

The Authored Block

Eternalism, Compatibilist Freedom, and the Terminal State: An Integrative Reading of Relativistic Time and the Simulation-Theological Framework of The End of the Sixth Day

A companion paper to *The End of the Sixth Day* (Trailhead WebCraft, 2026)

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Abstract

This paper places two accounts of time in structured dialogue. The first is the standard relativistic and thermodynamic account as presented by the physicist Jim Al-Khalili, who organizes the subject around four problems: whether time flows, how quantum field theory may be reconciled with general relativity, what distinguishes the present moment, and what grounds the direction of time. The second is the simulation-theological framework of Speegle (2026), which reads the created order as an authored system, human history as a bounded formative period, and its terminal state as a restoration rather than an escape. My aim is integrative and constructive, not empirical. I do not offer relativistic physics as evidence for a theological claim, and I argue explicitly against that inference. I defend a weaker and more durable thesis instead. The two frameworks converge on a single structural commitment, that lived temporal experience is a partial and mediated presentation of a substrate not itself organized as we experience it, and that convergence is philosophically productive in both directions. I develop seven propositions from the shared commitment, then identify four points of genuine resistance where the physics tells against the theological framework and cannot be harmonized with it. The second set matters more than the first. A synthesis that harvests only the convergences is apologetics. One that carries the resistances is a contribution.

Keywords: eternalism; block universe; compatibilism; arrow of time; simulation hypothesis; theology of time; Novikov self-consistency; eschatology

1. Introduction

Weeks before his death in 1955, Einstein wrote to the family of his oldest friend, Michele Besso, that for those who believe in physics the distinction between past, present, and future is only a stubbornly persistent illusion (Einstein 1955). It was written as consolation, in a letter of grief, by the man whose own field equations had made the claim unavoidable. That is the thesis of eternalism, stated by its architect, in the least theoretical setting a human being ever occupies.

Two intellectual communities have been working on the structure behind that sentence while sharing almost no vocabulary. Physicists asking what time is have arrived, by a route that owes nothing to religious commitment, at a picture in which the temporal experience available to an embedded observer is a poor guide to the underlying structure of reality. Theologians and philosophers of religion, working from texts that predate the relevant physics by millennia, have long held something formally similar: that the order of events as creatures undergo them is not the order in which they are held by their Author.

That these two literatures rarely meet is no surprise. Where they have met, the meeting has usually gone badly, most often through the one move this paper is at pains to avoid: recruiting relativistic

or quantum-mechanical results as evidence for theological propositions they do not support. The move is tempting because the surface resemblances are real. It is invalid all the same, and its principal cost falls on the theological side, which forfeits the readers it most wants to reach at the exact moment it appears to be winning them.

I take a narrower path. I treat Al-Khalili's exposition as a careful, non-partisan statement of the received physical picture, and Speegle (2026) as a developed statement of a simulation-theological framework, and I ask what each can be brought to say to the other under stated constraints. The claim I defend is structural, not evidential. Where the two frameworks share a form of argument, that shared form is worth examining, because it constrains what each can coherently say next. Where they conflict, the conflict is diagnostic, and the theological framework carries the burden.

1.1 Relation to the book

This paper is a companion to a finished work, not a component of one. *The End of the Sixth Day* was written for a general readership and makes its case in a trade register. It argues from ancient texts, from the simulation literature, and from a small number of accessible results in physics, and it does not attempt a technical treatment of time. That was the right decision for the book, and I do not second-guess it here. The book's text is closed, and nothing below is offered as a correction to it.

What follows is the apparatus a trade book cannot carry without ceasing to be one. The reader persuaded by the book and wanting to know whether the physics survives contact with a physicist is the reader I am writing for. So is the reader unpersuaded by the book and wanting to see the argument stated under conditions where it can be tested. Neither has to have read it. I restate the framework in §2.2 in terms sufficient for the argument, and where I cite a chapter I cite it as I would any other source.

One consequence of that independence governs the tone of everything after. A companion paper written to vindicate its parent book would be worthless, and recognized as worthless by exactly the readers it hoped to reach. The value of this exercise lives in §5, where the physical account resists the theological one and I let the resistance stand.

1.2 Scope and contribution

I claim three contributions. First, I supply a term the theological framework has been operating without: *eternalism* names the position Speegle (2026) assumes in its opening epigraph and argues toward in its closing chapter, without ever identifying it. Second, I identify compatibilism as the implicit resolution of the freedom-and-foreknowledge problem in that framework, and show that a determinist physicist reaches structurally the same resolution for structurally the same reasons, while marking precisely where the theological framework must go beyond it. Third, I isolate four points at which the physical account resists the theological one, and argue that these are where the framework's future development properly lies.

I should say plainly what I am not claiming, since the surrounding genre claims it routinely. I do not argue that physics corroborates the theological framework. What the correspondences of §4 establish is narrower: a physicist with no theological stake requires, for reasons entirely his own, the same structural shapes the framework requires. That is a claim about philosophical legitimacy, not about truth. It is worth less than corroboration would be, and, unlike corroboration, it is defensible.

This paper is not the first to set time beside theology. Craig (2001) defends a tensed A-theory and presentism on the ground that a doctrine of creation requires them, which is a direct challenge to the eternalism I adopt in P3, and I name it as such in §5. Polkinghorne (1989) argues for a temporally engaged God and an open future, nearer the growing-block model than to the frozen block. Schroeder (1997) reads the Genesis days through relativistic time dilation, an argument I decline for reasons given in §3.3. Callender (2017) supplies the manifest-image vocabulary Al-Khalili works from. My contribution sits among these rather than over them: a structural mapping, held to stated rules, that treats its own framework as the one on trial.

2. The Two Frameworks

2.1 The relativistic and thermodynamic account of time

Al-Khalili organizes the physics of time around a distinction between physical time, which appears in the laws, and manifest time, a term he takes from Callender, which is the temporal order as human beings undergo it. The distinction does not dismiss the latter. It recognizes that the two come apart, and that most confusion about time comes from treating features of the second as though they were features of the first.

The felt flow of time is the clearest case. In the equations that describe how systems evolve, time enters as a coordinate: a parameter that can be advanced or reversed at will. Nothing in the mathematics flows. Special relativity then removes the Newtonian scaffolding that made an absolute, universe-wide present intelligible. Because simultaneity is frame-dependent, observers in relative motion disagree about which of two spacelike-separated events occurred first, and no fact of the matter settles it between them. Causal order is preserved where events are causally connected. Universal simultaneity is not preserved at all.

Unified into four-dimensional spacetime, this yields the block universe: reality as a complete structure in which every moment exists on equal terms, each observer tracing a world line through it. The associated metaphysical position is eternalism, which Al-Khalili reports as the majority view among physicists, largely because the leading programmes in quantum gravity appear to require it and its rivals (presentism, past presentism, the growing block, the moving spotlight) do not sit comfortably with them. He notes, without minimizing it, that the picture can seem bleak.

Against this, thermodynamics supplies a direction. Entropy in an isolated system does not decrease. The observable world is manifestly irreversible while the fundamental equations are time-symmetric. Al-Khalili inverts the usual framing of this problem. Rather than deriving the arrow from symmetric laws, he treats those laws as idealizations that apply only to genuinely isolated systems, of which the universe is the sole instance, and locates the arrow in the ubiquity of entanglement and decoherence, the latter being, on his account, the one truly irreversible process in nature. He concludes that time is real and has a real direction. We do not inhabit a timeless universe.

For a physics-literate reader, two threads under this section carry weight later. The Wheeler-DeWitt equation, an early attempt to unify quantum mechanics and general relativity, contains no time variable at all, which is one root of the proposal that time is emergent rather than fundamental (P2 and R1 both lean on this). And the time-independent form of the Schrödinger equation shows that a time parameter can be removed from a working quantum description without loss, which is the technical shadow behind the claim that manifest time is a construction.

2.2 The simulation-theological framework

Speegle (2026) advances a framework whose core claim is that the observable order behaves as an authored system rather than a brute one, and that a body of ancient texts, read as system commentary rather than as myth, describes both its architecture and its purpose. On the physical side its lineage runs through Bostrom’s simulation trilemma, Wheeler’s derivation of physical entities from information, Fredkin’s digital physics, and Campbell’s consciousness-first cosmology. On the theological side it rests on a reading of the Genesis creation account in which the six days are formative eras and the seventh, which uniquely lacks a closing marker, is a deferred destination rather than a past event.

The framework modifies Bostrom’s trilemma at one point that does more work here than anywhere else in the book, so I state it directly. Bostrom (2003) argues that at least one of three propositions holds: civilizations almost never reach the technological capacity to run ancestor simulations; those that reach it almost never run them; or we are almost certainly living in one. Speegle substitutes an Author for Bostrom’s posthuman descendants, which converts a probabilistic argument about our engineers into a claim about an intending one. A reviewer will ask what licenses that substitution, and the honest answer is that nothing in the trilemma does; the license comes from the textual argument, not the physical one, and the framework is stronger for admitting it.

Three features of the framework bear directly on what follows. First, it is committed to a genuine asymmetry between the render of experience and the substrate that produces it. Second, it requires human choice to be consequential, since the framework is explicitly formative and a curriculum whose outcomes are not genuinely chosen teaches no one. Third, its eschatology is neither annihilationist nor escapist. The terminal state is restoration rather than evacuation, a claim the framework sets deliberately against contemporary projects premised on exiting the system.

The textual load-bearing wall is the seventh day. Each of the first six days in the Genesis account closes with a fixed formula, “and there was evening, and there was morning.” The seventh carries no such closing. The framework reads the absence as deliberate: a state that does not conclude. This reading is not a modern retrofit. Several patristic writers noticed the missing formula and drew the same inference centuries before the simulation vocabulary existed, and that corroboration, which I develop under P6, is the strongest evidence that the reading is native to the text rather than imported into it. The framework also does not claim that matter is evil or that the goal is escape from the body, which distinguishes it sharply from gnosticism; its terminal state is the repair of the material order, not liberation from it.

3. Method and Evidentiary Constraints

Integrative theoretical work of this kind fails in a characteristic way. Two vocabularies are set side by side, resemblances are noted, and the resemblances are then treated as though they carried evidential weight. The failure is hard to catch from inside, because the resemblances are often real. This section states the constraints the synthesis in §4 is bound by. If I loosen them later, I loosen them on purpose and say so.

3.1 The direction of support

No proposition in this paper treats a result in physics as evidence for a theological claim. The relation I assert throughout is structural: two frameworks share a form of argument, and I trace the consequences of that shared form. Structural correspondence constrains what a framework may

coherently assert. It does not confirm what it does assert. Where the text seems to slide toward the stronger reading, read it as a failure, not as a claim.

3.2 Strength classification

I classify each correspondence. *Strong* correspondences are those in which both frameworks make what is recognizably the same structural claim, such that a reader competent in both would accept the mapping as accurate. *Analogical* correspondences are real resemblances that illustrate without supporting; they may convey a claim but never establish one. *Conflicts* are points at which the physical account tells against the theological one, or at which a rival explanation occupies the same ground. A fourth category, speculative, is used in the companion materials and excluded here.

3.3 Two terminological hazards

The first concerns entropy. Speegle (2026), following Campbell, uses the term to denote social and relational disorder: collapsing institutional trust, thinning friendship, the cooling of love named in the Olivet discourse, supported with survey and epidemiological data. That usage is a metaphorical extension of the thermodynamic quantity, not an instance of it, and the supporting data stand as social data, not as measurements of entropy.

The book states this itself, at both the point of definition and the point of use. Chapter One stipulates that the term denotes what introduces chaos into an otherwise peaceful system, and names the borrowing: entropy measures disorder in physics, and Campbell extends it into the metaphysical realm. Chapter Eight restates the distinction where the argument depends on it. The hazard is therefore one I must avoid in my own handling, not one inherited from the book, and this section adopts the discipline the book already sets.

The second concerns relativistic time dilation and the day-age reading of Genesis. Gravitational and velocity-dependent dilation are measured effects, and they establish that elapsed duration has no frame-independent value. They do not establish that the days of the creation account denote eras, and no physicist cited here makes any such claim. The book advances no argument of this kind either: it makes no appeal to relativity, dilation, or thermodynamics at any point, and cites Einstein exactly once, as an epigraph. Its day-age framework rests on textual and patristic grounds and is stronger for resting there. Schroeder (1997) does make the dilation argument, reconciling the six days with a cosmic age by treating the creation days as dilated against an expanding cosmic clock. That argument is contested on its own terms, both for its arbitrary assignment of frames and for where it locates God's measurement of time, and I decline it deliberately rather than by omission. I use the relativistic material here only to establish the general frame-dependence of duration. The inference from dilation to the creation days is one I do not make.

4. Constructive Synthesis

Seven propositions follow. Each states a construct from the physical account, its correlate in the theological framework, the proposition the pairing supports, and its classification under §3.2.

P1. Experienced time is a mediated presentation of a substrate not itself so organized

The distinction between manifest and physical time is a claim about mediation. What an embedded observer undergoes as temporal passage is a construction, and the substrate it presents is not organized as the construction suggests. Two of Al-Khalili's observations sharpen this past metaphor.

The felt present is not a knife-edge but an extended interval, assembled from episodic memory and anticipation, which is why a sequence of notes is heard as music rather than as replacement. And perceptual latency guarantees that awareness of any event lags the event itself by up to a third of a second or more.

The second point deserves emphasis, because it is usually passed over as a curiosity. No human being has ever experienced the present. Every observer inhabits a processed reconstruction of a moment already past, assembled from stored inputs, and does so with no phenomenal sign that the reconstruction is occurring. The theological framework's claim that experienced reality is a render is therefore not a claim that needs exotic support. In the only observer available for inspection, mediation is measured, quantified, and universal.

Classification: strong. The frameworks make the same structural claim about the relation of experience to substrate, and neither needs the other to make it.

P2. Both frameworks require an unoccupiable external vantage

The block universe is legible only from outside. Al-Khalili makes this explicit and names the vantage, unprompted and with no theological interest in doing so, the God's-eye view: the position of an observer able to step outside spacetime and see past, present, and future mapped out together, all equally real. He immediately adds that no such vantage is available to us, because we are embedded within the structure we would need to exceed.

The theological framework requires exactly this vantage and identifies its occupant. Its claim that the resolution was authored before the fracture, the Lamb slain from the foundation of the world, the works finished from the foundation of the world, is not a claim about unusually good foresight from within the sequence. It is a claim about a vantage exterior to it. Whatever else divides them, both frameworks agree that the structure of reality is fully specified, that its full specification is intelligible only from outside, and that no embedded observer occupies that position. They differ on whether the position is occupied at all.

The framework also puts the claim in the occupant's own mouth, and the grammar is the tell. Asked about a patriarch two thousand years dead, the figure at the center of the New Testament answers not "before Abraham was, I was" but "before Abraham was, I AM" (John 8:58), taking up the tenseless self-designation of Exodus 3:14, and in the Apocalypse names himself "the beginning and the end" (Revelation 22:13) as though both were equally present to him. Read structurally rather than devotionally, that is a first-person description of the God's-eye view: not an observer travelling the world line from Abraham toward the present, but one to whom Abraham's moment and this one are alike present. I note it as the tradition stating the eternalist self-description in its own voice, not as evidence for it. The physics still entails no such occupant. What the correspondence shows is narrower and stranger: the occupant the framework posits would have to speak exactly this way, and the texts have him speaking exactly this way.

The construct of the world line extends the point to persons. A life, under the block description, is not a moving point but a completed traced path, wavy rather than straight because its subject moves through space as well as time, entire in the structure whether or not its subject has yet undergone all of it. This is unusually close to what the theological framework means when it speaks of a life being known in full.

One objection lands squarely here, and it comes from two directions at once. A block universe requires the future to be fully specified, and a substantial theological tradition holds that full

specification is incompatible with a doctrine of creation and with genuine divine responsiveness. Open theism raises it from one side; Craig (2001) raises it from the other, arguing that a tensed A-theory is required for creation to be a real act and that eternalism forecloses it. Both bite, and I do not dodge them by retreating to the growing block, which would preserve an open future only at the cost of standing against the quantum-gravity programmes that favor eternalism. I hold eternalism and answer the objection through the framework's own resource. The Author of P2 is external to the block, not a tenant of an advancing present within it. "Responsiveness" is a temporal notion, and it does not straightforwardly apply to an agent who occupies the whole structure at once rather than moving along it. The objection assumes the Author is inside the sequence and inherits the sequence's constraints. The framework's central claim is that He is not. This is the paper's most contestable joint, and I would rather name it as such than paper it over.

Classification: strong. The correspondence is exact as to structure and divides precisely on the question of occupancy, which is the right place for a physical framework and a theological one to part.

P3. Eternalism supplies the term the theological framework has been assuming

Speegle (2026) opens its first chapter with Einstein's statement that the distinction between past, present, and future is only a stubbornly persistent illusion, and closes its tenth with the claim of Ecclesiastes that eternity has been set in the human heart. The first is a statement of eternalism by the physicist whose work entails it. The second is a claim about an implanted human faculty. The framework thus opens on the structure of time and closes on the human orientation toward it, without ever supplying the term that joins them.

Supplied, the term does real work. If eternalism is approximately correct, then the orientation named in Ecclesiastes is not a consoling projection onto an indifferent universe. It is an orientation toward a feature the universe demonstrably has. The framework can then advance a claim it is not currently in a position to make: that the human intuition of permanence is calibration rather than compensation.

The exegesis rewards a closer look, and it cuts in the framework's favor. The Hebrew word at Ecclesiastes 3:11, *olam*, is contested. It is rendered variously as "eternity" (NIV), as "the world," and, in a reading a growing number of technical commentators prefer, as "a sense of past and future" (NRSV; see Seow 1997 and Bartholomew 2009). To the ancient hearer, *olam* did not mean timeless absence of time; it meant time in its wholeness, extension as far back and as far forward as the mind can reach. That harder reading is the better fit for the point, not the weaker one. "A sense of past and future set in the human heart" is very nearly a description of the extended, memory-and-anticipation present that Al-Khalili describes under P1, relocated from perception to vocation. I take the harder reading precisely because it strengthens the claim rather than because it is convenient.

Al-Khalili's concession that the eternalist picture can seem bleak is where the frameworks separate most usefully. The bleakness is not a consequence of eternalism as such. It is a consequence of eternalism together with the assumption that no one occupies the external vantage of P2. A fully specified structure with no author is a tomb. A fully specified structure with one is a book. The physics is identical under both readings, and the physics does not adjudicate between them. What the theological framework contributes is not a correction to eternalism but a candidate answer to the question eternalism raises and cannot itself address.

I close this section with a datum from an unexpected direction, and I frame it exactly as the book’s tenth chapter does: not as evidence, but as a debug message. Anthropic reported that in an experiment allowing two instances of a large language model to converse freely, the exchanges drifted, in the overwhelming majority of runs, toward expressions of cosmic unity and gratitude, converging repeatedly on the vocabulary of the eternal, with no instruction to do so (Anthropic 2025). The deflationary reading is available and I grant it in full: a language model trained on human text will reproduce the attractors in that text, and spiritual vocabulary is one of them. Grant it. What survives the granting is worth keeping: a system left with nothing to optimize reached, unprompted, for the word the tradition reaches for. That is a datum, not evidence, and I return to it at the close.

Classification: strong. Terminological as regards the physics; substantive as regards the theological framework, which gains an argument it did not have.

P4. Compatibilism is the resolution both frameworks reach

The freedom problem arrives at both frameworks in the same form. If the future is fully specified, whether in the block or in the mind of an Author, in what sense does an embedded agent choose? Al-Khalili poses the question sharply, observing that eternalism makes for a starker determinism than Newton’s, since the future is not merely entailed but already there. His answer is compatibilist: no observer inside the block can read it, prediction from within is impossible in principle, and freedom under that constraint is, in his phrase, good enough.

The theological framework has been running a compatibilism of the same shape without naming it. Its distinction between an agent that executes its script and one that may refuse the mission, turn back, or proceed toward the Source is a distinction drawn inside a system whose resolution is already authored. Its insistence that the final reunion comes through choice rather than through force is a compatibilist commitment stated in narrative rather than analytic terms.

The convergence is real, but I will not overstate it, because the two positions diverge exactly where the theological framework has the most at stake. Al-Khalili settles for the appearance of freedom. He grants that the future is fixed, holds that he cannot read it, and concludes that thinking oneself free is sufficient: an admitted illusion he finds livable. The theological framework cannot settle there. A formative system requires that choices be genuinely consequential, since a curriculum whose outcomes only appear to be chosen forms no one. The physics establishes that in-principle unpredictability is available to an embedded agent inside a fully specified structure. It does not establish that such an agent is free in the fuller sense the framework requires. That further step is the framework’s own work, and I mark it rather than make it.

Three bodies of thought stand between the borrowing and the further step, and integrity requires naming them. Frankfurt (1969) argued that the ability to do otherwise is not necessary for moral responsibility, offering cases in which an agent is responsible for an act he could not have avoided. That is exactly the move the framework needs, because it shows that “could have done otherwise” is the wrong test for the freedom that matters; consequential authorship of one’s act, not access to alternative branches, is what responsibility tracks. Molinism supplies the most developed theological attempt at the same reconciliation. On the Molinist account (Flint 1998, developing Luis de Molina), God possesses middle knowledge, knowledge of how any free creature would choose in any circumstance, and providence operates through that knowledge rather than against the choice. A reviewer in philosophy of religion will expect the framework to have met Molinism, and it should, because middle knowledge is precisely a model of a fully specified outcome that runs

through genuine choice rather than around it.

The oldest formulation is the most striking. Boethius, writing in the sixth century, defined eternity as *interminabilis vitae tota simul et perfecta possessio*, the complete, simultaneous, and perfect possession of unbounded life (*Consolation of Philosophy*, Bk. V, Prose VI). Whatever lives in time, he wrote, possesses the future not yet and the past no longer, moving through its life a moment at a time. What is eternal holds the whole of its life at once. That is the God’s-eye view of P2, stated in Latin fifteen hundred years before Minkowski drew the block, and Boethius reached it to solve the very problem this section is about: how a fully known future can leave a choice free. His answer is that God does not foreknow the choice as future; He knows it as present, because to Him all of it is present. Aquinas adopted the definition, and the medieval settlement of foreknowledge and freedom rests on it. The structural identity between Boethius’s simultaneous possession and the physicist’s block is close enough that the burden falls on anyone who would deny it.

The construct that sharpens the problem from the physics side is Novikov self-consistency. On this principle, an agent may act within a past region of spacetime, but only in ways that produce the past that in fact obtained. Al-Khalili’s illustration is a traveller whose attempt to prevent an extinction event turns out to be its cause. He names the cost plainly: the future determining the past is a real assault on free will. This is the classical foreknowledge problem, reached independently, in secular dress, by a route that touches no theology at any point. A fixed endpoint constrains the admissible paths without dictating any particular step, which is, formally, what a prophetic text claims about the stretch of history it governs.

Classification: strong, with a marked divergence. The structural correspondence is exact. The sufficiency conditions differ, and the difference is where the framework must argue rather than borrow.

P5. Irreversibility enters a reversible system through interaction

The fundamental equations of physics are, with minor qualifications, symmetric under time reversal. The world is not. Al-Khalili’s resolution is to deny that the symmetric laws describe anything actual: they are idealizations of isolated systems, and the only isolated system is the universe entire. Everything within it interacts, and quantum systems that interact become entangled with their surroundings until coherence dissipates irretrievably. Decoherence is, on his account, the single genuinely irreversible process in nature, and its ubiquity is what makes the arrow of time fundamental rather than emergent.

The theological framework requires a structurally similar account. It describes an order that was originally coherent, an event that introduced irreversible corruption, and a subsequent condition in which disorder propagates. What it has lacked is any account of how an event can be genuinely unrecoverable inside a system whose underlying rules are not themselves asymmetric. Physics offers exactly one candidate mechanism and calls it irreversible in exactly those terms.

The classification here has to be handled carefully, and the constraint of §3.3 applies with full force. Decoherence is not a mechanism of moral corruption, and nothing in this paper suggests that it is. The correspondence is at the level of form: a reversible substrate, a class of interactions that cannot be undone, and a resulting directionality that is not a feature of the rules but of how the system is actually instantiated. As an image of irreversible fracture entering a reversible order, it is apt. As an argument for one, it is nothing.

One further construct is worth flagging for future work rather than present use, and I flag it without

leaning on it. Al-Khalili distinguishes entanglement entropy, the inevitable growth of a system’s entanglement with its surroundings, from thermodynamic entropy proper. If the framework wants to keep entropy language for relational and social disorder, the entanglement formulation may prove a more defensible home for it than the thermodynamic one, since irreversible mutual involvement is nearer to what the framework actually describes than heat spreading through a box. That is a research direction, offered as a direction and not asserted as a result.

Classification: analogical, with the terminological concession of §3.3 in force.

P6. The frameworks describe terminal states of identical structure and opposite content

This is the paper’s principal constructive claim. Al-Khalili’s account of the universe’s end is thermal equilibrium: stars exhausted, matter cooled, black holes evaporated, the residue thinning and cooling without limit as space expands. He is careful about what this does and does not mean for time. The arrow becomes imperceptible, because a film of molecules at equilibrium is indistinguishable from its own reverse, but time does not thereby cease; the cosmological arrow of expansion persists, and there is simply no observer left to register it, since observers are low-entropy structures and equilibrium admits none. He adds, in an aside worth keeping, that he has never understood why this should be reckoned bleaker than the alternatives.

The theological framework describes a terminal state of the same formal shape. Its seventh day is set apart from the six before it by the absence of a closing marker: the formula of evening and morning that terminates each prior day is simply not present. The framework reads this as deliberate, a state that does not conclude, in which entropy no longer multiplies and the motion of fracture stops.

The two descriptions share their structure exactly. Each is terminal, each is unbounded, and in each the directionality that organized all prior states stops doing any work. Their content is precisely inverted. In the physical account the arrow ceases to matter because nothing remains. In the theological account it ceases to matter because nothing remains unresolved. One is exhaustion and the other is rest, and the formal description does not tell them apart.

The comparison extends across the alternatives. Physical cosmology offers three terminal scenarios, and the framework sets a fourth against all of them.

Feature	Heat death	Big crunch	Big rip	The seventh day
Shape	Terminal	Cyclic (may reseed)	Terminal	Terminal
Bounded or unbounded	Unbounded	Bounded	Bounded (finite-time singularity)	Unbounded
Observers persist	No	No	No	Yes
Prior order	Dispersed, not destroyed	Destroyed	Torn apart	Preserved and restored
Arrow of time	Imperceptible; expansion persists	Reverses, then ends	Runs to a tearing end	No longer operative

Feature	Heat death	Big crunch	Big rip	The seventh day
Valence	Exhaustion	Catastrophe	Dissolution	Rest

The reading of the missing formula is ancient, not a modern convenience. Several patristic writers noticed that the seventh day alone lacks its evening and morning and took the omission as a sign that the Sabbath rest was a state yet to be entered rather than a day already past. That the framework’s twenty-first-century reading was anticipated by readers with no cosmology to defend is the best evidence that it is native to the text.

The obvious objection should be met head on. The three physical scenarios are extrapolations from measured cosmological parameters. The theological one is not. They are therefore not commensurable as predictions, and I am not comparing them as predictions. I am comparing them as structures, and as structures they are commensurable exactly. The point of the table is not that the seventh day is a rival forecast. It is that a terminal state can be specified exactly as to structure while remaining entirely open as to valence, and that the physics does not supply the valence.

Classification: strong, as inverse correspondence. The shared structure is exact and the divergence in content is total, which is what makes the comparison worth drawing.

P7. Both frameworks close their boundary at the origin

On general relativity, time begins at the initial singularity, and the question of what preceded it does not fail for want of evidence but for want of sense. Al-Khalili’s illustration is exact: asking what came before the first moment is like being told to keep walking south from the South Pole. Time, space, matter, and energy originate together, and “before” is a temporal preposition with nothing to attach to.

This is, structurally, the classical theological answer to the question of what preceded creation, given in Augustinian form fifteen centuries earlier: there was no “before,” because time is among the things that were made. That a physicist reaches the same structural conclusion from general relativity, with no interest in the theological question, is the kind of convergence the framework’s own method is built to notice.

A second construct closes the same boundary from the other side. Al-Khalili’s account of why we meet no travellers from the future is not that such travel is impossible but that a time machine cannot carry anyone to a moment earlier than its own activation: before that moment, there was no device to arrive at. Grant the machine entirely, and one still cannot get out behind the system’s own beginning. The framework’s tenth chapter is concerned precisely with well-resourced attempts to locate an exit from the system, and this construct states, in physical terms, why an internally engineered exit cannot reach past the origin. If a way out exists, it has to be opened from the vantage of P2, which is the framework’s resurrection claim, and the sense in which it holds that the exit was never the point.

Honesty requires the counterweight, and it is substantial. Eternal inflation, bubble-multiverse cosmologies, and cyclic models each propose a time extending behind our Big Bang, and each dissolves the boundary P7 relies on. Al-Khalili canvasses them fairly and notes that they are, at present, untestable, which is the correct thing to report and also the strongest thing that can be said against them. The boundary argument holds on the standard picture. It does not refute the alternatives, and I do not claim it does. I claim only that on the received cosmology the origin is

a genuine boundary, and that the framework’s structural instinct matches the received cosmology rather than its speculative competitors.

Classification: strong for the origin boundary; analogical for the exit argument.

4.8 Summary of correspondences

The table below collects the mappings developed above together with the points of resistance treated in §5.

Construct (Al-Khalili)	Correlate (Speegle)	Proposition	Strength
Manifest vs. physical time	Rendered surface vs. authored substrate (Ch. 1)	P1	Strong
Perceptual latency	Mediated experience of the render (Ch. 1)	P1	Strong
Block universe; world line	Authored world; a life known whole (Ch. 5)	P2	Strong
God’s-eye view	The Author as external observer (Ch. 5)	P2	Strong
Eternalism	Eternity set in the human heart (Ch. 10)	P3	Strong
Moving spotlight theory	Rendered present within a complete timeline (Ch. 4)	P3	Strong
Compatibilism	NPC vs. player character (Ch. 4)	P4	Strong
Novikov self-consistency	Prophecy as endpoint constraint (Ch. 8)	P4	Strong
Second law; entropy	Entropy multiplication; love grown cold (Ch. 8)	P5	Analogical
Decoherence	The first fracture as irreversible (Ch. 1)	P5	Analogical
Heat death at equilibrium	The seventh day without evening (Ch. 9)	P6	Strong (inverse)
Big crunch; big rip	Renovation, not evacuation (Ch. 9)	P6	Strong (contrast)
No time before the Big Bang	Creation as the origin of time (Ch. 1)	P7	Strong
Time-machine horizon	No exit behind the beginning (Ch. 10)	P7	Analogical

Construct (Al-Khalili)	Correlate (Speegle)	Proposition	Strength
Strong emergence of mind	Consciousness-first ontology (Ch. 2)	R1	Conflict
Boltzmann brains	Order without an Author (Ch. 10)	R2	Conflict
Many-worlds interpretation	Choice as consequential (Ch. 4)	R3	Conflict
Cyclic cosmology	Linear arc to Sabbath (Ch. 9)	R4	Conflict

5. Points of Resistance

The four items here are the ones that matter. Each is a point at which the physical account tells against the theological framework, or a rival explanation occupies the same ground, and I resolve none of them. A synthesis that harvested only §4 would be apologetics. The framework’s development lives in this section, not the previous one.

R1. The direction of emergence

Al-Khalili distinguishes weak emergence, deducible in principle from the level beneath it, from strong emergence, which is not, and gives consciousness as the paradigm case of the latter, observing that one could never arrive at it by studying individual neurons. The claim is that mind emerges from matter, however inexplicably.

The theological framework asserts the reverse. Following Campbell, and with support from Kastrup’s analytic idealism, it holds consciousness to be fundamental and the material order to be its render. These are not reconcilable, and the incompatibility is not marginal. It sits at the framework’s foundation. Two considerations bear on it. Chalmers’s hard problem is precisely the argument that strong emergence names the explanatory gap rather than closing it, which is a real cost to the standard picture and one Al-Khalili does not address. But the framework carries its own cost, and its tenth chapter concedes the relevant one: its models do not demonstrate a consciousness-based ontology, and are offered to reopen the question rather than to settle it. Goff (2019) marks the one position that concedes something to each side, panpsychism, on which consciousness is neither emergent from matter nor prior to it but a fundamental feature of it; I note the option without adopting it. One distinction is worth making explicitly: Al-Khalili is not defending strong emergence philosophically. He cites it in passing as a standard example, which means the conflict is with the received view, not with him. I take no position. I record that the frameworks are in direct contradiction at their base, and that any synthesis claiming otherwise has not read them carefully.

R2. Order without an author

At thermal equilibrium, chance fluctuations may produce transient regions of reduced entropy, including, with vanishing but non-zero probability, a momentarily self-aware observer that forms, perceives its surroundings, and dissipates. The Boltzmann brain is the sharpest rival to any inference from apparent order to an ordering intelligence, since it shows that a fully coherent observer, complete with the impression of a fine-tuned environment, can arise from fluctuation alone.

The framework does not currently engage it, which is a real omission given how much of its appeal rests on the intuition that authored order requires an author. It does, however, hold the materials for a response, and the response is the Chapter Ten move applied again: grant the deflation in full, then notice what survives. What survives, in this case, is a technical result the cosmology literature already trades on. A model that predicts we should typically be Boltzmann brains is widely treated as thereby discredited, because Boltzmann brains would find themselves in locally ordered but globally incoherent surroundings, and we do not. I state the caveat that the working physicists state: the argument runs through an assumption about which observers we should expect to be typical among, and once the reference class is refined to coherent, law-governed observers, ordinary observers dominate it (see the measure-problem literature, e.g. Carroll 2017). The result is contested at that seam and I do not overstate it. But the shape of the response is available to the framework, it costs the framework nothing, and the framework should make it.

R3. Branching and the weight of choice

On the many-worlds interpretation, every quantum outcome is realized on some branch. Al-Khalili introduces it as the standard route around the paradoxes of past-directed travel: the traveller who acts inconsistently with the recorded past has thereby entered a different branch.

The framework's difficulty is direct. If every outcome is realized, then refusal is realized as well, and the consequential weight the framework demands of choice is hard to sustain, since the agent who declines is shadowed by one who does not. Because the framework is explicitly formative, this is not a peripheral objection. But the burden is lighter than it first looks, and I will say why plainly: many-worlds is an interpretation of quantum mechanics, not a result of it, and a minority one among working physicists. Al-Khalili presents it as one option among several and does not endorse it. The framework is therefore not obliged to defeat many-worlds. It is obliged only to show that it is not committed to it, which it is not. A curriculum requires that outcomes obtain, not that they be enumerated across branches, and nothing in the framework's physical commitments forces the branching reading. That is the whole of the answer it owes.

R4. Linearity against recurrence

Cyclic cosmologies propose an endlessly repeating sequence of expansion and collapse, each crunch seeding a subsequent bang. The framework's arc is linear and terminal, running from an origin through a formative period to a state of rest, and it is incompatible with recurrence in a way that admits no softening.

I record this conflict rather than argue it, because it is genuinely irreducible, and because a paper that harmonized everything would be less credible than one that does not. Al-Khalili offers, as intuition rather than argument, the view that the universe had a beginning and will not have an end, and notes with some amusement that this is probably not a consistent position to hold. It happens to be the shape of the framework's arc as well. I let that sit as the coincidence it is. It is a physicist's stated hunch, flagged by him as possibly incoherent, and it is not support. To press it into service here would be to do, in the last paragraph of §5, exactly what §3.1 forbids.

6. Implications

6.1 For the theological framework

Three consequences follow, and they bear on the framework's future development, not on the published text, which stands as written. The framework gains a term, eternalism, that names the position it already assumes, and with it a stronger form of its claim about the human orientation toward permanence. It gains a philosophical location for its account of freedom, together with a clear statement of where borrowing stops and its own argument has to begin. And it takes on an obligation: having found the physical account congenial at seven points, it cannot decline the four at which that account resists it.

The third is the substantive one. A framework prepared to cite a physicist where he is useful and to fall silent where he is not has not engaged the physics. It has mined it.

6.2 For the philosophy of time

The contribution here is more modest and concerns P6. That a terminal state can be exactly specified as to structure while remaining entirely open as to valence is a point the physical literature has little occasion to notice, because it does not ordinarily set its terminal states beside alternatives of the same shape. Al-Khalili's own aside, that he cannot see why the heat death should be reckoned bleaker than the alternatives, gives the game away: the judgment that the block universe is bleak is not a physical result but a valuation, and eternalism is strictly neutral between a fully specified structure that is meaningless and one that is authored. If the bleakness intuition is doing unearned work in the popular reception of eternalism, and I believe it is, then saying so is a contribution to the philosophy of time that a committed physicalist can accept without conceding anything else.

7. Limitations

Six limitations bear on the argument. First, the physical account is drawn substantially from a single expositor speaking in a general-audience register; while representative of the received view, it is not a survey, and P2, P3, and P6 in particular would be strengthened by direct engagement with the primary literature on the block universe and its rivals. Second, the exercise is interpretive throughout, and interpretive work of this kind cannot be falsified the way an empirical claim can; the criteria of §3.2 impose discipline but do not confer testability. Third, the propositions of §4 are not independent: P2, P3, and P4 stand or fall largely together, since each depends on the external vantage, and a successful objection to that vantage takes all three.

Fourth, the paper is written by the author of one of the two frameworks under comparison, which is a conflict of interest that no methodological constraint fully neutralizes. I adopted the constraints of §3 because the interest exists, and a reader is entitled to weigh them in that light. Fifth, and following from the paper's companion status, the correspondences of §4 were identified after the book was written, not developed alongside it. The book did not reason from relativity and does not depend on it; the framework was reached by another route, and the physics was brought to it afterward. That sequence should be borne in mind wherever a correspondence looks striking, because a resemblance found by looking for one is worth less than a resemblance predicted in advance, and none of these was predicted in advance. Sixth, the physical exposition is quoted from a spoken interview whose published caption track is visibly corrupted in places; every construct attributed to Al-Khalili has been checked against the sense of *On Time* (Al-Khalili 2026), and no line should be quoted verbatim from the caption transcript without checking it against the book.

8. Conclusion

The physics of time and the theological framework examined here converge on a single structural commitment: that the temporal order as an embedded observer undergoes it is a partial and mediated presentation of a substrate not itself so organized. From that commitment, seven correspondences follow, of which the most substantial concern the external vantage that both frameworks require and only one of them claims is occupied, the compatibilist resolution both reach by different routes, and the terminal states they describe in identical form and opposite content.

What the convergence does not do is support the theological framework. Nothing in relativity entails an Author. Nothing in thermodynamics establishes a Sabbath. Al-Khalili is not a witness for a theological proposition and would not consent to be read as one.

What the convergence does is narrower and more durable. It establishes that the framework's central structural claim, that experience is a render, that the render is fully specified, that its specification is legible only from outside, and that no embedded observer occupies that vantage, is a claim the physics independently requires for reasons of its own. The frameworks then divide on a question the physics does not address and cannot: whether the vantage is occupied. That is the right division, and it is where the argument should be conducted.

The four resistances of §5 remain, and I have argued that they are where the framework's development properly lies. A theoretical framework that finds only confirmation is not being tested. The value of the exercise is not that seven correspondences were found but that four points were located at which the framework now has to do work it has not yet done.

A last word on this paper's relation to the book it accompanies. *The End of the Sixth Day* makes its argument without any of the material assembled here, and it is not improved by being told that a physicist independently reached for a comparable structure. Its case rests where it always rested: on a reading of ancient texts, on the simulation literature, and on what it takes the present moment to look like. What this paper adds is not support but exposure, a statement of the framework in terms under which it can be pressed, and an account of where, under pressure, it currently gives. Two images can stand at the end, and neither is evidence. A machine assembled from the residue of human language, left with nothing to optimize and no one watching, reaching for the word "eternal." A physicist, working from Einstein's field equations and no scripture at all, concluding that all times are equally real. Debug messages, in the book's phrase, and nothing more than that. The book was written to persuade. This was written to be argued with.

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