UNITY OF THE EXPLANANDUM, UNITY OF THE EXPLANANS: AN AUDIT OF EXPLANATORY TRANSITIONS IN ARGUMENTS FOR AN ULTIMATE ORIGIN

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ABSTRACT

Arguments for an ultimate origin—kalām, contingency, and metaphysical grounding—are frequently treated as a single inference, exposed to a single objection. This article maintains that such homogenization is a mistake and proposes, in its place, an audit of explanatory transitions. Drawing on the contemporary theory of origin explanation, which analyses origin phenomena as bottlenecks in expanding causal networks (MALATERRE, 2026), and on the literature on causal selection (ROSS, 2018; GLENNAN, 2026), four senses of unity that are habitually conflated are distinguished: unity of the entity, genealogical unity, causal unity, and explanatory unity. Well-documented cases of natural genesis—the multiple origins of multicellularity, evolutionary transitions in individuality, eukaryogenesis, genomic reticulation—show that none of these senses implies the others. From this follows no refutation whatsoever of a single metaphysical ground, but rather a requirement: every passage from one explanatory structure to another calls for an independent bridge premise, formulated and defended (the Principle of Explanatory Type Integrity). Two dimensions of the bridge are further distinguished—type, when the explanatory relation changes, and scale, when only the domain changes. Applied to kalām, contingency/the Principle of Sufficient Reason, and grounding, the audit discriminates: the three arguments distribute these bridges in different ways and display unequal sensitivity to the science of origins. The same audit is applied to naturalism. The result is modest and methodological: the science of origins does not adjudicate the metaphysics of origin, but it disciplines the inferences that are meant to be drawn from it.

Keywords: origin explanation; causal selection; cosmological argument; metaphysical grounding; Principle of Sufficient Reason; contrastive explanation; philosophy of religion.

1. INTRODUCTION

1.1. An Intuition and Its Collapse

There is a recurrent, and not negligible, intuition on the border between the natural sciences and the philosophy of religion. It might be stated thus: the empirical investigation of origins reveals gradual, varied, and distributed geneses, whereas religious conceptions of origin postulate a single primordial act or agent. Were this true, there would be an interesting tension—

not a refutation, but at least an asymmetry of explanatory style that would itself call for explanation.

The intuition does not survive examination. It fails for at least seven distinct reasons, and it is worth stating them at once, because each of them shapes the final form of the thesis defended here.

First, “the religions” do not constitute a homogeneous causal class. Documented cosmogonies occupy practically the whole of the available logical space: creation without prior material, the ordering of pre-existing matter, divine genealogy, the separation of primordial elements, emergence through successive worlds, cycles without absolute beginning, and cosmologies that explicitly reject a first cause. Second, many religious cosmogonies are processual, genealogical, or cyclical—so that the opposition “process versus point” does not divide the religious traditions on one side from science on the other. Third, nature also presents relatively abrupt transitions: hybrid speciation with polyploidy, phase transitions, thresholds. The appropriate category was never slowness, but processuality with antecedents. Fourth, common ancestry is not equivalent to simple causal origin: known life possesses deep genealogical unity without this implying a single abiogenetic event or a single cause. Fifth, creatio ex nihilo, in its classical philosophical formulations, is not necessarily a temporal hypothesis about a first event, but a thesis about ontological dependence—possibly continuous (VANDER LAAN, 2022). Sixth, causal explanation, mechanistic explanation, and metaphysical grounding do not belong to the same explanatory type, so that comparing them as though they were direct rivals commits a category mistake before the comparison has even begun. Seventh, and decisively, no natural science decides, by itself, a metaphysical question about an ultimate ground; to suppose otherwise is an additional philosophical thesis that would need to be defended separately.

These corrections are not peripheral concessions. They are the result of the examination, and what remains after them is the object of this article. I record them at the outset because the temptation to return to the initial formulation—more striking, easier to defend rhetorically, and false—is persistent.

1.2. What Remains

What survives is narrower and, I believe, more interesting. It is a thesis neither about religion nor about science, but about inference.

When we explain the origin of something empirically accessible, the explanation usually identifies a historically situated causal structure: transformed antecedents, integrated components, converging lineages, boundary conditions, bottlenecks. When we argue for an ultimate origin, the conclusion frequently belongs to another category: a first cause, a necessary being, an ontological ground. Between the one and the other there is a passage. The passage may be legitimate. But it is not gratuitous, and it is almost never made a theme of discussion.

The thesis of the article is the following:

> The scientific investigation of origins does not directly decide the question of an ultimate metaphysical ground, because distinct cosmological arguments invoke distinct types of dependence. Nevertheless, this investigation dissolves a frequently presupposed intuition: the present unity of the explanandum does not, by itself, provide a reason to postulate causal, genealogical, or explanatory unity of its origin. Consequently, every passage to a first cause, to a necessary being, or to a single ground requires a bridge premise of its own, whose legitimacy must be assessed independently.

In condensed form: the question is not whether everything came from one or from many, but what inference authorizes the passage from the structure of what exists to the structure of its ultimate explanation.

The proposition that organizes the argument is a series of non-identities:

> UNITY OF THE ENTITY ≠ GENEALOGICAL UNITY ≠ CAUSAL UNITY ≠ EXPLANATORY UNITY.

And, in particular: the unity of the explanandum does not imply the unity of the explanans. This does not mean that a single explanans is false. It means that its singleness needs to be established by independent argument, and not inherited from the unity of what one wishes to explain.

1.3. What Contribution Is Claimed

It is worth being explicit about the modesty of the contribution, because each isolated piece of the argument already has a consolidated literature—and because, as will be seen, two of the four literatures have already met.

It is not new that origins are historical and processual, nor that causal networks converge in bottlenecks—that is precisely Malaterre's (2026) proposal. It is not new that explanations select causes within broader networks (ROSS, 2018; GLENNAN, 2026), nor that "why?" questions depend on a contrast (VAN FRAASSEN, 1980; GARFINKEL, 1981; LIPTON, 1990). It is not new that the unity of an effect does not require a single cause, nor that cosmological arguments face part–whole problems (REICHENBACH, 2026), nor that classical creation may be non-temporal (VANDER LAAN, 2022; SILVA, 2025a), nor that grounding is not ordinary causation (FINE, 2012; SCHAFFER, 2009; BLISS; TROGDON, 2021). Nor is it new that there is a psychological preference for explanations with few root causes (LOMBROZO, 2007; PACER; LOMBROZO, 2017).

Three more uncomfortable acknowledgements are due, and I prefer to make them here rather than leave them to a referee.

First, cosmological arguments and metaphysical grounding have already been brought into systematic contact. Oberle (2022) compares the Thomistic argument with Schaffer's argument for

metaphysical foundationalism and maintains that both share a structure and fail for the same reason; Oberle (2024) reformulates the Hume–Edwards principle in the vocabulary of grounding and argues that the plurality of contingent facts is grounded in its members. Pearce (2017) already constructs theistic explanation as non-causal and makes the bridge a theme of discussion. Silva (2025b) already applies contemporary theories of explanation to the Thomistic distinction between primary and secondary causation, and Mghirbi (2026) constructs, with declared bridge principles, a hierarchical argument that runs from contingency to grounding and from grounding to the divine attributes. The idea that natural theology and the philosophy of science live in separate silos is, moreover, belied by a recent special issue devoted entirely to the encounter between the two.

Second, bridge principles between explanation and grounding have already been named and discussed. Skiles and Trogdon (2021) formulate an inheritance schema that explicitly separates the characterization of explanation from the inferential premise that authorizes its transfer to grounding; Kortabarria and Giannotti (2024) propose a scientific inheritance with the same structure. The principle of section 4.2 is not, therefore, a discovery; it is a relative of these schemas, with one further restriction.

Third, the thesis that "cosmological argument" is not a single inference, and that objections to one version may be irrelevant to the others, is already recorded in the reference literature (REICHENBACH, 2026). What is offered here in this respect is systematization, not discovery.

These deductions made, what remains is the following, and it is only this that is claimed.

1. *An independence restriction on the bridge premise.* The inheritance schemas cited do not impose on the inferential premise itself the requirement of being justifiable without presupposing what it licenses—Skiles and Trogdon state that they do not offer a principle governing when inheritance holds, and Kortabarria and Giannotti justify theirs by a balance of theoretical costs and benefits. Section 4.2 formulates this restriction and section 4.5 applies it, including against them.
2. *Bottleneck topology as a normative restriction on origin inferences.* Malaterre (2026) characterizes origin phenomena by the convergence of causal lines prior to an expansion. I have found no one who has asked whether this narrowing licenses, or fails to license, a singular explanans.
3. *Empirical cases of origin as a testing ground.* Eukaryogenesis, evolutionary transitions in individuality, and genomic reticulation are used here against an inference of natural theology. I have found no precedent for this use.
4. *One and the same test applied to the three families.* Kalām, contingency, and grounding are audited by the same criteria, rather than by objections constructed separately for each.

The question that organizes all of this is a single one:

> When does a causally distributed or historically structured origin explanation authorize the passage to an explanans of a different kind—first cause, necessary being, or single ontological ground? What bridge premise legitimizes the transition, and what legitimizes it in turn?

The contribution is, therefore, architectural and comparative, not conceptual. If the instrument did not discriminate among the three arguments, it would be rhetoric; section 5 seeks to show that it does discriminate.

1.4. Map

Section 2 examines what it means to explain an origin, fixing the vocabulary: origin phenomenon, causal bottleneck, causal selection, contrast, and the four unities. Section 3 runs through cases of natural genesis and draws from them an epistemically limited conclusion—and only that conclusion. A final subsection of that section undoes the false contrast class "religion". Section 4 formulates, defends, and qualifies the Principle of Explanatory Type Integrity, distinguishes type bridges and scale bridges, and proposes the audit protocol. Section 5 applies the protocol to kalām, contingency/the Principle of Sufficient Reason, and grounding. Section 6 confronts objections, including those that strike at the audit itself, and submits naturalism to the same examination. Section 7 draws out implications; section 8 concludes.

A caveat before proceeding: this article does not presuppose naturalism and does not conclude in its favour. The requirement to make bridge premises explicit is symmetrical, and an audit that charged only one side would be a burden disguised as method.

2. WHAT DOES IT MEAN TO EXPLAIN AN ORIGIN?

2.1. Origin Phenomena and Causal Bottlenecks

The question "where did X come from?" is not just any causal question. Malaterre (2026) proposes that it has a distinctive explanatory structure, anchored in two ideas.

The first is that of an *origin phenomenon*: a phenomenon that did not exist before a certain historical moment and that, from that moment on, unfolds into an expanding causal network. The origin of life, the origin of eukaryotes, the origin of a pandemic, the origin of an institution—all share this form. It is not enough that something begins: what begins must branch out causally onwards, constituting a relatively distinct network.

The second is that of a *bottleneck*: to explain an origin is to identify the point in the causal network at which antecedent lines converge before the subsequent expansion. The explanation neither lists all the antecedent conditions nor points to an isolated cause; it locates a convergence.

Two consequences matter here. First: in an origin explanation, antecedent multiplicity is the rule, not the anomaly. The bottleneck is a narrowing *of many lines*, and the fact that there is a narrowing does not turn the lines into one. Second: the identification of the bottleneck is

retrospective. It is because we know the later expansion that we cut out, looking backwards, a point as “the origin”. Origins, in this sense, are cuts imposed upon historical transitions whose boundary is, in general, diffuse.

This second consequence will be decisive in section 4. If the category “origin” is constituted in part by the subsequent causal expansion, then asking about the origin of something that is not inserted in any causal network at all—or whose relation to the rest is not causal—requires showing, and not presuming, that the question remains well formed.

2.2. Causal Selection: Why Explanations Single Out Some Factors

Any occurrence has a very large number of causally relevant conditions. To explain is not to enumerate them. The problem of *causal selection* consists in justifying why some conditions are raised to “the cause”, “principal cause”, or “root cause”, while others remain in the background.

Glennan (2026) treats selection as a four-step procedure—choosing the audience and aims, the effects to be explained, the models and variables, and then the explanatorily significant causes—and identifies recurrent heuristics in investigative practice, among them a preference for complete but economical sets of causes, for norm violations, for controlling factors, and for practically manipulable causes. His study of aircraft accident investigations shows what matters for our problem: appropriate selection depends on who asks for the explanation and why, and is not a direct reading of the structure of the world.

Ross (2018), for her part, shows that selection does not always fall on a single cause. In biology, the concept of a causal pathway (*pathway*) supports genuinely multicausal selection, guided by principled considerations and not by a preference for simplicity. The philosophical literature, she observes, had neglected exactly this pattern.

The joint lesson is twofold and uncomfortable for both sides of the debate that concerns us. That an explanation singles out one cause does not show that reality contains only one—this may be an effect of selection; but neither does it show that the explanation is distorting reality—the selection may be perfectly principled. Explanatory concentration is not, in itself, either a virtue or a vice: it is assessed case by case, by explicit criteria.

2.3. The Relevant Contrast

“Why?” questions are contrast-sensitive (VAN FRAASSEN, 1980; LIPTON, 1990). “Why did Maria buy the car?” calls for different answers depending on whether the contrast is *Maria*, and not João; *bought*, and not rented; *the car*, and not the motorcycle. The same proposition, under different contrasts, defines different explananda.

The questions usually grouped under “the question of origin” are not, therefore, a single one:

1. Why is there something rather than nothing?

2. Why is there *this* universe rather than another?
3. Why does this universe have *these* laws?
4. Why are there contingent beings?
5. Why is there a structure of ontological dependence?

There is no prior reason to suppose that these five questions share an explanans. An explanans may answer the fourth very well and discriminate nothing in the third. A change of contrast may radically change what counts as a relevant explanation—and, as we shall see, arguments for an ultimate origin frequently slide among these contrasts without signalling the change.

2.4. Four Unities That Are Not One

I come to the central conceptual point of the section. The debate about origins is traversed by a systematic ambiguity in the use of "one" and "single". Four senses should be separated.

1. **Unity of the entity.** The explanandum is today one thing, individuable, with reasonably clear boundaries: an organism, a species, a language, a universe.
2. **Genealogical unity.** The explanandum descends from a single lineage or from a single ancestral event.
3. **Causal unity.** The production of the explanandum is due to a dominant causal factor, and not to a multiplicity of relatively independent factors.
4. **Explanatory unity.** A single explanatory structure, or a single explanans, accounts for everything one wishes to explain about the explanandum.

The four come apart in every direction, and section 3 documents the dissociations in the domain in which they can be inspected. Let the most counterintuitive be recorded straight away: an explanation may be unified (iv) while covering causally heterogeneous processes, as happens in equilibrium or topological explanations—so that not even explanatory unity guarantees the other three.

The slide that concerns us is the tacit passage from (i) to (ii), (iii), or (iv). It is psychologically natural—I shall return to this in section 6—and logically invalid. Formulated as a negative principle:

> **Non-transfer of unity.** From the synchronic unity of an explanandum there does not follow, without an additional premise, the genealogical, causal, or explanatory unity of its origin.

This principle is not a metaphysical thesis. It is an inferential restriction, and it can be checked case by case. The following section checks it.

2.5. Three Families of Explanation

Finally, three explanatory families that will be drawn upon throughout the article must be distinguished, because the central thesis concerns precisely the passage between them.

Etiological or causal-historical. It explains how an event or state was produced over time. Typical criteria: causal history, counterfactual dependence, invariance under intervention (WOODWARD, 2003), productive structure. Model question: why did E occur?

Mechanistic or constitutive. It explains how organized components produce, sustain, or realize a phenomenon, by means of entities, activities, and organization in levels (MACHAMER; DARDEN; CRAVER, 2000; CRAVER, 2007). Model question: how does X work, or how is it produced by its parts?

Metaphysical, by grounding. It explains in virtue of what something exists or has a certain ontological status, by means of relations of priority or determination that most of the literature considers non-causal and hyperintensional (BLISS; TROGDON, 2021). The very nature of these relations is disputed: for Fine (2012), grounding is itself a form of explanation; for Schaffer (2009), it is the primitive relation of determination that backs explanations, analogous to causation and distinct from it. Model question: in virtue of what is X, or is X thus?

None of these families is illegitimate. None is reducible to the others without argument. And it is precisely because they are all legitimate that the passage between them requires bookkeeping.

3. WHAT NATURAL ORIGINS AUTHORIZE US TO INFER

3.1. Cases, Counter-Cases, and Precautions

The function of the biological cases here is strictly delimited. They do not prove a naturalist metaphysics, do not show that every origin is multiple, do not refute the existence of an ontological ground, and do not establish that nature is “always gradual”—a claim that is false. They serve a single, negative, and limited purpose: to weaken the intuitive inference that runs from the present unity of an explanandum to the unity of its origin, by exhibiting, in an empirically controlled domain, the dissociation between the four unities of section 2.4. I avoid, for that reason, saying that natural origins are “gradual”: it is antecedence, not slowness, that matters to the argument.

The most instructive case is not that of a particular origin, but that of the very category of the individual. Evolutionary transitions in individuality describe processes by which formerly independent entities come to constitute a new unit of selection (WEST et al., 2015; MICHOD, 2007). Radzvilavicius and Blackstone (2018) make the point explicit: individuality is itself a trait that had to evolve, and the individual is not an indivisible entity, but the result of processes that begin at the lower hierarchical level—which leads them to reconceive it as an approximative model, and not as an exact ontological category. If the unity of the entity is the product of a

process, taking it as the starting point for inferring the unity of the genesis inverts the order of explanation.

Three cases confirm the dissociation in different directions. Multicellularity arose independently in multiple lineages, with diverse architectures and mechanisms (GROSBERG; STRATHMANN, 2007; NIKLAS; NEWMAN, 2020): unity of *type* does not imply unity of *genesis*. The eukaryotic cell, a paradigmatic unit, is treated as a transition involving the symbiotic integration of distinct lineages (EME et al., 2017): unity of the entity without genealogical unity. And genealogy is a network, not merely a tree—hybrid speciation is more common than was supposed (MALLET, 2007), and hybridization characterizes practically every branch of the eukaryotic tree (SCHUMER; RIESEBERG, 2026).

The counter-cases must be presented, not hidden. Hybrid speciation with polyploidy can produce a new species very rapidly; phase transitions can be abrupt after an accumulation of conditions; and real causal bottlenecks exist, with dominant causes correctly selected. If the argument depended on universal gradualism, these cases would destroy it. It does not, because even the most abrupt origin presupposes earlier lineages, conditions, or states: rapid polyploidy is rapid *and* dependent on parental genomes; the phase transition is abrupt *and* dependent on prior accumulation. What natural cases exhibit is not slowness, but structured antecedence.

Two precautions, in opposite directions, close the repertoire. Common ancestry is a counterweight and must be acknowledged as such: known life possesses a deep genealogical unity. But this is a matter of *retrospective* convergence towards common ancestors, and not of the identification of a single causal event; it implies neither a single abiogenesis nor a single cause. Genealogical unity, yes; causal unity, not established. The origin of life calls for the opposite precaution: the field remains open, and it would be abusive to say that “science has shown how life arose”. What can be affirmed is that contemporary research programmes treat the interval between prebiotic chemistry and cellular life as something to be filled in by antecedent mechanisms, and not as the appearance of a complete living system without causal history (KALAMBOKIDIS; TRAVISANO, 2024)—a direction of research, not an accomplished fact. It is also here that Malaterre’s (2026) analysis applies most directly: the origin of life is described as a convergence of pre-existing systems, not as an emergence from a single antecedent.

3.2. The Limited Conclusion, and the Contrast Class That Does Not Exist

In empirically accessible domains, relatively unitary entities frequently emerge through the transformation, integration, or reorganization of antecedents, and the unity that characterizes them today is often posterior to the process that produced them. From this a single proposition is drawn, which is all that the section aims at:

> **Limited conclusion.** The present unity of an entity does not, on its own, determine the topology of its origin.

The proposition is epistemically modest and metaphysically inert: it says nothing about God, about the universe as a totality, or about grounding. It speaks about an inference—and blocks it.

It remains to undo the contrast that the initial intuition presupposed: processual science on one side, punctual religion on the other. It is empirically false. Documented cosmogonies occupy almost the whole of the available logical space—from primordial waters and theogonic conflict to cycles without absolute beginning, from emergences through successive worlds to the explicit rejection of a first cause and to the eternity of the cosmos without creation at any moment (LEEMING, 2010). And even the tradition of maximal causal concentration, monotheistic *creatio ex nihilo*, is not reducible to a temporal hypothesis: in its philosophical formulations it affirms the absence of pre-existing material and ontological dependence, possibly continuous, and not a temporal fabrication analogous to ordinary physical causation (McMULLIN, 2010; SOSKICE, 2010; VANDER LAAN, 2022).

The religious axis cannot, therefore, be the organizing contrast of the article, and it is not: it enters only to prevent a false opposition and to make clear that the object of the audit is not "the religions", but determinate philosophical arguments, with identifiable premises. It is to these that we now turn.

4. FROM NATURAL ORIGIN TO ULTIMATE ORIGIN

4.1. What Changes When One Changes Level

Suppose the limited conclusion of section 3 is granted. Nothing in it concerns the universe as a totality, and still less being as such. The passage from the one to the other is not an enlargement of scale; it is a change of explanatory type.

It is worth reconstructing, with maximal charity, the reply the classical theist offers at this point, because it is correct in what it affirms:

> God is not a competing cause within the chain of natural causes. Natural processes explain intramundane transformations; God explains existing, ontological dependence, the grounding of the causal order itself.

This reply should not be caricatured and is not contested here in its structure. Evolution, abiogenesis, endosymbiosis, and distributed causation are compatible, in principle, with a classical theistic metaphysics; the Thomistic tradition has long distinguished the first cause from secondary causes, and creation may be understood as the giving and sustaining of being and of causal powers themselves, without natural processes ceasing to be true causes (SILVA, 2025a; VANDER LAAN, 2022). An argument of the type "natural origin is multicausal, therefore God is excluded" is simply invalid, and this article does not formulate it.

But observe what the reply does. It moves theistic explanation from one explanatory family to another—from the causal-historical to grounding. This move is legitimate. And it is precisely because it is legitimate that it brings with it obligations of its own: an explanans that occupies no node of the causal network investigated by the sciences cannot inherit from that network either its plausibility or its criteria of success. It needs its own.

Asking about them is not hostility: it is the minimum asked of any explanation, and it is what the protocol of section 4.6 systematizes.

4.2. The Principle of Explanatory Type Integrity

I propose, as an instrument—and not as an axiom—the following principle:

> **Principle of Explanatory Type Integrity (PETI).** When an inference passes between non-equivalent explananda, relations of dependence, or criteria of explanatory success, the conclusion is not established by the preceding premises alone, unless there is an independent bridge premise that justifies the transition—that is, a principle that preserves explanatory relevance across the change.

The name keeps the word "type" for convenience, but the formulation is deliberately relational, not taxonomic. The principle does not depend on there being a correct and exhaustive classification of explanatory families; section 2.5 offers three useful families, not an ontology of explanations. It depends only on a minimal condition, verifiable case by case: that the premises and the conclusion answer non-equivalent explanatory questions. Where the equivalence is contested, it is contested—and that contestation is itself a thesis to be defended, not a gratuitous resource.

Five clarifications prevent foreseeable misunderstandings.

PETI does not prohibit transitions. It does not say that inferences between explanatory types are invalid, nor that metaphysics cannot learn from science, nor that science has no metaphysical implications. It says that the transition needs to be made by something—a premise, a principle, a substantive thesis—and that this something is what must be assessed.

"Independent" has a determinate sense. It does not mean logical independence from the other premises, nor evidential isolation. It means: **justifiable without presupposing the conclusion whose passage it licenses.** A bridge that holds only because the conclusion is true licenses nothing at all; it merely repeats the conclusion in the position of a premise. The criterion is dialectical, and that is why it can be applied by someone who has not yet decided the question.

PETI is epistemic, not metaphysical. It concerns what is established by given premises, not what exists. It is compatible with the truth of any conclusion it declares not established.

PETI is symmetrical. It applies to the theist who passes from causal dependence to grounding, and to the naturalist who passes from mechanistic sufficiency to the non-existence of

grounding. Section 6 charges the latter with the same severity with which section 5 charges the former.

PETI is not original in its content, and its ancestry is long. In its logical form, it is a relative of Hume's thesis about the gulf between "is" and "ought", in the generalization Schurz (1991) gave it: from premises in one vocabulary no conclusion in another follows without a principle connecting them. In its metaphysical form, it is a neighbour of the inheritance schemas already formulated in the literature on explanation and grounding. Skiles and Trogdon (2021) explicitly separate the characterization of explanation from the inferential premise that authorizes its transfer to grounding, and observe that such inferences work better within a single explanatory framework than between frameworks; Kortabarria and Giannotti (2024) propose, with the same two-premise structure, a scientific inheritance that runs from constitutive explanation to *ground*.

What is added here to these schemas is one single thing: the independence requirement stated above. None of them imposes it. Skiles and Trogdon state that they do not offer a principle governing when inheritance holds; Kortabarria and Giannotti justify their inference by a balance of theoretical costs and benefits—that is, by the advantages of admitting what it licenses. Section 4.5 returns to this point, and the requirement bites.

Examples of application, to fix the sense:

- From "events within the universe have causes" there does not follow, without an additional bridge, "the totality of the universe has an external cause".
- From "contingent beings have local explanations" there does not automatically follow "the totality of contingents requires a necessary ground".
- From "there exists a necessary ground" there does not automatically follow "this ground is single, personal, intentional, good, or identical to the God of a determinate tradition".
- From "natural processes explain the history of complex entities" there does not automatically follow "there is no metaphysical ground for these processes".

4.3. What the Principle Detects, and the Triviality Objection

The most serious objection needs to be answered here, and not at the end. It has the form of a dilemma, and the dilemma is not my invention: it is the documented fate of Hume's law, and whoever formulated it against that law will formulate it against PETI.

First horn—triviality. If "is not established by the preceding premises alone" means only that the conclusion is not a logical consequence of them, the principle is the conservativeness of deduction under another name, and the independence clause is the commonplace prohibition of begging the question. This is the criticism Pigden (1989) directs at Hume's law: no new and non-vacuously introduced vocabulary appears in the conclusion of a valid argument, and to say this is to say nothing substantive.

Second horn—operational vacuity. If the principle aims to be more than that, the whole weight falls on individuation: when do two explananda or two relations of dependence count as

non-equivalent? Without a criterion, the principle never decides a case—the defender of kalām will say that efficient causation and sustaining dependence are of the same type, the critic will say they are not, and the principle is left out. Chilovi and Wodak (2022) bring exactly this charge of insignificance against Hume's law: the real philosophical work lies in the substantive theses, not in the non-derivability thesis.

Three replies, none of which entirely dissolves the dilemma.

The first is about what the principle detects. Its object is not missing premises—that would be trivial—but a specific phenomenon: **certain arguments appear to have explanatory continuity precisely because the change in the explanatory relation remains invisible in the surface form of the argument.** The same term appears in the premises and in the conclusion, and the inference looks like an application when it is an extension. In kalām, "cause" keeps the word and loses the repertoire when it passes from intramundane events to the beginning of space-time; in the contingency argument, "explanation" slides from the distributive to the global, a slide frequently operated by a single adjective—"adequate", "complete"—that carries on its own an entire theory of explanation; in the argument from grounding, "dependence" passes from local relations to the requirement of a *terminus*, and from that to the requirement of a single *terminus*. None of these steps is the same step, and the continuity of the vocabulary does not unite them.

The second is about the nature of the diagnosis. What the principle points to is not a semantic error. A category mistake, in Ryle's sense, is an ill-formed attribution. A type bridge may be well formed and true—grounding *is* a real relation—and nonetheless vitiated by a failure of warrant transfer: the evidence that supported the old relation does not support the new one. The diagnosis is epistemic, not semantic, and that is why it neither coincides with the charge of category mistake nor is resolved by conceptual analysis.

The third is about the burden. As to individuation, I grant that the principle does not supply it a priori, and that it cannot supply it. But it redistributes the burden in a non-trivial way: whoever maintains that two relations are equivalent—that intramundane efficient causation and sustaining dependence are of the same type—now owes that thesis, instead of receiving it through continuity of vocabulary. It is not much. It is more than zero, and it is exactly the difference between an argument whose point of decision is identified and one in which it is diffuse.

4.4. Two Dimensions of the Bridge

Not all bridges do the same work. I propose to distinguish them by two dimensions of variation—and I insist on "dimensions", not "species", because the arguments that concern us vary in both at the same time.

Type dimension. The explanatory relation invoked changes: from causal to modal, from causal to grounding, from grounding to personal agency. What counts as explanatory success is altered.

Scale dimension. The relation is kept and the domain is altered: from events to the universe, from individual contingents to the contingent totality, from local relations of grounding to the global structure.

Two qualifications are necessary, and both were imposed by the literature.

The first is that the scale dimension is not homogeneous, and treating it as though it were repeats the amalgam that Potochnik and McGill (2012) undid when they showed that scale is independent of the part–whole relation. Under the label fall at least three things that fail in distinct ways: mereological aggregation, which is the classical fallacy of composition and is repairable by reformulation; quantifier shift, which is a formal and not an informal error; and the passage from the distributive to the collective in structures of dependence, which is no error at all, but a substantive and open question—Dasgupta (2014) argues that a plurality of aspects may be explained jointly without each being explained in isolation, and Oberle (2024) defends the distributive reading against the collective one precisely in the cosmological argument. The third variety, therefore, carries no presumption of defect.

The second qualification is more costly for the instrument. It would be convenient to say that each dimension has its own critical repertoire—composition and loss of empirical repertoire against scale; change of success criterion and loss of discriminating relevance against type. It would be convenient, and it is false. Morriston (2000) employs the loss of empirical repertoire against a change of type, when he observes that the "comings into being" of which we have experience are intratemporal and asks whether the coming into being of a mushroom is relevantly similar to that of time. And the loss of discriminating relevance, which looks like a type criterion, is what Wilson (2014) directs against grounding taken as a unified relation, and what Schurz (1991) formalizes as irrelevance by substitutability—a property of scope as much as of vocabulary. The repertoires, therefore, are not disjoint: each dimension makes certain criticisms *salient*, without exclusivity.

With these qualifications, what the distinction offers is less than a taxonomy and more than nothing. It prevents an argument from being criticized in one dimension when the problem lies in the other, and it prevents one bridge from being counted when there are two. That is enough for the use I make of it in section 5.

4.5. The Principle Put to the Test

A principle that never runs a risk is not a principle, it is a preference. I consider three serious objections.

First objection: intertheoretic reductions. Statistical mechanics explains thermodynamic facts; microphysical explanations explain macroscopic properties. Here there is, apparently, a transition between types without a declared bridge. The reply is that the bridge exists and is precisely what makes the case interesting: theoretical identities, relations of composition, theses of supervenience or of realization. When these theses are contested—and they are—the

debate takes place precisely over them, not over the data. The case confirms PETI rather than refuting it.

Second objection: scientific explanation as a guide to grounding. Kortabarria and Giannotti (2024) defend a naturalist approach to grounding according to which constitutive scientific explanations—topological, quantum entanglement, equilibrium explanations—should serve as evidence for grounding relations, by means of what they call scientific inheritance. If this is correct, there is a legitimate passage from scientific explanation to metaphysical grounding. Would it be a counterexample to PETI?

No. It would be an instance of it—and, what is more interesting, an instance in which the independence requirement bites. Kortabarria and Giannotti's proposal *is* a bridge premise: an explicitly formulated principle exposed to criticism, and in that respect exemplary. But they justify it by a balance of costs and benefits, that is, by the theoretical advantages of admitting grounding relations wherever there is constitutive explanation. A bridge so justified is not independent in the sense of section 4.2: its credentials come from what it licenses. This does not refute it—principles are frequently defended by their fruits—but it shows that it still owes a justification of another order, and it is this debt that the independence requirement makes visible. The same holds, with greater force, for Skiles and Trogdon (2021), who expressly decline to offer a principle governing when inheritance holds.

I record the dialectical cost of this reply: if the independence requirement is very severe, few bridges will satisfy it, including those I would like to preserve. I prefer to take that risk rather than dilute it, because a requirement that approves everything distinguishes nothing. The relevant contrast, in any case, is not between arguments with a bridge and arguments without one—every argument that changes dimension has one—but between declared bridges and tacit bridges, and, among the declared ones, between those that stand on their own and those that stand on what they authorize.

Third objection: the typology is arbitrary. If the explanatory families of section 2.5 have no sharp boundaries, the principle has no content. I grant that the boundaries are disputed—there is a lively debate about whether grounding is a form of explanation or a relation that backs it, and about whether mechanistic explanations are causal. But that is why the formulation of section 4.2 is relational. It does not ask to which family an explanation belongs; it asks whether the explanatory questions answered by the premises and by the conclusion are equivalent. When the model questions differ—how was E produced? *versus* in virtue of what is E?—the difference must be made a theme of discussion, and no taxonomy needs to be fixed in order to observe it. If someone maintains that there is no difference at all between the two questions, that is a strong thesis, and the burden is its own.

With these qualifications, the principle is weak, and that weakness is intentional. It decides nothing on its own. It merely prevents decisions from being taken without its being seen what took them.

4.6. The Audit Protocol

From PETI a protocol is derived. I present it as a philosophical structure, and not as a form; its application in the following sections does not follow the items mechanically, but omits none.

1. **Specification of the explanandum.** Which fact, exactly, is one trying to explain? “Why is there something?” is not identical to “why is there this universe?”, nor to “why does this universe have these laws?”.
2. **Specification of the contrast.** X rather than what? Different contrasts require different explanantia (VAN FRAASSEN, 1980; LIPTON, 1990).
3. **Identification of the explanatory relation.** What relation is being invoked—causal production, modal dependence, constitution, grounding, agency? Changes over the course of the argument must be declared, even if the vocabulary remains constant.
4. **Discriminating relevance.** Does the explanans make the explanandum more intelligible *than its relevant alternatives*? A personal explanation, in particular, needs to show how intentions or reasons discriminate among possible outcomes; otherwise it explains anything equally well, and therefore nothing.
5. **Bridges: type and scale.** What principle licenses each transition, and of what kind is each one (4.4)? If the inference passes from parts to totality, the bridge is one of scale; if it passes from one explanatory relation to another, it is one of type; if it does both, there are two bridges, and each needs its own defence.
6. **Non-redundant gain.** What new content is obtained?

This is, of the eight criteria, the most philosophically fertile, and it is worth dwelling on it. The risk it addresses is that a metaphysical explanation merely re-expresses the explanandum in another vocabulary. “Everything dependent depends on something” becomes “there is a ground”; “the totality of contingents is not explained by itself” becomes “there is a necessary being”. In these cases, the second formulation may add nothing to the first beyond a noun.

The test for distinguishing gain from redescription is reasonably precise, and it requires no commitment to any empiricist methodology. One asks whether the proposed explanans: (a) discriminates among outcomes or possible worlds that, without it, would remain indiscernible; (b) imposes some modal structure—what becomes necessary, possible, or impossible once it is admitted; (c) generates consequences for the architecture of dependence that were not contained in the premises; or (d) unifies phenomena previously treated separately. If none of these four things occurs, there is ontological redescription, not explanation.

It is important to note that this criterion is of an entirely different nature from the preceding one, and that the order between them is not accidental. Criterion 5 asks whether the inference was authorized to reach the new level; criterion 6 asks whether, having reached it, anything was gained. A theory may pass 5 and fail 6—it may be perfectly authorized to speak of grounding and, even so, fail to show why “there is a ground” explains more than “there is a

structure of dependence". The converse also occurs: an explanans may be explanatorily fertile and have arrived there by an unjustified bridge. These are two charges, and satisfying one does not dispense with the other.

7. **Termination criterion.** Why does the explanatory chain end here? If brute facts are prohibited in the cosmos but permitted in the final explanans, the asymmetry needs to be justified by necessity, essence, or some other principle—and not stipulated.
8. **Exposure to defeat.** What discovery, argument, or rational condition would weaken the explanation? Let "defeat" be understood as rational *defeasibility*, and not as falsifiability in the Popperian sense: the relevant defeat may be empirical, logical, modal, explanatory, or comparative, and the criterion does not import scientific methodology into metaphysics. Not every metaphysical thesis needs to be empirically testable. But an explanation against which nothing counts—neither incoherence, nor discriminating incapacity, nor a more economical rival, nor a false modal premise—is not a strong explanation; it is an invulnerable formulation, which is a different thing.

None of these criteria is mine, and it is worth saying whose they are. The first goes back to the conditions of adequacy of explanation and to the specification of the topic in a why-question (VAN FRAASSEN, 1980). The second is contrastive explanation (GARFINKEL, 1981; LIPTON, 1990). The third is the notion of a backing relation in the literature on metaphysical explanation (RAVEN, 2015). The fourth is the difference-making requirement (WOODWARD, 2003; STREVENS, 2008). The sixth has close relatives in the argument from explanatoriness (KOVACS, 2017) and in the criterion of informativeness applied to theistic hypotheses (DAWES, 2009). The seventh is the most occupied of all: it is the problem of regress termination, worked on by Cameron (2008), Bliss (2013; 2024), and Dixon (2016). The eighth is the least occupied, and for that very reason the most vulnerable—I shall return to it in section 6. What is claimed is not the authorship of the criteria, but their assembly into a single instrument and their symmetrical application to three families that the literature usually audits separately.

The question the protocol must answer, in the end, is not "is the argument true?", but "what exactly is this argument asking us to grant, and at what point?". It is to this that we now turn.

5. THREE DISCRIMINATING TESTS

The arguments usually grouped under the label "cosmological argument" do not constitute a single inference (REICHENBACH, 2026). Treating them as though they did is the error symmetrical to that of treating "religion" as a homogeneous causal class, and it produces generic criticisms that strike nothing in particular. This section applies the protocol to three families, and the criterion of success is clear: if the audit does not produce distinct profiles, it is rhetoric.

5.1. Kalām

The standard form is well known: (1) whatever begins to exist has a cause; (2) the universe began to exist; (3) therefore, the universe has a cause. Expanded versions add that this cause must be transcendent and, next, personal (CRAIG, 1979; CRAIG; SINCLAIR, 2009).

Explanandum and contrast. The explanandum is the beginning of the existence of the universe, understood temporally or as a finite past. The contrast is: this universe began, rather than not having begun—or rather than there being nothing.

Explanatory type. Causal and temporal. The argument operates, at least in its first stage, in the register of production: something brings it about that something comes to exist.

First bridge: beginning → cause (variation of scale). The causal principle of premise (1) has its repertoire in events and entities *within* space-time. Note that the relation invoked does not change: it is still causal production. What changes is the domain of application, and in an extreme way—from the interior of space-time to its beginning. Applying it to the beginning of space-time itself requires additional defence, and the nature of that defence is the critical point. If the principle is presented as an empirical generalization, the extension is precisely the kind of transfer PETI prohibits without a bridge. If it is presented as a modal intuition or a metaphysical principle—which is the strongest reply, and the one its defenders actually give—then the argument is no longer empirical and must be assessed as metaphysics: one must ask what the scope of the intuition is, whether it extends to situations without a temporal antecedent, and why we should trust it precisely where we have no cases.

Here, and only here, section 3 has some bearing. Not because biology says anything about the beginning of the universe—it does not—but because it offers a corrective to the intuition that sustains the weakest reading of the premise: that the unity of what is produced points to the unity of what produces. If this intuition is already unreliable in domains we can inspect, its authority in the case in which we can inspect nothing does not increase.

Cosmological situation. One must not exaggerate. Contemporary cosmology has not refuted kalām, and it would be bad faith to suggest it. Nor does it corroborate it in any simple way: the physical models remain disputed, and they do not authorize treating the Big Bang as an ordinary event at an initial instant. Dialectical honesty recommends recording that premise (2) is defended both by scientific arguments and by philosophical arguments about the impossibility of an actual infinite, and that the latter do not depend on physics.

Second bridge: cause → personal cause (variation of type). Here there is no enlargement of domain whatever: the domain is the same, and what is altered is the explanatory relation, which passes from causal production to intentional agency, with criteria of success of its own. Even granting (1), (2), and (3), the personalization of the cause does not follow from the causal conclusion. It is a supplementary inference, with a structure of its own: typically, an argument that only a free agent could produce a temporally finite effect from eternal conditions. Morriston (2000) attacks this inference along two routes. The first is one of self-application: if God’s eternal decision to create is causally sufficient for the existence of the world, then, by the

very principle invoked—that a sufficient condition existing from eternity produces an eternal effect—the universe should be eternal. The second exposes an oscillation between two senses of "eternal"—timelessness and duration without beginning or end: once timelessness is fixed, a timeless personal agent does not differ, in this respect, from a non-personal cause, since in neither case is there an interval between the willing and what is willed. The conclusion he draws is measured, and it is worth preserving it in that measure: even granting that the first event has a cause, it is by no means obvious that this cause has to be a person. There is no need to decide the dispute here. The result of the audit suffices: there are two bridges, not one, and they require independent defences.

Discriminating gain, termination, and defeat. A transcendent cause explains that there is a beginning, but discriminates little between this universe and others. As to termination: why does the cause not begin to exist? The standard reply—it is timeless or necessary—is available, but it introduces into the explanans exactly the property whose absence in the explanandum motivated the argument, which requires independent justification. Exposure to defeat is high, and this is a virtue: the argument depends on theses about the actual infinite and about the finite past that can be attacked head-on.

Verdict. Structurally the most exposed of the three, and the only one whose two bridges are of different kinds—one of scale, the other of type—which means that they need to be attacked and defended by arguments of distinct natures. Not because its premises are false—they may be true—but because the audit locates two transitions of distinct kinds, both loaded, and because it is the only one of the three whose intuitive plausibility depends, in part, on a causal generalization whose repertoire is intramundane.

5.2. Contingency and the Principle of Sufficient Reason

The standard form: there exist contingent beings or facts; contingents require adequate explanation; contingents alone do not provide a complete explanation of the contingent totality; therefore, the explanation must include something non-contingent.

Explanandum and contrast. It is not primarily a temporal beginning. It is the existence of contingent reality—why there are contingents rather than nothing, or rather than another configuration. The explanandum is modal, not chronological.

Explanatory type. Explanatory-modal. And here lies the structural advantage of the argument, which must be acknowledged frankly: it does not extend physical causation to a domain where it has not been tested. It declares the explanatory rule it employs. The Principle of Sufficient Reason appears as a premise, not as a presupposition.

The bridge. It is the principle itself. And, because it is explicit, it can be criticized productively. The unrestricted PSR faces well-known objections—among them that it would make every contingent fact necessary (DELLA ROCCA, 2010; DASGUPTA, 2016, for a defence of metaphysical rationalism; for a systematic reassessment of the principle, PRUSS, 2006). Pruss

(2004) proposes an elegant restriction: instead of requiring that every true contingent proposition have an explanation, it is required that every true *explicable* proposition have one. The restriction avoids conceptual counterexamples and, Pruss argues, remains strong enough to sustain the cosmological argument.

The work of the audit, at this point, is precise: is the restriction not *ad hoc*? A restricted principle that excludes exactly the problematic cases and preserves exactly the desired case needs to show that the dividing line has independent motivation. Pruss offers one; whether it is sufficient is a disputed question, and it is *the* question. Note the gain of the audit: the debate is concentrated where it should be.

Part and whole (variation of scale). Here lies the second transition of the argument, and it varies in the scale dimension: the relation remains explanatory-modal, but the domain passes from individual contingents to the contingent totality. It must be justified why explaining each contingent separately is not enough to explain the plurality. The Hume–Edwards principle maintains that, once all the members are explained, the set is explained (EDWARDS, 1959; ROWE, 1975). The debate, however, is no longer where Rowe left it: Oberle (2024) reformulates the principle in the vocabulary of grounding and maintains that the plurality of contingent facts is grounded in its members, that is, that the distributive reading suffices; and Dasgupta (2014) offers the contrary position the resource of collective grounding, according to which a plurality can be explained jointly without each member being explained in isolation. This is the contemporary form of the dispute, and it confirms what section 4.4 anticipated: in this variety of variation of scale there is no presumption of error, only a substantive open question. The audit does not decide it; it requires that one say which of the two readings is being used, and why.

Singleness and identification (type bridges). Even once a necessary being is obtained, neither singleness nor personality is established. Nothing in the argument excludes, without an additional premise, a plurality of necessary beings, or an impersonal necessary being. The passage from “necessary being” to “personal God” is a third stage.

Verdict. Stronger than kalām as regards the integrity of explanatory type, precisely because it declares its principle of passage. It remains dependent on a robust theory of explanation and on a defence of the requirement of global explanation. Its exposure to the science of origins is low: the results of section 3 hardly touch it, and it is right that they should not.

5.3. Grounding

The standard form: derivative entities or facts are ontologically dependent; a chain of grounding cannot descend indefinitely; therefore, there must be something ungrounded that grounds the rest. Theistic versions identify this ground with God, frequently insisting that God’s explanation of everything is not causal (PEARCE, 2017).

This is the philosophically most sophisticated adversary, and it deserves to be treated as such.

Explanandum and contrast. The structure of ontological dependence of reality—not a first event, not a temporal chain. The contrast is between a reality with fundamentalia and a reality without them.

Explanatory type. Grounding: constitutive, non-causal, hyperintensional determination (FINE, 2012; SCHAFFER, 2009; BLISS; TROGDON, 2021).

Strength. It is the argument that most clearly avoids confusing natural causation with metaphysical dependence. For that very reason, it is the most immune to section 3 of this article. I record this as a result, and not as a reluctant concession: the audit shows where the science of origins is irrelevant, and that information is as valuable as its converse. Whoever wishes to object to theism with biology should know that, against this version, they have nothing to say.

First bridge: well-foundedness (variation of scale). The argument passes from the existence of local relations of dependence to the requirement of a *terminus* for the global structure; the relation invoked does not change, the domain does. It depends on grounding being well-founded—on there being no infinite descending regresses, or on their being vicious if there are any. This is not a matter of consensus, and the literature is extensive: Cameron (2008) and Bliss (2013) discuss when a regress is in fact vicious, and Bliss concludes that infinite grounding regresses are not necessarily so; Dixon (2016) shows that "well-foundedness" admits non-equivalent formulations, with distinct consequences; Kortabarria (2024) examines local and global versions of the argument from insufficiency and maintains that foundationalists have not demonstrated the metaphysical impossibility of infinitism, there being resources—zero-grounding, essentialist replies—available to the infinitist; and Bliss (2024) brings the problem together under the heading of ultimate explanations, which is exactly ours. Oberle (2022), for his part, shows that the Thomistic cosmological argument and Schaffer's argument for metaphysical foundationalism share a structure—which matters here not for its conclusion, but because it confirms that the same bridge is at stake in both.

None of this refutes metaphysical foundationalism. It shows, however, that the bridge is substantive and contested, and that it carries the weight of the conclusion.

Second bridge: singleness (variation of scale). Even granting fundamentalia, the passage to *a single* ground requires another premise. Principles of parsimony applicable to the case—such as Schaffer's (2015) "Laser", according to which one should avoid multiplying *fundamental* entities without necessity—are methodological principles of economy, not consequences of the structure of grounding. A pluralism of grounds is coherent with well-foundedness.

Third bridge: identification (variation of type). It still remains to identify the ground with a person, an intelligence, or a God. The leap from "ungrounded" to "divine" is independent of everything that precedes it. Pearce (2017) is among those who explicitly take on this burden, arguing that the hypothesis of God as ground offers explanatory advantages unavailable to naturalism—which is exactly the kind of argument the audit asks for, and which must then be assessed on its merits.

Discriminating gain and termination. Criterion 6 bites hard here. If “there is a ground” merely renames “the totality depends on something”, without supplying additional structure, there is no gain—and this is the same doubt Wilson (2014) raises against grounding taken as a unified relation, when she asks what work it does that the specific relations do not already do. Criterion 7 bites equally: why does the ground terminate the regress? If by necessity or essence, these notions need to do work, and not merely occupy the terminal position.

Verdict. The most resistant to criticism based on natural origins, precisely because it does not compete with them. It is also, and for the same reason, the one in which it becomes most visible that the theistic conclusion depends entirely on additional metaphysical premises—well-foundedness, singleness, personality—and in no way on the science of origins.

5.4. What the Comparison Shows

The three profiles diverge in every relevant dimension.

The *principal relation* invoked is causal-temporal in kalām, explanatory-modal in contingency, one of ontological dependence in grounding. The *initial bridge* is, respectively, a causal principle, the Principle of Sufficient Reason, and well-foundedness—three things of different natures, which are defended and attacked in different ways. The *distribution between the two dimensions* also differs, and this is perhaps the most instructive difference: kalām carries a variation of scale followed by a variation of type; contingency declares its explanatory principle from the outset and concentrates the weight in a variation of scale; grounding chains two variations of scale—well-foundedness and singleness—before a terminal variation of type. The *dependence on the science of origins* is moderate in the first, low in the second, very low in the third; empirical criticism, therefore, weighs unequally, and an objection that works against one does not work against the others. The *part–whole problem* appears in all three, but in distinct forms: extension of a causal principle, requirement of global explanation, globality of the ground. The *passage to the person* is not established in any of the three, and in all of them constitutes an additional stage. The *risk of regress* is temporal, explanatory, and metaphysical, respectively.

Two conclusions follow. The first is methodological: the instrument discriminates, and is therefore not mere rhetoric. The second is substantive and holds for both sides of the dispute: there is no such thing as “the cosmological argument”, and, consequently, there is no generic criticism that strikes it. Whoever claims to have refuted *the* cosmological argument has refuted, at best, one of its versions—and, frequently, the weakest.

6. OBJECTIONS

6.1. The Criticism Commits the Fallacy of Composition It Denounces

Objection. The article censures the passage from parts to whole, but it itself generalizes: from particular biological cases it draws a lesson about origin inferences in general.

Reply. The generalization made is negative and second-order. It is not claimed that the origin of the universe is compositional because eukaryogenesis is—that would indeed be the fallacy—but that a specific inference, from present unity to originary unity, fails in cases we can inspect and cannot, therefore, be treated as self-evident where we cannot. A counterexample need not be of the same type as the targeted case in order to destroy the *intuitive evidence* of a general principle; it is enough that it falls under it. And it does: if "what is one now had a single origin" were true, eukaryogenesis would be a counterexample.

6.2. Divine Causation Is Not Competitive

Objection. The whole apparatus is useless against classical theism, which never placed God in the chain of natural causes.

Reply. Premise granted, conclusion rejected. The distinction between the first cause and secondary causes is correct and has been incorporated into the article (4.1), but it does not exempt from examination: it *determines* the examination. Whoever affirms that theistic explanation operates at another level takes on the burden of saying what that level is, what relation sustains it, what work it does, and why the regress terminates in it—which is what section 5.3 does. Observe, moreover, that the article concludes in the theist's favour on a significant point: against the version from grounding, the science of origins has nothing to say.

6.3. The Article Demands of Theism What It Does Not Demand of Naturalism

This is the most serious objection, because, if well founded, it destroys the claim to symmetry and turns the method into advocacy. I confront it by applying the protocol to naturalism.

"The totality is a brute fact." It is a coherent position. It is not, however, a neutral position: it is a metaphysical thesis, and one that closes the demand for explanation at a chosen point. Criterion 7 applies with equal force to the naturalist: if brute facts are unacceptable in the theistic explanans but acceptable in the cosmos, the asymmetry needs justification.

"Denying the PSR requires no defence; the burden lies on whoever affirms it." It does require one. Denying an explanatory principle widely operative in scientific practice and in ordinary reasoning is a substantive position, and whoever adopts it must show that the denial is localized and principled, and not merely convenient. Della Rocca (2010) formulates the difficulty in a way that is uncomfortable for the naturalist: demands for explanation are selectively suspended only with difficulty.

"Complete scientific explanations make the metaphysical question idle." This is the inference symmetrical to the one the article criticizes in the theist, and equally invalid without a bridge: from explanatory completeness at one level, metaphysical completeness does not follow. If there are modal or dependence facts not captured by mechanisms, metaphysics may have genuine work to do, and declaring it idle is a thesis about the limits of explanation that would

need to be defended on its own account. A “science of the metaphysical gaps” is a vice as real as the “God of the gaps”.

“Only scientific explanations are legitimate.” This is a philosophical thesis about explanatory legitimacy, not a scientific result, and it cannot be sustained by the very methods it privileges—which does not refute it, but submits it to the same regime of justification as any other philosophical thesis.

The symmetry test I propose is simple and can be applied by any reader to any passage of this article: for each demand made of one position, check whether the corresponding demand was made of the rival position. If at some point it was not, the point is wrong—and not the position that benefited from the omission.

6.4. The PSR Saves the Argument, and the Article Underestimates It

Objection. If some defensible version of the PSR is true, the contingency argument is sound, and the audit adds nothing.

Reply. Correct—and this is precisely what the audit says. Section 5.2 does not claim that the argument fails; it claims that it is decided by the strength and non-arbitrariness of the principle, and by the requirement of global explanation. Locating the premise that decides is the service rendered, and an argument whose point of decision is identified is in a better epistemic state than one whose point of decision is diffuse, regardless of who is right.

6.5. Infinitism about Grounding Is Untenable

Objection. Section 5.3 relies on minority positions. Infinite chains of grounding are vicious, and well-foundedness is almost a matter of consensus.

Reply. “Almost a matter of consensus” is not “established” (BLISS, 2013; DIXON, 2016; KORTABARRIA, 2024; BLISS, 2024). But the main reply is another: the argument of this article does not require infinitism to be true, but that well-foundedness be a substantive premise—which is uncontroversial, there being serious literature on both sides. An argument that depends on a contested premise is not a bad argument; it is an argument whose cost is identified.

6.6. Explanations Can Be Complementary

Objection. Causal explanation and grounding do not compete; they can coexist, and the article treats as rivals things that are not.

Reply. The article does not treat them as rivals—it expressly maintains that they can coexist (2.5, 4.1). But complementarity is a relation to be shown, not a free pass: there remain the question of what authorizes affirming the second once the first has been established (criterion 5) and the question of what each one adds (criterion 6).

6.7. Science Does Not Decide Metaphysics

Objection. Nothing biology says affects questions of ultimate ground.

Reply. That is the thesis of the article, not an objection to it—with the addition that the converse holds: no metaphysics of origin may invoke in its favour an intuition about the structure of origins that empirical investigation shows to be unreliable.

6.8. The Risk of the Genetic Fallacy

There is a temptation to be avoided, and I prefer to confront it explicitly rather than leave it implicit.

There is a robust experimental literature indicating a preference for simpler causal explanations, especially for a smaller number of unexplained causes at the root of the explanation (LOMBROZO, 2007; PACER; LOMBROZO, 2017). It is tempting to conclude that the preference for a single explanans in the question of origin is a bias, and that arguments that exploit it are psychologically diagnosed.

That conclusion would be illegitimate three times over. A cognitive genealogy of a belief does not decide its truth value: that is the genetic fallacy in pure form. The preference for simplicity is neither a universal nor an invariable bias—the literature shows that it is contextual, and that more complex explanations can become more attractive when mechanisms are displayed. And, above all, parsimony is frequently rational: preferring a common cause may be probabilistically correct, and the selection of a root cause may be perfectly principled (ROSS, 2018; GLENNAN, 2026).

The legitimate use of this literature is, therefore, strictly limited, and it is the only one made here: it explains why the inference from the unity of the explanandum to the unity of the explanans *seems* to dispense with justification, without suggesting that the conclusion to which it leads is false. Diagnosing the naturalness of an inference is not refuting it—but neither is it a reason to exempt it from examination.

6.9. The Audit Is Trivial

Objection. Asking arguments to make their premises explicit is empty advice; every good philosopher already does so.

Reply. The fundamental reply is in section 4.3, where the objection is confronted in its strongest published form—the dilemma between triviality and operational vacuity that Pigden (1989) and Chilovi and Wodak (2022) direct at Hume’s law. I add the verification here. If the audit were empty, section 5 would have produced three identical profiles. It produced three distinct profiles, with variations in different dimensions, in different orders and proportions, unequal sensitivities to empirical evidence, and breaking points of their own.

6.10. Eight Independent Criteria Make a Form

Objection. Multiple-criterion models treat assessment as a sum of items checkable one by one, when no isolated criterion suffices and assessment is holistic—an objection that the recent literature on what makes an argument in natural theology successful formulates expressly against one-dimensional models (EMDADI MASULEH; EBADI, 2026).

Reply. I grant the premise and deny that it strikes the instrument. The protocol neither scores nor sums: no argument is approved for satisfying six of eight criteria, and section 5 assigns no marks. The criteria function as questions whose lack of an answer locates a debt, and the result of the audit is not a verdict of success, but a map of the concessions required. An instrument of this kind does not compete with holistic assessment; it precedes it, by saying what that assessment will have to be holistic about. That is also why criteria 5 and 6 are carefully distinguished (4.6): they are not summed, because they answer questions of different orders.

6.11. It Is the Symmetry That Begs the Question

This is the strongest objection I know of against the article, and I prefer to state it in its best form.

Objection. If the three families invoke relations of genuinely distinct types—causal-temporal, explanatory-modal, of ontological dependence—then applying the *same* criteria to them may be precisely the error. Criteria formed in the analysis of causal explanation may demand of grounding what it never promised. And, if so, the "different profiles" of section 5.4 do not measure the arguments: they are an artefact of the instrument, and the proclaimed symmetry is a disguised asymmetry.

Reply. Before the three replies, a clarification about what symmetry means here. It is not the dialectical symmetry of Oppy (2006), who assesses every argument of natural theology by a single criterion of success—whether it would persuade someone who does not yet accept the conclusion. That criterion is single and external; the protocol is multiple and internal, and asks about the anatomy of the inference, not about its effect on an interlocutor. With the distinction made, three things. First: the eight criteria are formal in the relevant sense—they ask what is being explained, against what contrast, by what relation, with what bridge, with what gain, how far, and under what conditions of defeat. None of them requires grounding to satisfy causal standards; criterion 3 exists precisely to record the relation invoked in its own terms. Second: if the instrument were biased in favour of the causal register, the result of section 5.3 would be the opposite of what it is. The audit concludes there that the version from grounding is the most resistant, and that against it the science of origins has nothing to say—that is, the instrument registered a difference it did not impose, and one that works against the expectation of anyone who built it to favour empirical criticism. Third, and this is the one that offers a test: if the profiles were an artefact, they would track the instrument's categories and not the real disputes. They do not. The breaking points the audit locates—the scope of the causal principle in kalām, the strength and non-arbitrariness of the Principle of Sufficient Reason in contingency, well-foundedness and singleness in grounding—are exactly the points that each literature, independently and without

this instrument, already identifies as decisive. An instrument that rediscovers by its own path what the specialists in each field point to by theirs is, at least, calibrated.

One concession remains. Criterion 8 is, in fact, the most exposed: exposure to defeat is a condition on the epistemic state of the one who assesses, not on the explanation assessed, and to that extent it mixes registers. I keep it because an explanation against which nothing counts is indistinguishable, in argumentative practice, from an explanation that does not explain—but I record that it is the criterion I would abandon first, if I had to abandon any.

7. IMPLICATIONS

7.1. What the Science of Origins Can and Cannot Do

It can: exhibit, in controllable domains, the dissociation between the four unities; provide cases in which explanatory concentration is legitimate and cases in which it is not; show that "origin" is, frequently, a retrospective cut upon transitions with diffuse boundaries; and, with that, withdraw from circulation an intuition that was operating without credit.

It cannot: decide whether there exists a metaphysical ground; establish that grounds cannot be single; nor, in the opposite direction, corroborate the existence of a first cause. The symmetrical temptation—to use natural processuality as anti-theistic evidence, or to use causal bottlenecks as a pro-theistic analogy—must be resisted in both cases, and for the same reason: in both, authority is transferred from one explanatory type to another without paying the toll.

There is a corollary for the practice of the debate: empirical objections to theism must declare against which version they are directed. Against kalām, they have some bearing, albeit indirect; against contingency, little; against grounding, none. An objection that does not specify its target has hit nothing.

7.2. Why the Unity of the Explanandum Is Not Enough

The most transferable result of the article is perhaps the simplest. When an argument starts from a unitary explanandum—the universe, the totality of contingents, reality—and concludes with a unitary explanans, one must ask where the singleness of the conclusion came from. If it was imported from the explanandum, it was imported illicitly.

This holds regardless of position. It holds for the theist who concludes with one God, and it holds for the naturalist who concludes with one fundamental brute fact. In both cases, singleness is an additional thesis. It can be defended—by parsimony (SCHAFFER, 2015), by necessity, by essence, by unification arguments—but it needs to be defended.

7.3. The Need to Make the Bridges Explicit

The practical recommendation drawn from all this is at once modest and demanding: in any argument for an ultimate origin, the bridge premise must be stated as a premise, numbered, and discussed separately.

A side effect deserves to be recorded. Once the bridges are made explicit, the distance between the positions changes place: there ceases to be a global dispute between “science” and “religion”—which, as section 3.2 showed, never had the contours attributed to it—and there come to be localized disagreements about the scope of a modal intuition, about the non-arbitrariness of a restriction of the PSR, about well-foundedness. These are difficult questions, but ones on which progress is possible, with their own literature, their own criteria, and competent adversaries on both sides.

7.4. Open Questions

Three lines remain open, and they are not ornamental.

The first is conceptual: does the explanandum “the universe as a totality” satisfy the conditions that, according to Malaterre’s (2026) analysis, make an origin question well formed? Origin phenomena are characterized by subsequent causal expansion within a network; the totality, by definition, is not inserted in any network. If the answer is negative, then treating the origin of the universe as an origin question in the technical sense would be a category mistake—and the consequence would strike not only the theist, but anyone who speaks of “the origin of everything”.

The second is methodological: the audit should be applied to other arguments, including ones from outside the philosophy of religion—about the origin of consciousness, of normativity, of language—in order to check whether the instrument generalizes or whether it is calibrated to the case that generated it.

The third remains a debt: a sample of cosmogonies coded by causal structure, and not by religious label, would make it possible to test whether agential concentration is a distinctive property of some determinate family. Without that work, claims about cosmogonic patterns remain illustrative, and it is only as illustration that section 3.2 employs them.

8. CONCLUSION

The result of this article is deliberately limited, and the limitation is part of what is meant to be defended.

It has not been established that an ultimate ground exists, nor that it does not; kalām has not been refuted, nor the contingency argument, nor the argument from grounding; it has not been shown that natural origins are always multiple, nor that creation is incompatible with evolution; science has not been granted authority over metaphysics, nor metaphysics immunity from examination.

What has been established is narrower: that four senses of unity habitually conflated are independent; that the investigation of natural origins exhibits this independence in controllable domains, and thereby removes an intuitive source of support for the inference that runs from the unity of the explanandum to the unity of the explanans; and that, once this source is removed,

each passage to a first cause, to a necessary being, or to a single ground becomes dependent on a bridge premise of its own, which needs to be stated and defended on its own merits.

Applied to three concrete arguments, this requirement discriminates. Kalām presents two bridges of distinct kinds—one of scale, from the interior of space-time to its beginning, and another of type, from cause to person—and it is the only one of the three in which the science of origins has some bearing, albeit indirect. The contingency argument declares its principle of passage, and for that reason concentrates the dispute where it should be: on the strength and non-arbitrariness of the Principle of Sufficient Reason, and on the requirement of global explanation. The argument from grounding is the most resistant to empirical criticism, because it does not compete with it, and it is also the one in which it becomes most visible that the theistic conclusion rests entirely on additional metaphysical premises: well-foundedness, singleness, and personality. None of the three establishes the personality of the explanans without a supplementary stage.

The same audit, applied to naturalism, produces corresponding demands: declaring the totality a brute fact is a metaphysical thesis; denying the Principle of Sufficient Reason requires justification; and passing from the sufficiency of mechanistic explanations to the non-existence of questions of grounding is the inference symmetrical to the one the article criticizes in the theist, and equally invalid without a bridge.

The contribution claimed is, therefore, one of integration and of method: bringing into contact the contemporary theory of origin explanation, the literature on causal selection, cosmological arguments, and the metaphysics of grounding, and drawing from this rapprochement an audit instrument that does not presuppose the result. The instrument does not win disputes. It makes visible what each dispute is asking us to grant, and at what point.

It is little. But a limited thesis that survives examination is worth more than a broad thesis that has not faced it—and, on this terrain in particular, broad theses have been abundant.

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