Time as a Self-Emergent Creative Force beyond Mechanical Regularity: A Philosophical Analysis

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Abstract

This paper develops a philosophical analysis of time as an emergent phenomenon, arising not from the mechanical regularity of the cosmos but from within the layered structures of consciousness, biology, and selfhood. Tracing the philosophical trajectory from Heraclitus and Parmenides through Kant, Schopenhauer, Bergson, and Iqbal, the article argues that time is not a static container of events nor a mere dimension of spacetime, but a dynamic process of becoming. Drawing on insights from neuroscience, evolutionary biology, and quantum physics—particularly bioelectric signalling, circadian biology, and the principle of least action—the study reveals how temporal awareness is not imposed externally but generated internally by living systems. Iqbal's metaphysics of *khudi* is positioned as a unique synthesis, framing time as a creative force shaped by conscious will, contrasting both mystical escapism and scientific determinism. By examining Islamic mysticism, especially in the Qur'anic concept of divine novelty and the metaphors of Rumi, the paper presents time as a luminous unfolding of divine self-disclosure. Ultimately, the work converges on the thesis that time is neither illusion nor absolute, but a self-organizing, self-aware rhythm woven into the very act of existence—making selfhood the secret architect of temporality.

Keywords

Time Perception, Iqbal's notion of Time, Selfhood and Creativity, Consciousness and Temporality, Emergence of Time, Bioelectric Signalling and Time Perception.

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1. Introduction

What is time? Is it a linear sequence of events, a measure of motion, or an illusion created by consciousness? This paper explores a radically different perspective: that time is not an external framework imposed on life, but a self-emergent rhythm generated by living systems, minds, and the metaphysical self. Across traditions—from Kant and Bergson to modern neuroscience and Islamic thought—the phenomenon of temporality reveals itself not as repetition, but as creation. Could it be, then, that time is not something we inhabit—but something we generate?

Throughout history, philosophers and scientists have grappled with this question, proposing varying conceptions of time—from objective clock time to subjective lived time. Saint Augustine famously captured the difficulty of defining time. "What then is time? If no one asks me, I know: if I wish to explain it to one that asked, I know not." (Augustine, 2008).

This statement highlights the paradox of time—it is something we intuitively experience yet struggle to articulate. The philosophical discourse on time is as ancient as human thought itself. From the earliest metaphysical inquiries, thinkers have debated whether time is real or an illusion. Does it flow like a river, or is it merely a static backdrop against which events unfold? These questions first emerged in the opposing views of Parmenides and Heraclitus, two pre-Socratic philosophers whose ideas shaped later debates. Heraclitus saw reality as an ever-changing process. His famous claim—"No man ever steps in the same river twice" (Plato, 1892)—illustrates his belief that existence is in constant flux. In his view, time is not a fixed structure but a continuous transformation, where each moment emerges and fades into another. The world is in perpetual motion, and our experience of time reflects this ceaseless becoming. According to Plato (1892) "Heraclitus says, you know, that all things move and nothing remains still, and he likens the universe to the current of a river, saying that you cannot step twice into the same stream."

According to Parmenides, "What is, is ingenerated and imperishable, whole, unique, immovable, and complete" (Kirk, 1983). If reality were truly in flux, knowledge would be impossible, as there would be no stable truth to grasp. In this framework, time is not a real phenomenon but a mental construct born from human perception. This fundamental

opposition—between time as dynamic (Heraclitus) and time as static (Parmenides)—has echoed through centuries, shaping debates in metaphysics, theology, and science. More than a millennium later, Saint Augustine deepened the discussion by exploring time's paradoxical nature. As mentioned earlier, he acknowledged that while we experience time intimately, it defies clear definition. He questioned whether the past truly exists—since it is already gone—or whether the future exists—since it has not yet arrived. Even the present is elusive, slipping into the past the moment we try to grasp it. "But the present, should it always be present, and never pass into time past, verily it should not be time, but eternity." (Augustine, 2008)

Augustine's reflections unveil a profound philosophical dilemma: Is time an objective, external reality, or merely a construct of human consciousness? This tension has reverberated through the centuries, evolving with each new intellectual epoch. The Scientific Revolution marked a significant turning point when Newton introduced a critical distinction between absolute and relative time. He asserted that time, "of itself, and from its own nature, flows equably without relation to anything external" (Newton, 1999). In this framework, time existed independently of all physical phenomena, serving as an immutable backdrop against which events unfolded. However, this Newtonian conception was fundamentally disrupted by Einstein's theory of relativity, which redefined time as a dynamic entity inseparable from space, moulded by motion and gravity. In Einstein's relativistic framework, time is no longer an independent absolute but a variable contingent upon the observer's frame of reference (Einstein, 1916). This paradigm shift dismantled the notion of temporal uniformity, revealing that the passage of time is not universal but relative, altering with velocity and gravitational fields. Reflecting on the implications of his theory, Einstein remarked in a letter, "For us believing physicists, the separation between past, present and future has only the meaning of an illusion, albeit a tenacious one." (Zeh, 2007) Yet, despite this ground-breaking reconfiguration of time, Einsteinian physics still treats time as an external, quantifiable entity rather than a purely subjective experience. The question that troubled Augustine—whether time is an intrinsic feature of reality or a mental

construct—thus remains an open and evolving inquiry, continuing to challenge our understanding of the nature of time itself. Several modern philosophers shifted the discussion inward, emphasizing the human experience of time. Kant argued that time is not an independent reality but rather a mental framework through which we perceive the world. He maintained that time does not exist as an objective entity but instead arises from the inner structure of human perception.

As he explains in Critique of Pure Reason,

> Time is not something which exists of itself, or which inheres in things as an objective determination, and therefore remains when abstraction is made of all subjective conditions. It is nothing but the form of inner sense, that is, of the intuition of ourselves and of our inner state (Kant, 1781/1787).

Schopenhauer, building upon Kantian transcendental idealism, maintained that time belongs strictly to the world of representation—the phenomenal reality as shaped by human perception. Like Kant, he argued that time is not an objective entity but a construct of the mind (Schopenhauer, 1844). However, Schopenhauer introduced a deeper metaphysical distinction between will and representation. Everything that exists in the world as representation (that is, everything we perceive) is bound by time, causality, and individuality. However, the will—which is the true, fundamental essence of reality—is not limited by time at all; it exists beyond time. This means that while we perceive life as an unfolding sequence of events, the deeper metaphysical reality is timeless, therefore, he agrees with Kantian serial time as just a mental faculty of the mind. In his words, "space and time are themselves only modes or aspects of the principle of sufficient reason" (Schopenhauer, 1844).

He argued that time is not merely a condition of perception but a mechanism that perpetuates suffering. Since all life is driven by will—the blind, ceaseless striving for existence and fulfilment—time ensures that we are always pulled toward the future, yearning for something beyond the present moment (Schopenhauer, 1844). This idea is vividly illustrated in Samuel Beckett's Waiting for Godot, where the characters remain trapped in an endless cycle of expectation, waiting for a future that never arrives (Beckett, 1953). This perpetual movement from desire to

dissatisfaction creates an endless loop of suffering, a notion that finds striking parallels in psychological studies of time perception. Building on this shift toward subjective time, Bergson (1889/2001) distinguished between measured, spatialized time and la durée—the fluid, indivisible experience of time as we live it. Unlike the fragmented nature of clock time, la durée is an ongoing, qualitative flow that cannot be reduced to discrete moments. In this sense, Bergson's la durée resonates with Schopenhauer's philosophy, as both emphasize the qualitative, lived aspect of time rather than a mere mathematical abstraction. However, where Bergson saw pure duration as an indivisible flow, Schopenhauer saw time as a mechanism of suffering, trapping beings in an endless cycle of striving, desire, and frustration. Thus, the perception of time itself becomes a source of existential torment, an illusion that binds us to relentless will-driven existence (Magee, 1983).

Schopenhauer saw time as a force that perpetuates striving and suffering. Interestingly, modern neuroscience finds that emotions influence time perception—fear may slow it, while joy accelerates it (Eagleman, 2008). While this does not confirm Schopenhauer's metaphysical Will, it suggests a psychological basis for how time feels subjective. Schopenhauer's insight also aligns with meditative mysticism (Stace, 1960). Just as suffering arises from attachment to time, the loss of self-centred desire—whether through aesthetic experience, deep meditation, or mystical insight—allows one to momentarily transcend the tyranny of time itself (Schopenhauer, 1844).

Neuroscientific research suggests that time perception is a dynamic construction of the brain, shaped by cognitive and emotional factors. Eagleman (2009) describes how our brain actively reconstructs temporal experience rather than passively recording it. Similarly, Wittmann (2018) argues that time perception is deeply intertwined with memory and cognition. Moreover, studies by Droit-Volet and Meck (2007) demonstrate that emotions play a significant role—time appears to accelerate in joyful moments and slowdown in fear or boredom, reinforcing the idea that time is a dynamic interplay between the mind and external conditions. However, the human brain's time perception is an evolved feature, but how did time itself originate as a biological necessity, this serves as a crucial

starting point for the discussion on the genesis of time. Nevertheless, despite of being in agreement with Schopenhauer and Bergson on the matter of time as inner genesis, Iqbal (1930) viewed time as an active process of becoming, shaped by human will and creativity rather than a passive, fixed background for events. He rejected static notions of temporality, arguing that true time is not merely measured but actively generated through experience and selfhood.

2. Evolution of Time, in Life

The study of evolutionary adaptations in time perception reveals consistent patterns across biological life. For instance, ants and many other insects demonstrate an ability to recognize day-night cycles, coordinating their activities accordingly (Megan & Meuti, 2013). Nearly all life forms—from insects to mammals—possess an internal biological clock, commonly referred to as the circadian rhythm, which is regulated by molecular oscillators and clock genes (Foster & Kreitzman, 2004). In mammals, this process is centrally controlled by the suprachiasmatic nucleus (SCN) of the hypothalamus (Moore & Eichler, 1972; Reppert & Weaver, 2002), whereas in insects and other non-mammalian organisms, it is regulated by distributed clock cells that synchronize with environmental cues. As life evolved into more complex organisms, particularly in mammals and higher-order animals, the sense of time became increasingly sophisticated.

Scientific studies suggest that some mammals exhibit rudimentary temporal awareness beyond mere circadian rhythms. For instance, Menzel (1973) found that chimpanzees demonstrate spatial memory that extends beyond short-term cycles. Similarly, Biro (2010) and Cronin (2011) documented cases where monkeys—particularly chimpanzees, bonobos, and baboons—displayed distress behaviours, such as carrying deceased infants for days and showing signs of agitation. While some researchers interpret this as evidence of emotional attachment and a basic sense of past events, others argue that it may be a social response rather than a genuine cognitive awareness of time. Similarly, dogs exhibit food caching behaviours, burying food and retrieving it days or even weeks later, a trait that has been widely observed in canine species (Vetter, 2023). While this behaviour might seem to indicate future planning, research suggests that it

is largely an instinctive survival strategy inherited from their wolf ancestors rather than a conscious decision-making process (Club, 2023). However, studies have shown that dogs possess episodic-like memory, allowing them to recall specific past events rather than relying solely on instinct (Fugazza, 2014). Though this does not necessarily imply the ability for advanced future planning, it suggests that dogs have a rudimentary sense of temporal awareness, distinguishing between past occurrences and present actions (Kaminski, 2013).

Crows, recognized for their exceptional problem-solving skills, demonstrate a sophisticated understanding of causal relationships. Studies on New Caledonian crows reveal that they can infer the presence of hidden causal agents, a cognitive ability previously thought to be unique to humans and great apes (Taylor, 2012). Additionally, research on corvids suggests that these birds possess a rudimentary form of future planning. Western scrub-jays, a close relative of crows, have been observed caching food in anticipation of future scarcity, indicating a capacity to plan for long-term needs rather than acting purely on instinct (Raby, 2007). While the exact nature of their time perception remains unclear, studies on corvid decision-making reveal that these birds can delay gratification when a higher-quality reward is expected, reflecting a primitive yet functional sense of temporal awareness (Hillemann, 2014). These findings suggest that crows, like other members of the corvid family, engage in complex cognitive processes that involve both causal reasoning and an awareness of future outcomes.

Collectively, these findings suggest that time perception likely emerged as an evolutionary adaptation, facilitating survival strategies. In humans, this faculty became more refined, evolving into a subjective sensation of time's passage, closely linked to memory, anticipation, and consciousness. Michael Levin's research on bioelectric signalling demonstrates that even at the cellular level, living systems exhibit a kind of temporal awareness—a structured process of anticipation and self-organization. Cells are not merely responding to external stimuli in the present; instead, they use bioelectric gradients to predict and guide their future states. This predictive capacity forms the foundation of biological time perception, showing that time is not just measured externally but

generated internally. In developing organisms, cells communicate through electric fields to coordinate what shape they will form in the future—long before these structures actually appear. For example, in planarian flatworms, if part of the body is cut off, the remaining cells already 'know' the correct structure they need to regenerate—whether it's a head or a tail. This occurs through bioelectric pre-patterning, where cells store and process spatial-temporal information before physical changes happen. This suggests that time, in some form, already operates within biological self-organization—not as an external force, but as an emergent, self-directed process encoded in living systems.

Levin's findings resonate with modern neuroscientific models of time. Just as cells predict and organize their future morphology, the human brain does not passively experience time but actively constructs it by anticipating future events. Neuroscientists like Karl Friston argue that biological systems minimize uncertainty by continuously predicting what will happen next. This is known as the Free Energy Principle. The brain organizes memories, present experiences, and expectations of the future into a coherent temporal framework—just as cells prefigure spatial organization through bioelectric fields. This leads to a profound insight. Time is not merely 'out there' as an independent entity but emerges through the structure of life itself. Even simple biological systems exhibit temporal organization, meaning time is woven into the very fabric of living processes, not imposed from the outside. This parallels Iqbal's vision of 'Pure Time'—not as a fixed sequence but as an active force of becoming shaped by consciousness and creativity. Thus, bioelectric signalling reveals the earliest traces of time perception in living systems, reinforcing the idea that time is a self-generated, emergent phenomenon rather than an external flow. Similarly, research in cognitive neuroscience highlights how the brain actively predicts and structures its perception of time rather than passively experiencing it. Studies show that neural processes continuously generate expectations about upcoming events based on prior information, reinforcing the idea that temporal cognition is deeply rooted in predictive processing (Bubic, 2010). In this sense, biological development is not merely deterministic; rather, it engages in a form of structured "futuring"—a self-organizing process where patterns

unfold dynamically, guided by implicit temporal blueprints encoded within the system.

Iqbal's appreciative self operates on a remarkably similar principle, though at the level of conscious creativity rather than biological automation. Just as bioelectric networks in cellular regeneration prefigure future morphology, Iqbal's self is an active generative force—not passively shaped by external conditions, but rather a fountainhead of creation, a white-hole of emergence, continuously unfolding new realities. This notion is deeply embedded in Iqbal's philosophy, where time is not just a backdrop but a dynamic force of self-actualization, reinforcing a continuous process of becoming (Mohomed, 2017). However, the crucial difference lies in awareness: the regenerative system of cells follows a preordained, unconscious temporal logic, whereas Iqbal's self is conscious, wilful, and self-actualizing.

This perspective aligns with broader inquiries into the role of temporality in self-organizing systems, suggesting that the principle of structured emergence—whether at the level of cells, cognition, or selfhood—may offer a unified insight into the origins of time, creativity, and form across disciplines in biology, neuroscience, and philosophy. Similar self-organizing principles are observed in large-scale biological systems, where coordinated patterns emerge without a central guiding force, reinforcing the notion that structured anticipation operates across multiple levels of life (Camazine, 2003). The crucial implication of this phenomenon is that even at the most fundamental level, biological assemblies exhibit an intrinsic form of temporal structuring, responding not only to present stimuli but also organizing in ways that anticipate future states. If this is the case, then it is reasonable to hypothesize that time perception—however primitive—may have originated at the microscopic level, embedded within the very fabric of biological self-organization.

This idea finds further support in unicellular organisms such as Euglena, which exhibit phototaxis, responding to light-based environmental cycles (Diehn, 1967). While this does not necessarily indicate a conscious awareness of time, it suggests that even at a unicellular level, biological systems synchronize with external periodic

changes. Additionally, some microorganisms, such as cyanobacteria, exhibit circadian-like rhythms, reinforcing the idea that time-regulated behaviour emerged early in evolution (Golden, 1997). This evolutionary perspective is further supported by research showing that biological clocks provided early life forms with adaptive advantages (Pittendrigh, 1993). If this argument holds true, then time perception is not merely an externally imposed construct of physical laws but an actively generated phenomenon within living systems. Even at the unicellular level, a form of temporal processing emerges as an intrinsic feature of life, suggesting that time perception is not a passive response but an inherent property of biological and cognitive structures.

This brings us to a crucial assertion: External stimuli act upon an organism's consciousness only if the consciousness is receptive to external influence. However, even if isolated from external stimuli, a system capable of internal self-awareness would still perceive change, sequence, and passage, thereby generating its own intrinsic sense of time. A powerful way to illustrate this hypothesis is through a thought experiment:

Imagine a mind with all its memories, emotions, and cognitive faculties intact, yet entirely isolated from the external universe. Would this mind still experience time? While some argue that time perception depends on external cues, it is likely that even in the absence of external stimuli, the mind's internal processes—such as emotional transitions, memory recall, and anticipation—would continue to generate a sense of sequence and change. This strongly suggests that while time may be influenced by external factors, its core experience is actively constructed by internal cognitive processes rather than being an inherent property of the universe. In such a scenario, external rhythms, such as the rising and setting of the sun, become irrelevant. The mind's intrinsic flow remains the sole source of temporal awareness, reinforcing the argument that time emerges from within and is later synchronized with external patterns.

3. Where Should We Look for the Answers?

If we want to uncover the true nature of time, we first need to determine where to look for answers. Historically, discussions on time

have revolved around a few fundamental areas where its reality might be examined. Broadly, we can explore five key domains:

1. Periodic Motion in the Universe – The universe contains repeating patterns that are constantly in motion, such as planetary orbits and atomic vibrations. Can these patterns reveal the presence of time?

2. The Growth of Disorder (Entropy) – The natural progression from order to disorder is a fundamental characteristic of reality. Does this irreversible change indicate the existence of a real, objective time?

3. Relativity (Special and General) – Einstein's theory of relativity suggests that time is dependent on the observer's motion and gravitational field. Does this imply time is relational rather than fundamental?

4. The Mind's Perception of Change – Our thoughts and mental states are always shifting. Since change implies time, could time be something that exists only in our perception?

5. The Principle of Least Action: In physics, many natural processes follow the principle of least action, where systems evolve in a way that minimizes a certain quantity. Could this optimization process be the fundamental origin of time?

To systematically approach the problem, we must examine each of these areas in turn. Let's begin with periodic motion—one of the earliest human intuitions about time.

3.1 Periodic Motion in the Universe

One of the oldest ways humans have measured time is through repetitive cycles—the rising and setting of the sun, the orbits of planets, and even atomic vibrations (Whitrow, 1980). However, while periodic motion serves as a useful measurement of time, does it define what time actually is? Upon closer examination, periodic motion alone does not determine the directional flow of time. Moreover, at a microscopic level, atomic motion follows quantum rules without distinguishing between past and future (Feynman, 1965). If an observer examines an atomic system in isolation, he may find no intrinsic marker of time's direction, except in cases where quantum decoherence introduces asymmetry (Zurek, 2003). This aligns with the fact that the fundamental laws of physics—Newtonian

mechanics, quantum mechanics, and even relativity—are largely time-reversible, meaning they work the same whether time moves forward or backward (Price, 1996). However, Einstein's theory of relativity significantly redefined time as a coordinate within the fabric of spacetime rather than an absolute, independent entity (Einstein, 1916). While relativity mathematically describes time's behaviour under different conditions, it does not fully resolve whether time possesses an intrinsic direction or is merely a relational construct between events (Barbour, 1999). A helpful analogy is a recorded video of a repetitive motion, such as a swinging pendulum or a planet orbiting a star. If we were to play the recording in reverse, an observer would struggle to tell whether the motion was happening forward or backward in time. This suggests that while periodic motion provides a means to measure time, it does not, on its own, establish an inherent direction or fundamental reality of time.

3.2 The Growth of Disorder (Entropy): The Arrow of Time

The second domain where we should look for answers regarding the nature of time is entropy, or disorder in nature. One of the strongest arguments for the objective passage of time comes from the Second Law of Thermodynamics, which states that entropy—often described as the measure of disorder—tends to increase in a closed system. This irreversible increase is what defines the 'arrow of time' (Hawking, 1988). This aligns with our everyday experience: we remember the past but not the future, presumably because entropy increases rather than decreasing (Carroll, 2010). However, while entropy provides a compelling explanation for why time appears to 'move forward,' it does not necessarily prove that time is a fundamental feature of reality. The laws of physics, including those governing classical mechanics, quantum mechanics, and relativity, are largely time-symmetric—they do not inherently distinguish between past and future (Loschmidt, 1876). If the universe's fundamental equations operate just as well in reverse, then why does time appear to flow in only one direction? Some physicists argue that the arrow of time may not be an intrinsic property of nature but rather an emergent phenomenon, arising from the statistical properties of large systems (T-symmetry).

Still, entropy remains the most persuasive argument for the passage of time as we experience it. Yet, paradoxes such as Maxwell's Demon suggest that entropy—and therefore time's direction—could be manipulated by intelligent intervention, hinting that time's objectivity may be less absolute than traditionally assumed (Wheeler–Feynman Absorber Theory). If entropy is the only empirical basis for time's flow, then time itself might not be an independent entity but rather a construct shaped by thermodynamic principles. As our universe evolves, some physicists suggest that time might become increasingly subjective, tied more to observation and information processing than to an absolute cosmic reality (Carroll, 2010). Maxwell's Demon, first proposed by James Clerk Maxwell in Theory of Heat (Maxwell, 1872), challenges the Second Law of Thermodynamics by raising profound questions about the relationship between entropy and information. The Second Law states that entropy always increases in a closed system. However, Maxwell imagined a hypothetical demon capable of sorting fast and slow gas molecules, appearing to locally decrease entropy and seemingly violate the Second Law. This paradox puzzled physicists for decades until Leo Szilard (Szilard, 1929) demonstrated that in order to perform its task, the demon must store and process information somewhere (perhaps in his mind), which itself carries an entropy cost (Szilard, 1929). A key breakthrough in resolving the paradox came with Landauer's Principle, which states, "The erasure of information is always accompanied by an increase in entropy" (Landauer, 1961).

This insight proved that while the demon may create local order, it cannot escape the fundamental increase of entropy elsewhere—specifically in its own memory or the surrounding environment (Earman, 1998). This resolution reinforces the idea that entropy is not merely about physical disorder, but also about the relationship between information processing and thermodynamic constraints. This raises an even deeper question: What if all entropy were absorbed into a single mind—whether an intelligent being or even a divine consciousness? In information theory, pioneered by Claude Shannon, entropy quantifies uncertainty or missing knowledge, much like it measures disorder in thermodynamics (Shannon, 1948).

- In physics, entropy quantifies disorder in a system.
- In information theory, entropy measures uncertainty or missing knowledge.

If a system were completely known, its informational entropy would be minimized. This suggests a radical implication for time: If entropy dictates the arrow of time, and entropy is closely linked to missing information, then time itself may emerge from how we process and interpret information—rather than being an intrinsic property of the universe (Maruyama, 2009). A profound philosophical and theological question arises then: Would an omniscient being experience time at all? Many religious traditions describe God as timeless, existing beyond past, present, and future (Augustine, 2008). If an all-knowing intelligence exists, then from its perspective, there is no disorder—everything is already known, structured, and never lost to randomness.

Since entropy defines our experience of time, an entity that absorbs all entropy would not experience time as we do. Instead, time would become entirely subjective, existing only within the mind of the observer rather than as an external phenomenon (Barbour, 1999). However, while entropy provides a compelling explanation for time's direction on a cosmic scale, it does not fully account for how living beings perceive and interact with time on an experiential level. The brain does not passively observe time as dictated by thermodynamic processes; rather, it actively constructs time as a predictive model of reality. Neuroscientific research suggests that perception of time is not a mere by-product of entropy but an anticipatory mechanism that allows biological systems to navigate their environment efficiently.

Instead of simply following an entropic 'arrow of time,' the brain operates by continuously predicting future states based on past experiences—minimizing uncertainty through learned patterns. This perspective aligns with Karl Friston's Free Energy Principle, which posits that living organisms reduce surprise and entropy by forming structured, adaptive models of their surroundings (Friston, 2010). Thus, entropy dictates the direction of time at the cosmic level, yet the time of entropy itself may not be fundamental—much like temperature, which ceases to exist at the level of a single molecule. Meanwhile, at the cognitive level,

the brain's predictive processing shapes the fluidity of time. These perspectives are not contradictory but complementary, each operating at a different scale of reality—one governing the universe's irreversible progression, the other shaping our subjective experience of time within it.

3.3 Relativity: Time as a Coordinate of Spacetime

In relativity, time is not an absolute entity but rather a coordinate that depends on the observer's motion and gravitational field. This dependency arises because, in special relativity, time dilation occurs due to an object's velocity, while in general relativity, the presence of massive astronomical objects alters the passage of time. However, treating time as a coordinate raises a fundamental question: if time is relative to motion and gravity, does it retain an independent, objective existence, or is it purely a relational construct? To understand this, let's first clarify what a coordinate represents. A coordinate specifies a position within a given reference system. In Minkowski spacetime, the standard three spatial dimensions (x, y, z) are extended by a fourth coordinate, time, which is represented as act to ensure dimensional consistency with space.

This formulation suggests that time is treated mathematically as just another spatial coordinate rather than an independent entity. But if time is merely an additional spatial dimension, it loses its foundational status as 'time' in the intuitive sense. Instead of being the medium through which change occurs, time in relativity becomes dependent on an observer's state of motion, meaning it is not an intrinsic feature of reality but rather a relational construct. A crucial problem arises here: if time changes based on an observer's motion or gravitational field, then it lacks an independent, objective existence. True fundamental entities should remain invariant across all frames of reference. However, in relativity, time can contract, dilate, or even seemingly come to a halt from certain perspectives, such as near an event horizon. If time can be stretched, contracted, or nearly halted under extreme conditions, does it have an independent ontological status, or is it fundamentally relational?

Moreover, in the relativistic framework, motion vectors can point in any direction, and their components adjust accordingly. This means that if an object moves at a fraction of the speed of light, the time component on

the graph becomes shorter, and at lower speeds, it expands. This is the essence of time dilation in special relativity. However, this leads to deeper paradoxes—if time can stretch and contract depending on motion, and if it can nearly stop under extreme gravitational effects, then it is not time in the sense that we are familiar with. Let's take an example to understand this further. To illustrate a central tension in contemporary physics, consider the following thought experiment, adapted from Donald Hoffman's work (Hoffman, 2019). In order to probe smaller scales of physical reality, physicists employ light or other forms of radiation with increasingly shorter wavelengths. According to well-established principles of quantum mechanics and optics, the smaller the target scale, the higher the energy of the probing radiation must be (Griffiths, 2018).

To investigate structures at the Planck length (approximately 1.6×10^(-35) meters), in principle, require a photon with correspondingly high energy—on the order of the Planck energy (1.22×10^19 GeV) which vastly exceeds the energies accessible by current technology. However, general relativity introduces a paradox at this scale: concentrating such an immense amount of energy in an extremely small region of space would theoretically lead to the formation of a black hole due to gravitational collapse (Kiefer, 2012). This implies that any attempt to observe phenomena at the Planck scale might be self-defeating, as the act of measurement would obscure the very region being studied behind an event horizon.

This paradox highlights a profound incompatibility between the macroscopic framework of general relativity and the microscopic framework of quantum mechanics. It also raises critical questions about the status of spacetime—and, by extension, time itself—as a fundamental component of physical reality. If our most basic tools of observation break down at this scale, it is conceivable that spacetime is not fundamental but emergent, arising from deeper non-spatiotemporal structures. Such a view remains speculative but has gained traction among physicists and philosophers exploring the foundations of quantum gravity. While definitive empirical validation remains elusive, this line of reasoning supports the increasingly influential hypothesis that time may not be a fundamental feature of the universe, but rather an emergent phenomenon

tied to higher-level structures such as entropy, observation, or consciousness. Einstein's relativity introduced a profound shift in how time is conceptualized. It by some interpretations imposes even a harder determinism onto the reality which is known as the Idea of Block Universe. This view, posits that past, present, and future all exist simultaneously—time is just another dimension like space (Putnam, 1967). In this model:

- The flow of time is an illusion.
- The universe is a static four-dimensional structure where all events are 'laid out' in spacetime.
- The passage of time is merely a cognitive construct imposed by human perception.

This idea has profound implications: If time is already 'laid out' in the fabric of spacetime, does this imply a predetermined future? If so, does it challenge the notion of human agency, or is there still room for subjective experience and choice?

Philosopher and physicist Julian Barbour takes this idea even further, arguing that time itself does not exist at the most fundamental level. He proposes that what we perceive as the passage of time is merely a series of static 'Now' configurations, and that change is just a difference between these configurations rather than something unfolding within time itself. As Barbour puts it, "If you can see all of eternity, then time disappears." (Barbour, 1999)

According to Barbour, the universe can be understood as a timeless configuration space he calls 'Platonia,' where all possible states coexist. In this view, change is merely a transition between configurations rather than a progression through time. In this view, time is not an external reality but an emergent property of relationships between different physical states. His radical rethinking of time challenges both block universe and the presentist view, suggesting that there is no true flow of time—only change without time. The notion that the distinctions of past, present, and future may be mere projections of human consciousness is not a novel conclusion born solely from Einstein's theory of relativity. As early as J. M. E. McTaggart (1908) argued in his seminal paper The Unreality of Time that

these temporal distinctions are not intrinsic to reality itself, but rather imposed upon it by our modes of perception. His argument anticipates aspects of the Block Universe interpretation suggested by relativity, reinforcing the idea that the experience of temporal flow may be a cognitive illusion (McTaggart, 1908).

Iqbal anyhow, rejected the Block Universe interpretation of relativity, and said, “It appears to me that time regarded as a fourth dimension of space really ceases to be time.” (Iqbal, 2011) He argued that time is not a passive dimension as Einstein’s Relativity’s interpreters suggested but an active force of becoming. He saw time as dynamic, shaped by human action and experience rather than a fixed backdrop. Unlike deterministic models, Iqbal emphasized:

- The self does not exist in time; it creates time through action.
- The future is open-ended, unfolding through human agency.
- Time is not just a measurement but a lived experience.

This aligns with Bergson’s la durée, which views time as qualitative rather than a mathematical construct. Iqbal’s critique was not of relativity itself but of interpretations that strip time of agency, reducing it to a static structure rather than a field of transformation. "Serial time is pure duration in which the ego creates for itself successive degrees of freedom and infolds its past and unfolds its future." (Iqbal, 2011).

4. The Mind’s Perception of Change: The Lived Experience of Temporality

While relativity explains time in terms of physics, it does not address how we directly experience it as a continuous, flowing entity. This is where neuroscience, philosophy, psychology, sociology, and mysticism contribute to the discussion. Let’s first see what neuroscience says about the time perception?

4.1 Neuroscience and Time Perception

Buonomano asserts that the human brain functions not only as a timekeeping mechanism but also as an active constructor of temporal experience, shaping the perception of chronological flow and facilitating ‘mental time travel’—the cognitive ability to simulate past and future

events (Buonomano, 2017). Research (Garcés, 2025) strongly supports the role of the fronto-parietal network, cingulate cortex, and cerebellum in temporal processing and subjective time perception. The fronto-parietal network is involved in integrating sensory information with working memory, allowing for temporal attention and expectancy. The cingulate cortex, particularly the ACC, helps regulate cognitive control over timing, influencing subjective time dilation and error monitoring in temporal judgments. The cerebellum, traditionally viewed as an internal clock, fine-tunes precise timing, especially in sensory prediction and interval estimation. Together, these regions form a distributed neural system that structures time perception, enabling us to process durations, sequence events, and anticipate when things will happen.

Additionally, time perception is influenced by emotional and interoceptive signals, demonstrating that the brain does not merely track external time but constructs its flow based on cognitive and affective states. Another research Pollatos (2014) indicates that time perception is shaped by emotional arousal and interoceptive signals, with the brain constructing the flow of time based on cognitive and affective states. Heightened arousal often causes time to feel slower, while interoceptive awareness alters time perception by integrating internal bodily cues. The insular cortex, which processes both emotional and interoceptive information, plays a key role in this integration, emphasizing that our sense of time is actively constructed rather than passively recorded.

4.2 Constantly Changing Conscious States of Mind

Before delving into mind's perception of time, we must first acknowledge the constant flux of mental states—a person may feel joyful in one moment, anxious in the next, then melancholic, then enraged, and so on. Change is inseparable from time; without time, no transition could occur. If mental states are in perpetual motion, in what time do they change? As we explored in a previous thought experiment, these transitions do not unfold with reference to external time—in fact, they often occur independently of the external clock, shifting at their own pace. This suggests the existence of time intrinsic to consciousness itself, a time

that can be felt and experienced even in the absence of external stimuli. But what exactly are these shifting mental states?

Unlike material objects or their properties, these states are consciously experienced phenomena, raising a profound question in contemporary science: Are conscious states merely emergent properties of matter, or do they represent something fundamentally distinct? This dilemma is what David Chalmers famously termed the 'Hard Problem of Consciousness.' Chalmers formulates the problem as, "The hard problem of consciousness is the question of how physical processes in the brain give rise to subjective experience" (Chalmers, 1995). He distinguishes this from the 'easy problems' of consciousness—such as perception, attention, and cognitive processing—which can be explained by neural mechanisms. The hard problem, however, concerns why and how subjective experiences (qualia) emerge from physical processes. Chalmers further elaborates,

> Even when we have explained the performance of all the cognitive and behavioural functions in the vicinity of experience—perceptual discrimination, categorization, internal access, verbal report—there may still remain a further unanswered question: Why is the performance of these functions accompanied by subjective experience? (Chalmers, 1995)

This statement encapsulates the central mystery: even with a complete understanding of neural activity, we still lack an explanation for the very existence of first-person experience. Consciousness, then, remains an unsolved enigma for science, yet it is precisely within this inner theatre of experience that all changes in mental states occur. What, then, is time? This question brings us to Henri Bergson's notion of La Durée—a concept that challenges conventional scientific views of time. As we saw earlier, Kant and Schopenhauer held that time is a faculty of the mind rather than an external reality. Bergson expands on this idea, drawing a fundamental distinction between measured, external time and lived, subjective time, rejecting the mechanistic view of temporality inherited from classical physics. In Time and Free Will (1889/2001), he argues that scientific time is merely a spatialized abstraction, reducing time to discrete, measurable units such as seconds, minutes, and hours. Our lived

experience of time, however, does not unfold in separate, countable moments but as a continuous, indivisible flow.

This distinction becomes clearer through Bergson's analogy of music: when we listen to a melody, we do not perceive it as a series of detached notes, but as a seamless whole, where each note is infused with the memory of the past and the anticipation of the future. Similarly, our experience of life is not a succession of isolated events but a fluid, interwoven continuum of past, present, and future. Bergson writes,

> As happens when we recall the notes of a tune, melting, so to speak, into one another. Might it not be said that, even if these notes succeed one another, yet we perceive them in one another, and that their totality may be compared to a living being whose parts, although distinct, permeate one another just because they are so closely connected? (Bergson, 1889/2001)

This is what Bergson termed la durée, or pure duration. He further explains,

> Pure duration is the form which the succession of our conscious states assumes when our ego lets itself live, when it refrains from separating its present state from its former states. In this way, it does not perceive them as distinct elements juxtaposed to one another, but as a continuous flow in which nothing is distinguishable from what has preceded (Bergson, 1889/2001).

This passage encapsulates Bergson's critique of the scientific reduction of time to a spatialized sequence, emphasizing that time as we actually experience it is qualitative, not quantitative. He contends that measuring time imposes a false spatial structure onto a phenomenon that is inherently fluid. In contrast, la durée represents the inner, lived reality of time, where past and present interpenetrate dynamically, rather than existing as fixed and separable entities.

4.3 Spiritual Traditions of the Perspectives of Time

The nature of time has been one of the most profound inquiries in both spiritual and philosophical traditions. While science often treats time as an objective sequence of events, spiritual traditions question its

fundamental nature—whether it is real, illusory, linear, cyclic, or a mere construct of perception. Many mystical traditions attempt to go beyond time, considering it either a veil or an instrument of divine manifestation. Islamic thought, particularly in the Qur'anic worldview, presents a distinct and profound conception of time—one that is neither merely subjective nor wholly deterministic but rather a continuous unfolding of divine creativity. In this sense, time is not just an external measure of existence but an integral part of reality's becoming. The Qur'an however, presents a particularly profound conception of time, portraying reality itself as an ever-unfolding process, rather than a fixed, linear structure. This notion is encapsulated in the verse, "Every moment He shows a novel excellence." (Quran 55:29).

This statement signifies that God is continuously in the act of creation, suggesting a dynamic and ongoing renewal of existence. Within the Qur'anic framework, divine time can be understood as 'creative awareness'—an eternal present that is perpetually manifesting, much like light. This perspective finds further theological support in the Hadith of the Prophet (Peace be Upon Him), "Do not curse time, for indeed, Allah Himself is Time" (Sahih Muslim, 2246). This profound statement, also referenced by Iqbal in his philosophical reflections, suggests that time is not an independent entity but a direct expression of divine will. Unlike the mechanistic, linear notion of time found in classical physics, the Qur'anic view aligns more closely with a continuous process of becoming, where divine presence unfolds moment by moment, rather than existing as a static framework.

The Qur'an itself presents light as the sole explicit ontological metaphor for God, "Allah is the Light of the heavens and the earth" (Surah An-Nur 24:35). From a philosophical standpoint, this analogy is significant. Light, despite being omnipresent in space, remains invisible unless it interacts with matter. The universe, though permeated by light, appears dark unless illuminated through interaction with physical objects. Similarly, divine presence, while pervading all existence, is only perceptible through its manifestations in both the material and spiritual realms. Just as scientific instruments allow us to infer the existence of

unseen light, human cognition and spiritual insight enable an awareness of the divine.

This juxtaposition of time and light in the Qur'an suggests a deeper syllogistic connection between the two. If time, as per the Qur'an, is an ongoing revelation of divine excellence, and divine Self is described as light, then it follows that light itself is the medium through which divine novelty is ceaselessly manifested—both in the external, objective universe and in the internal, subjective consciousness. While the Qur'anic view integrates time with divine renewal, mystical traditions within Islam expand upon this idea, exploring time as more than an external reality. Rather, they see it as an inward, experiential phenomenon—one that is not merely measured but lived and transcended in the pursuit of divine reality. Among these traditions, Suhrawardī's illuminationist philosophy stands out for its deep connection between time, light, and divine manifestation, as discussed by Iqbal (1908) in The Development of Metaphysics in Persia, *Suhrawardī* posits that the 'Primal Light' is the ultimate reality, continuously illuminating all existence. Just as light actively manifests reality and sustains all being, the Qur'anic conception of time presents divine activity as an ongoing, ceaseless renewal of existence (*kulla yawmin huwa fī shā'n*). Moreover, Suhrawardī's rejection of dualism—where darkness is merely the absence of light rather than an independent force—resonates with the Qur'anic portrayal of time as not an autonomous entity but an expression of divine will. This further strengthens the connection between time and light as intertwined aspects of divine manifestation.

While this discussion naturally lends itself to a broader ontological argument concerning the existence of God, the present inquiry remains focused on the nature of time. Within this framework, the Qur'anic conception of time appears as an ever-renewing creative force, intimately tied to light as both a physical and metaphysical phenomenon. This perspective not only aligns with traditional spiritual thought but also invites further exploration into its implications for contemporary philosophy and metaphysics. In Islamic mysticism, the nature of time has captivated Sufi thinkers across different traditions. Prominent figures such as Shahāb al-Dīn Suhrawardī, Ibn Arabi, and Jalāl al-Dīn Rūmī perceive

time not as an external absolute but as an internal, subjective tool—a medium through which the soul gradually assimilates into ultimate reality (Iqbal, 1908).

In Sufi thought, time is not a rigid framework but a veil that obscures the eternal present, separating human perception from divine reality. Jalāl al-Dīn Rūmī describes this veil as the illusion of past and future, which must be transcended to reach true awareness. He urges the seeker to abandon temporal attachments, "Past and future veil God from our sight; burn up both of them with fire." (Rumi, 2004) But what remains when past and future are burned? The present moment itself—the ever-renewing reality that Rumi calls '*Ablaq-e-Ayyam*' (the galloping steed of time). In Persian and Arabic tradition, a piebald horse symbolizes both swiftness and unpredictability, a creature moving forward without hesitation, yet marked by dual colours—representing the interplay of light and darkness, being and becoming. Unlike the linear, measured flow of time in ordinary perception, this moment is not static but a force in constant motion, ceaselessly unveiling divine realities as it rushes forward. Rumi vividly captures this, "Like that piebald horse of time, it rushes forward, crossing the waterfall." (Rūmī, 2004)

Here, the present moment is not static—it is a force that rushes forward, ceaselessly unfolding divine novelty. The seeker ('ashiq) does not merely ride time passively but harnesses it by expressing divine excellence through the self. This aligns with the Qur'anic principle, "Every moment He shows a novel excellence" (Surah Ar-Rahman 55:29). This understanding is further illuminated in Iqbal's thought, where he emphasizes that a true believer (mu'min) is in a constant state of renewal, manifesting divine brilliance through action and speech, "At every moment, the true believer (Momin) radiates a new excellence, in word and deed, a living proof of God's presence" (Iqbal, 1935).

Thus, when the ego (self-awareness) is purified and aligned with divine will, it does not merely exist within time—it actively shapes and manifests divine excellence within it. Time, in this sense, is not an external reality but the medium through which divine self-disclosure (*tajalli*) occurs. Rumi's galloping horse of time—*ablaq-e-ayyam*—is not merely a metaphor for fleeting existence but for the dynamic present in which the

awakened self becomes a conduit of divine creativity. By burning the illusions of past and future, one enters the true nature of time—a realm where each moment is a stage for divine expression.

Another prominent mystic philosopher, Ibn Arabi's perspective on time is deeply tied to his doctrine of *wahdat al-wujud* (Unity of Being), where time emerges as a by-product of creation itself. In *Fusus al-Hikam*, he suggests that time has no independent reality but is instead a property of created beings—a relational framework through which existence unfolds in multiplicity. Before creation, there was only divine timelessness (*azal*), an undifferentiated reality beyond past, present, and future. Time, therefore, comes into being with the manifestation of the cosmos, serving as the medium through which divine self-disclosure (*tajalli*) is actualized. Since creation is a continuous process, time is likewise perpetually renewed in each moment (*kulla yawmin huwa fī shā'n*), making it not a static container but a dynamic unfolding of divine presence (Dagli, 2001). Thus, in Ibn Arabi's vision, the genesis of time is inseparable from the genesis of existence itself—it begins the moment God manifests the world from His infinite, timeless reality (Dagli, 2001).

The mystical critique of time is not exclusive to Islamic thought. Western and Eastern traditions alike have viewed time as an illusion, a suffering, or a cycle to be broken. Arthur Schopenhauer's metaphysics, for instance, is similar to Sufi notions of *fana* (self-annihilation), while Buddhist thought similarly regards time as a mere construct of perception rather than an inherent reality (Dōgen, 2001). Some of the mystic western philosophical traditions treat time as painful illusion. Arthur Schopenhauer's metaphysical framework presents time as a mere construct governing the realm of representation, while the underlying reality—the Will—exists beyond time (Schopenhauer, 1844). His concept of self-denial and the negation of the Will resonate deeply with Sufi *fana* (annihilation of the self), where the soul evolves beyond temporal existence.

In Buddhism, too, Nirvana represents liberation from the cyclical illusion of time, much like Schopenhauer's idea of transcending time-bound suffering. The Buddhist philosopher Nagarjuna, a key figure in *Madhyamaka* philosophy, argued that time is an illusion generated by the

mind rather than an inherent property of reality—an idea strikingly similar to Bergson's claim that our perception of time is imposed by the intellect rather than discovered in nature (Garfield, 1995). Hindu and Buddhist traditions further elaborate on the cyclicality of time, contrasting with the linear model predominant in the West. The concept of Samsara—an endless cycle of birth, death, and rebirth—frames time as recurring rather than progressing toward a fixed end. Karma, as a governing force of this cycle, makes time non-linear, where past actions shape the present and future in an interconnected web. Liberation (Moksha/Nirvana) is thus described as freedom from the illusion of temporal constraints, reinforcing the view that true existence lies beyond the grasp of sequential time (Britannica, 2024).

These mystical and philosophical perspectives challenge the deterministic and mechanistic notions of time found in classical physics, instead presenting it as a fluid, subjective, or even illusory construct. They converge in the idea that transcending time—whether through mystical experience, philosophical contemplation, or spiritual enlightenment—leads to a higher reality beyond the constraints of past, present, and future. While Iqbal draws ideas from Sufi thought, particularly Rumi, he refashions time as a creative battleground—a realm where the self (*khudi*) must exert its will to shape reality. His poetry echoes the imagery of Rumi's 'galloping horse of time,' but with an added emphasis on action—on time as a canvas upon which divine creativity unfolds through the agency of a self-aware individual. Thus, in Iqbal's philosophy, the self does not merely transcend time; it transforms it.

Unlike Newtonian absolute time or Einstein's Block Universe, where past, present, and future coexist statically, Iqbal envisions time as a creative force of becoming, shaped by human will. His poetry echoes Rumi's idea of the 'piebald horse of time' but with an added emphasis on human agency as an instrument of divine manifestation. This perspective challenges both mechanistic determinism and mystical fatalism, placing the evolving self (*khudi*) at the centre of time's unfolding reality. These mystical perspectives align with modern insights into subjective time perception, where time is not an objective flow but an internal construct shaped by memory, emotions, and cognition. The Buddhist philosopher

Nagarjuna, for instance, argued that time is a mere conceptual framework, much like Bergson's critique of spatialized, measurable time imposed by the intellect.

Thus, in Iqbal's philosophy, time is not merely an abstract concept or an external force—it is a realm of action, a canvas upon which the self (*khudi*) expresses divine creativity. Iqbal envisions time as a spiritual challenge—one that the self must engage with, master, and ultimately transform. His view, therefore, stands at the intersection of divine manifestation, human will, and the perpetual renewal of existence.

4.4 The Role of Iqbal's Creative Time

Iqbal rejects the notion that time is merely an external, mechanical measurement. Instead, he argues that true time—Pure Time (*Zamān-e-Khālis*)—is an active process of self-creation, emerging through agency and experience. He describes this as follows,

> Pure time, then, as revealed by a deeper analysis of our conscious experience, is not a string of separate, reversible instants; it is an organic whole in which the past is not left behind, but is moving along with, and operating in, the present. And the future is given to it not as lying before, yet to be traversed; it is given only in the sense that it is present in its nature as an open possibility (Iqbal, 2011).

While discussing Bergson's concept of time, Iqbal introduces two aspects of the self, which serve as a necessary background to understanding the true nature of time. He states,

> Conscious existence means life in time. A keener insight into the nature of conscious experience, however, reveals that the self in its inner life moves from the centre outwards. It has, so to speak, two sides which may be described as appreciative and efficient (Iqbal, 2011).

By bringing these two selves into discourse, Iqbal aligns Bergsonian time with the efficient self, while unveiling a deeper, more primordial self—an entity that does not merely perceive, but beholds reality in its wholeness, free from the fragmentation imposed by serial time. This inner self is not a passive spectator, but an active participant in the unfolding of

existence, observing while shaping, witnessing while creating—an architect of new worlds even as it contemplates the one before it. According to Iqbal, it is this self that possesses the entirety of destiny (*taqdīr*)—not as a fixed, preordained script, but as a living, dynamic reality unfolding in real time. Iqbal elaborates on this concept in the following passage,

> A deeper analysis of conscious experience reveals to us what I have called the appreciative side of the self. With our absorption in the external order of things, necessitated by our present situation, it is extremely difficult to catch a glimpse of the appreciative self. In our constant pursuit after external things, we weave a kind of veil round the appreciative self which thus becomes completely alien to us. It is only in the moments of profound meditation, when the efficient self is in abeyance, that we sink into our deeper self and reach the inner centre of experience. In the life-process of this deeper ego the states of consciousness melt into each other. The unity of the appreciative ego is like the unity of the germ in which the experiences of its individual ancestors exist, not as a plurality, but as a unity in which every experience permeates the whole (Iqbal, 2011).

The nature of time, in its metaphysical essence, differs significantly for the two aspects of the self: the efficient self and the appreciative self. The time of the efficient self corresponds to what Henri Bergson describes as la durée—a duration that attempts to reconcile itself with external measurement, striving for order through the rhythmic repetitions of nature. At times, this inner time aligns with the mechanical flow of clocks; at other times, it diverges so radically that the dissonance between internal experience and external chronology becomes immediately perceptible.

In contrast, the time experienced by the appreciative self is *subḥān*—pure and untouched by the quantitative, divisible structure of measured time. This time is not merely distinct from clock-time; it is sacred. On one hand, it mirrors the temporality of Ultimate Reality—a timeless Divine Presence; on the other, it is profoundly tied to the inward awareness of the appreciative self in self-conscious beings. Unlike the efficient self, which experiences temporal succession—one state following another—the appreciative self remains a constant witness, an unchanging observer of

all such transient phases. It is not subject to the flow of time but remains unaffected and self-identical, abiding in a state that is simultaneously *al-Awwal* (the First) and *al-Aakhir* (the Last). Iqbal insightfully remarks, "It is extremely difficult to catch a glimpse of the appreciative self," because our constant preoccupation with outward goals and objects forms a veil that conceals it. Nevertheless, in moments of deep meditative stillness, the presence of this self may be faintly felt—an encounter with a form of time that transcends the temporal and approaches the eternal. It is this sacred temporality that Iqbal refers to as pure time, and it is within this dimension that all reality is generated. While the efficient self, caught in the flux of becoming, is limited in its capacity to manifest excellence at every moment, it is the appreciative self—as the witness of the efficient self—that possesses the creative power to generate new realities, provided consciousness has matured sufficiently to express this inner potential.

Iqbal identifies this creative, indivisible, and organic time as *taqdīr*. He asserts that this is the Qur'anic understanding of destiny—one that has been widely misunderstood both within and outside Islamic thought. He writes, "It is time regarded as an organic whole that the Qur'an describes as *taqdīr* or destiny—a word which has been so much misunderstood both in and outside the world of Islam." (Iqbal, 2011) For Iqbal, *taqdīr* does not signify a fixed, predetermined fate, but rather refers to pure time—a dynamic and self-sustaining whole where the past and future are not isolated segments but are continuously woven into the creative present. This present is not a fleeting instant; it is a living field of potential, within which future possibilities emerge, shaped by the cumulative depth of past experiences—extending back to the origins of existence itself.

Iqbal further expands on this idea by linking *taqdīr* to another Qur'anic concept—the Preserved Tablet (*Lauh-e-Maḥfūẓ*). In his discussion on 'Thought', he describes it as an organic unity, akin to a seed that inherently contains within itself the entire structure of the tree it will become. He then draws a parallel to the Preserved Tablet, which he envisions not as a static record of predetermined events, but as a dynamic reality that unfolds through time,

> It is dynamic and unfolds its internal infinitude in time like the seed which, from the very beginning, carries within itself the organic unity

> of the tree as a present fact….This larger whole is, to use a Qur'anic metaphor, a kind of Preserved Tablet, which holds up the entire undetermined possibilities of knowledge as a present reality, revealing itself in serial time as a succession of finite concepts appearing to reach a unity which is already present in them (Iqbal, 2011).

This interpretation presents *taqdīr* not as a rigid script of fate, but as a continuously unfolding reality, where the present moment acts as the creative bridge between past causality and future potential. Thus, Iqbal's vision of *taqdīr* suggests that as soon as a self (*khudī*)—or even an ordinary object with a degree of individuality—emerges, its time begins. This temporal existence is not an externally imposed framework, but a self-generating process that grows alongside the entity itself—much like a branch extending outward from a tree. The branch does not merely stretch into space; rather, it carries within itself the entire history of the tree—its genetic memory, its formative struggles, and its inherent tendencies. Similarly, time is unidirectional, yet it retains within itself the imprint of all that has passed, continuously shaping what is yet to come.

This present moment, which generates new realities, is not merely a passive transition between past and future, but an active force of creation. It does not resemble the classical view of time as a river of discrete particles pushing each other forward in a linear sequence. Rather, it is an outward thrust—an unfolding of existence itself—where each moment gives rise to new structures, new events, and even new particles of reality. Iqbal quotes a Qur'anic verse in this context and attempts to emphasize the idea further by claiming that it's the nature of Reality to present itself as an originally new reality in each and every moment of its life (from the perspective of an observer).

> If time is real, and not a mere repetition of homogeneous moments which make conscious experience a delusion, then every moment in the life of Reality is original, giving birth to what is absolutely novel and unforeseeable. 'Everyday doth some new work employ Him,' says the Qur'an (Iqbal, 2011).

This view finds strong resonance with the Big Bang theory, which posits that time and space began simultaneously with the emergence of

matter (Weinberg, 1993). Iqbal seems to analogies the same for all entities assuming that the moment an entity comes into existence, so does its unique time. In this sense, Iqbal's concept of pure time is not as mysterious as it first appears. However, its genesis remains deeply linked to consciousness, suggesting that time, at its core, is not merely an objective flow but something intimately connected to the emergence of selfhood and creativity. This perspective finds compelling support in modern physics, where time does not passively emerge but is an intrinsic feature of existence itself. Just as Iqbal envisions time as self-generated through action, quantum mechanics suggests a similar principle at the most fundamental level. It may seem mysterious that Iqbal's metaphysical concept of time aligns so closely—almost mystically—with Feynman's modern physical interpretation of time. However, as enigmatic as this connection appears, it becomes surprisingly clear when traced step by step through the evolution of the universe.

Iqbal's 'Pure Time' emphasizes creative unfolding, where past and future interact dynamically. Interestingly, in quantum mechanics, Feynman's Path Integral also suggests multiple possible histories leading to a single outcome. While these ideas arise from different domains, they share a conceptual resonance in viewing time as a non-fixed process. The Big Bang demonstrates that time comes into existence the moment matter begins to exist. Similarly, Quantum Field Theory (QFT) suggests that time emerges as soon as particles materialize (Feynman, 1965). Richard Feynman's Path Integral formulation of quantum mechanics further supports this idea by revealing that particles do not follow a single, predetermined trajectory. Instead, they explore all possible/allowed paths between two points. However, due to quantum interference, most of these paths cancel out, leaving only the dominant ones—those that adhere to the principle of least action (Feynman, 1965).

This suggests that time is not a pre-existing framework through which events unfold; rather, it is an emergent property of how a system selects its own history. In this sense, time is not something an object moves through but something that materializes through the object's interaction with reality. This perspective aligns with Iqbal's vision of *khudi* as an active force that does not merely drift in time but sculpts its own

temporality—an unfolding process where the present retains the past while shaping the future. So far, we have developed that according to Iqbal, Human beings do not merely move through time; they shape time through their actions. Passive submission to time is an illusion; the self must actively create its own time. By restoring Iqbal's emphasis on time as creativity, we gain a deeper understanding that challenges both traditional physics and neuroscience. Time is not merely something to be measured—it is something to be lived, shaped, and actively constructed.

Despite analysing time through periodic motion, entropy, relativity, cognition and mind, we still lack a unifying principle that explains why time unfolds as it does. However, physics offers another foundational insight—one that applies across all domains: the Principle of Least Action.

5. The Principle of Least Action: Does Time Emerge from Optimization?

The Principle of Least Action (LAP) is considered one of the most universal laws of nature, governing everything from the trajectory of planets to the behaviour of subatomic particles. It states that systems evolve in a way that minimizes the action integral, meaning that objects do not move randomly but follow optimized paths—as if nature itself seeks efficiency.

In classical mechanics, LAP determines the shortest or least-energy-consuming path for any system. In quantum mechanics, Richard Feynman's Path Integral formulation extends this idea—showing that a particle takes all possible paths but only the ones satisfying LAP constructively interfere, becoming the actual trajectory (Feynman, 1965). This leads to a profound question: If LAP governs motion and causality, could it also dictate the emergence of time itself? If nature always selects the most efficient temporal pathway, then time is not merely an external dimension but an emergent effect of optimal decision-making at all levels of reality. This idea extends beyond physics. In thermodynamics, systems minimize free energy, mirroring LAP's optimization principle. In biology, metabolic pathways and neural activity follow least-energy principles. In cognition, the Friston Free Energy Principle suggests that the brain minimizes uncertainty through predictive processes, much like LAP-

driven optimization. Thus, time may not exist independently but arise through the universe's intrinsic drive toward efficiency and minimal action. If so, LAP could be the missing key to understanding time's origin, structure, and function across all levels of existence.

So, in a nutshell, modern neuroscience supports the idea that time is an actively generated phenomenon rather than an externally imposed structure. The Free Energy Principle, developed by Karl Friston, suggests that biological systems operate by minimizing uncertainty—constantly predicting and updating their models of the future. This aligns closely with the least-action framework, where systems evolve in a way that optimally reduces unnecessary fluctuations. Studies in cognitive neuroscience show that time perception is shaped by anticipatory neural processes rather than being a mere passive experience. This means that our experience of time is constructed internally through neural computations. If time emerges from prediction and optimization, then consciousness itself operates as a least-action system. It clearly means this action is the true expense of nature, nature obeys this optimization principle and the nature attempts the best possible thing. This directly connects with Iqbal's metaphysics: just as the self actively generates its own reality, so does the brain actively generate its experience of time. The parallel between *khudi* and neural self-organization suggests that time is not something we move through—it is something we co-create with every thought, action, and decision. Finally, across quantum physics, biology, and cognition, one unifying insight emerges: time is not a fixed, external reality but a phenomenon that arises through action, creativity, and optimization. Whether in Feynman's Path Integrals, where systems generate their own pasts and futures, or in biological anticipation, where organisms optimize survival through prediction, time consistently emerges from self-organization. This directly supports Iqbal's concept of Pure Time—not as a passive backdrop, but as a creative unfolding of existence. If time is not something pre-imposed on reality but something dynamically generated by it, then the ultimate question remains: What is the primordial force that organizes itself into being? Iqbal suggests that this force is *khudi*, while physics hints at an underlying principle of least action. Perhaps these two perspectives are not separate but complementary. Understanding time as an emergent, self-

directed process may be the missing key to uniting physics, metaphysics, and the experience of reality itself.

One more thing to clear is that LAP ensures that systems evolve optimally, but it does not preclude the role of selfhood in shaping the path of evolution. Just as nature selects the most efficient processes, selfhood navigates through these possibilities, defining its own trajectory. So, if time is the unfolding of action, and action emerges from selfhood, then perhaps the deepest secret of time is self-awareness itself—whether in the universe, the biological mind, or the depths of human consciousness.

Conclusion

The quest to understand time has often led us outward—toward celestial motions, thermodynamic arrows, and relativistic coordinates. Yet this inquiry reveals that the essence of time does not lie in clocks, equations, or entropy alone, but emerges from the inward pulse of life itself. Time is not an indifferent backdrop but an intimate process: sculpted by memory, anticipation, emotion, and most profoundly, by the self-aware will of living beings. From the anticipatory rhythms of cells to the complex constructions of the human mind, and from the creative agency of Iqbal's *khudi* to the divine unfolding of Qur'anic temporality, a single thread runs through: time is genesis, not geometry.

In tracing this inner genesis, the paper has shown that time is a self-organizing force, a rhythm generated by the very structure of existence—from the primordial stirrings of biology to the luminous creativity of the appreciative self. The philosophies of Schopenhauer, Bergson, and Iqbal converge with cutting-edge science to reveal that the experience of time is not passively received but actively composed. Iqbal's vision takes this insight further, presenting time as a sacred trust—an open canvas for selfhood to inscribe its becoming, echoing divine creativity in every moment. Thus, to ask what time is, is to ask what the self is—and what it might become. Time, in its truest form, is not a measure of change, but the very medium through which change gains significance. It is not something we merely pass through, but something we bring into being through the rhythm of our choices, the depth of our awareness, and the force of our becoming. And perhaps, as this exploration has humbly attempted to show,

time is the song of existence—sung by the universe, echoed by the soul, and composed by the self.

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