CONSCIOUSNESS AND FUNDAMENTAL FINE-TUNING: BRENTANIAN TELEOLOGY CONTRA AGENTIVE COSMOPSYCHISM

Brandon Rickabaugh

The state of fine-tuning debates has overlooked non-theistic personal explanations. Some underexplored accounts appeal to resources in the philosophy of mind, such as a consciousness-first ontology, like panpsychism. Philip Goff defends such a hypothesis (*agentive cosmopsychism*): anthropic fine-tuning is best explained by a conscious universe capable of fine-tuning itself. Drawing from Franz Brentano's neglected teleological argument, I argue that agentive cosmopsychism, although helpful in moving the fine-tuning debates forward, fails insofar as it cannot explain what I call *fundamental fine-tuning*: the precise ontological features necessary for the act of fine-tuning. In conclusion, I explain how fundamental fine-tuning impacts teleological arguments in general by positively altering the prior probability of teleology on theism.

1. Designing Minds

1.1 The Significance of Philosophy of Mind for Natural Theology

Most arguments for theism hinge on a metaphysics of consciousness, relying on features like mental causation, mental content, intentionality, agency, and divine immateriality. These features (at least as analogous to humans) and aspects of other issues, including omnisubjectivity[1] and union with Christ,[2] fall within the philosophy of mind. Yet philosophers of religion rarely resource methods and theories in the philosophy of mind. Noteworthy exceptions include certain theistic arguments[3] and alterna-

[1]Omnisubjectivity faces versions of the subject-necessity, mental privacy, and combination problems for panpsychism and or the decombination problems for cosmopsychism, each of which is widely thought to currently lack a successful solution.

[2]Marilyn McCord Adams urged applying the philosophy of mind to the beatific union with Christ in "Horrendous Evils and the Goodness of God." Adams made progress on this issue, but much work remains.

[3]Here is a very incomplete list. *Consciousness*: Page, "Arguing to Theism from Consciousness"; Vandergriff, "Naturalism, Theism, and Multiply Realizable Mental States"; and

pp.197–222 FAITH AND PHILOSOPHY Vol. 41 No. 2 April 2025
doi: 10.37977/faithphil.2025.41.2.3

tive conceptions of the divine.[4] As a result, the growing disillusionment with physicalism and standard naturalism receives little attention, and certain logical spaces remain uncharted.

To help close this gap, I will explore a recent personal yet non-theistic explanation of anthropic fine-tuning that draws on recent shifts in the philosophy of mind toward consciousness-first views of fundamental reality, such as panpsychism. I will also provide an unforgivable number of references as a resource for further work by others.

I will analyze Philip Goff's recent proposal that a fundamentally conscious universe with certain characteristics offers a superior explanation of fine-tuning compared to both theism and the multiverse hypothesis.[5] Drawing from Franz Brentano's overlooked teleological argument,[6] I will argue that while Goff's proposal advances the debate in a creative and positive direction, it ultimately fails to explain what I call fundamental fine-tuning: the precise features necessary for fine-tuning, such as metaphysical laws, the fittingness of powers, an ontology of reason, and conceptual access to reality. I conclude by showing how Brentanian teleology reveals an oversight in some design arguments and positively impacts the prior probability of teleology on theism.

2. Panpsychism, Agentive Cosmopsychism, and Fine-Tuning

Some will dismiss Goff's conscious, self-designing universe. To assuage premature judgment, I will briefly explain the recent move from physicalism to panpsychism and cosmopsychism and then Goff's account of fine-tuning.

2.1 From Physicalism to Panpsychism to Cosmopsychism

There is a growing disillusionment with physicalism because of its failure to answer the *hard problem of consciousness*: the great difficulty of explaining facts about phenomenal consciousness wholly by facts about nonconsciousness.[7] Any view on which consciousness is fundamental evades

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Moreland, *Consciousness and the Existence of God*. ***Intentionality***: Keller, "The Argument from Intentionality (or Aboutness)"; Willard & Rickabaugh, "Intentionality Contra Physicalism"; and Taliaferro & Evans, *The Image in Mind*. ***Psychophysical Harmony***: Cutter & Crummett, "Psychophysical Harmony"; and Cutter & Saad, "The Problem of Nomological Harmony." ***Psychophysical Laws***: Adams, "Flavors, Colors, and God"; Swinburne, *The Existence of God*, and "The Argument from Colors and Flavors." ***Rationality***: Menuge, "The Ontological Argument from Reason"; Reppert, "The Argument from Reason"; and Rickabaugh & Buras, "The Argument from Reason, and Mental Causal Drainage."

[4]See, e.g., Leidenhag, *Minding Creation*; and Brüntrup, Göcke, and Jaskolla, *Panentheism and Panpsychism*.

[5]Goff, "Did the Universe Design Itself?"

[6]One exception is Gabriel, "Brentano on Darwin I: Teleology."

[7]Recent work, beginning with Thomas Nagel and Galen Strawson, has been moving in this direction; see Nagel, *Mortal Questions*, 181–95, and Strawson, "Realistic Monism Why Physicalism Entails Panpsychism."

the hard problem. Thus, views like *panpsychism*, on which fundamental elements, perhaps quarks or gluons, are phenomenally conscious, are gaining support.[8]

On the most popular version of panpsychism, *Russellian constitutive micro-panpsychism*, facts about macro-level consciousness are (wholly or partially) grounded in/realized by/constituted of facts about fundamental micro-conscious elements. The fact that we are conscious is explained by the fact that we are made up of fundamental conscious entities. Panpsychism faces the *combination problem(s)*: explaining how the phenomenal states of fundamental physical entities combine into a macro-subject of phenomenal consciousness. Any view on which consciousness is fundamental and subjects are not built up of conscious parts avoids the hard problem and the combination problem(s). Thus, some adopt cosmopsychism: the conscious universe is the one and only fundamental entity.

Most cosmopsychists, including Goff, defend

> ***Constitutive Cosmopsychism (cosmopsychism)***: All facts are grounded in facts about the universe as a whole and the universe instantiates consciousness-involving categorical properties.

The universe is the ground of all being. Accordingly, the fact that we are conscious is explained by the fact that we are proper parts of the conscious universe, which is the ground of all being.

Constitutive Cosmopsychism, hereafter cosmopsychism, is bolstered by the revival of *priority monism*, which posits the universe as the sole fundamental entity.[9] This diverges from the standard naturalist mereological hierarchy where wholes are built bottom-up from more fundamental parts.[10] Cosmopsychism's main challenge is the decomposition problem(s): explaining how a cosmic consciousness generates distinct subjects and experiences. I will set this issue aside.

In summary, cosmopsychism avoids the typical issues with physicalism and panpsychism's combination problem and is gaining support.[11] This shift from physicalism to panpsychism to cosmopsychism has played

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[8]See, e.g., Brüntrup & Jaskolla, *Panpsychism*; and Alter & Nagasawa, *Consciousness in the Physical World*.

[9]See, e.g., Schaffer, "Monism: The Priority of the Whole," and "The Internal Relatedness of All Things."

[10]Priority monism is developed in other ways. Mark Johnston posits a naturalistic panentheism where the divine is wholly constituted by but not identical to the universe; see his, *Saving God*. Andrei A. Buckareff developed a neo-Aristotelian pantheism on which the universe—a Divine Mind—is a constellation of causal powers that unify the universe; see his, "Unity, Ontology, and the Divine Mind."

[11]A recent issue of *The Monist*, edited by Jonardon Ganeri & Itay Shani, is dedicated to exploring the merits of cosmopsychism. See also, Nagasawa & Wager, "Panpsychism and Priority Cosmopsychism"; Goff, *Consciousness and Fundamental Reality*; Shani, "Cosmopsychism"; Jaskolla & Buck, "Does Panexperiential Holism Solve the Combination Problem?"; and Mathews, "Panpsychism as Paradigm."

a central role in other recent defenses of non-theism.[12] Some use panpsychism or cosmopsychism to ground the intrinsic value and the meaning of life naturalistically.[13]

2.2 The Agentive Cosmopsychism Hypothesis

The pervasive appearance of teleology is evident to nearly everyone, as is the belief that teleology is the product of a conscious mind.[14] Goff is focused on anthropic fine-tuning: the fact that the laws, initial conditions, and the fundamental parameters of physics are precisely set for a universe hospitable to embodied conscious agents suggests, to many, a cosmic designer.[15]

Teleological arguments for panpsychism are as ancient as Plato (*Philebus* and *Timaeus*),[16] and continue to be defended.[17] Paul Davies posited that "the universe has engineered its self-awareness through quantum backward causation or some other physical mechanism yet to be discovered."[18] "In this way," says Davies, "the universe could both create itself and steer itself toward its destiny," thus, the universe is "self-explaining."[19] Davies eventually abandoned this hypothesis. In more explicit panpsychist commitments, Thomas Nagel entertains the possibility that "The universe has become not only conscious and aware of itself but capable in some respects of choosing its path into the future."[20]

Goff's account differs in important details. In addition to Constitutive Cosmopsychism, he adds the following theses to explain fine-tuning.

> ***Reasons Responsiveness***: The universe acts and only acts through a basic flawless capacity to recognize and respond to reasons.
>
> ***Future Representationalism***: The universe has a basic disposition to form spontaneous mental representations of the complete future consequences of all the choices available to it in designing the universe.
>
> ***Benevolence***: The universe cares about supporting the existence of conscious beings in addition to itself.

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[12]See, e.g., Leon, "Filling Out a Naturalistic Picture via Spinoza and Russell."

[13]See, e.g., Milem, "The Universe Waking Up"; Goff, *Why?*; and Buckareff, "Axiological Pantheism."

[14]See, e.g., Schmidt, "The Perception of 'Intelligent' Design in Visual Structure."

[15]See, e.g., Waller, *Cosmological Fine-Tuning Arguments*, ch. 2; and Collins, "The Teleological Argument," and "The Argument from Physical Constants."

[16]See Skrbina, *Panpsychism in the West*.

[17]Bradford Saad defends a kind of fine-tuning argument for panpsychism from psychophysical harmony; see, "Harmony in a Panpsychist World." For scientific arguments, see Smolin, "The Self-Organization of Space and Time"; and Stapp, "Minds and Values in the Quantum Universe."

[18]Davies, *The Goldilocks Enigma*, 250.

[19]Davies, *The Goldilocks Enigma*, 250.

[20]Nagel, *Mind & Cosmos*, 124.

Thus, Goff posits the following explanation of fine-tuning.

> ***Agentive Cosmopsychism Hypothesis (ACH)***: The fine-tuning of a universe, *u*, is best explained by the following: (i) *u* is a constitutive cosmopsychist universe, (ii) *u* is an agent, (iii) *u* acts solely through a flawless capacity to recognize and respond to reasons, (iv) *u* has a basic disposition to form spontaneous mental representations of the complete future consequences of all available choices in designing the universe, and (v) *u* cares about supporting the existence of conscious beings.

As we will see, Goff's universe is limited in its power to act, limitations expressed by the laws of physics.

2.3 Why Agentive Cosmopsychism?

Goff offers two arguments for ACH. My aim here is not to analyze but merely explain why Goff urges others to take ACH seriously.

2.3.1 Parsimony

Goff argues that ACH is a more parsimonious explanation of fine-tuning than its rivals. The multiverse hypothesis fails on *quantitative parsimony* (committing to as few token entities as possible) by positing an enormous number of concrete universes. Theism passes the *quantitative parsimony* test, postulating one designer and one universe, but fails the *qualitative parsimony* test (committing to as few types of entities as possible) by postulating God, who is necessary and immaterial, in addition to the physical and contingent universe. However, ACH succeeds in *quantitative parsimony* by positing only one universe and in *qualitative parsimony* by postulating a physical universe with only physical parts.

There is much to challenge here; I will do so in section 5.1.2 below. I will say that I find Goff's theoretical virtue argument puzzling. These issues are downstream from explanatory adequacy. They are irrelevant if ACH fails to explain fine-tuning. I will soon argue that it does.

2.3.2 False Predictions

Goff's second argument is that the multiverse and theism make false predictions that ACH avoids. Goff mentions Roger Penrose's commonly-used Boltzmann brain problem, according to which the multiverse model predicts an astronomically low probability of observers in a fine-tuned universe. Our existence contradicts this prediction.

Regarding theism, Goff claims that *prima facie* theism predicts a universe without gratuitous suffering, which is falsified by the gratuitous suffering we experience. Rather than an argument, Goff only expresses this intuition. Without mentioning any theistic responses, Goff dismisses them as "special pleading or *ad hoc* alteration, desperate attempts" to deny that theism is falsified.[21] I can't imagine theists, or many non-theists, being moved by Goff's argument.

[21]Goff, "Did the Universe Design Itself?," 107.

To avoid the problem of evil, Goff posits that "the cosmic agent has a flawless capacity to recognize and respond to reasons but has power-limitations expressed by the laws of physics."[22] Goff's universe values intelligent life but cannot prevent at least some instances of evil. The balance here is difficult. Goff needs the universe to be good, intelligent, and powerful enough to fine-tune itself. However, it must also be limited in some plausible way such that it is unable to know that it will bring about such evil, does not care, or is somehow (within its limitation) capable of overcoming the evil of the world. These details require careful attention. In section 6, I will argue that Goff's theodicy faces a serious dilemma.

2.3.3 A Rational Yet Non-Theistic Explanation of Fine-Tuning

ACH's greatest promise is its attempt to offer a rational/personal, non-theistic explanation of fine-tuning. To appreciate this, consider the difference between mechanistic and rational explanations. To give a *mechanistic explanation* of some phenomena (e.g., change in location) is to cite a thing's property (e.g., the mass of a body) together with a natural law (e.g., Newton's inverse-square law) describing how things with that property regularly behave. A *rational explanation* posits an agent with basic powers and intentions to exercise those powers, such as changes in the agent's mental states (e.g., knowing one's normative reasons) and bringing about the agent's intention (e.g., protecting the vulnerable).

The theistic hypothesis and ACH are personal explanations, differing over the perfection or imperfection of the fine-tuning agent. ACH attempts to retain the strengths of theism's rational explanations while avoiding problems of non-theistic mechanistic explanations while maintaining a non-theistic explanation of fine-tuning. If successful, this would be a significant achievement. Either way, Goff is advancing fine-tuning debates beyond competing rational/personal and mechanistic/sub-personal explanations to competing rational/personal explanations: an imperfect, contingent mind or a perfect, necessary mind—a god-like universe or a God of the universe.[23]

3. Groundwork: Franz Brentano's Teleological Insights

Franz Brentano, one of the most influential philosophers of mind in the last century, produced sophisticated works of philosophy of religion.[24]

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[22]Goff, "Did the Universe Design Itself?," 116 (see also p. 109, 110).

[23]Some might balk at the notion of naturalism's compatibility with any version of theism. However, as Fiona Ellis argues, naturalism requires only a natural one-world ontology that seeks empirical respectability. So, "materialist atheism" is incompatible with theism, there is no incompatibility between naturalism and pantheism; see, Ellis, "Between Orthodox Theism and Materialist Atheism," 151–54. Andrei Buckareff defends naturalistic cosmopsychist pantheism, on which all of reality is constituted by the spacetime world, which is identical to God; see, Buckareff, *Pantheism*. Paul Draper defends a view like cosmopsychism that he calls "panpsychotheism" as a naturalistic theism; see, Draper, "Panpsychotheism."

[24]The only relevant works translated into English are Brentano, *On the Existence of God*, and *The Teaching of Jesus and Its Enduring Significance*.

These works have received no attention partly due to a caricatured distinction between analytic and continental philosophy that is often as inaccurate as unhelpful.[25] This is unfortunate, as Brentano offers novel and helpful insights. In fact, issues in the philosophy of religion are present to one degree or another in nearly all of Brentano's works.[26] In this section, I lay the groundwork for my objection to ACH by introducing, updating, and applying insights from Brentano's teleological argument.[27]

3.1 Order and Prior Order, Ordering and Creating

Brentano distinguishes between two categories of teleology:

> ***Order***: The teleological features of the universe and the universe's elements.
>
> ***Prior Order***: The teleological features that make it possible for a universe and the elements of a universe to possess Order.

As an illustration, Brentano observes that a watch cannot be composed of just any components but only those of a particular form and kind, including those capable of standing in specific relations with each other. Likewise, the elements of nature exhibit what Brentano called "an order prior to their being ordered."[28] Any universe with teleology requires that its elements possess the capacity for being designed. The watchmaker can select and prepare the appropriate parts to design the watch but cannot select and prepare the fundamental ontological structure of those parts (examples will be given below).

To help grasp the significance of Prior Order, consider how Brentano distinguishes between two kinds of explanations of Order and Prior Order.

> ***Ordering Intelligence***: S is an ordering intelligence of a universe *u iff* S can explain the Order of *u* but not the Prior Order of *u*.
>
> ***Creating Intelligence***: S is a creating intelligence of a universe *u iff* S can explain the Prior Order of *u*.

The watchmaker is an Ordering Intelligence of the watch's Order but not a Creating Intelligence of the watch's Prior Order—including its fundamental ontological structure. A Brentanian fine-tuning argument explains Order and Prior Order by a Creating Intelligence, God. However, as we will see, ACH posits an Ordering Intelligence to fine-tune the universe's existing elements.[29]

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[25]Dallas Willard diagnoses the "invisibility" of Brentano's work in analytic philosophy as the dismissal of phenomenology in favor of a generally scientistic view of what counts as philosophy; see Willard, "Who Needs Brentano?" See also, Sławkowski-Rode, "The Distinction in Question."

[26]See Gabriel, "Brentano at the Intersection of Psychology, Ontology, and the Good."

[27]Brentano's earlier and less thorough treatments of teleological arguments, especially Plato's in *Laws*, 896c–897b, are found in *Religion und Philosophie*, and *Geschichte der griechischen Philosophie*.

[28]Brentano, *On the Existence of God*, 260.

[29]There are historical precursors to a similar, although underdeveloped, kind of teleological argument. Socrates makes a similar argument in Xenophon's (*Memorabilia*, I.4). See also

Some might think Brentano's Prior Order principle odd. It is, however, a particular formulation of a principle about the nature of relations and their relata that is nearly canonical among those who work on the ontology of relations. According to that general principle, *relata can stand in some relations and not others, depending on the properties and other constituents of those relata*. For example, Middle C and B♭ notes stand in the musical relation <tonally higher than> but cannot stand in the <heavier than> relation. Do whatever you like with Middle C and B♭; they will never stand in the <taller than> relation. Their ontology limits the way they can be propertied or related. Musical notes lack a kind of Prior Order required for these relations.

Gustav Bergmann explains, "*The ontological ground of an internal connection is the natures of the entities it connects and nothing else*."[30] More precisely:

> ***Internal Relation***: R is an internal relation between *a* and *b iff* (i) facts about R are grounded in facts about the natures of *a* and *b*, and (ii) necessarily, if R fails to obtain, *a* and *b* are altered.

If the R of *a*R*b* is internal to *a* (or both *a* and *b*), then for all *x*, if *x* does not stand in R to *b*, then $x \neq a$. Facts about an internal relation are grounded in facts about the nature/essence of the relevant relatum or relata. Accordingly, relata have a nature, including Prior Order, fit for some internal relations and unfit for others.

Lastly, consider again the hard problem of consciousness. The reason microphysical facts can't explain facts about phenomenal consciousness is that no microphysical fact (structural property/fact) can stand in the <entailment> or <explanation> relation to any phenomenal or qualitative property/fact. Non-phenomenal entities lack the kind of Prior Order necessary for explaining phenomenal consciousness.

4. Fundamental Fine-Tuning of the Mental and Non-Mental

4.1 Fundamental Fine-Tuning Stated

What I'm calling fundamental fine-tuning is a species of Brentano's Prior Order.

> ***Fundamental Fine-Tuning***: The precise features of a universe *u* required for the possibility of *u*'s anthropic fine-tuning.

If *x* is a feature of *u* and *x* is required for the possibility of fine-tuning, then *x* is an instance of Fundamental Fine-Tuning.

Consider the arrival of the laws of physics in the universe's structural formation. Adrianne Slyz explains:

John of Damascus's *The Orthodox Faith*, I.3 (to which Aquinas refers along with Averroes, *II Physicorum*, t.c.75 (fol.75v-76r), in the *Summa Contra Gentiles*, 1.13.35). Brentano does not mention these works.

[30]Bergmann, "Realism: A Critique of Brentano and Meinong," 54.

> The story of structure formation begins from the moment when Einstein's equations become a valid description of the Universe—i.e., a little after the Planck time, 10^{-43} seconds after the birth of the Universe. From this moment onwards, it is possible to describe the dynamical evolution of the Universe with the laws of physics as we know them.[31]

The scientific story might begin at the 10^{-43} second mark. The whole story, however, starts at the deeper ontological levels necessary for Einstein's equations and their aptness to govern or describe the things so governed.

Two clarifications are essential. First, FUNDAMENTAL FINE-TUNING is not a thesis about a more fundamental kind of anthropic fine-tuning. While anthropic fine-tuning is at the level of ORDER, FUNDAMENTAL FINE-TUNING is at the level of PRIOR ORDER. Features of FUNDAMENTAL FINE-TUNING are preconditions for fine-tuning. Consequently, FUNDAMENTAL FINE-TUNING doesn't have the same fine-grained range of conceivable alternatives as anthropic fine-tuning.

Second, I offer the following as compelling or at least plausible examples. Although many find these examples compelling in other contexts, there are two ways to consider the following discussion. In the strong sense, you might be persuaded that these are actual features of FUNDAMENTAL FINE-TUNING. In the weaker sense, the following can function like an intuition pump, making the actuality of FUNDAMENTAL FINE-TUNING plausible if not actual in other instances.

4.2 Fundamental Fine-Tuning of the Non-Mental

Here, I mention four compelling or at least plausible instances of non-mental FUNDAMENTAL FINE-TUNING.[32]

4.2.1 Temporal and Spatial Order

By temporal order (regularities of succession), I have McTaggart's A/B-series distinction in mind.[33] On the B-series, temporal order refers to the tenseless properties of events and times as being earlier than and later than other events or times. On the A-series, temporal order refers to the tensed properties of events and times as being past, present, and future concerning other events and times. Now, on substantivalism, space and locations (the relation between a body and its place or other bodies) exist such that things are located by being in a place. Alternatively, relationists hold that having a location is having relational properties or irreducible relations, such as contiguity, direction, and distance. Both agree that spatial order is a feature of reality, a property had by a thing located in a place.

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[31]Slyz, "Structure Formation," 205–6.

[32]Brentano's examples of PRIOR ORDER in inorganic things include the unity of similarity, the unity of relations, active and passive capacities, truth, the forces that make possible reciprocal relations among bodies, and relations between organic and inorganic things. These are similar feature to those I have in mind.

[33]McTaggart, *The Nature of Existence*.

Temporal and spatial order are necessary for fine-tuning, as the laws of physics govern temporally and spatially ordered manifestations of fine-tuning. For example, the universe's expansion rate is a measurement of the increase in distance between any two given gravitationally unbound parts of the universe with time.

$$H^2 = \frac{8\pi G}{3}\rho - \frac{kc^2}{R^2} + \frac{\Lambda}{3}$$

For my purposes, we need only consider that c = speed of light, G = gravitational constant, ρ = matter density of the Universe, and k = curvature of the Universe. Each of these is a temporal and/or spatial feature of the universe. Therefore, each is set to a precise range.

Without spatial and temporal order, there is no temporally distal increase and no expansion of the scale of space. And the gravitational constants governing the expansion rate are instances of fine-tuning. Therefore, temporal and spatial order are instances of Fundamental Fine-Tuning.[34] The universe needn't be spatially or temporally ordered in the way that fine-tuning requires.

To be clear, the point is not that the spatial and temporal order of the universe is antecedently improbable, although it may be. The point is that spatial and temporal order are necessary for the universe to be fine-tuned, but not necessary for a universe to exist. The conscious universe could not fine-tune itself to have spatial and temporal order, as both are necessary for fine-tuning to occur. Suppose, by chance, the universe comes with the Fundamental Fine-Tuning of its spatial and temporal order. ACH would be unable to explain both features.

4.2.2 Metaphysical Laws

Perhaps, as Jonathan Schaffer has argued, there are metaphysical laws concerning the not-causal-but-constitutive generation of a dependent outcome. Shaffer observes:

> Insofar as causal explanation requires laws of nature (and overall involves a <Sources, Links, Result> dependence structure), metaphysical explanation has a structurally parallel requirement. Without linking principles, nothing connects the sources to the result, no general pattern of dependence is revealed, and a full understanding of why the result obtained remains elusive in causal and metaphysical cases equally.[35]

Shaffer refers to truth-making as a paradigm example of a linking principle.

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[34]Richard Swinburne argues that spatial order and temporal order are instances of teleology, although he does so without any notion of Prior Order or Fundamental Fine-Tuning; Swinburne, *The Existence of God*, 153–72.

[35]Schaffer, "Laws for Metaphysical Explanation," 309. I owe Robert Garcia for bringing this essay to my attention.

Applied to fine-tuning, consider the cosmological constant, which controls the universe's expansion speed by balancing the attractive force of gravity with a hypothesized repulsive force of space or dark matter, which is calculated anywhere from 10^{53} to 10^{120} to sustain embodied conscious agents.[36] There is a linking connection between the fact that the cosmological constant must be set anywhere from 10^{53} to 10^{120} and the truth of the proposition that the universe is fine-tuned. In such cases, the operative metaphysical principle is truth-making, a principle that links facts to truths.

It isn't difficult to see that a metaphysical truth-making law is required for a fine-tuned universe. Imagine possible worlds devoid of the kind of truth-making. There might be Goodman-like worlds, the fundamental structure of which precludes the possibility of objectively correct theories of the world but allows only a plurality of incompatible yet subjectively correct theories.[37] Or there might be Strawsonian or Davidsonian worlds, where facts are not objective but mere products of assertion.[38]

In a Strawsonian world, for example, states of affairs and facts are not things in the world. Truth is not a property or a relation, but a linguistic performance. Thus, in a Strawsonian world, there is no truth-maker linking principle between facts and propositions. Neither is truth a property of a proposition. There is no dependence pattern between a proposition's truth status and any fact or state of affairs. In a Strawsonian world, there are only assertions of agreement. "It is true that the universe is fine-tuned" means no more than "the universe is fine-tuned." The claim corresponds to nothing. The language of physics in a Strawsonian world tells us nothing about facts or states of affairs, as there are none.

Perhaps one would challenge that we have no good reason to think our world includes truth-making. I believe Edmund Husserl provides a strong phenomenological argument in terms of the "synthesis of fulfillment" that can meet this challenge.[39] However, I needn't offer such a reason to make my argument against ACH. Future Representationalism assumes a truth-making principle between facts and the propositional content of the conscious universe conceptions of how it can fine-tune itself.

Without the operative metaphysical truth-making principle, nothing connects facts about truth-makers, such as states of fine-tuning, to facts about truth-bearers, such as the propositional content presented in states of Future Representationalism. Because operative metaphysical laws, in this case, the truth-making principle, are necessary for the universe to fine-tune itself, metaphysical laws are instances of Fundamental Fine-Tuning.

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[36]The often-cited article on this issue is Straumann's "The Mystery of the Cosmic Vacuum Energy Density and the Accelerated Expansion of the Universe."

[37]Goodman, *Ways of Worldmaking*, 1–22.

[38]Strawson, "Truth"; and Davidson, "The Structure and Content of Truth."

[39]See, e.g., Husserl, *Logical Investigations*, and *Ideas Pertaining to a Pure Phenomenology*. See also Bolzano, *Theory of Science*, I.22, 34.

4.2.3 Mathematics

The fine-tuning of a universe like ours is structured in a way capable of mathematical description, what Eugene Winger refers to as "the appropriateness of the language of mathematics for the formulation of the laws of physics."[40] The fact that we can anticipate the mathematics needed by physics is difficult to explain.[41] Plausibly, ACH entails that the universe is structured for mathematical description. This structure makes possible the formulation of the actual and possible laws of physics from which the conscious universe selects to fine-tune itself. Therefore, the applicability of mathematics to the structure of the universe is an instance of Fundamental Fine-Tuning.

4.2.4 The Fitting of Powers

Suppose that there are irreducible causal powers. For example, for salt to manifest its solubility in water, the water must manifest its power to receive the salt into a solution. The salt has the intrinsic power of solubility, while the water has the inherent power of being modified into a solution with salt, and these powers are mutually interrelated. However, it isn't apparent how such powers are intrinsically powerful and mutually interlinked. As Neil Williams explains:

> Stated briefly, the problem is that powers have to work together when they produce manifestations (reciprocity). Still, as they are not relations (intrinsicality) and they cannot change with the circumstances (essentialism), the fact that they are causally harmonious is without explanation.[42]

Powers are ontologically isolated from each other and yet mutually interdependent to produce their mutual manifestations. This fittingness of powers is constitutive of the fine-tuning that governs the bonding of fine-tuned fine-tuning. For example, the strong nuclear force that binds protons and neutrons in an atom cannot be stronger or weaker than 5% for a life-permitting universe. This assumes that protons and neutrons are ontologically fit concerning their bonding powers under highly specified conditions. For the strong nuclear force to do this work, protons, and neutrons (the relata of bonding relations/powers) must be fit—fundamentally fine-tuned—for bonding to obtain. The fittingness of powers is, therefore, an instance of Fundamental Fine-Tuning.

4.3 Fundamental Fine-Tuning of the Mental

There is also the Fundamental Fine-Tuning of the mental (for beings like us and the universe if ACH is true).[43]

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[40]See, e.g., Wigner, "The Unreasonable Effectiveness of Mathematics in the Natural Sciences," 14.

[41]Weinberg, *Dreams of a Final Theory*, 125.

[42]Williams, "Puzzling Powers: The Problem of Fit," 89.

[43]Among the class of the Prior Order of the mental, Brentano includes the ideas of sense, memory, intuition, judgment, and intellect.

Fundamental Cognitive Fine-Tuning: The precise mental features required for the knowledge needed for the anthropic fine-tuning of a universe.

One way this species of Prior Order differs from or adds to Brentano's is that these features refer to the fine-tuning of a universe, while Brentano's notion of the Prior Order of the mental refers to features conscious subjects. My use is tailored to evaluating Agentive Cosmopsychism. Thus, these features are considered in the context of a self-designing universe.

Here are a few plausible examples of Fundamental Cognitive Fine-Tuning that should function in the same way as the previous set (§4.1).

4.3.1 Intelligibility of Nature

At least some minds are capable of understanding aspects of the universe. That our universe is fit for scientific discovery is plausibly an instance of fine-tuning.[44] The intelligibility of nature is certainly required for a self-designing universe. It is entailed by ACH's Future Representationalism and Reasons Responsiveness.

But the universe needn't be intelligible. It could have been chaotic without uniformity (spatial, temporal, causal), stability, ontological relations, or categories. That the universe is conscious and perfectly rational does not entail that its features relevant to fine-tuning itself are intelligible. The probability of a universe intelligible to the degree required for ACH is low, especially compared to theism.[45] Regardless, the intelligibility of the nature of the universe is a feature of Fundamental Fine-Tuning.

4.3.2 Conceptual Access to Reality

The fine-tuning mind must be able to perceive, for example, the temporal and spatial order of the universe via conceptual access to those aspects of reality relevant to fine-tuning. Yet, the universe needn't be this way. Some possible worlds are not precategorized for conceptual access, lacking "joints" fit for ontological "carving." Among these are Kantian worlds, where concepts or mental representations block epistemic access to reality. These universes lack the epistemic resources necessary for ACH's Future Representationalism. That is, fine-tuning requires conceptual access to those aspects of reality relevant to fine-tuning. On ACH, Future Representationalism is one example. Perhaps Goff will attempt to avoid this by asserting Future Representationalism as a brute fact. I will consider this in §5.1.1.

4.3.3 Powers of Reason

Theists and some naturalists recognize naturalism's great difficulty in accounting for our powers of reason. Thomas Nagel observes:

> there is a real problem about how such a thing as reason is possible. How is it possible that creatures like us, supplied with the contingent capacities of

[44]See, e.g., Steiner, *Mathematics as a Philosophical Problem*; and Collins, "The Argument from Physical Constants."

[45]See, e.g., Collins, "The Argument from Physical Constants."

> a biological species whose very existence appears to be radically accidental, should have access to universally valid methods of objective thought?[46]

In a candid moment, Alex Rosenberg confessed to his naturalist colleagues:

> It's a dirty little secret that among us naturalist philosophers that our biggest problem—looks like an inconsequential problem outside of philosophy—is giving a naturalistic account of reason.[47]

The problem(s) arises from squaring the ontology of various mental features and naturalist theories of consciousness and intentionality.[48]

Consider what Goff calls *the cognitive fine-tuning problem*.[49] Suppose two theses: (*Cognitive Phenomenalism*) that occurrent thoughts are identical with, or constituted of, states of cognitive phenomenology; and (*Robust Realism about Consciousness*) that facts about consciousness are not grounded in functional facts. This makes possible cases where cognitive phenomenal states, sensory phenomenal states, and functional states match up in ways that do not respect or even violate rational norms. Goff offers the following possibility:

> ***Dotty Dawkins***: Dotty Dawkins is a functional duplicate of Richard Dawkins and shares all of Dawkins's sensory conscious states. However, they differ in their cognitive phenomenology, such that whenever Richard has cognitive phenomenology that constitutes the belief that *p* (e.g., that God does not exist), Dotty has cognitive phenomenology that constitutes the belief that not-*p* (e.g., that God does exist). Unlike Richard, Dotty believes that God exists. Yet, as a functional duplicate of Richard, Dotty acts in accord with Richard's atheism.

In cases like this, one's actions are neither guided nor set into action by one's cognitive phenomenology. On the supposition that functional facts are distinct from phenomenal facts, the evidence of one's sensory experience is expressed irrationally. Moreover, on this supposition, there would be a higher probability of these cases than not. Yet, in reality, the evidence of our sensory experience appropriately fits our cognitive phenomenology and behavior, so we act rationally.

What explains this fortunate yet improbable situation? Goff explains how standard naturalist explanations are unlikely:

> Indeed laws aiming at rationally appropriate cognitive phenomenology seem rather unlikely, given all of the other conceivable laws which would fail to secure rationally appropriate cognitive phenomenology. What then

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[46]Nagel, *The Last Word*, 4.

[47]Rosenberg, "Consciousness and Reason," (at the 1:05:15 mark).

[48]Lynne Rudder Baker, Victor Reppert, and William Hasker, for example, have made an argument from reason regarding intentionality against eliminative materialism. See, e.g., Baker, *Saving Belief*; Hasker, *The Emergent Self*, 1–26; and Reppert, "Ramsey on Eliminativism and Self-Refutation."

[49]Goff, "Conscious Thought and the Cognitive Fine-Tuning Problem."

> explains the fortunate fact that the actual world contains laws ensuring a rationally suitable match rather than laws that cannot?[50]

The probability of our rationally appropriate cognitive phenomenology is *prima facie* low on standard naturalism but high on theism.[51] And rationally appropriate cognitive phenomenology is entailed by ACH, at least for the universe itself. I will address this shortly. The powers of reason are necessary for fine-tuning and are, therefore, an instance of Fundamental Fine-Tuning.

4.3.4 Knowability of the Laws of Logic

The Law of Non-Contradiction that any proposition *p* cannot be both true and false at the same time and place has peculiar properties. Consider how Dallas Willard explains that:

> logical laws are directly and essentially laws of a certain class of universals or "conceptual contents" which we may describe as propositions and the components and complexes thereof. Those laws "state the 'eternal' relations which hold between these ideal, timeless entities in virtue of their most abstract natures as concepts and propositions (and compounds thereof).[52]

On standard naturalism, these features are highly peculiar. Also peculiar are the logical relations between propositions, such as the fact that truth values necessitate the truth values of those logically related propositions in a way that we can grasp.[53] Plausibly, the laws of logic are also mind-dependent and nonphysical. It is also hard to deny that we know the laws of logic by direct acquaintance or given in what Husserl called eidetic intuition.

Accounting for these peculiar features and our knowledge of the laws of logic is difficult on standard naturalism. This is evidenced by how nearly all naturalists handled the issue. As Willard explains:

> Concerns about the bearings of logic on mind and world were sacrificed to the objective of getting rid of 'strange' entities, 'Platonistic' ones, and accompanying strange ways of knowing—'strange,' at least, to the overwhelmingly empirical and naturalistic inclinations of the 20th Century.[54]

This is such a difficult issue, as evidenced by the wide disagreement among naturalists on the ontology of logic and the modes of logical knowledge.[55]

Some will reject the notion that the peculiarity of logic is problematic for standard naturalism. Regardless, these laws and their knowability are

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[50]Goff, "Conscious Thought," 117.

[51]Goff, "Conscious Thought," fn. 3.

[52]Willard, *Logic and the Objectivity of Knowledge*, 166. See also Willard, "Wholes, Parts, and the Objectivity of Knowledge."

[53]Willard, "Degradation of Logical Form," and "A Realist Analysis of the Relationship Between Logic and Experience."

[54]Willard, "Degradation of Logical Form," 45.

[55]Willard, "Husserl's Critique of Extensionalist Logic," and "Space, Color and Sense Perception and Epistemology of Logic."

instances of Fundamental Fine-Tuning. Fine-tuning is improbable, if not impossible, without logical laws, their relations, and knowledge of both. However, there are possible worlds with knowable logical laws but no fine-tuning. One does not guarantee the other. What accounts for this? Some theists argue that facts about God best explain facts about logic.[56] Perhaps, for example, the laws of logic are necessarily existing thoughts and, therefore, require a necessary mind.

Elsewhere, Goff argues that a Platonist-like theory of the laws of logic is the most plausible account.[57] His solution only explains the knowability of the logical laws for micro-subjects of consciousness and not the conscious universe itself. However, the conscious universe must possess knowledge of the laws of logic and their relations. This is entailed by Reasons Responsiveness and Future Representationalism. Hence, knowledge of the laws of logic is an instance of Fundamental Fine-Tuning.

4.4 Summary

I've argued that a fine-tuned universe like ours comes prepackaged with numerous instances of Fundamental Fine-Tuning, or at least ACH must assume so. Examples included temporal and spatial order, metaphysical laws, mathematical structure, the fittingness of powers, mental features, such as conceptual access to reality, powers of reason, and the laws of logic and their knowability.

In a different context, Goff defends a view of cosmopsychism on which "It is more plausible that the consciousness of the universe is simply a mess."[58] In the context of fine-tuning, if it is not more plausible that the conscious universe is simply a mess, Goff owes us a non-*ad-hoc* natural explanation. I will have more to say about this in section 5.1.1.

Recall that it is enough for my argument to show that features of Fundamental Fine-Tuning (a) require the kind of rational explanation as anthropic fine-tuning and (b) are preconditions for the features of anthropic fine-tuning.

5. The Fundamental Fine-Tuning Problem for Agentive Cosmopsychism

In explaining cosmopsychism (not regarding anthropic fine-tuning), Denis Bobanovic states, "It's [the cosmopsychist universe's] *fine-tuning* that allows the existence of conscious objects within it."[59] But what about the Fundamental Fine-Tuning of the conscious universe itself?

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[56]See, e.g., Paseau, "Logos, Logic and Maximal Infinity"; Anderson & Welty, "The Lord of Non-Contradiction"; and Adams, "Divine Necessity."

[57]Goff, "Universal Consciousness as the Ground of Logic."

[58]Goff, *Consciousness and Fundamental Reality*, 243.

[59]Bobanovic, "Holism | Cosmopsychism–And the Collapse of the Wavefunction," 92 (emphasis added).

Consider Brentano's observation.

> If the intelligence is to order a given matter, indeed, if it is first to transform its very nature into a teleological one, then this is obviously impossible except if it knows the given matter. But how is this knowledge to be understood?[60]

Any plausible answer to this question seems to introduce a further "teleology prior to the teleology, an order prior to the order which must be thought of as the work of an intelligence if any order must be."[61]

The following problem emerges.

> ***Fundamental Fine-Tuning Problem***: The great difficulty of explaining how facts about the cognitive fine-tuning of a universe *u* ground facts about the Fundamental Fine-Tuning of *u* when these facts are grounded in facts about *u*'s Fundamental Fine-Tuning.

Can a neurosurgeon reconfigure her neural structure to produce level-*n* cognitive abilities when doing so requires level-*n* cognitive abilities? No. For the same reason, ACH cannot explain fundamental cognitive fine-tuning. ACH cannot, in principle, explain fundamental cognitive fine-tuning. Moreover, as Fundamental Fine-Tuning is a species of fine-tuning, ACH cannot explain the total fine-tuning data.

5.1 Two Likely Objections

5.1.1 A Brute Facts Objection

A likely reply will assert that Fundamental Fine-Tuning is a brute fact. This is Goff's proposal for Future Representationalism: "I don't think it would be implausible for the agentive cosmopsychist simply to take this disposition as basic, just as the theist takes the omniscience of God as basic."[62] But there is a decisive reason to think the theist doesn't take God's omniscience as basic in the same way as Goff. God's attributes are naturally bound together, but not so for the ACH universe.

From God being limitless, every other divine attribute deductively follows, including omniscience, omnipotent, and perfect freedom. To lack any one of the essential divine attributes is to be limited.[63] A limitless being has the divine attributes essentially. Not so on ACH. Future Representationalism cannot be deduced from the universe having Reasons Responsiveness or Benevolence. They are not bound together in any deductive or natural way. Unlike the divine attribute, asserting Fundamental Fine-Tuning as a brute fact is *ad hoc*, as it violates an explanatory virtue that adjudicates between rival views of some phenomenon where one takes it as a brute and the other proffers an explanation.

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[60]Brentano, *On the Existence of God*, 261.
[61]Brentano, *On the Existence of God*, 262.
[62]Goff, "Did the Universe Design Itself?," 112, fn. 26.
[63]Swinburne, *Is There a God?*, 40–42.

An important theoretical virtue is the naturalness of a postulated entity in light of the overall theory of which it is a part.[64] The types of entities postulated, along with the properties or powers they possess and the relations they enter, should be "at home"—there should be a fittingness—with other entities in the theory. More precisely:

> *Naturalness*: Some derivative entity (an item that needs an explanation) *e* is natural for a theory T, just in case either (i) *e* is a central, core entity of T or (ii) *e* bears a relevant similarity to central, core entities in *e*'s category within T.

For example, suppose *e* is in a category such as derivative entity, individual, force, property, event, relation, or cause. In that case, *e* should bear a relevant similarity to the core entities of T in that category. This is a formal definition, and the specific material content depends on the theory in question.

Given rival theories T_1 and T_2, the postulation of *e* in T_1 is *ad hoc* and *question-begging* against advocates of T_2 if *e* bears a relevant similarity to the appropriate entities in T_2, and in this sense, is "at home" in T_2, but fails to bear this similarity pertinent to the appropriate entities in T_1. The notion of "being *ad hoc*" is often difficult to specify precisely. It is usually characterized as an intellectually inappropriate adjustment of a theory whose sole epistemic justification is to save the theory from falsification. Such an adjustment involves adding a new supposition to a theory not already implied by its other features in the face of a serious defeater. In evaluating rivals T_1 and T_2, Naturalness provides a sufficient condition for the postulation of *e* to be *ad hoc* and question-begging.

Naturalness is relevant in assessing rival theories in that it provides a criterion for advocates of a theory to claim that their rivals have begged-the-question or adjusted their theory in an inappropriate *ad hoc* way. Naturalness is related to *bruteness* in at least this way:

> *Natural Bruteness*: Naturalness can provide a means of deciding the relative merits of accepting theory T_1, which depicts phenomenon *e* as brute, rather than embracing T_2, which takes *e* to be explainable in more basic terms.

Suppose *e* is natural in T_2 but not in T_1. In that case, advocates of T_1 will find it difficult to justify the mere assertion that *e* is brute in T_1 and that proponents of T_1 need only describe *e* and correlate it with other phenomena in T_1 instead of explaining *e*. Such a claim by advocates of T_1 will be even more problematic if T_2 explains *e*.

For example, suppose T_1 = Kim-style reductive physicalism and T_2 = constitutive panpsychism, and *e* = qualia. T_1 depicts consciousness as reducible to non-conscious states, except for *e*, which is considered irreducible. T_2 depicts consciousness, including *e*, as irreducible. Given the presence of T_2, it would be hard for advocates of T_1 to claim that their

[64]This is not to be confused with Absolute Naturalness and Technical Naturalness as used in the physics of quantum field theories.

treatment of *e* is adequate against T_2. Phenomenon *e* counts in favor of T_2 over against T_1.

Goff's positing of Fundamental Fine-Tuning as a brute fact is unlike the theists positing God as a brute fact and God's attributes as essentially bound together. Why does Goff limit only the universe's power and not its other attributes? Goff's reason is not in principle or deductive from the nature of the universe. He does so to avoid the problem of evil. Goff's appeal to bruteness is unnatural because Future Representationalism cannot be deduced from the universe's having Reasons Responsiveness or Benevolence. They are not bound together in any natural way.

5.1.2 Parsimony Once More

Unpersuaded by the previous arguments, one might reply that ACH can avoid the Fundamental Fine-Tuning problem by arguing that ACH, like all ultimate explanations, reaches an explanatory stopping point. ACH can frontload consciousness without further explanation, just like theism, while offering a more parsimonious explanation than theism.

In defending ACH, Goff argues that it is a more parsimonious explanation of fine-tuning than theism concerning two kinds of parsimony or explanatory simplicity: *quantitative parsimony* (committing to as few token entities as possible) and *qualitative parsimony* (committing to as few types of entities as possible). Here is how Goff assesses the situation. ACH passes *quantitative parsimony* (committing to as few token entities as possible) by positing one fundamental entity—the universe—and *qualitative parsimony* (committing to as few types of entities as possible) by positing a purely physical reality. Although theism passes *quantitative parsimony* by postulating only one fundamental entity—God—it fails on *qualitative parsimony* by postulating a non-physical necessary being in addition to the contingent physical universe.

Much can be said in reply. Overall, Goff's argument moves too quickly. First, the claim that God is distinct in kind from creation assumes the falsity of idealism.[65] Goff's claim also assumes the falsity of mind-body dualism. If we have independent reasons for dualism, then the parsimony objection loses its teeth. Recognizing the dualist way out, Goff claims that accepting Russellian monism weakens the case for dualism.[66] Naturalism, not Russellian monism, motivates the parsimony objection as the latter does not rival theism. Naturalism is what is in dispute and, therefore, cannot be assumed.

There are also reasons to think cosmopsychism is less qualitatively parsimonious than Goff claims. As I explained above, cosmopsychism

[65]Some Christian theists, such as Jonathan Edwards, embrace a kind of idealistic panentheism, according to which created reality is constituted by divine ideas that exist in God's mind, although God transcends created reality, which emanates from God. See, e.g., Crisp, *Jonathan Edwards on God and Creation*, ch. 7.

[66]Goff, "Did the Universe Design Itself?," 106n17.

presumes that phenomenal/qualitative facts are not identical to quantitative facts. Here is a possible problem. Facts about physical properties, such as mass, spin, and charge, are qualitatively different than phenomenal facts, such as intentionality, normativity, and rationality. Perhaps these are both physical facts, but they are qualitatively distinct.

Secondly, although not in the context of anthropic fine-tuning, Joshua Sijuwade argues that theism is a *qualitatively* simpler hypothesis than priority monism.[67] As I've explained, ACH is a priority monist; thus, the following objection applies to ACH. Sijuwade draws attention to Schaffer's observation that the priority monist universe is identical to the general-relativistic spacetime manifold, possessing its material objects as regions of spacetime and instantiating properties directly.[68] On this construal, the universe is many-propertied (nearly infinite-propertied). And there seems to be no reason to think these properties are explanatorily linked to one property.

Theism posits one fundamental being: God. According to the traditional Doctrine of Divine Simplicity, God is numerically identical to his qualitative character and thus has no properties.[69] On an alternative view, God has properties/attributes, such as omniscience, omnipresence, omnipotence, and perfect goodness. As previously mentioned, divine attributes deductively follow from the simple divine attribute of limitless power. Not so on ACH, according to which the universe is limited and possesses its material objects as regions of spacetime and instantiates numerous properties directly. Thus, theism is *qualitatively* simpler than ACH.

Lastly, the connection between God's intention to bring about the universe is simpler than on ACH. On theism, the connection is direct: God intends to bring about ϕ is followed by the occurrence of ϕ. On ACH, the universe, with limited power, brings about ϕ by its intentions in conjunction with and dependent on certain conditions, such as the initial state of the universe or the fine-tuned parameters. Considering the questions of the previous point, the explanation for ACH's intention to fine-tune itself will include further dependence conditions. The explanatory power of theism is simpler than that of ACH.[70] Thus, theism remains the best explanation for fine-tuning.

6. Why Goff's Theodicy Requires Fundamental Fine-Tuning

Lastly, there is a conflict between Goff's theodicy and the rejection of Fundamental Fine-Tuning. To see this, consider two of Goff's commitments.

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[67]Sijuwade, "Grounding and the Existence of God." The following follows one aspect of Sijuwade's argument.

[68]Schaffer, "Spacetime the One Substance."

[69]This understanding of divine simplicity (a core doctrine of classical theism) was defended by Augustine, Anselm, and Aquinas, among many contemporary philosophers. For two influential critiques of this view, see Christopher Hughes, *On a Complex Theory of a Simple God*; and Alvin Plantinga, *Does God Have a Nature?*

[70]A similar argument is given by Swinburne in his, *The Existence of God*, 108–9.

Power-Limitations: The conscious agential universe has power-limitations expressed by the laws of physics.

ACH Theodicy: The existence of suffering is explained by the Power-Limitations thesis. Were the universe not constrained by power-limitations, it would prevent at least some kinds of suffering.

If the laws of physics express certain power-limitations of the universe, then either the universe is responsible for its power-limitations, or they are features out of the universe's control.

Here is the dilemma. If the problem of evil is avoided by the fact that the universe has power-limitations expressed by the laws of physics, then those power-limitations exist *prior to and independently of* the universe's actions. Where the power-limitations are self-imposed, the universe would be culpable for the reality of suffering. Thus, on Goff's theodicy, power-limitations must be instances of Fundamental Fine-Tuning or at least of Prior Order. Goff can deny Fundamental Fine-Tuning or keep his ACH Theodicy, but not both. To keep his false prediction argument from evil against traditional theism, he must accept Fundamental Fine-Tuning or at least Prior Order, both of which are best explained by traditional theism.[71]

7. The Probability of Theism and Fundamental Fine-Tuning

Aside from providing a reply to ACH, I suggest Brentano's Prior Order provides two helpful insights for many design arguments. First, if Brentano is correct, many design arguments presuppose teleology at the level of Prior Order. Consequently, design arguments should consider varieties of Prior Order. A teleologically-infused fundamental ontology may prove unavoidable.

Secondly, the kinds of Prior Order should positively alter the prior probability of design on theism. If fine-tuning, for example, requires Prior Order, which is best explained by theism, then the prior probability of fine-tuning may increase (at least in some cases). I suspect developing Brentano's teleological insights will be fruitful.[72]

~~*Palm Beach Atlantic University*~~

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[71]I am grateful to a reviewer who encouraged me to make this argument more explicit and developed.

[72]My thanks to Robert Garcia, William Hasker, Robert Koons, J. P. Moreland, ~~Madeline Marie~~ Nettles, Alexander Pruss, and Ralph Weir who generously provided feedback on an early draft of this paper.

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