Time as the Structure of Unresolved Knowledge

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Abstract:
This paper proposes that time is not an independent entity or dimension but an emergent conceptual framework reflecting the interval of unresolved knowledge during interaction. By examining everyday uses of time—measurement, coordination, duration, waiting, causality, subjective experience, planning, history, and narrative—it reframes time as a signal of the epistemic tension between not knowing and knowing. The paper further clarifies how this epistemic model differs fundamentally from physical theories of time, such as Einstein's relativity, highlighting its unique focus on cognition and interaction.

Introduction:

Time is traditionally viewed as a fundamental dimension or a continuous flow, measured objectively and independent of observers. Yet in daily life and language, time serves many roles beyond measurement: it coordinates actions, expresses duration, orders causes and effects, structures narratives, and reflects subjective experience. This paper argues that these varied uses share a common root: time is a marker of incomplete knowledge and the gradual unfolding of understanding through interaction. Rather than flowing independently, time is the conceptual structure that captures the interval during which we "need more to know."

Time as Measurement and Retrospective Label:

When we say "it took three hours," we describe the duration between a starting point and resolution. Importantly, this duration is usually known only after the event's completion. Before starting, we do not truly know how long the process will last. The label "three hours" is therefore a retrospective assignment marking the distance through epistemic uncertainty.

Time as Coordination:

Scheduling a meeting at 5 pm exemplifies how time serves as a symbolic placeholder coordinating separate frames of knowledge and action. The agreed-upon time does not cause the meeting but marks the future moment at which two separate, unresolved states of knowledge are intended to converge.

Time as Duration and Waiting:

Describing an event lasting "for days" or telling someone to "give it time" captures the experience of ongoing interactional tension. The event or system is unresolved, and time is the placeholder for the expectation that further interaction will produce clarity. Waiting is thus not passive but an acceptance of epistemic delay.

Time as Cause and Effect Ordering:

We say "first this happened, then that" to order events causally. Time here functions as the structure organizing sequences of interaction where effects unfold only after causes, reflecting dependencies in the resolution of knowledge.

Time as Subjective Experience:

Expressions like “time flew by” or “it dragged on” illustrate how the felt passage of time corresponds to the density or sparsity of knowledge resolution. High-density interaction speeds understanding, while stagnation slows it, altering subjective temporal perception.

Time as Planning and Readiness:
Statements such as “it’s time to act” or “wait until the time is right” reflect thresholds of epistemic sufficiency. Action is only taken once enough knowledge has accumulated, and “time” is the symbolic boundary signaling readiness.

Time as History and Narrative:
When referring to “back then” or structuring stories with flashbacks, time segments past resolutions of uncertainty. Narrative time is not linear flow but a controlled sequence of revealing knowledge to the audience.

Relation to Einstein’s Physical Theory of Time:
It is important to clarify the distinction between the epistemic model of time presented here and the physical theory of time developed by Albert Einstein.

Einstein’s relativity unified space and time into a four-dimensional spacetime continuum, showing that time intervals depend on the observer’s frame of reference and velocity. His work is a mathematical and physical description of how clocks behave and how events relate within the fabric of the universe.

In contrast, the model in this paper approaches time as an epistemic and conceptual phenomenon. Time is viewed as the interval of unresolved knowledge during interaction rather than a physical dimension. It focuses on how humans and other observers experience, use, and understand time through cognition and language.

This epistemic perspective does not compete with or contradict Einstein’s physics but complements it by addressing the cognitive and informational aspects of time. While Einstein explained how time behaves in physical reality, this paper explores what time means as a marker of need more to know, highlighting time’s role in knowledge unfolding and interaction.

Conclusion:
Across its many uses, time consistently marks the interval between incomplete and complete understanding in interaction. By reframing time as the structure of unresolved knowledge, this paper unifies its diverse linguistic and experiential roles and highlights interaction and cognition as fundamental to temporality. This perspective encourages rethinking time not as an external dimension but as an emergent property of epistemic engagement with the world.