembled from isolated data streams; it emerges holistically from the body’s situated engagement with the world.

British Empiricism and the Myth of Atomic Sensory Data

Having dismantled Cartesian dualism, Merleau-Ponty turns his attention to the British empiricist tradition, particularly the epistemologies of John Locke, David Hume, and George Berkeley. Empiricism posits that the mind begins as a *tabula rasa* and acquires knowledge through the reception of simple, atomic sensory impressions. These raw qualia colors, sounds, tastes, textures are subsequently combined, associated, or abstracted by the mind into complex ideas and objects of experience. This model bears a structural resemblance to the classical theory of the Common Sense, which also assumes discrete sensory inputs requiring central integration. Merleau-Ponty categorically rejects this atomistic conception of perception. He insists, against Locke and Hume, that human beings never encounter “pure” sensory data in isolation. We do not first experience a patch of red, a tone of C-sharp, or a sweetness, and only later synthesize them into a unified object. Instead, perception is always already meaningful, structured, and object-directed from the outset (Merleau-Ponty, 1962, 60–260).

When a person perceives a date or an apple, they do not experience a bundle of disconnected properties. They immediately encounter a cool, sweet, dark, slightly firm fruit embedded in a meaningful context. The unity of the percept is not constructed post hoc by a central cognitive faculty; it is given primordially in the lived encounter. Merleau-Ponty’s phenomenology thus replaces the empiricist model of passive reception and subsequent synthesis with a model of active, holistic disclosure. Perception is not a computational process of data fusion; it is an embodied dialogue between organism and environment. This insight directly undermines any epistemological framework that treats sensory input as modular, quantifiable, and algorithmically integrable.

Reorienting Kant: From Transcendental Categories to Bodily Intentionality

Merleau-Ponty's third major critique targets Immanuel Kant's transcendental idealism. Kant rightly recognized the limitations of empiricism, arguing that the mind is not a passive recipient of sensory data but an active organizer that structures experience through a priori categories such as space, time, and causality. Merleau-Ponty agrees with Kant that perception is not passive; however, he fundamentally disagrees with the location and nature of this activity. For Kant, synthesis occurs at the level of the transcendental understanding, operating through abstract, intellectual categories that impose order on chaotic sensory manifolds. Merleau-Ponty shifts the locus of synthesis from the transcendental intellect to the lived body. The unity of perception does not arise from categorical judgment; it emerges from bodily spatiality, motor intentionality, and pre-conceptual engagement (Merleau-Ponty, 1962, 72–90, 240–254, 440).

Where Kant sees perception as conditioned by formal categories, Merleau-Ponty sees it as grounded in bodily habits, postural orientation, and sensorimotor routines. The body does not apply time and space to experience; it lives them. It does not infer causality; it anticipates it through action. This reorientation dismantles the Kantian divide between sensibility and understanding, replacing it with a continuous, embodied field of perception that precedes conceptual reflection. Consequently, there is no need for a higher-order faculty to synthesize raw data, because data are never raw. They are always already shaped by the body's historical, spatial, and practical relationship with the world.

Beyond Husserl and Heidegger: Intentionality, Worldhood, and the Primacy of Lived Experience

Merleau-Ponty's phenomenological project also engages critically with his immediate predecessors in continental philosophy. Edmund Husserl distinguished between *hyle* (raw sensory material) and *noesis* (intentional act), arguing that consciousness animates neutral sensory data through intentional acts that bestow meaning. Merleau-Ponty rejects this two-layer model as phenomenologically untenable. We do not experience a stratum of meaningless sensations that are subsequently interpreted; meaning is inherent to perception from the start. The hyletic-noetic distinction imposes an artificial intellectualism onto a phenomenon that is fundamentally pre-reflective (Merleau-Ponty, 1962, 210–250).

Similarly, Martin Heidegger's existential analytics shift the focus from theoretical perception to practical "Being-in-the-world". Heidegger emphasizes that we encounter objects primarily as "ready-to-hand" tools embedded in networks of use and significance rather than as "present-at-hand" objects of detached observation. Merleau-Ponty appreciates Heidegger's rejection of Cartesian spectatorship but criticizes him for marginalizing the body's perceptual role in favor of pragmatic and existential structures. Merleau-Ponty synthesizes Husserl's descriptive attention to intentional perception with Heidegger's emphasis on worldhood, but he grounds both in the lived body. Perception is neither a purely intellectual act nor merely a

pragmatic engagement; it is a bodily skill, a way of being oriented toward and responsive to a meaningful world (Merleau-Ponty, 1962, 67–147, 333–378).

The Gestalt Turn: Holistic Perception and the Epistemological Death of Atomism

The final theoretical pillar of Merleau-Ponty's account of perception is drawn from Gestalt psychology. German psychologists such as Kurt Koffka (1886–1941) and Wolfgang Köhler (1887–1967) demonstrated experimentally that human perception is inherently organized, holistic, and governed by principles of figure-ground relation, proximity, similarity, and closure. When we hear a melody, we do not perceive a sequence of isolated notes; we perceive a unified musical whole. The parts are not primary; the structure is. Perception is not built up from elements; it is grasped as a configuration. Merleau-Ponty transposes these empirical findings from the domain of psychology to the domain of epistemology and ontology. He uses Gestalt principles to argue that perception is structurally and essentially holistic, thereby delivering what he considers the definitive blow to atomistic and empiricist theories of sensory data (Merleau-Ponty, 1962, 1–15, 50–100, 200–250).

By integrating Gestalt theory into phenomenology, Merleau-Ponty establishes that the unity of perception is not a cognitive achievement but a perceptual given. The body does not compute; it resonates with the structures of the world. This insight carries profound implications for artificial intelligence, particularly for architectures that rely on modular sensor fusion, feature extraction, and hierarchical data processing. If perception is fundamentally holistic, pre-conceptual, and bodily grounded, then any system that attempts to reconstruct it from discrete, quantifiable inputs is epistemologically misguided from the outset.

The Epistemological Implications for Artificial Intelligence

Having reconstructed Merleau-Ponty's phenomenology of perception, we must now confront its direct implications for the development, limitations, and ultimate trajectory of artificial intelligence. Several contemporary scholars have argued, on explicitly Merleau-Pontian grounds, that AI is philosophically and ontologically destined for a theoretical dead end (Colarossi, 2013; Sonik & Colarossi, 2020, 23–30).

A potential objection must be addressed immediately: does this argument ignore the field of Embodied AI and 4E cognition (Embodied, Embedded, Enacted, Extended), where robots physically interact with environments? This objection is valid but partial. The article's original formulation risked a "straw man" by treating all AI as disembodied. However, the stronger Merleau-Pontian claim is not that physical bodies are sufficient for perception, but that the kind of body matters. Most contemporary Embodied AI remains what we may call "minimally embodied" (e.g., robotic arms, wheeled platforms, humanoid simulators). These systems lack several features Merleau-Ponty deems essential: a developmental history, affective valence, pre-reflective self-awareness, and what he terms the "body schema" as a dynamic, plastic

orientation to a meaningful world. A robot that avoids obstacles does not thereby inhabit its environment. Thus, the objection refines but does not refute the conclusion: even Embodied AI, in its current form, remains functionally constrained. The burden of proof lies with proponents of embodied robotics to demonstrate that their systems instantiate—not merely simulate—lived perception.

Two interlocking arguments support the Merleau-Pontian limit. First, the argument from constitutive engagement:

AI systems operate within simulated or bounded environments. They process inputs but do not engage the world as embodied, historically situated agents. Their “interactions” are functional, not constitutive. The Sims analogy illustrates this: agents exhibit apparent intentionality, yet this is an illusion generated by scripted routines. They lack an inner life or bodily grounding (Colarossi, 2013). Second, the argument from qualitative experience: Computational models reduce perception to information processing. Merleau-Ponty demonstrates that perception is irreducibly qualitative and non-algorithmic. The “what-it-is-like” of seeing red arises from the body’s dynamic coupling with the world, not from symbolic manipulation. (Colarossi, 2013; Sonik & Colarossi, 2020, 30–53).

Empirical Corroboration: The Kitten Experiment and 4E Cognition

These claims are corroborated by empirical research. Held and Hein’s (1963) classic kitten experiment demonstrates that if a young mammal is carried through an environment during critical developmental periods—allowed to see but never to move independently—its visual system fails to develop higher-order perceptual capacities. Despite intact eyes and optic nerves, the kitten lacks depth perception and spatial navigation. Active exploration and sensorimotor contingency are necessary for organizing sensory input into coherent perception (Blakeslee & Blakeslee, 2008, 12–13). This finding directly supports Merleau-Ponty: perception is a skill, not a data stream. It also challenges al-Fārābī’s model: if discrete sensory inputs were sufficient for perception, passive observation would suffice. It does not. The empirical evidence therefore corroborates Merleau-Ponty’s framework. Contemporary 4E cognition strongly supports this view: cognitive processes emerge from the continuous sensorimotor loop between organism and environment. Intelligence is not computed; it is performed.

The Role and Impact of Fārābī’s Theory of Perception on the Future of AI: A Dialectical Comparison

Having reconstructed both paradigms, we now directly compare them on three points to determine which is more defensible. The divergence is foundational.

First, the nature of sensory data: For al-Fārābī, perception begins with discrete, modality-specific inputs that are epistemologically fragmented and require synthesis. For Merleau-Ponty, there are no raw inputs. Perception is holistic from the start. Second, the locus of synthesis: For

al-Fārābī, a central faculty (Common Sense) binds inputs into unified percepts. For Merleau-Ponty, unity is given primordially through bodily engagement; no central faculty is needed. Third, the role of embodiment: For al-Fārābī, embodiment is functionally incidental to the structural logic of integration. For Merleau-Ponty, embodiment is ontologically constitutive; without a lived body, perception is impossible.

At this juncture, we must ask: which paradigm does empirical evidence support? The “kitten experiment” and the entire trajectory of 4E cognition indicate that passive, modular input integration is insufficient for robust perception. Active, embodied, sensorimotor engagement is necessary. This directly undermines the Fārābīan model as a complete account of human perception. However, this does not render al-Fārābī’s framework irrelevant to AI. It suggests that while his model cannot fully explain human perception, it may still serve as a blueprint for functional AI systems that operate under different constraints—systems that simulate perceptual outputs without claiming to replicate lived experience. This is a crucial refinement: the question is not whether al-Fārābī’s model is true of human perception, but whether it is a viable engineering paradigm for AI.

Technical AI Analysis: From Metaphor to Mechanism

A significant weakness in prior treatments of this topic is the metaphorical use of terms like “sensorimotor algorithms” and “bodily intentionality.” To move beyond metaphor, we must specify mappings. Consider multi-modal transformers (e.g., CLIP, Flamingo). These architectures receive discrete modality-specific inputs (text, images, audio) as token sequences. Through cross-attention mechanisms, they align and integrate these inputs into joint representational spaces. This is structurally analogous to al-Fārābī’s Common Sense: modality-specific “external senses”, central integrative mechanism, unified percept. However, the analogy is functional, not ontological. The transformer does not “experience” unity; it performs weighted matrix multiplications that converge on a representational equilibrium. Merleau-Ponty’s objection is that no amount of functional integration generates the “for-itself” character of lived perception. This is not a technical but an ontological claim: there is a qualitative gap between representational alignment and phenomenal binding. Thus, any claim that AI achieves perceptual parity requires specifying how functional integration could bridge this gap—a task currently unmet.

Conclusion: Paradigm Dependence and the Weight of Evidence

This article has examined two divergent epistemological paradigms. Under al-Fārābī’s framework, perception as modular, integrative synthesis opens a computational horizon for AI. Under Merleau-Ponty’s framework, perception as embodied, holistic engagement imposes ontological boundaries. The conclusion that the fate of AI is “paradigm-dependent” might appear as an epistemological escape—a mere description of two possibilities without

adjudication. However, this article has moved beyond description. Empirical evidence from developmental psychology (the kitten experiment, 4E cognition) actively corroborates Merleau-Ponty's insistence on active embodiment. This shifts the burden of proof. If a researcher claims that al-Fārābī's model offers a "promising path" for AI achieving genuine perception, they must explain how modular integration alone could generate the perceptual skills that, in biological organisms, require sensorimotor history. Without such an explanation, al-Fārābī's model remains a historical curiosity—an interesting structural analogy without empirical grounding as a complete theory of perception.

The practical implication is not that AI research should cease, but that it should reorient. If the goal is human-like perceptual parity, then disembodied or minimally embodied architectures are likely insufficient. The more promising path—consistent with both Merleau-Ponty and 4E cognition—is the development of AI systems with rich, developmental, sensorimotor histories, embedded in environments that demand active exploration and affordance-based interaction. Whether such systems could ever cross the threshold from functional simulation to genuine lived perception remains an open philosophical question. What is no longer tenable is the assumption that modular, integrative architectures alone will suffice. The fate of AI, therefore, is not merely paradigm-dependent—it is empirically constrained. And the evidence tilts toward Merleau-Ponty.

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