The Deep Past Problem

Record-Based Ontology and the Status of Cosmological Reconstruction

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Working paper draft — philosophical/ontological version; no new cosmological dynamics claimed
Part of a broader record-based philosophical program on subjectivity, identity, and quantum definiteness

Abstract

This paper argues that a record-based ontology of facthood introduces a neglected asymmetry between present records and deep past reconstruction. For finite agents, facts are constituted in a primary sense by stable, accessible, and update-constraining records. Historical narratives are then reconstructed from those records under varying degrees of inferential constraint. As the inferential chain extends further into the past, especially into the cosmological past, the ontological status of what is being described changes. The past does not become unreal, but it becomes increasingly reconstructed, indirect, and non-primitive.

The paper does not challenge cosmology as science. It targets a stronger and often tacit assumption: that remote cosmological posits such as the Big Bang, singular initial conditions, or ultra-remote early-universe states possess the same ontological status as present record-constituted facts. I argue instead that deep cosmological history is best understood as disciplined ontological reconstruction from present evidence, not as primitively given facthood. This weakens naive realism about the deep past without collapsing into subjectivism, anti-realism, or anti-scientific skepticism.

The proposal extends a broader record-based framework developed elsewhere. If definite facts for finite agents are constituted through accessible, persistent, and update-constraining records, then the ontological status of the past must be graded according to its relation to those records. This becomes philosophically significant in cosmology, where the inferential distance from present evidence to putative origins is exceptionally large and where the temptation to reify reconstruction into primitive ontology is especially strong.

Keywords: deep past; cosmology; Big Bang; realism; records; ontology; facthood; historical reconstruction

1. Introduction

The past appears, at first glance, to be ontologically straightforward. We take current evidence, infer earlier states of the world, and treat those earlier states as facts that simply existed before us. In ordinary life this picture often works well. The cup broke because there are shards on the floor. The fire happened because there is ash in the grate. The animal crossed the field because tracks remain in the mud. Even when the earlier event is not directly accessible, present records allow us to reconstruct it with high confidence.

Yet there is a philosophical slide hidden inside that confidence. We move easily from present records to past events, and then from justified reconstruction to the assumption that the reconstructed past is

ontologically given in the same sense as the records from which it is inferred. In nearby cases this may feel harmless. In the cosmological case it becomes much less innocent. The Big Bang, primordial singularities, early-universe conditions, and ultra-remote cosmological states are not given to finite agents in the same way as present stable records. They are theoretical reconstructions, however disciplined and powerful, from evidence available now.

This paper argues that this difference matters ontologically. The core claim is not that cosmology is false, nor that the past is unreal, nor that the Big Bang is merely subjective fiction. The claim is narrower and sharper. In a record-based ontology, facts for finite agents are constituted in a primary sense through stable, accessible, and update-constraining records. Historical narratives are then reconstructed from those records. As the inferential chain extends backward, the status of what is being described changes. The deep past becomes increasingly reconstructed, indirect, and non-primitive. It may remain scientifically indispensable. It need not therefore be ontologically primitive in the same sense as present record-constituted facthood.

The importance of this issue is easiest to miss precisely because cosmology is such an impressive science. Modern cosmology offers remarkable explanatory and predictive success. It integrates background radiation, large-scale structure, nucleosynthesis, gravitational theory, redshift data, and a wide range of observational constraints into a coherent picture of the early universe. None of that is under attack here. The question is not whether the reconstruction is scientifically powerful. It is whether one should move, without further argument, from that scientific power to a naive realism according to which cosmological origins are simply “there” as facts in exactly the same sense as present record-stabilized differences.

The paper proceeds as follows. Section 2 introduces the record-based distinction between present facthood and historical reconstruction. Section 3 develops the asymmetry between present records and past narratives. Section 4 explains why this asymmetry becomes philosophically explosive in the case of the deep cosmological past. Section 5 discusses the Big Bang as a paradigmatic case of disciplined reconstruction rather than primitive facthood. Section 6 considers singularities, horizons, and other cosmological limit-cases that already pressure straightforward realism. Section 7 addresses the charge of subjectivism and clarifies the role of public, shared, and scientific records. Section 8 formulates the main objections. The conclusion is that cosmology remains intact as science while naive deep-time realism becomes ontologically less secure.

2. Present Facthood and Record-Based Ontology

The framework assumed here is record-based. A fact for a finite agent is not simply any physical difference somewhere in the total state of reality. It is a physically realized difference that is accessible, sufficiently stable to persist, and capable of constraining later updates in memory, expectation, inference, or action. The emphasis is on finite record-bearing systems: not ideal observers, not omniscient viewpoints, and not metaphysical access to a total state, but agents or systems for which differences become determinate by entering stable record-structure.

This notion should not be misunderstood. It is not a psychologistic claim that facts are whatever an individual happens to notice. Nor is it a voluntarist claim that consciousness creates reality by choice. The relevant records are objective features of physically stabilized structures. They may be personal, interpersonal, institutional, or instrumentally distributed. What matters is that they are accessible to finite systems, persist long enough to matter, and constrain later updates.

Within such a framework, present facthood has a kind of ontological priority. A thermometer reading, a detector trace, a memory state, a fossil layer, a spectral signature, a map of background radiation, a mathematical fit to multiple datasets: all of these function as present records. They may point beyond themselves, but they are what is directly available as stabilized differences now. The ontology of facthood begins there.

This does not mean that only the present exists or that only what is presently recorded is real. It means something more careful: the constitution of facts for finite agents starts from present record-structure. Past events are then accessed through reconstruction. This is a relation of dependence in epistemic access, but it also carries ontological consequences once one asks what sort of fact a reconstructed past event really is.

3. From Records to Histories

Historical reconstruction is indispensable. We do not and cannot live only at the level of isolated present records. We connect records into trajectories, trajectories into histories, and histories into explanatory structures. This is as true of ordinary memory as it is of paleontology, archaeology, and cosmology.

But the move from records to histories already introduces a change in ontological status. A present record is a stabilized difference available now. A history is a structured reconstruction that explains why this record exists and how it fits with other records. The reconstructed event is constrained by evidence, sometimes strongly constrained, but it is not given in the same way as the record itself.

This distinction is easy to overlook because in many local cases the inferential gap is short. If there are fresh footprints in wet soil, the step from record to event feels almost immediate. Yet even here the event is reconstructed, not presently given. The difference becomes harder to ignore in long and layered cases: geological epochs, evolutionary lineages, prehuman history, and cosmological origins.

The important point is not that reconstruction is weak. It can be extraordinarily strong. The point is that strength of inference does not erase the ontological difference between present record and reconstructed past. A past event is not a present record merely because the evidence for it is excellent. What changes is the degree of inferential warrant, not the mode of givenness.

A record-based ontology therefore suggests a hierarchy:

1. **Present record-constituted facts**: accessible, stable, update-constraining differences now.
2. **Historical reconstructions**: disciplined narratives constrained by those records.
3. **Deep historical or cosmological posits**: reconstructions whose inferential distance from present records is especially large and whose reification into primitive ontology therefore demands special care.

The hierarchy does not imply that level 3 is false or unreal. It implies that it is ontologically derivative relative to level 1. This is the asymmetry that becomes philosophically significant in cosmology.

4. Why the Deep Past Is Special

The deep past is not simply “more of the same” historical relation. It differs by degree and, at some point, by philosophical kind. The reason is that cosmological reconstruction pushes inferential dependence to an extreme. For a finite present-day agent, the early universe is not merely absent. It is absent by an immense chain of mediation.

What is available now are present records: background radiation maps, redshift surveys, isotope abundances, large-scale structure, gravitational measurements, detector outputs, theoretical fits, and the interlocking inferential architecture of cosmological science. These are present, public, and often highly robust. But the early universe itself is not present in that same mode. It is reconstructed through layered inference from those records.

That fact alone does not weaken cosmology as science. What it weakens is a metaphysical habit: the unargued inflation by which one treats the deep past as though it were ontologically given in the same sense as present record-constituted facthood. The distinction matters because cosmological language often slides too easily from “our best reconstruction of the early universe” to “the early universe as straightforwardly real in the same way this current detector trace is real.”

The issue becomes even sharper the further back one goes. Recent astronomical history is inferred from present records. Stellar formation histories are inferred from present records. Galactic evolution is inferred from present records. Early nucleosynthesis is inferred from present records. Recombination-era plasma conditions are inferred from present records. The first fractions of a second are inferred from present records. Singularities or pre-inflationary conditions, where invoked, are inferred from present records plus extrapolated theory. At each step, the distance from current record-structure increases. The scientific discipline may remain impressive. The ontological status does not thereby become identical.

This is the core of the deep past problem: the better cosmology becomes at reconstructing origins, the easier it becomes to forget that one is still dealing with reconstruction.

5. Is the Big Bang a Fact?

The Big Bang is the paradigmatic case. It is tempting to pose the question crudely: is the Big Bang real or not? That is the wrong form of question. The more precise question is: **in what sense is the Big Bang real?**

If by “real” one means that the Big Bang is part of our best scientifically disciplined reconstruction of cosmic history, then yes: it is real in a strong and legitimate sense. It is not myth, not arbitrary invention, and not a merely private projection. It is a central explanatory posit in a powerful scientific framework.

But if by “real” one means that the Big Bang is a fact in exactly the same ontological sense as a present stable record, then the answer should be more careful. The Big Bang is not given as a present accessible, persistent, update-constraining record. It is what present records, taken together, lead us to reconstruct. In a record-based ontology, that difference matters.

This does not demote the Big Bang to fiction. It relocates it. The Big Bang is best understood as a scientifically constrained reconstruction of cosmic origins rather than as a primitive fact given independently of the record-structures through which finite agents access it.

The strength of cosmological science may make this sound weaker than it is. In fact, it is quite strong. It means that cosmological origin-events do not enjoy automatic ontological parity with present facthood merely because a theory treats them as historical nodes. To earn that parity would require an argument showing that inferential reconstruction and record-constituted givenness are ontologically equivalent. That argument is rarely provided. More often, parity is simply assumed.

The record-based challenge is therefore not anti-cosmological. It is anti-naive-realist in a specific sense. It resists the silent slide from current evidence to primitive deep-past facthood.

6. Singularities, Horizons, and Limit-Cases

The point becomes sharper when cosmology confronts its own limits. Singularities are useful here, not because they prove the record-based view, but because they already trouble straightforward realism. A singularity is not ordinarily treated as a simple, comfortably described event like an explosion in a laboratory. It is a limit-case where the explanatory grammar of theory strains. This alone should make us cautious about reifying the earliest cosmological "event" as though it were given in the same mode as everyday facthood.

The observable horizon offers a different pressure point. In standard physical terms, it is a limit on causal or observational access. In the present framework, it can be redescribed as an informational limit on integration and public record-extension. Beyond a certain threshold, what lies there may still exist in the broad physical sense, but it is no longer part of the domain in which our current record-net can be extended in the same way. This does not make it unreal. It shows that existence and record-constituted accessibility can diverge.

Black holes are useful as analogical support. Whatever one says about their exact ontology, they are already treated in physics as cases where accessibility, recoverability, and status of information become philosophically nontrivial. They remind us that reality need not be ontologically uniform with respect to finite access. The distinction between what exists, what is accessible, and what is record-recoverable is already written into the edge-cases of physics.

These cases do not prove that the Big Bang is "only" reconstruction. They do something subtler and more useful. They break the spell of a flat realism in which all parts of the past are automatically treated as facts of one undifferentiated kind.

7. Public Records, Science, and the Charge of Subjectivism

The most immediate objection is that this makes cosmology subjective. It does not. The record-based view is relational, not arbitrary. The relevant records are not private whims or introspective episodes. They include public, instrumentally stabilized, socially transmissible, and theoretically integrated structures. Scientific cosmology is precisely a machinery for converting scattered local records into robust public evidence.

This is why the present proposal does not diminish science. If anything, it clarifies what science actually does. Cosmology does not hand us the early universe directly. It constructs disciplined access to it through present evidence and inferential organization. The record-based view simply refuses to confuse this extraordinary success with a collapse of all ontological distinctions between present fact and reconstructed past.

Nor does the argument imply that nothing existed before agents or before life. That would be a caricature. The claim is not that the pre-agent world is unreal. It is that, for finite agents, the ontological status of that world is always mediated by record-constituted access and inferential reconstruction. The world may exceed current records. The point is that facthood for finite agents is not primitively given outside that mediated structure.

One may think of the proposal as a disciplined weakening of realism rather than as anti-realism. It grants a world independent of any one observer while denying that all statements about that world share one and the same mode of ontological givenness.

8. Objections

8.1 “This collapses ontology into epistemology.”

No. The claim is not that what exists is only what is known. The claim is that facthood for finite agents is constituted through record-structures, and that reconstructed history therefore has a different ontological status from present record-givenness. This is an ontological distinction about modes of facthood, not a simple epistemic slogan.

8.2 “Science already treats the Big Bang as inferred, so nothing new is added.”

Science often does treat cosmology as inference from evidence. What is added here is the insistence that this inferential status matters ontologically. The novelty lies not in observing that cosmology is reconstructive, but in denying that successful reconstruction automatically licenses primitive fact-status.

8.3 “This is just anti-realism in polite language.”

Not quite. A fully anti-realist view would threaten the reality of the reconstructed past itself. The present proposal does not do that. It grants the scientific legitimacy and constrained reality of cosmological reconstruction while rejecting an unargued parity between reconstruction and present record-facthood.

8.4 “Ordinary history would be destabilized too.”

Only in a limited and clarifying sense. Yes, the same logic applies to all history. But in local and recent cases the inferential chain is short, dense, and heavily overdetermined by records. The ontological distinction remains, but the practical gap is small. In cosmology the gap becomes philosophically visible because the inferential chain is vast and the temptation to reify origins is correspondingly strong.

9. Conclusion

A record-based ontology gives present stable records primacy in the constitution of facts for finite agents. Historical narratives are then reconstructed from those records, not given in the same way as the records themselves. As one moves deeper into the past, especially into the cosmological past, the inferential chain grows longer and the ontological status of what is described becomes increasingly indirect.

This does not undermine cosmology as science. It clarifies its ontological status. The Big Bang, singular early-universe conditions, and other deep-time posits are best understood as disciplined reconstructions from present evidence rather than as primitive facts given in the same sense as present stable records. A record-based ontology therefore weakens naive realism about the deep past without denying realism altogether.

The philosophical payoff is significant. It allows one to respect cosmology’s scientific force while resisting the silent metaphysical inflation by which reconstruction is treated as ontological immediacy. The deep past remains meaningful, powerful, and real in a derivative sense. But it is not given to finite

agents in the same way that present record-constituted facthood is given. That difference is not a defect in cosmology. It is the beginning of a clearer ontology of history and origins.

Author note

This text is a forward-looking working paper draft within a broader record-based philosophical program concerning subjectivity, identity, and quantum definiteness. It explores a possible future extension of that framework into the philosophy of cosmology.

Note on AI use

AI tools were used for drafting assistance, conceptual testing, and editing. The author takes responsibility for the final claims, structure, and wording.