

The Poverty of Theistic Cosmology*

Adolf Grünbaum**

ABSTRACT

Philosophers have postulated the existence of God to explain (I) why any contingent objects exist at all rather than nothing contingent, and (II) why the fundamental laws of nature and basic facts of the world are exactly what they are. Therefore, we ask: (a) Does (I) pose a well-conceived question which calls for an answer? and (b) Can God's presumed will (or intention) provide a cogent explanation of the basic laws and facts of the world, as claimed by (II)? We shall address both (a) and (b). To the extent that they yield an unfavourable verdict, the afore-stated reasons for postulating the existence of God are undermined.

As for question (I), in 1714, G. W. Leibniz posed the Primordial Existential Question (hereafter 'PEQ'): 'Why is there something contingent at all, rather than just nothing contingent?' This question has two major presuppositions: (1) A state of affairs in which nothing contingent exists is indeed genuinely possible ('the Null Possibility'), the notion of nothingness being both intelligible and free from contradiction; and (2) *De jure*, there *should* be nothing contingent at all, and indeed there *would* be nothing contingent in the absence of an overriding external cause (or reason), because that state of affairs is 'most natural' or 'normal'. The putative world containing nothing contingent is the so-called 'Null World'.

As for (1), the logical robustness of the Null Possibility of there being nothing contingent needs to be demonstrated. But even if the Null Possibility is demonstrably genuine, there is an issue: Does that possibility require us to explain why it is not actualized by the Null World, which contains nothing contingent? And, as for (2), it originated as a corollary of the distinctly Christian precept (going back to the second century) that the very existence of any and every contingent entity is utterly dependent on God at any and all times. Like (1), (2) calls for scrutiny. Clearly, if either of these presuppositions of Leibniz's PEQ is ill founded or demonstrably false, then PEQ is *aborted* as a *non-starter*, because in that case, it is posing an ill-conceived question.

In earlier writings (Grünbaum [2000], p. 5), I have introduced the designation 'SoN' for the ontological 'spontaneity of nothingness' asserted in presupposition (2) of PEQ.

* *Editorial note:* Fifty-one years ago, Professor Grünbaum published his first paper in the *British Journal for the Philosophy of Science*, in the issue for 1953. It was entitled 'Whitehead's Method of Extensive Abstraction' (*British Journal for the Philosophy of Science*, 4, pp. 215–26). The Editor wishes to acknowledge Grünbaum's extraordinary achievement in philosophy of science and in particular the debt that this journal owes to so distinguished and productive an author.

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Clearly, in response to PEQ, (2) can be challenged by asking the *counter*-question, ‘But why *should* there be nothing contingent, rather than something contingent?’ Leibniz offered an a priori argument for SoN. Yet it will emerge that a priori defences of it fail, and that it has no empirical legitimacy either. Indeed physical cosmology spells an important relevant moral: As against any *a priori dictum* on what is the ‘natural’ status of the universe, the verdict on that status depends crucially on empirical evidence. Thus PEQ turns out to be a non-starter, because its presupposed SoN is ill founded! *Hence PEQ cannot serve as a springboard for creationist theism.*

Yet Leibniz and the English theist Richard Swinburne offered divine creation *ex nihilo* as their *answer* to the ill-conceived PEQ. But being predicated on SoN, their cosmological arguments for the existence of God are fundamentally unsuccessful.

The axiomatically topmost laws of nature (the ‘nomology’) in a scientific theory are themselves unexplained explainers, and are thus thought to be true as a matter of brute fact. But theists have offered a theological explanation of the specifics of these laws as having been willed or intended by God in the mode of agent causation to be exactly what they are.

A whole array of considerations are offered in Section 2 to show that the proposed theistic explanation of the nomology fails multiply to transform scientific brute facts into specifically explained regularities.

Thus, I argue for The Poverty of Theistic Cosmology in *two* major respects.

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1 Why is there something rather than nothing?

1.1 Refined statement of Leibniz's Primordial Existential Question (PEQ)

Leibniz's 1714 essay 'Principles of Nature and of Grace Founded on Reason' ([1714], [1973], sec. 7, p. 199) is the *locus classicus* of the question 'Why is there something rather than nothing?' In the German translation of his French original, this question is 'warum es eher Etwas als Nichts gibt' (*ibid.*, p. 13).

We shall speak of this query as 'the Primordial Existential Question' and will use the acronym 'PEQ' to denote it for brevity. But we must refine the statement of PEQ to preclude a *trivialization*, which Leibniz certainly did not intend when he asked this question. As we shall see, he believed that God is 'a necessary being, bearing the reason of its existence within itself' in order to provide a 'sufficient reason' for 'the existence of the [*contingent*] universe' (*ibid.*, sec. 8, p. 199). But if there is a *necessary* being, there can be no question why it exists, rather than not, because such a being could not possibly *fail* to exist. Therefore, it would clearly *trivialize* Leibniz's cardinal PEQ, if it were asked concerning a 'something' comprising one or more entities whose existence is logically or metaphysically *necessary*.

Hence, the scope of the term 'something' in his PEQ must obviously be *restricted* to entities whose existence is logically *contingent*; entities whose non-existence is *logically possible*. And similarly for the scope of the term 'nothing'. Accordingly, we can formulate Leibniz's non-trivial construal of PEQ as follows: 'Why is there something contingent at all, rather than just nothing contingent?' Philip Quinn ([forthcoming]) has usefully characterized that articulation of PEQ as an 'explanation-seeking contrastive why-question'. He calls it 'contrastive' because it features the contrastive locution 'rather than'.

William Craig ([2001], sec. 2, pp. 375–8) is oblivious to the *non-trivial* construal of PEQ above. Thus, in the paper in question, published in this journal and entitled 'Professor Grünbaum on the "Normalcy of Nothingness" in the Leibnizian and Kalam Cosmological Arguments', which is directed against my earlier essay in this journal (Grünbaum [2000]), Craig obfuscates and eviscerates Leibniz's primordial question, which drives Craig to an exegetical falsehood as follows: 'It must be kept in mind that for Leibniz (in contrast to Swinburne) [...] a state of nothingness is logically impossible' (*ibid.*, p. 377). But Craig's assertion here is a red herring precisely because, for *both* Leibniz *and* Swinburne, a state of affairs in which there is nothing *contingent* is indeed logically possible. If Craig is to be believed and Leibniz had regarded a state of nothingness to be logically impossible, then his PEQ would have been tantamount to asking fatuously: why is there something rather than a specified logically *impossible* state of affairs? This alone, it appears, is a *reductio ad absurdum* of Craig's exegesis of Leibniz.

As we shall see in some detail in Section 1.9, Swinburne ([1991], p. 128) deems the existence of God to be logically *contingent*, and therefore he *excludes* God from a state of affairs in which there is nothing contingent. But Swinburne as well as Leibniz was all too aware that, if there are entities that exist *necessarily*, then even a state in which there is nothing contingent cannot exclude such entities. Moreover, Leibniz ([1714], [1973], sec. 8, p. 199) had inferred that God exists necessarily *qua sufficient reason* for the ‘existence of the [contingent] universe’. Hence Leibniz deemed the existence of God to be compossible with a state featuring nothing contingent, whereas Swinburne denied that compossibility, having concluded that God exists only contingently.

It is crucial to note at the outset that PEQ rests on important presuppositions. If one or more of these presuppositions is either ill founded or demonstrably false, then PEQ is aborted as a *non-starter*, because it would be posing a *non-issue* (pseudo-problem). And, in that case, the very existence of something contingent, instead of nothing contingent, does *not* require explanation. In earlier writings (Grünbaum [1998], p. 16; [2000], pp. 5, 19), I have used the rather pejorative term ‘pseudo-problem’—‘Scheinproblem’ in German—to reject ‘a question that rests on an ill-founded or demonstrably false presupposition’ ([2000], p. 19). But, since the term ‘pseudo-problem’ was given currency by the Vienna Circle, I immediately issued the caveat that, in my own use of it, ‘I definitely do not intend to hark back to early positivist indictments of “meaninglessness”’ (*ibid.*). Terminology aside, PEQ will indeed turn out to be a non-starter, because one of its crucial presuppositions is demonstrably ill founded. As we shall see, that presupposition is a corollary of a distinctly Christian doctrine, which originated in the second century C.E.

What are the most important presuppositions of PEQ? Clearly, one of them is that the notion of a state of affairs in which absolutely nothing *contingent* exists is both *intelligible* (meaningful) and *free from contradiction*. Let us call such a putative state of affairs ‘the Null Possibility’, as the English philosopher Derek Parfit does ([1998a], p. 420). And let us speak of a supposed world in which there is nothing contingent as ‘the Null World’.

Yet it is vital to recognize that the Null Possibility is *not* shown to be logically genuine by the premise that each contingent entity, taken individually, might possibly not exist. After all, this premise is entirely compatible with the *denial* of the Null Possibility. Indeed, the familiar fallacy of composition is being committed if one infers that all entities, taken *collectively*, might possibly fail to exist merely because each contingent entity, taken *individually*, might possibly fail to exist.

In just this way, both Derek Parfit ([1998b], p. 24) and the English theist Richard Swinburne ([1996], p. 48) seem to have fallaciously inferred the logical robustness of the Null Possibility after enumerating a finite number of actual

entities, *each* of which individually may possibly fail to exist. And their commission of the fallacy of composition then blinds them to their obligation to justify the Null Possibility as logically sound before posing PEQ. Alternatively, they may just have taken the Null Possibility for granted preemptorily. Thus, Parfit ([1998b], p. 24) gave the following version of PEQ:

[W]hy is there a Universe at all? It might have been true that nothing [contingent] ever existed: no living beings, no stars, no atoms, not even space or time. When we think about this ["Null"] possibility (Parfit [1998a], p. 420), it can seem astonishing that anything [contingent] exists.

In this statement, Parfit presumably construed the term ‘nothing’ to mean ‘nothing *contingent*’, as Leibniz did. Evidently, Parfit inferred the Null Possibility without ado, declaring: ‘It might have been true that nothing ever existed.’ But he gave no cogent justification for avowing this logical possibility to be genuine: he just assumed preemptorily that the *nihilistic proposition* ‘There is nothing’, or ‘The Null World obtains’, is both intelligible and free from contradiction. Instead of providing a conceptual *explication* of the Null Possibility, Parfit has evidently offered a mere *open-ended enumeration* of the absence of familiar ontological furniture from the Null World: ‘no living beings, no stars, no atoms, not even space or time’. Thereupon, he enthrones PEQ on a pedestal (*ibid.*, column 1): ‘No question is more sublime than why there is a Universe [i.e., some world or other]: why there is anything rather than nothing.’ Besides presupposing that the Null Possibility is logically robust, Parfit’s motivation for PEQ tacitly *pivots* on the supposition that, *de jure*, there should be nothing contingent.

1.2 Is it imperative to explain why there *isn’t* just nothing contingent?

Parfit told us that ‘When we think about this [“null”] possibility, it can seem astonishing that anything exists.’ And assuming such an astonished response, he feels entitled to ask why the Null Possibility does *not* obtain, i.e. why there is something after all, rather than just nothing. But I must ask: Why should the *mere contemplation* of the Null Possibility reasonably make it ‘seem astonishing that anything exists’?

If some of us were to consider the logical possibility that a person might conceivably metamorphose spontaneously into an elephant, for example, I doubt strongly that we would feel even the slightest temptation to ask why that *mere logical possibility is not realized*. But what if someone were to reply that, in such a case, we are not puzzled because, as we know empirically with near certainty, people just don’t ever turn into elephants? Then I would retort: Indeed, and what could possibly be more commonplace empirically than that something or other does exist? On the other hand, consider, as just a thought

experiment, that *per impossibile*, a person actually metamorphoses into an elephant. If we were suddenly to witness such a spontaneous transformation, we would all be aghast, and we would ask urgently: Why, oh why, did this monstrous transformation occur?

Why then, I put it to Parfit, should anyone reasonably feel astonished at all that the Null Possibility, if genuine, has remained a mere logical possibility and that something does exist *instead*? In short, why *should* there be just nothing, merely because it is logically possible? This *mere* logical possibility, I claim, does *not suffice* to legitimate Parfit's demand for an explanation of why the Null World does *not* obtain, an explanation he seeks as a philosophical anodyne for his misguided ontological astonishment.

1.3 Must we explain why any and every *de facto* unrealized logical possibility is not actualized?

To justify a negative answer to this question, let us inquire quite generally: For *any* and *every de facto* unrealized logical possibility, is it well conceived to demand an explanation of the fact that it is *not* actualized? As we know, Leibniz's Principle of Sufficient Reason (PSR) has been used to answer affirmatively that every fact has an explanation. Yet, as we shall see in Section 1.71, Leibniz himself did not regard that principle as itself an adequate justification for his PEQ, because he also relied on its presupposition SoN to convey that the existence of something contingent *is not to be expected at all*, and therefore calls for explanation. But even his PSR is demonstrably unsound.

To appraise his Principle of Sufficient Reason, consider within our universe the grounds for the demise of Laplacean determinism in quantum theory. This *empirically* well-founded theory features irreducibly stochastic probability distributions governing such phenomena as the spontaneous radioactive disintegration of atomic nuclei, yielding emissions of alpha or beta particles and/or gamma rays. In this domain of phenomena, there are not only logically but also nomologically (i.e., law-based) possible particular events that *could* but do *not* actually occur under specified initial conditions. Yet it is impermissibly legislative ontologically to insist that merely because these events are thus possible, there *must* be an explanation entailing their specific *non*-occurrence, and similarly, of course, for stochastically governed, actually occurring events. This lesson was not heeded by Swinburne ([1991], p. 287), who avowed entitlement to *pan*-explainability, declaring: 'We expect all things to have explanations.' In our exegesis of Leibniz in Section 1.71 below, we shall deal further with his PSR.

The case of quantum theory shows that an empirically well-grounded theory can warrantably discredit the tenacious demand for the satisfaction of a

previously held ideal of explanation, such as Leibniz's Principle of Sufficient Reason. To discover that the universe does not accommodate rigid prescriptions for explanatory understanding is not tantamount to scientific failure; instead, it is to discover positive reasons for identifying certain coveted explanations as phantom. And to reject the demand for them is legitimate in the face of Charles Saunders Peirce's heuristic injunction not to block the road to inquiry, for this rejection does not abjure the search for a new, better theory in which the original explanatory quest may appear in a new light.

The demise of the PSR at the hands of micro-physics spells a moral for Parfit's question why the Null Possibility does *not* obtain: the *mere* logical possibility of the Null World—assuming it to be genuine—does *not suffice* to legitimate Parfit's demand for an explanation of why the Null Possibility does *not* obtain, rather than something contingent.

Nonetheless, Richard Swinburne declared ([1991], p. 283): 'It remains to me, as to so many who have thought about the matter, a source of extreme puzzlement that there should exist anything at all.' And, more recently, he opined (Swinburne [1996], p. 48): 'It is extraordinary that there should exist anything at all. Surely the most natural state of affairs is simply nothing: no universe, no God, nothing.' It is here, incidentally, that Swinburne apparently commits the fallacy of composition, as Parfit did, in trying to vouchsafe the Null Possibility by an enumeration of contingent entities, each of which, taken individually, may possibly fail to exist.

1.4 Is a world not containing anything contingent logically possible?

We need to be mindful of a further imperative to demonstrate that the Null Possibility hypothesized by PEQ is logically authentic, if indeed it is: some philosophers have explicitly denied the intelligibility of a kindred possibility. Thus, Henri Bergson has argued relatedly against nothingness: 'The idea of absolute nothingness has not one jot more meaning,' he tells us ([1974], p. 240; originally published in 1935), 'than a square circle.' True enough, Richard Gale ([1976], pp. 106–13) has given a number of detailed reasons for rejecting Bergson's claim of unintelligibility. Yet Gale's own proposed explication of the hypothetical claim that 'Nothing exists' is itself so qualified as to drive him to the following unfavourable conclusion: 'it is not [logically] possible for there to be [absolutely] Nothing' (*ibid.*, p. 116).

To state the nub of his reasoning, let me again use the locution 'Null World' to speak of a putative world in which the Null Possibility in fact obtains. Then we can say that the Null World is devoid of space-time, no less than of all other contingent objects. But according to Gale's account ([1976], pp. 115–6), the Receptacle of space and time (extension and duration), along with the

'positive' properties or 'forms', 'are the ontological grounds for the possibility of there being Nothing'. Hence Gale contends that 'there is no possibility of *their* not existing. Put differently, it is not possible for there to be [absolutely] NOTHING, for there must at least be the [spatio-temporal] Receptacle and the forms' (*ibid.*, p. 116). Thus, Gale diverges from Parfit's view that space and time exist only contingently: for Gale, they exist necessarily and hence exist even in the Null World; but for Parfit, they are excluded from the Null World, qua existing only contingently. Therefore, it is puzzling that, in the face of this exclusion, Parfit used the seemingly *temporal* term 'ever' when he told us that 'It might have been true that nothing ever existed.'

But, as Edward Zalta has pointed out (private communication), it is unclear how Gale's avowal of space and time as existing *necessarily*, and Bergson's indictment of meaninglessness, are relevant to the issue of the intelligibility of the Null Possibility. That possibility pertains to contingent existents, not to necessary ones. After all, as we saw, Leibniz's Null World contains necessarily existing entities like his God, while being devoid of all contingent ones. Hence Gale's argument has not gainsaid the pertinent sort of Null Possibility. And, as for Bergson, he is addressing the hypothesis that 'absolutely nothing exists', rather than the hypothesis that nothing *contingent* exists. And the latter may be meaningful, even if the former is not.

But are there positive arguments which establish the meaningfulness of the Null Possibility? The reader is referred to philosophical misgivings or challenges issued by Edward Zalta of Stanford University, which place the burden of proof on those who deem PEQ to be well conceived, and which I have quoted elsewhere (Grünbaum [forthcoming]).

In any case, it should be borne well in mind that the provision of a viable explication of the Null Possibility is surely not *my* philosophical responsibility, but rather belongs to the protagonists of PEQ, who bear the onus of legitimating their question. In the absence of assurance that the Null Possibility is logically authentic, PEQ might well be aborted as a non-starter for that reason alone.

How, then, are we to understand more deeply the *tenacity* with which PEQ has been asked not only by some philosophers but even in our culture at large? An illuminating set of answers is afforded, it seems, by delving critically into three kinds of impetus for this ontological question, as follows: (1) historically based assumptions going back to the second century of the Christian era, which served to inspire PEQ; (2) explicitly a priori logical justifications of PEQ put forward by Leibniz, Parfit, Swinburne and Robert Nozick, and (3) hypothesized emotional sources articulated by Arthur Schopenhauer in his magnum opus *The World as Will and Representation* (*Die Welt als Wille und Vorstellung*).

Let us consider these three sorts of impetus for PEQ seriatim:

1.5 Christian doctrine as an inspiration of PEQ

On Maimonides' reading of the opening passage of the Book of Genesis, the Mosaic God created the world *out of nothing*. Yet there is recent biblical exegesis contending that this doctrine of creation *ex nihilo* was not avowed in the Book of Genesis. Though the doctrine may have had a prehistory, it was first widely held by Christian theologians, beginning in the second century C.E., as a *distinctly Christian* precept (May [1978]). Thus, in an exegetical essay on 'Genesis's account of creation' in the Old Testament, the Jewish scholar Norbert Samuelson wrote four years ago (Samuelson [2000], p. 128): 'this [Hebraic] cosmology presupposes that initially God is not alone. Prior to God's act of creation [...] the earth, [and] water are the stuff from which God creates.' But Christian writers regard their specific conception of divine creation *ex nihilo* as a philosophical advance over the account in the Book of Genesis, if only because they held that an omnipotent God had no need for pre-existing materials to create the universe. Thus, as one such writer noted rather patronizingly, 'The abstract notion of nothing does not seem to have been reached by the Israelite mind at that time' (Loveley [1967], p. 419). And, evidently, the notion of nothingness was essential to generate PEQ.

According to traditional Christian ontological doctrine, the *very existence* of any and every contingent entity other than God himself is utterly dependent on God at any and all times. Let us denote this fundamental Christian axiom of total ontological dependence on God by 'DA', for 'Dependency Axiom'. Clearly, DA entails the following cardinal maxim: 'without God's [constant creative] support [or perpetual creation], the world 'would instantly collapse into nothingness' (Hasker [1998], p. 695; *cf.* also Edwards [1967], p. 176). This assumption played a crucial role in subsequent philosophical history. Thus, in later centuries, precisely this hypothesis DA was avowed, as we shall see, by such philosophers as Thomas Aquinas and Descartes, among a host of others.

Evidently, DA in turn entails that, in the absence of an external cause, the spontaneous, natural or normal state of affairs is one in which nothing contingent exists at all. As will be recalled, in earlier writings (Grünbaum [2000], p. 5), I have denoted the assertion of this ontological spontaneity of nothingness by 'SoN'. As before, we shall usually speak of the putative state of affairs in which no contingent objects exist at all as 'the Null World', a locution that is preferable to the term 'nothingness'. In that parlance, SoN asserts the ontological spontaneity of the Null World.

As we see, the fundamental Christian ontological axiom DA of total existential dependence on God *entails* SoN. In other words, logically the truth of SoN is a *necessary condition* for the truth of the fundamental ontological tenet of Christian theism. In this clear sense, SoN is a *presupposition* of DA, which will turn out to be a heavy doctrinal burden indeed. SoN is 'a heavy doctrinal burden', because, as we shall see, it is *completely baseless*.

According to SoN, the actual existence of something contingent or other—qua deviation from the supposedly spontaneous and natural state of nothingness—automatically requires a *creative external cause ex nihilo*, a so-called *ratio essendi*. And such a supposed creative cause must be distinguished, as Aquinas emphasized, from a merely transformative cause: transformative causes produce changes of state in contingent things that *already exist in some form*, or the transformative causes generate new entities from previously existing objects, such as in the building of a house from raw materials.

Furthermore, in accord with the traditional Christian commitment to SoN, creation *ex nihilo* is required at every instant at which the world exists in some state or other, whether it began to exist at some moment having no temporal predecessor in the finite past, or has existed forever. More precisely, having presupposed SoN, traditional Christian theism makes the following major claim: in the case of any contingent entity *E* other than God himself, if *E* exists, or begins to exist *without* having a *transformative* cause, then its existence must have a creative cause *ex nihilo*, **rather than being externally UNCAUSED**.

Yet, as some scholars have pointed out, ‘To the ancient Indian and Greek thinker the notion of *creation [ex nihilo]* is unthinkable’ (Bertocci [1968], [1973], p. 571). Thus, in Plato’s *Timaeus*, there is no *creation ex nihilo* by the Demiurge, who is held to transform chaos into cosmos, although that notion is very vague. Indeed, as John Leslie ([1978], p. 185) has pointed out informatively: ‘To the general run of Greek thinkers *the mere existence of things [or of the world] was nothing remarkable*. Only their *changing patterns* provoked [causal] inquisitiveness’ (italics added). And he mentions Aristotle’s views as countenancing the acceptance of ‘reasonless existence’.

It is a sobering fact that, before Christianity moulded the philosophical intuitions of our culture, those of the Greeks and of many other world cultures (Eliade [1992]) were basically different ontologically. No wonder that Aristotle regarded the material universe as uncreated and eternal. In striking contrast, SoN is deeply ingrained in the traditional Christian heritage, even among a good many of those who reject Christianity in other respects. And the Christian climate lends poignancy to Leslie’s conjecture that ‘When modern Westerners have a tendency to ask why there is anything at all, rather than nothing, possibly this is *only* because they are heirs to centuries of Judaeo-Christian thought’ (*ibid.*; italics added). So much for the Christian historical contribution to PEQ via its SoN doctrine.

1.6 Henri Bergson

Early in the twentieth century, Henri Bergson was alert to the often-beguiling, if not insidious, role of SoN in metaphysics, and he aptly articulated that

assumption as inherent in PEQ. In 1935, speaking of occidental philosophy, Bergson ([1974], 239–40) lucidly wrote disapprovingly concerning PEQ as follows:

[P]art of metaphysics moves, consciously or not, around the question of knowing why anything exists—why matter, or spirit, or God, rather than nothing at all? But the question presupposes that reality fills a void, that underneath Being lies nothingness, that *de jure* there should be nothing, that we must therefore explain why there is *de facto* something.

Bergson's concise formulation of SoN as a presupposition of the Primordial Existential Question is that '*de jure* there should be nothing'. But as a rendition of this cardinal presupposition of PEQ, his formulation that *de jure* there *should* be nothing is significantly incomplete: it needs to be amplified by the further claim that there indeed *would* be nothing in the absence of an overriding external cause or reason! Thus, let us bear in mind hereafter that *SoN makes the following very strong ontological assertion: De jure, there should be nothing contingent at all rather than something contingent, and indeed, there would be just nothing contingent in the absence of an overriding external cause (reason).*

In a chapter devoted to PEQ, Robert Nozick ([1981], p. 122) notes, as Bergson had, that this inveterate question is predicated on SoN, a presupposition avowing, in his words, 'a presumption in favour of nothingness'. As he puts his view there: 'To ask "why is there something rather than nothing?" assumes that nothing(ness) is the natural state that does not need to be explained [causally], while deviations or divergences from nothingness have to be explained by the introduction of special causal factors.'

Importantly, SoN can be challenged by the counter-question: 'But why *should* there be nothing contingent, rather than something contingent?' And, indeed, why *would* there be nothing contingent in the absence of an overriding external cause (reason)? In effect, Leibniz (1714, [1973], sec. 7, p. 199) endeavoured to disarm this challenge, as we are about to see, when he tried to legitimate SoN—albeit unsuccessfully—as part of a *two-fold* a priori justification of PEQ.

Since PEQ is predicated on SoN, PEQ will be undermined in due course by the failure of *a priori* defences of SoN, and by the unavailability of any empirical support for it. Hence I am not persuaded by Nicholas Rescher's ([1984], p. 19) claim that PEQ—which he calls 'the riddle of existence'—'does not seem to rest in any obvious way on any particularly problematic presupposition'. Although the defects of SoN are indeed not obvious, SoN will, in fact, turn out to be a 'particularly problematic presupposition' of PEQ.

1.7 A priori justifications of PEQ by Leibniz, Parfit, Swinburne and Nozick

A number of writers have used ideas such as simplicity, non-arbitrariness, naturalness and probability in an attempt *to justify PEQ a priori*. In each case, the argument seems to be that a state of affairs in which nothing contingent exists has a crucial property (simplicity, non-arbitrariness, naturalness, high probability, etc.) which we would *a priori* expect the world to have. This *a priori* expectation is then presumed to validate the second presupposition of PEQ, which entails that the Null World would be actual in the absence of an external cause. Typically, the property in question (e.g., simplicity) has not even been sufficiently articulated; but even if its character is taken for granted, the governing principle (e.g. the world should be simple) has not been justified, as we can see now.

1.7.1 Leibniz

In stark contrast to Bergson, both Leibniz ([1714]; [1973], sec. 7, p. 199) and Swinburne ([1991], pp. 283–4) maintained that SoN is a priori *true*. And their reason was that the Null World is simpler, both ontologically and conceptually, than a world containing something contingent or other. This very ambitious assertion poses two immediate questions: (a) Is the Null World really a priori simpler, and indeed the *simplest* world ontologically as well as conceptually? And (b) even assuming that the Null World *is* thus simpler, does its supposed maximum dual simplicity *mandate ontologically* that there *should* be just nothing *de jure*, and that, furthermore, there *would* be just nothing in the absence of an overriding cause (reason), as claimed by SoN?

As for question, (a), of maximum two-fold simplicity, the Swedish philosophers Carlson and Olsson ([2001], p. 205) speak of the Null World as ‘the intrinsically simplest of all possibilities’, and they add that they ‘have not seen it questioned’. But as for the question of *conceptual* simplicity, there is one *caveat*, which needs to be heeded.

To see why, note first that Leibniz couched his original 1697 statement of PEQ in terms of ‘worlds’ when he demanded ‘a full reason why there should be any world rather than none’ ([1697]; [1973], p. 136). This formulation suggests that, conceptually, the very notion of the Null World may well range—by *negation* or *exclusion*—over all of the possible contingent worlds or objects other than itself which are *not* being actualized in it. But this collection of unrealized, non-instantiated contingent worlds is *super-denumerably infinite* and is of such staggering complexity that it boggles the mind!

As we have remarked, the champions of the maximum simplicity of the Null World have not given us a demonstrably viable explication of the notion of the Null World as being logically authentic or robust. Therefore, they cannot

claim to have *ruled out* that, conceptually, this notion is highly complex, instead of being the simplest. So much for the caveat pertaining to the purported maximum *conceptual* simplicity of the Null World.

Beyond this caveat, we do not need to address the ramified issues raised by (a) in dealing with Leibniz's defence of SoN except to say that, to my knowledge, the purported conceptual and *ontological* maximum simplicity of the Null World has not been demonstrated by its proponents.

But let us assume, just for the sake of argument, that Leibniz and Swinburne could warrant a priori the maximum conceptual and ontological simplicity of the Null World, as avowed by Leibniz, when he declared ([1714]; [1973], sec. 7, p. 199): “nothingness” is simpler and easier than “something”.¹ It is of *decisive importance*, I contend, that *even if the supposed maximum ontological simplicity of the Null World were warranted a priori, that presumed simplicity would not mandate the claim of SoN that de jure the thus simplest world must be spontaneously realized ontologically in the absence of an overriding cause*. Yet, to my knowledge, neither Leibniz nor Swinburne nor any other author has offered any cogent reason at all to posit such an ontological imperative.

Let us quote and then comment on the context in which Leibniz ([1714]; [1973], secs. 7 and 8, p. 199), formulates his PEQ and then seeks to *justify* it at once by relying carefully on both of the following two premises: (1) his Principle of Sufficient Reason (PSR), and (2) an *a priori* argument from simplicity for the presupposition SoN inherent in PEQ.

7. Up till now we have spoken as *physicists* merely; now we must rise to *metaphysics*, making use of the *great principle*, commonly but little employed, which holds that *nothing takes place without sufficient reason*, that is to say that nothing happens without its being possible for one who has enough knowledge of things to give a reason sufficient to determine why it is thus and not otherwise. This principle having been laid down, the first question we are entitled to ask will be: *Why is there something rather than nothing?* For ‘nothing’ [the Null World] is simpler and easier than ‘something’¹. Further supposing that things must exist, it must be possible to give a reason *why they must exist just as they do* and not otherwise.

8. Now this sufficient reason of the existence of the universe cannot be found in the series of contingent things, that is to say, of bodies and of their representations in souls. [. . .] Thus the sufficient reason, which needs no further reason, must be outside this series of contingent things, and must lie in a substance which is the cause of this series, or which is a necessary being, bearing the reason of its existence within itself; otherwise we should still not have a sufficient reason, with which we could stop. And this final reason of things is called *God*.

¹ It merits mention that, in the German translation and French original version of his 1714 essay (Leibniz [1956], pp. 13 and 12 respectively), the word ‘nothing’ in the sentence ‘For “nothing” is simpler and easier than “something”’ is rendered by the respective *nouns* ‘das Nichts’ and ‘le rien’.

(Incidentally, note that although the English translation by Parkinson and Morris of the first sentence of Leibniz's Section 8 speaks of the sufficient reason 'of' the existence of the universe, I shall hereafter replace their 'of' by 'for', since the German translation of Leibniz's [1956] text uses the term 'für'.)

These two major passages in Leibniz's Sections 7 and 8 invite an array of comments:

(1) Right after enunciating his Principle of Sufficient Reason (PSR), Leibniz poses PEQ '*Why is there something rather than nothing?*' as 'the first question we are entitled to ask'. And immediately after raising this question, he relies on simplicity *to justify* its presupposition SoN that, *de jure*, there should be nothing contingent at all, rather than something contingent: 'For "nothing" [the Null World] is simpler and easier than "something".' But, in the class of logically contingent entities to which this claim of greater simplicity pertains, 'nothing' (the Null World) and 'something' (a world featuring something) are mutually exclusive and jointly exhaustive. Thus Leibniz is telling us here, in effect, that the Null World is the *a priori simplest* of all, besides being 'the easiest'. But, alas, he does not tell us here in just what sense the Null World is 'the easiest'.

This thesis of the intrinsically greatest *a priori* ontological and conceptual simplicity of the Null World has been a veritable mantra in the literature, which is why Carlson and Olsson ([2001], p. 205) wrote that they 'have not seen it questioned'.

(2) It is vital to appreciate that Leibniz explicitly went beyond his PSR to justify his PEQ on the heels of enunciating PSR and posing PEQ: fully aware that PEQ presupposes SoN, he clearly did *not* regard PEQ to be justified by PSR alone, since he explicitly offered a *simplicity argument* to justify the presupposed SoN immediately after posing PEQ. Most significantly, he is *not* content to rely on PSR to ask *just* the truncated question 'Why is there something contingent?'. Instead he uses SoN in his PEQ to convey his dual thesis that (i) the existence of something contingent *is not to be expected at all*, and (ii) *its actual existence therefore cries out for explanation in terms of the special sort of non-contingent causal sufficient reason he then promptly articulated in his Section 8*.

Thus, the soundness of Leibniz's justification of his PEQ evidently turns on the cogency of his PSR as well as of his *a priori* argument for SoN. As for the correctness of his PSR, recall our preliminary objections to it from Section 1.3, which were prompted there by Parfit's erotetic musings. The modern history of physics teaches that PSR, which Leibniz ([1714]; [1973], sec. 7) avowedly saw as metaphysical, cannot be warranted *a priori* and indeed is untenable on empirical grounds. The principle asserts that every event—in

Leibniz's parlance, anything that 'takes place' or 'happens' [*geschieht*, i.e., 'sich ereignet' in the German translation of his original French text]—has an *explanatory* 'reason [cause] sufficient to determine *why it is thus and not otherwise*' (italics added). Leibniz's inclusion of the locution 'and not otherwise' is presumably intended to emphasize an important point: his PSR guarantees the existence of a sufficient reason not only for the actual occurrence of a given specific event **E**, but also for the actual *non*-occurrence of any and every *specific* event which is *different* from **E** in some respect or other. Quite reasonably, therefore, PSR has been taken to avow the existence of a reason sufficient to explain any and every *fact* pertaining to an individual event. For example, one such fact might be the occurrence of the complex event of Ronald Reagan *not* having been killed when Hinckley shot at him.

In sum, PSR is untenable: irreducibly stochastic laws in quantum physics tell us that some events have no individual explanations but occur as a matter of brute fact. And, assuming with Leibniz that there is no infinite regress of explanations, the history of science strongly supports the view that, no matter how we axiomatize our body of knowledge, every such axiomatization will feature some contingent fundamental laws or other that are unexplained explainors in that axiomatization and codify brute facts. And, as for Leibniz's *a priori* argument from simplicity for SoN, we saw earlier in this Section 1.7.1 that it does not pass muster.

(3) To set the stage for a further instructive commentary on the subtle deficits of PSR, recall from Section 1.3 Swinburne's own formulation of SoN, which reads in part ([1996], p. 48; italics added): 'surely *the most natural* state of affairs is simply nothing.' As will be shown in Section 1.7.3, this formulation of SoN entails the following consequence: it would be natural—though *not* 'most natural'—for *our* world or universe **U_o** *not* to exist rather than to exist. Let us denote that corollary of SoN by 'Son(**U_o**)'. Now, though Leibniz's PSR turned out to be untenable, suppose just for argument's sake that we were to grant him his PSR for now. Then someone may be tempted to believe that its explanatory demand could suffice after all, *without* a separate additional argument for SoN's corollary Son(**U_o**), to legitimate the question 'Why does our universe **U_o** exist, rather than not?', a question which presupposes that corollary. In short, the issue is whether PSR can *single-handedly* license the injunction to explain the existence of our universe in particular.

To evaluate the claim that it can, note that Leibniz (*ibid.*, sec. 8) called for an explanatory 'sufficient condition for the existence of the universe [**U_o**]. But, importantly, this explanatory demand generates at least three *distinct*

questions, which differ both from each other *and* from PEQ:

(Q₁): ‘Why does U_o exist, rather than not?’

(Q₂): ‘Why does U_o exist, rather than just nothing contingent?’

(Q₃): ‘Why does U_o exist, featuring certain laws L_o, rather some different sort of universe U_n, featuring logically possible different laws of nature L₁?’

Moreover, note that each of these questions, no less than PEQ, is predicated on a presupposition of its own, which is asserted by the *alternative* stated in its ‘rather than’ clause. The relevant presupposition is that, *de jure*, the corresponding alternative *should* obtain and indeed might well or would obtain in the absence of an overriding cause (reason). And the question then calls for an explanation of the *deviation* from the supposedly *de jure* alternative.

In question Q₁, the alternative A₁ is that U_o should not exist. Hence Q₁ is predicated on SoN(U_o). But its alternative, A₁, is non-committal as to whether *other* universes likewise should *not* exist. Thus, A₁ differs from the alternative A₂ in Q₂ that nothing contingent at all should exist, which asserts SoN. A₂, in turn, differs from the alternative A₃ in Q₃ that something else exists in lieu of U_o. Thus Q₁, Q₂ and Q₃ are different questions whose answers therefore may well be different. Furthermore, observe that Q₂, besides differing from Q₁ and Q₃, also differs from PEQ: whereas Q₂ asks specifically why our U_o exists, rather than nothing contingent at all, PEQ asks why *something or other* exists, as against nothing at all.

In effect, Q₃ demands an explanation of why *our* world U_o exists, as contrasted with a logically possible different sort of universe featuring different laws of nature. Interestingly, Leibniz ([1714], sec. 7, p. 199) called for an answer to *that* question only after having assumed that: ‘Further, supposing that things must exist, it must be possible to give a reason *why they must exist just as they do* and not otherwise’ (italics in original). By way of anticipation, note that, as Section 2 will show, the volitional theological answer to question Q₃ by such theists as Leibniz, Swinburne and Quinn completely fails to deliver on their explanatory promises.

We can now deal specifically with the afore-stated issue: if Leibniz’s PSR were granted, could it *single-handedly* legitimate question Q₁ (‘Why does U_o exist, rather than not?’) *without* having to justify Q₁’s presupposition SoN(U_o) by an additional argument? This question will now enable us to demonstrate the inability of PSR to serve solo as a warrant for Q₁, just as it turned out above to be incapable of licensing PEQ without a further argument justifying the latter’s presupposition SoN. As will be recalled, Leibniz himself recognized that limitation of PSR by his recourse to the supposed greater simplicity of the Null World as the ontological underwriter of the presupposition SoN of his PEQ.

In what sense, if any, might his PSR underwrite his demand for a 'sufficient reason for the existence of the universe [U_o]?' This injunction is clearly more specific than the imperative to supply a sufficient reason for the existence of something contingent or other. In his statement of PSR, Leibniz asserts the existence of a sufficient reason for what '*takes place*' or 'happens'. And, very importantly, this reason for the occurrence of events, he tells us, is 'sufficient to determine *why it is thus and not otherwise*' ([1714], p. 199); italics added). Evidently, his contrasting alternative to 'what *takes place*' is '*otherwise*'. But, crucially, that alternative demonstrably fails, however, to be *univocal*!

An example that, alas, has become quotidian since the two attacks on the World Trade Center in New York will illustrate the considerable ambiguity of Leibniz's notion of 'otherwise'. When we explain ordinary sorts of events, we typically know instances of their occurrence as well as instances of their non-occurrence. Furthermore, we have evidence concerning the conditions relevant to both kinds of instances, and often have information as to their relative frequency. That information often tells us which of these sorts of events, if either, is to be expected routinely.

Indeed, when we explain the occurrence of a given event, the *contrasting non-occurrence* of that event can *take different forms*: we may wish to explain why the event occurred rather than some *specified* other sort of event that might have occurred *instead*; or we may just ask why the given event occurred rather than not.

Thus, when a presumably well-built skyscraper collapsed, we may ask why it did, rather than withstand an assault on it, though not without considerable damage. Or we may ask why a presumably well-built skyscraper collapsed, rather than just staying intact. The latter contrasting alternative of staying intact constitutes the '*natural*' career of well-built skyscrapers in the absence of an overriding external cause.

In the context of Leibniz's inquiry into 'the sufficient reason for the existence of the universe [U_o]', the relevant event or happening is the existence of the universe through time. Hence we must ask in that context: What becomes of his call for a sufficient reason that determines 'why it [an event] is thus and not otherwise'?

The ambiguity of this request for a sufficient reason is shown by the different contrasting alternatives in questions Q_1 , Q_2 and Q_3 , questions which pertain to the existence of U_o . One such alternative to the existence of U_o is simply that it does not exist, another that nothing contingent exists, but yet another alternative is that some other sort of universe U_n exists *instead* of U_o . Yet the demand to explain the existence of U_o , as issued by PSR, does *not* dictate *which* one of these alternatives is presupposed by it as 'otherwise'! Thus, PSR fails to license the question Q_1 single-handedly by failing to single out its presupposed $SoN(U_o)$ as against the very different presuppositions of questions Q_2 and Q_3 .

For precisely this portentous reason, it turns out that to ask ‘Why does U_o exist?’ is *to ask an incomplete question!* Hence Leibniz’s PSR is incapable of showing that if the existence of U_o is to be explained, it must be explained qua deviation from its non-existence, as against qua deviation from some other alternative. In short, PSR itself does not license Q_1 as against Q_2 or Q_3 . The tempting belief that it does so single-handedly is a will-o’-the-wisp.

The failure of his PSR to underwrite the particular question Q_1 ‘Why does U_o exist, rather than not?’ also emerges from one of the reasons for rejecting SoN(U_o) as ill founded. As we saw, when we call for an explanation of such events as the collapse of a skyscraper, we do so against the background of having observed specified instances of their *non*-occurrence. Indeed, these non-occurrences may well be so very frequent that we are warranted in taking them to be ‘natural’. But obviously, yet very importantly, we have never ever observed an event constituted by the *non*-existence of our U_o , let alone found evidence that its non-existence would be ‘natural’. Nor does the empirically supported big bang cosmology feature such a temporal event (Grünbaum [1998], sec. 5, pp. 25–6). Accordingly, it is ill founded to regard the *non*-existence of our U_o to be ‘natural’, such that PSR could then warrant the question why U_o exists, rather than not.

(4) As we saw in Section 1.1 on refining Leibniz’s PEQ to preclude its unintended trivialization, its articulated version states: ‘Why is there something *contingent* at all, rather than just nothing *contingent*?’ Alas, this rather straightforward construal of PEQ was lost on Craig. As we saw in Section 1.1, his bizarre, misguided reading of Leibniz turns PEQ into the ludicrously fatuous question: Why is there something rather than a specific logically impossible state of affairs? And it will be recalled that, contrary to Craig, for Leibniz no less than for Swinburne, the Null World—being devoid of all *contingent* existents, though clearly not of any necessary existents—is indeed logically possible. Yet Craig ([2001], p. 377) denied this exegetical fact and offers a non-sequitur:

It must be kept in mind that for Leibniz (in contrast to Swinburne) God’s existence is logically necessary, so that [sic!] a state of nothingness is logically impossible. Hence, Leibniz *cannot* be assuming that a state of absolute nothingness is the natural or normal state of affairs, as Swinburne does.

But here Craig has irrelevantly fabricated for himself a notion of ‘a state of (absolute) nothingness’ that is indeed logically impossible, because he himself incoherently banished all *necessary* existents from it, rather than only all *contingent* existents, as in Leibniz’s Null World. Thus, Craig clearly offers a non-sequitur in claiming that ‘for Leibniz (in contrast to Swinburne) God’s existence is logically necessary, so that a state of nothingness is logically

impossible,' a baseless conclusion. Moreover, once Craig had concocted his own incoherent state of 'absolute nothingness', which is logically impossible by excluding necessary existents, he manufactured an incoherent *pseudo*-version of SoN which features such phantom nothingness. Thereupon, he informs us irrelevantly and misleadingly that Leibniz 'cannot' be claiming such absolute nothingness to be 'the natural or normal state of affairs, as Swinburne [allegedly] does'.

But surely, nobody of just ordinary intelligence, let alone Swinburne, would avow Craig's incoherently devised pseudo-version of SoN! Swinburne's Null World excludes only all *contingent* existents, while including, of course, any necessary existents. Thus, his conception of SoN plainly does not pertain to Craig's inane artifact of 'absolute nothingness', with which Craig saddled him.

Unfortunately, Craig used an *ignoratio elenchi* and an exegetical jumble to reject my attribution of SoN to Leibniz, although SoN is a patent presupposition of Leibniz's PEQ, as Bergson and Nozick explicitly recognized.

(5) In Section 1.3 above, and under item (3) of the current Section 1.7.1, there is a preliminary mention of Swinburne's alternative formulation of SoN, which reads in part ([1996], p. 48; italics added): 'surely *the most natural* state of affairs is simply nothing,' a state devoid of all and only *contingent* existents. And as we shall see in Section 1.7.3, this formulation of SoN entails the following consequence: it would be natural—though *not* 'most natural'—for our world or universe U_o of inanimate matter, biological organisms and homo sapiens *not* to exist, rather than to exist, a corollary of SoN that we have denoted by 'SoN(U_o).' Since Leibniz evidently presupposed SoN in his PEQ, he is likewise committed to its corollary SoN(U_o).

But the existence of our U_o is a *deviation* from its purportedly 'natural' *non*-existence, as avowed by SoN(U_o). And any deviation from naturalness calls for *explanation* in terms of a suitable cause or reason. No wonder that, in the opening sentence of Leibniz's afore-cited Section 8, he demanded that the answer to his PEQ provide a 'sufficient reason' for 'the existence of the universe [U_o]'.
 Yet, true to form, Craig ([2001], p. 378) tells us blithely:

Even with respect to the physical universe, moreover, Leibniz did not hold that the natural or normal state of affairs is the non-existence of the physical universe, for he held (notoriously) that God's creation of the world is, like God Himself, necessary.

But, as Nicholas Rescher has argued in a thorough chapter significantly entitled 'Contingentia Mundi: Leibniz on the World's Contingency' ([2003], p. 45):

From the earliest days of his philosophizing Leibniz insisted upon the contingency of the world. It was always one of his paramount aims to avert a Spinozistic necessitarianism, and he regarded the contingency of the

world's constituents and processes as an indispensable requisite towards this end, one in whose absence the idea of divine benevolence would be inapplicable.

To the further detriment of Craig's exegesis, Rescher explains (*ibid.*, p. 46):

Leibniz distinguishes between two different modes of necessity. The one is the *metaphysical* necessity of that whose opposite is logico-conceptually impossible. And the other is the *moral* necessity of that whose opposite is ethically unacceptable. Only the former is absolute and categorical, the latter is standard-relative and dependent upon ultimately evaluative ethical considerations.

Rescher elaborates crucially (*ibid.*, emphasis added):

God's choice of the best available alternative for actualization [i.e., 'God's creation of the world', in Craig's words.], while indeed a certain fact regarding God, is only *morally* and not metaphysically necessary—and *thereby contingent* [footnote omitted].

And while God's moral perfection as creator of this best of worlds is itself a morally necessary truth, it is emphatically not metaphysically necessary. (*ibid.*, p. 49)

As shown by Rescher's account of Leibniz's views, Craig used an exegetically false premise to deny incorrectly that Leibniz was committed to SoN(U_o). It would seem that the remainder of Craig's misguided gloss on Leibniz does not merit discussion.

1.7.2 Derek Parfit

Parfit has gone beyond Leibniz and Swinburne in laying down alleged a priori ontological imperatives. Claiming that the Null World is not only the a priori simplest but also the 'least arbitrary', Parfit believes that SoN is warranted all the more qua presupposition of PEQ. And hence he thinks that the supposed minimum arbitrariness of the Null World confers even greater urgency on PEQ ([1998b], p. 25). Thus, he asks, 'Why is there a Universe at all? Why doesn't reality take its simplest and least arbitrary form: that in which nothing ever exists?'

But why, one must ask, *should* ontological reality spontaneously be 'least arbitrary', even assuming that the Null World is a priori 'least arbitrary' in Parfit's intended sense? He develops his reasoning ([1998a]) as follows. First he declares quite generally (p. 420): 'If some possibility would be less puzzling, or easier to explain, we have more reason to think that it obtains.' And then, echoing Leibniz's undemonstrated belief that the Null World is the a priori simplest both conceptually and ontologically, Parfit offers that world as his paradigm example (p. 421): 'Is there some global possibility whose obtaining would be in no way puzzling? That might be claimed of the Null Possibility

[. . .]. Perhaps, of all the global possibilities, this would have needed the least explanation. It is much the simplest and it seems the easiest to understand.’

Parfit’s view that the Null Possibility ‘seems easiest to understand’ may well have been suggested by Leibniz’s dictum ([1714]; [1973], sec. 7, p. 199) that “nothing” is simpler and easier than “something,” a claim that Leibniz offered unsuccessfully to justify SoN qua presupposition of his PEQ. But the Null Possibility may well not be ‘easiest to understand’: as we saw in Section 1.7.1, conceptually the very notion of the Null World may well range—by *negation* and *exclusion*—over a mind-boggling non-denumerable infinitude of possible contingent worlds. This complexity seems to have been tacitly discerned by Parfit ([1998a], p. 420) in his implicitly *open-ended* enumeration of objects that are *excluded* from the Null World.

In any case, Parfit has to retract his view that the Null Possibility is the least problematic (*ibid.*): ‘Even if this possibility would have been the easiest to explain, it does not obtain. Reality does not take its simplest and least puzzling form.’

Why then did Parfit claim, in the first place, that we have more reason to think that the allegedly simplest and ‘least arbitrary’ Null World would obtain than that some other unremarkable possible world would be actualized? Without ado, he appeals to some concept of ‘coincidence’, saying (Parfit [1998a], p. 424):

Coincidences can occur. But it seems hard to believe. We can reasonably assume that, if all possible worlds exist, that is *because* that makes reality as full as it could be.

Similar remarks apply to the Null Possibility. If there had never been anything, would that have been a coincidence? Would it have merely happened that, of all the possibilities, what obtained was the *only* possibility [i.e., the *one* possibility] in which nothing exists? That is also hard to believe. Rather, if this possibility had obtained, that would have been because it had that feature.

Yet now Parfit no longer claims that some remarkable global feature **F** of some possible world **W** (e.g., maximum simplicity) warrants *the presumption that W would obtain*, rather than some unremarkable world. Instead, now we learn that *if W* does obtain and features some remarkable global property **F**, then we can infer explanatorily that **W** was ontologically mandated by the fact that **F** was ontologically *self-realizing*! Relying on such purported mandatory-ness, Parfit says (*ibid.*, pp. 426–7): ‘Our world may seem to have some feature that would be unlikely to be a coincidence. We might reasonably suspect that our world exists, not as a brute fact but because it has this feature.’

But how can Parfit tell whether a given global feature **F** of our world or of some other possible world in fact is ‘unlikely to be a coincidence’? He told us that if every conceivable world were actualized in a so-called ‘plenary

universe', it would be very unlikely to be a coincidence. And if the Null Possibility were to obtain, that too would be very unlikely to be coincidental. On the other hand, we learn (Parfit [1998a], p. 424), if a universe of 57 worlds were to exist, its cardinality of 57 'could hardly' be self-actualizing and hence *would be coincidental*. In the case of the plenary universe and of the Null World, Parfit (*ibid.*) is struck alike by the fact that 'of all the global possibilities, the one that obtains' is just that particular one. But, clearly, in the 57-worlds-universe as well, *only* one of the 'countless global possibilities' is instantiated.

Why then, one must ask, would the obtaining of the *extremities* of the full range of possibilities *not* be coincidental and therefore cry out for being explained, whereas the actualization of one of the possibilities *in-between* would be just coincidental? Why, indeed, isn't the 57-member world-ensemble just as a priori *improbable* as either the plenary universe or the Null World?

Apparently, Parfit determines which instantiations are not coincidental, and which ones are, by *tacitly* appealing to some metric of a priori probabilities for the actualization of possible worlds that he has not even begun to articulate, let alone to justify. *A fortiori*, he has not shown that the then a priori improbable actualizations call for *ontological* explanation just because they are a priori improbable. For these reasons alone, it seems, his bizarre ontology of potentially self-actualizing explanatory global properties does not enlarge our philosophical horizons.

Furthermore, Swinburne ([1998], p. 428) objects cogently to Parfit's self-actualizing scenario for our world:

Parfit's suggestion that there might be some non-causal explanation of the existence of the Universe involves his claiming that there is some kind of principle at work in producing the Universe, which is never operative in producing more limited effects within the Universe. But then we have absolutely no reason for supposing that that kind of principle is ever at work, or that such a principle explains anything at all [footnote omitted].

Note, incidentally, that when Parfit purports to explain that our universe U_o exists by recourse to its possession of some remarkable self-actualizing property P , what he is, in effect, claiming to explain is why U_o is actualized, *rather than* some other universe U_n that *lacks* P .

Parfit even generalizes his notion of self-actualizing remarkable global features into a comprehensive doctrine of cosmological explanation (Parfit [1998a], p. 424):

If some possibility obtains because it has some feature, that feature selects what reality is like. Let us call it the *Selector*. A feature is a *plausible* Selector if we can reasonably believe that, were reality to have that feature, that would not merely happen to be true.

There are countless features which are not plausible Selectors. Suppose that fifty-seven worlds exist. Like all numbers, 57 has some special

features. For example, it is the smallest number that is the sum of seven primes. But that could hardly be *why* that number of worlds exist.

I have mentioned certain plausible Selectors. A possibility might obtain because it is the best, or the simplest, or the least arbitrary, or because it makes reality as full as it could be, or because its fundamental laws are as elegant as they could be. There are, I assume, other such features, some of which we have yet to discover.

For each of these features, there is the *explanatory* possibility that this feature *is* the Selector. That feature then explains why reality is as it is.

Among the a priori selectors, which Parfit countenanced as ‘plausible’, he included the minimization of a priori arbitrariness: ‘A possibility might obtain because it is [...] the simplest, or the least arbitrary’ ([1998a], p. 424). Thus when he inquired ([1998b], p. 25) why the Null Possibility does *not* obtain, he asked why reality does *not* ‘take its simplest and least arbitrary form’.

Parfit’s a priori view that the minimization of arbitrariness is *ontologically legislative* had been championed years earlier by Peter Unger ([1984]), who took a leaf out of Robert Nozick’s ([1981], p. 128) fanciful ‘fecundity principle’, which richly populated the universe with an infinite ‘plenitude’ (Unger [1984], p. 45) of isolated worlds on avowedly altogether a priori grounds (Unger [1984], sec. 10, pp. 45–9). Though Unger admits to being ‘uncertain’ as to what he means by the conception of a ‘highly unarbitrary’ world (p. 47), he reaches a very gloomy *empirical* verdict concerning the realization of *non-arbitrary* features in our world (Unger [1984], pp. 48–9):

Well, then, what *is* the available empirical evidence, and what *does* it indicate about the actual world? As empirical science presents it to us, is the world we live in, the world of which we are a part, a world notable for its lack of natural arbitrariness? Far from it, the actual world, our evidence seems to indicate, is full of all sorts of fundamental arbitrary features, quirks that seem both universal for the world and absolutely brute.

[...]

According to available evidence, and to such a theory of our actual world as the evidence encourages, the actual world has nowhere near the lack of arbitrariness that rationalist intuitions find most tolerable. To satisfy the rationalist approach, our evidence tells us, we must look beyond the reaches of our actual space and time, beyond our actual causal network. For there to be a minimum of arbitrariness in the universe entire, indeed anything anywhere near a minimum, we might best understand the universe as including, not only the actual world, but infinitely many other concrete worlds as well.

Thus, neither Parfit nor Unger have supplied any cogent reason for believing that a priori non-arbitrariness—insofar as that notion is clear at all—is *ontologically legislative* in the sense of mandating what sort of world is actualized.

As an ontological injunction, the minimization of arbitrariness seems to be just a case of apriorism run amok.

1.7.3 Richard Swinburne and Thomas Aquinas vis-à-vis SoN

Interestingly, Swinburne's alternative formulation of SoN, already mentioned in Section 1.7.1 above, can serve as a point of departure for arguing, as a lesson from the history of science, that SoN stands or falls *on empirical but not on a priori* grounds. Swinburne's alternative formulation of SoN reads in part ([1996], p. 48): 'Surely the most natural state of affairs is simply nothing.' Let us develop the implications to which Swinburne commits himself by his thesis that the Null World is 'Surely the most natural state of affairs'. The articulation of the corollaries of his version of SoN will then enable us to make an *empirical* judgment of its validity.

Assume, for argument's sake, that the Null World were actualized. And consider the set \mathbf{W} of logically possible contingent worlds (or objects) that *fail to be instantiated* or realized in the Null World. Then Swinburne's version of SoN makes the following claim: it is *most natural* that *none* of the possible member-worlds or objects in \mathbf{W} are actualized. But if this collective failure of actualization is 'most natural', what is the ontological status, in regard to 'naturalness', of the individual member-worlds of \mathbf{W} , taken singly or distributively? As we are about to see, Swinburne's SoN entails that, for each individual member of \mathbf{W} , taken singly, it is *natural*—though *not* 'most natural'—that it *not* be actualized rather than that it exist *de facto*.

To see that this conclusion follows from his version SoN, note that if it *were* natural for *some one* member world of \mathbf{W} to *exist actually rather than not*, then the state of affairs in which *no* member is actualized—i.e., the Null World—could *not* be the *most* natural of all. Notice, incidentally, that the stated inference from SoN does *not* commit the fallacy of division, since it reasons from the superlative attribute 'most natural' of the collection \mathbf{W} to the merely positive attribute 'natural' of its individual members.

Thus, it is a corollary of Swinburne's version of SoN that it is natural for our world or universe \mathbf{U}_o of inanimate matter, biological organisms, and homo sapiens not to exist, rather than to exist. As before, let us denote this particular corollary by 'SoN(\mathbf{U}_o)'. A like corollary pertains to each individual member-world of a putative mega-universe which features universes in addition to ours in a world ensemble. But the actual existence of our \mathbf{U}_o is a deviation from its allegedly *de jure* 'natural' non-existence, as avowed by SoN (\mathbf{U}_o). Hence its existence calls for explanation in terms of a suitable external cause or reason. Indeed, precisely because Swinburne claims that there should be nothing instead of our universe \mathbf{U}_o , he is driven to ask *why* our cosmic abode \mathbf{U}_o does exist, even though, *naturalistically*, it supposedly should not.

By the same token, he, like other theists before him, appeals to SoN(U_o) to demand an explanation of how our world is *kept in existence*, instead of reverting to its supposedly natural state of not existing ([1996], p. 49). And, again in concert with other theists, he therefore holds the view that ‘God keeps the universe in being, whether he has been doing so forever or only for a finite time’ (quoted in Quinn [1993], p. 593). This is the Christian doctrine of perpetual divine creation, which is labelled *creatio continuans*.

Thomas Aquinas is one of the early major theists who simply assumes SoN *tout court* in his metaphysics of essence and existence ([1948]; *Summa Theologiae* 1a, 50, Art. 2, ad 3). Logically contingent existing entities, he holds, are ‘composed’ of both essence and existence. The ontologically *spontaneous* state of affairs, in his view, is *à la* SoN that *no* logically contingent objects exist, but that their essences constitute *potentialities* for actualization. Yet since logically contingent objects do exist, Aquinas’ assumption of SoN prompts him to conclude that there must be a *ratio essendi*, a creative ‘act of being’ which actualizes their essences. And that act, we have learned, is performed by God. Moreover, the divine bestowal of being has to take place at every instant of their existence. Thus, he concluded: ‘the being of every creature [i.e., every logically contingent thing] depends on God, so that not for a moment could it subsist, but would fall into nothingness were it not kept in being by the operation of Divine power’ (quoted in Quinn [1993], p. 593).

Aquinas’ peremptory assumption of SoN as a presupposition of his argument above for perpetual divine creation is further evident from his view that God could *annihilate* objects by *merely ceasing to conserve them*, without any destructive act, since they would then *spontaneously* lapse into non-existence (see Quinn [1993], pp. 593–4).

But, now suppose, for the sake of argument, that one conceptualizes any logically contingent object with Aquinas as being ‘composed’ of its essence and existence, which is quite dubious anyway. Even then, it is baseless to assume that the essence of the object must be *ontologically prior*, as it were, to its existence *such that SoN is true*. Evidently, Aquinas *does not justify SoN* but begs the question by taking it for granted in the service of his creationist theological agenda.

William Craig ([2001], p. 383) concedes that ‘Grünbaum is correct in seeing the spontaneity of nothingness [...] to lie at the heart of the Thomist cosmological argument [for the existence of God].’ But then Craig objects (*ibid.*, note 6): ‘it is up to Grünbaum to explain why he rejects the Thomistic metaphysics that underlies the argument, which he has not even begun to do.’ Although Craig himself recognized that Aquinas’ cosmological argument is predicated on SoN, he did not see that this argument is a *petitio principii*, since Aquinas begs the question with respect to SoN. Thus, contrary to Craig, I am entitled to reject Aquinas’ cosmological argument as ill founded after

having impugned his baseless contention that essence is ontologically prior to existence *such that SoN is true*.

Alas, the sixteenth-century Jewish Kabbalist Meir ben Gabbai encumbers his affirmations of SoN with primitive word-magic. Yet without even a hint of intellectual disapproval, Nozick ([1981], p. 122, note*, second paragraph) reports that according to ben Gabbai, ‘only God’s continuing production of the written and oral Torah maintains things in existence.’ Speaking of the alleged dire ontological consequences of any interruption at all of God’s continuing production of the written and oral Torah, that Kabbalist wrote: ‘were it [i.e., this divine production of Hebrew words] to be interrupted for even a moment, all creatures would sink back into their non-being.’ Thus, ben Gabbai relies on divine word-magic to replace the ontological role which Aquinas assigned to divine creation *ex nihilo*. But plainly, the Torah-scribes are the ones who keep producing the written Torah. And it is ongoing human verbal communication among the faithful which preserves the Torah orally. Hence, if ben Gabbai is to be believed, human language-users are ontologically necessary at all times to prevent the mighty cosmos from lapsing into nothingness in accord with SoN, a patent absurdity that no one should ever have taken seriously.

But, as we are about to appreciate, SoN is altogether ill founded *empirically*, so that *any* cosmological argument or doctrine that is predicated on it is likewise empirically unwarranted. And since *a priori* defences of SoN are seen to have failed, it will then emerge as an induction from various episodes in the history of science that SoN stands or falls on *empirical grounds*.

1.7.4 The ‘natural’ status of the world as an empirical question

Consider the corollary of SoN pertaining to our own world U_o , i.e. $SoN(U_o)$, in its own right. As we recall, the latter corollary asserts that it is *natural* for our world U_o *not* to exist, rather than to exist. As against any *a priori* dictum on what is the ‘natural’ status of our world, the verdict on that status will now be turning out to depend crucially on empirical evidence. Two cosmological examples will spell this empirical moral:

(a) The *natural evolution* of one of the big bang models of the universe countenanced by general relativistic cosmology is a clear cosmological case in point. This model, the so-called Friedmann universe, is named after the Russian mathematician Alexander Friedmann. In the context of the general theory of relativity (GTR), the big-bang dust-filled ‘Friedmann universe’ has the following features (Wald [1984], pp. 100–1):

- (i) It is a spatially closed spherical universe (a ‘3-sphere’), which expands from a big bang to a maximum finite size, and then contracts into a crunch

- (ii) It exists altogether for only a finite span of time, such that no instants of time existed prior to its finite duration or exist afterward (Grünbaum [1998], pp. 25–6)
- (iii) As a matter of natural law, its total rest-mass is conserved for the entire time-period of its existence, so that, during that time, *there is no need for a supernatural agency to prevent it from lapsing into nothingness à la Aquinas*, or as in René Descartes' scenario in his Third Meditation ([1967], p. 168).

Evidently, the '*natural*' dynamical evolution of the Friedmann big bang universe *as a whole* is specified by the *empirically supported* general relativistic theory of cosmology. And if there is a world-ensemble of big-bang worlds, the '*natural*' evolution of the members of this mega-universe would likewise be based on such physical laws as are hypothesized to prevail in them. But the epistemic warrant for these presumed laws likewise cannot dispense with empirical evidence, if they are to become warrantably known to us. Thus, the '*natural*' behaviour of big-bang worlds is not vouchsafed a priori.

(b) The same epistemic moral concerning the empirical status of cosmological naturalness is spelled by the illuminating case of the now largely defunct Bondi and Gold steady-state cosmology of 1948, if only because its account of the hypothesized steady state of the expanding universe as being natural owes its demise to contrary empirical evidence.

Their 1948 steady-state theory (Bondi [1960]) features a spatially and temporally infinite universe in which the following steady-state cosmological principle holds: as a matter of natural law, there is large-scale conservation of matter-*density*. Note that this conservation is *not of matter*, but of the *density* of matter over time. The conjunction of this constancy of the density with the Hubble expansion of the universe then entails a rather shocking consequence: throughout space-time, and without any matter-generating agency, matter (in the form of hydrogen) pops into existence completely *naturally* in violation of matter-energy conservation (Bondi [1960], pp. 73–4; p. 140; p. 152). Hence the steady-state world features the accretion or formation of *new* matter as its *natural*, normal, spontaneous behaviour. And although this accretive formation is *ex nihilo*, it is clearly *not* 'creation' by an external agency. Apparently, if the steady-state world were actual, it would impugn the ontology of the medieval Latin epigram 'Ex nihilo, nihil fit'.

Its spontaneous matter-accretion occurs at the rate required by the constancy of the matter-density amid the mutual galactic recession, and it populates the spaces vacated by the mutual galactic recession. Thus, in the hypothesized Bondi and Gold world, the spontaneous accretion of matter would be explained deductively as *entirely natural* by the conjunction of two of its fundamental physical postulates. But the rate of this spontaneous cosmic

debut of new matter is small enough to leave the received matter-energy conservation law essentially intact locally (terrestrially).

Precisely because the new matter is held to originate *spontaneously* in the steady-state world, it is salutary to use the *agency-free* term ‘matter-*accretion*’ to describe this hypothesized process. And we must shun the use of the misleading *agency-loaded* term ‘matter-*creation*’, because the noun ‘creation’ denotes an act of causing something to exist by an agency *external* to its object. Thus the notion of creation calls for a creator.

It was therefore quite misleading that the cosmologist Hermann Bondi, who is a dedicated secular humanist, equated the problem of the origin of the universe with the alleged ‘problem of creation’ and declared that the steady-state theory solves ‘the problem of creation’ *scientifically*, whereas ‘other theories’, such as the Big Bang theory, do not, but hand it over to metaphysics (Bondi [1960], p. 140). But since SoN is turning out to be groundless, the purported problem of creation emerges to be a non-issue.

The steady-state theory owes its demise to the failure of its predictions and retrodictions to pass observational muster in its competition with the Big Bang cosmology. This episode again teaches us that *empirically-based scientific theories are our sole epistemic avenue to the ‘natural’ behaviour of the universe at large*, though only fallibly so, of course, since such theories are liable to be replaced by others in the light of further empirical findings.

In earlier writings (Grünbaum [1998], sec. 3, pp. 22–3; [2000], pp. 5–7), I have given other examples from the history of physics (Aristotelian and Newtonian mechanics) and from the history of biology (spontaneous generation of life from non-living substances), showing how evolving empirically-based theories in these domains provided *changing* conceptions of the ‘natural’, spontaneous behaviour of *subsystems* of the universe. By the same token, these episodes illustrate *how misguided it is to persist in asking for an external cause of the deviations of such systems from the pattern that an empirically discredited theory erroneously affirms to be ‘natural’*.

Thus, as I emphasized furthermore in previous writings (Grünbaum [1973], pp. 406–7; [1998], secs. 2, 3, 4), the history of empirical science has legitimated the *theory-relative rejection* of certain why-questions. Bas van Fraassen ([1980], pp. 111–2) referred to my legitimation of such rejections and has aptly encapsulated their upshot: ‘the important fact for the theory of explanation is that not everything in a theory’s domain is a legitimate topic for why-questions; and that *what is [legitimate], is not determinable a priori*’ (italics added).

Thus it is fitting that we should ask: What is the empirical verdict on SoN(U_o), a corollary of Swinburne’s SoN, which asserts that ‘It is natural for our universe not to exist, rather than to exist’? Its proponents have offered no empirical evidence for it from cosmology, let alone for SoN itself, believing mistakenly, as we saw, that it can be vouchsafed a priori *à la* Leibniz.

But what if they were to counter the injunction to supply empirical evidence, objecting that it demands the impossible. Impossible, it might be said, because, in principle, there just can be no evidence from within our actual world which might show that it is the ‘natural’ state of our cosmos *not* to exist in the first place. To this, the retort is two-fold: it is not obvious that this epistemic predicament is genuine; but even if it were, it would only redound to the baselessness of SoN(U_o), rather than tell against the legitimacy of demanding evidence for any and every averral of cosmic naturalness, including SoN(U_o).

Philip Quinn ([forthcoming], pp. 12–3) agrees that, as he put it (p. 13), ‘current scientific theories and the empirical evidence on which they rest provide little or no support for SoN.’ But he then chides me, declaring (p. 13) that, ‘the *de facto* history of science falls far short of establishing the strong modal conclusion that this issue [of the credentials of SoN] *cannot* be settled a priori because only empirical evidence could have a bearing on it.’ And he opines that it is ‘*scientistic*’—in von Hayek’s ([1952]) pejorative sense of being philosophically imperialistic—to maintain, as I do, that ‘only empirical evidence of the sort that supports scientific theories could have a bearing on the acceptability of SoN.’

Quinn’s complaint of scientism prompts several responses:

(a) There is an important *asymmetry*, I submit, between an empirical and an aprioristic adjudication of the truth of SoN, because of their *very different track records* in making determinations of naturalness. A priori defences of SoN seem to have failed, as we have already seen. But the *scientific* record of determining *what transpires naturally* is *brilliant*, not only in physics but also in biology. Witness the history of the theories as to the *spontaneous generation of life* from inorganic materials to which we alluded before, starting with Pasteur but including Oparin and Urey in the twentieth century. Furthermore, the rich history of the *disintegration of Kantian apriorism* in regard to the external world spells a strong caveat against the expectation of an a priori *vindication* of SoN.

(b) As Quinn noted, I appeal inductively to the substantial evidence from the history of science to infer that settling the merits of SoN a priori is pie-in-the-sky. But I allow, of course, that this induction is *fallible*. Hence I would surely be open to correction, if someone were unexpectedly to come up with a cogent a priori argument for SoN. But I trust I can be forgiven if I do not expect that to happen at all. And I do not see that I am being rash in my epistemological attitude.

Indeed, I deem it very important that Quinn makes both of the following concessions, the first of which bears repetition from above:

(i) ‘It seems to me that current scientific theories and the empirical evidence on which they rest provide little or no support for SoN’ ([2003], p. 13).

(ii) ‘If only empirical evidence can settle the issue of whether SoN is true [as claimed by Grünbaum] and it [SoN] is not well supported by empirical evidence, then SoN—[qua presupposition of PEQ]—is, indeed, ill founded and the *pseudo-problem charge* [against PEQ] *has been established* [as claimed by Grünbaum]’ (*ibid.*, p. 12, italics added).

(c) I attach great importance to pointing out why one should generally be left rather unmoved by the charge of scientism in metaphysics and epistemology, not only in this context, but also in others. It is easy enough to raise the red flag of scientism, whenever scientific reasoning impugns hypotheses or presumed ways of knowing that someone wishes to immunize against scientific doubts. But, as I see it, he who would level the charge of scientism *responsibly* incurs a major obligation: to come up with a *positive vindication* of the principles or methods that this critic wishes to *contrapose* to the scientific ones. In the present case, I would ask for *positive* reasons to expect that a priori methods can settle the merits of SoN. But neither Quinn nor, to my knowledge, anyone else has given any such reason.

As an example of an irresponsible use of the charge of scientism, I mention the hypothetical case in which scientific findings are adduced against the demonic possession theory of insanity, only to be rejected as ‘scientistic’. The charge would be that the scientific ontology is too impoverished to have room for Satan or other demons, who spring the confines of its allegedly narrow horizons.

1.7.5 Robert Nozick

Robert Nozick has offered some distinctive views on SoN and PEQ. He ([1981], p. 126) notes correctly that SoN is presupposed by the question ‘Why is there anything at all, rather than nothing?’, a presupposition he deems to be ‘a very strong assumption’ in the following sense: ‘to ask this question [i.e., PEQ] is to presume a great deal, namely, that nothingness is a natural state requiring no explanation, while all deviations from nothingness are in need of explanation.’ But the explanation of *deviations from the* natural state does not preclude that the natural state *also* may have an explanation of its own. Indeed, as shown by our scientific cosmological illustrations, Nozick was not entitled to suppose that the hypothesized ‘natural’ state would *itself* simply require ‘no explanation’, if it were to obtain.

Strangely, Nozick goes on to shroud the natural state of the world in blanket agnosticism, declaring *tout court* (*ibid.*, p. 126): ‘The first thing to admit is that we do not know what the natural state is.’ But surely the *fallibility* of the evolving verdicts of our empirically supported scientific theories as to the natural behaviour of the universe is not tantamount to our wholesale ignorance of the natural state of affairs.

Indeed, if Nozick were right that the natural behaviour of the world is unknown to us *tout court*, then none of those who endorse PEQ as an authentic question, himself included, could even entertain the claim of its presupposition SoN that the *Null World* is the most natural cosmic state. And that loss would then abort PEQ even before it is posed.

Yet despite his agnostic disclaimer concerning SoN, Nozick is undaunted in tackling PEQ a priori after first noting that this question is deeply, if not uniquely, problematic for the following reason ([*ibid.*], p. 115):

The question [i.e., PEQ] appears impossible to answer [footnote omitted]. Any factor introduced to explain why there is something will itself be part of the something to be explained, so it (or anything utilizing it) could not explain all of the something—it could not explain why there is *anything* at all. Explanation proceeds by explaining some things in terms of others, but this question seems to preclude introducing anything else, any explanatory factors.

In effect, Leibniz ([1697], [1973], pp. 136–7; [1714], [1973], sec. 8, p. 199) had anticipated Nozick's objection here by arguing that if PEQ is to have an answer, the sufficient reason for the existence of something could not be provided by a series of *contingent* somethings, because they would form an *infinite* explanatory regress; instead, he contended, the required sufficient reason (cause) terminates the regress by existing *necessarily*.

Though Nozick has posed a forbidding difficulty for PEQ, he insists that PEQ is 'not to be rejected' ([1981], p. 116) and writes:

This chapter [i.e., his chap. 2, on PEQ] considers several possible answers to the question [PEQ]. My aim is not to assert one of these answers as correct (if I had great confidence in any one, I wouldn't feel the special need to devise and present several); the aim, rather, is to loosen our feeling of being trapped by a question with no possible answer—one impossible to answer yet inescapable. [...] The question cuts so deep, however, that any approach that stands a chance of yielding an answer will look extremely weird. Someone who proposes a non-strange answer shows he didn't understand this question. Since the question is not to be rejected, though, we must be prepared to accept strangeness or apparent craziness in a theory that answers it.

Still, I do not endorse here any one of the discussed possible answers as correct. It is too early for that. Yet it is late enough in the question's history to stop merely asking it insistently, and to begin proposing possible answers. Thereby, we at least show how it is possible to explain why there is something rather than nothing, how it is possible for the question to have an answer.

Alas, the hospitality then displayed by Nozick to avowed 'extreme weirdness' and 'apparent craziness' does not stop short of countenancing explanations vitiated by gross logical improprieties or crude abuses of language. And he is

plainly not offering them tongue-in-cheek. Let us cite one of his proposed answers to PEQ, although it will turn out to be a mere farce.

Recall that the Null World, which is assumed to obtain *de jure* by PEQ, also excludes the existence of time. Yet Nozick ([*ibid.*], p. 123) will now offer us a *temporal* scenario a priori from which, he claims, one could conclude that ‘there is something rather than nothing because the nothingness there once was nothinged itself, thereby producing something [thereafter]’. Nozick depicts the grotesque scenario as follows:

Is it possible to imagine nothingness being a natural state which itself contains the force whereby something is produced? One might hold that nothingness as a natural state is derivative from a very powerful force toward nothingness, one any other forces have to overcome. Imagine this force as a vacuum force, sucking things into nonexistence or keeping them there. If this force acts upon itself, it sucks nothingness into nothingness, producing something or, perhaps, everything, every possibility. If we introduced the verb ‘to nothing’ to denote what this nothingness force does to things as it makes or keeps them nonexistent, then (we would say) the nothingness nothings itself. (See how Heideggerian the seas of language run here!) Nothingness, hoisted by its own powerful petard, produces something.

When Nozick speaks of ‘the nothingness there once was’, he means, I take it, that at one time, the Null World obtained. He envisions further that the Null World itself contains ‘a very powerful force toward nothingness’. Even this much already seems incoherent, since the Null World is presumably *devoid* of all forces, physical fields or forms of energy. If there were such a force, we learn, it would annihilate (destroy) any pre-existing things permanently, without residue.

Nozick describes this putative action of the force metaphorically and misleadingly by speaking of the force ‘sucking things into nonexistence and keeping them there’. But there are no things to be destroyed in the Null World. Hence, if *per impossibile*, a thing-consuming ‘vacuum force’ were operative in the Null World after all, on what does Nozick think it can act? Its function, he tells us would be to act ‘upon itself’, presumably to suspend or annihilate itself as an agency of potential destruction. But clearly, his putative ‘force toward nothingness’ is not *itself* identical with nothing or ‘nothingness’. Hence even if the annihilating force can intelligibly act on itself, it would *not* be annihilating ‘nothing’ or the Null World as the object of its self-destruction. Besides, ‘nothing’ (the Null World) is not a thing-like substance such as a fluid or a gas that could be ‘sucked out’ (evacuated), let alone *itself* be annihilated, leaving ‘something’ in its wake!

Thus, Nozick is misformulating his own scenario by beguilingly saying that, when acting on itself, the force ‘sucks nothingness [*sic!*] into nothingness, producing something or, perhaps, everything, every possibility’. Needless

to say, Nozick's metaphysical Potemkin village is impervious to appraisal by empirical evidence. Alas, in his attempt to propose this answer to PEQ, Nozick's imagination seems to have gone berserk, leaving only bewildered indignation in its wake.

Nozick also takes logical liberties in another tack he explores toward dealing with PEQ. But now he is considering *undermining* the question, instead of proposing an answer to it ([*ibid.*], p. 130): 'Why is there something rather than nothing? There isn't. There's both.' Here he invokes a so-called 'fecundity assumption', which asserts (p. 128) that 'all possibilities are realized' in the following sense: 'All the possibilities exist [are realized] in independent non-interacting realms, in "parallel universes"' (p. 129). But, as shown by our discussion of the Null Possibility, the obtaining of the Null World, which Nozick declares to be *compossible* with the existence of a super-abundance of different actualized universes, does logically *exclude* the realization (actualization) of any and all logically possible contingent worlds *other than itself*. Thus, the Null World cannot be one of the 'noninteracting realms' alongside parallel universes that constitute other actualized possibilities. Therefore, Nozick's fecundity principle cannot serve to undermine PEQ, although that question has turned out to be a non-starter, because it presupposes the truth of the baseless SoN.

Yet, the Nobel laureate physicist Steven Weinberg ([1993], p. 238) entertains Nozick's ([1981], p. 128) 'fecundity principle' even to the extent of declaring: 'If this principle is true, then our own quantum-mechanical world exists but so does the Newtonian world of particles orbiting endlessly and so do worlds that contain nothing at all.' So, Weinberg countenances a *plurality* of 'non-interacting' *Null Worlds*! That seems unintelligible.

So much for Nozick's *a priori* treatment of PEQ.

1.8 Hypothesized psychological sources of PEQ

It would be appropriate to consider possible emotional inspirations of PEQ, if we are to understand the tenacity with which it has been asked.

As Charles Larmore has emphasized, the unflinchingly pessimistic Arthur Schopenhauer held, contrary to Kant, that it is not Reason as such which drives us to pose questions such as PEQ (Schopenhauer [1966], Vol. I, Appendix). In a chapter on 'Man's Need for Metaphysics', Schopenhauer wrote ([1958], Vol. II, chap. 17, p. 161; italics added):

undoubtedly it is the knowledge of death, and therewith the consideration of the suffering and misery of life, that give the strongest impulse to philosophical reflection and metaphysical explanations of the world. *If our life were without end and free from pain, it would possibly not occur to anyone to ask why the world exists, and why it does so in precisely this way, but everything would be taken purely as a matter of course.*

Elaborating further on ‘Man’s Need for Metaphysics’, Schopenhauer declared (*ibid.*, p. 171):

In fact, the balance wheel, which maintains in motion the watch of metaphysics that never runs down, is the clear knowledge that this world’s non-existence is just as possible as its existence [. . .]. What is more, in fact, we very soon look upon the world as something whose non-existence is not only conceivable, but even preferable to its existence [. . .]. Accordingly, philosophical astonishment is at bottom one that is dismayed and distressed.

But to the detriment of Schopenhauer’s diagnosis of the emotional inspiration of PEQ, he leaves fundamentally *unexplained* why that question has apparently been posed *only*—or at least principally—by the heirs of the distinctly Christian doctrine SoN. After all, the thinkers in other cultures who did *not* raise it were just as conscious of death and the miseries of life as the legates of traditional Christian doctrine.

Yet it would be interesting to investigate empirically the motives of philosophers who embrace PEQ as an *authentic* question, so as to learn to what extent, if any, such philosophers are driven by emotions of the sort conjectured by Schopenhauer. It is perhaps not implausible that our deeply instilled fear of death has prompted some of us to wonder why we exist so precariously. And some of us may then have extrapolated this precariousness, more or less unconsciously, to the existence of the universe as a whole. But whatever the emotional inspiration of PEQ, no such motivation can vindicate it as a *philosophically* viable question, since its presupposed SoN is baseless.

Disappointingly, after declaring PEQ to be the most fundamental question of metaphysics, Heidegger ([1953], p. 1) *psychologized* it away as inspired by existential anxiety, thereby essentially echoing Schopenhauer’s ideas on the psychology of PEQ.

But PEQ dies hard. In 1999, it was the focus of a massive book of over 750 pages by the Swiss philosopher Ludger Lütkehaus ([1999]). Published in German, its title in English becomes *Nothing: Farewell to Being, End of Anxiety*. Let Lütkehaus speak for himself in stating the aim of his opus ([1999], p. 29) in his German original, to which I append my English translation as an endnote.

Es [dieses Buch] versucht, die Präokkupationen eines Denkens zu revidieren, das seinsfixiert, ‘ontozentrisch’ in seinen Werthierarchien, ‘ontomorph’ in seinen Begriffen und Vorstellungen und bedingungslos ‘ontophil’ in seinen Antrieben ist.

Den symptomatischsten Ausdruck hat dieses Denken in seinem paranoiden, ‘nihilophoben’ Verhältnis zum Nichtsein, zum ‘Nichts’ gefunden. Nicht die ‘Seinsvergessenheit,’ wie es die Todtnauberger Schule beklagt—die *Nichtsvergessenheit* bezeichnet das wahre ‘Schwarze Loch’ seiner ontologischen Amnesie. Nichtsvergessenheit, Nichtsangst und

Seinsgier bilden sein ‘ontopsychologisches,’ ‘ontopathologisches’ Syndrom. Und gerade damit arbeitet dieses Denken der Vernichtung und Selbstvernichtung zu. Das ist die—vielleicht tragische—Ironie der so seinsfixierten westlichen Seinsgeschichte.²

After this avalanche of words, I have no idea just what Lütkehaus would have each of us do to overcome our alleged ‘ontopathological syndrome’. Should we forsake all *joie de vivre*?

1.9 PEQ as a *failed* springboard for creationist theism: the collapse of Leibniz’s and Swinburne’s theistic cosmological arguments

We are now ready to appraise the theistic creationist answers given to PEQ by Leibniz and Swinburne respectively as part of a *cosmological argument* for the existence of God.

Swinburne has argued cogently against Leibniz that, if there is a God, his existence is logically contingent no less than that of the universe. As he reasoned carefully ([1991], chap. 7, p. 128):

it seems coherent to suppose that there exist a complex physical universe but no God, from which it follows that it is coherent to suppose that there exist no God, from which in turn it follows that God is not a logically necessary being. If there is a logically necessary being, it is not God [footnote omitted].

And having deemed the existence of God to be logically contingent, the sweep of Swinburne’s version of SoN *excludes* God along with our contingent universe from the Null World. Thus, as we recall, Swinburne formulated SoN as follows: ‘Surely the most natural state of affairs is simply nothing: no universe, no God, nothing’ ([1996], p. 48). But, on the basis of his SoN, he had demanded, in response to PEQ, a suitably potent external divine cause to explain the existence of the universe *qua deviation from nothingness*. And he issued this explanatory demand for a creator *ex nihilo* as a challenge to atheists ([*ibid.*], pp. 48–9; p. 2).

But clearly, what is sauce for the goose is sauce for the gander: if God does exist contingently, as Swinburne claims, then the contingent existence of the

² In my English translation, it reads: ‘This book is an attempt to revise the preoccupation of a mode of thinking that is fixated on being, “ontocentric” in its hierarchy of values, “ontomorphic” in its concepts and ideas, and unconditionally “ontophilic” in its motivations. This mode of thought has found its most symptomatic expression in its paranoid, “nihilophobic” relation to non-being, to nothingness. Not the forgetting of being, as deplored by the Todtnauberg School, but rather the forgetting of nothingness is the genuine “black hole” of its ontological amnesia. The forgetting of nothingness, fear of nothingness and ontological greed constitute its “ontopsychological”, “ontopathological” syndrome. And precisely thereby this way of thinking conduces to annihilation and self-annihilation. Thus fixated on being, this is the perhaps tragic irony of the Western history of being’.

Deity also constitutes a *deviation* from the allegedly most natural state of nothingness! Thus, on Swinburne's version of SoN, the existence of God requires causal explanation *in answer to PEQ* no less than the existence of the universe does. Hence Swinburne is not entitled to take the existence of God for granted, as he does, to explain the existence of the universe *in answer to PEQ*. To point out against Swinburne that, on his version of SoN, God and the universe *alike* require causal explanation is *not* to saddle him with an infinite regress of explanations.

How, then, does he deal with the following inescapable challenge from his version of SoN? If he is going to give an answer to PEQ, as he does, he needs to explain why God exists, *rather than just nothing contingent*, fully as much as he needs to explain why our universe exists, rather than just nothing contingent. Yet Swinburne is *oblivious* to this major challenge as emanating from his SoN!

Thus, unencumbered by this explanatory debacle, Swinburne opines one-sidedly ([1996], p. 2): 'the view that there is a God [. . .] explains the fact that there is a universe at all.' And, again in accord with his SoN, he claims furthermore ([*ibid.*], p. 49) that God also keeps 'the many bits of the universe' in existence.

But in regard to the imperative to explain why God exists rather than just nothing, Swinburne ([*ibid.*]) is driven to concede that 'inevitably we cannot explain' it. Thus he claims ([1991], p. 127) that 'The choice is between the universe as [explanatory] stopping point and God as stopping point.' Yet, Swinburne defaulted on his explanatory debt when he conceded that the existence of God 'inevitably' defies explanation. He had assumed that debt by embracing his version of SoN, which excludes God from the Null World and turns the existence of the Deity into a deviation from the 'most natural' state of nothingness. Hence, contrary to Swinburne, on his own premises, God does not qualify as an explanatory 'stopping point' after all.

Thus Swinburne has indeed deservedly incurred a jibe akin to the one Schopenhauer famously issued against those who demand a creative cause of the existence of the universe, but then suspend a like demand to explain the existence of God: Swinburne has treated SoN like a hired cab that he dismissed, just when it reached his intended theological destination.

But let there be no misunderstanding of my use of Schopenhauer's simile of the hired cab against Swinburne. I am emphatically *not* maintaining generally that a theological hypothesis **T** can be explanatory only if **T** itself can, in turn, be explained; instead, I am contending that Swinburne hoists himself with his own petard: in answer to PEQ, his recourse to SoN to call for a theistic explanation of the very existence of the universe *boomerangs*, because his SoN likewise requires a causal explanation of the existence of God, which, he tells us explicitly, is not to be had.

Leibniz ([1714], [1973], secs. 7 & 8, p.199) and Swinburne ([1991], pp. 121–130) have offered the *prima facie* most persuasive of the traditional "first

cause” cosmological arguments for the existence of God as creator of the universe *ex nihilo*. Though they differ as to whether God exists necessarily (Leibniz) or contingently (Swinburne), the common core of their cosmological arguments can be encapsulated as follows: (i) The Null world, which is devoid of all contingent existents, is the simplest (ontologically), (ii) SoN is true: *De Jure*, the Null World should obtain qua being the simplest, and indeed it would obtain as the most “natural” or normal state of affairs in the absence of an external cause (or “reason”), (iii) But the *de facto* existence of our universe of contingent objects is a massive *deviation* from the Null World mandated by SoN, (iv) This colossal existential deviation from ontological “normalcy” cries out for explanation by a suitably potent cosmic cause, making an answer to PEQ imperative. The required cause is a creator *ex nihilo*. Hence the God of theism exists.

Thus it is clear that the theistic creationist answers given to PEQ by both Leibniz and Swinburne are each predicated on a version of SoN in the face of contingently existing things. Their versions differ somewhat: Leibniz tells us that, in the absence of an overriding reason (cause), the nihilistic state of affairs is ontologically imperative, because it is ‘simpler and easier’ than the state of something contingent, whereas Swinburne claims that the Null World is ‘the most natural state of affairs’. But I have been at pains to argue that both of these versions of SoN are baseless, each for reasons of its own. Yet they both avow the central claim of SoN that *de jure* there *should* be nothing contingent and that there would indeed be nothing contingent in the absence of an overriding external divine creative cause.

But the ill-founded SoN is clearly a presupposition of PEQ. Therefore, the cosmic ontological question PEQ is a non-starter by posing a pseudo-issue. Yet the purported imperative to answer precisely this global question is the basis for Leibniz’s (secs. 7 and 8) and Swinburne’s ([1991], chap. 7) cosmological arguments for the existence of God. Thus, **PEQ cannot serve as a springboard for creationist theism.** Hence Leibniz’s and Swinburne’s cosmological arguments are fundamentally unsuccessful.

2 Do the most fundamental laws of nature require a theistic explanation?

We now consider theistic arguments that have been offered, not about the existence of contingent objects, but about the explanation of the natural laws that are exhibited by their behaviour, laws which are sometimes called the ‘nomological structure’ of the world, the ‘nomic structure’ or, briefly, its ‘nomology’. Theists have claimed to explain the nomology as having been willed or intended by God in the mode of agent-causation to be exactly what it

is. We shall speak of this supposed theistic explanation as ‘the theological volitional explanation of the nomology’. And the principal issue in this Section 2 will be whether creationist theism succeeds in explaining the specific content of the nomological structure, as claimed by its advocates.

2.1 The ontological inseparability of the laws of nature from the furniture of the universe

Unless there is an infinite regress of explanations, every explanatory theory will feature some set of *unexplained explainors*. Yet any theory can be axiomatized in *alternative* ways. For example, in Euclid’s synthetic plane geometry, the famous Parallel Postulate (Number 5) can be interchanged with the theorem that the sum of the interior angles of a rectilinear triangle is 180 degrees as follows: this angle sum theorem now becomes the 5th Postulate, while the previous Parallel Postulate now becomes a theorem. Similarly, Newtonian dynamics has been alternatively axiomatized by means of the so-called calculus of variations. Thus, the fundamentality of a postulate is *not* absolute, but depends on the axiomatization. Hereafter, when we speak of ‘the most fundamental laws’ of the nomology, this characterization is to be understood to within just such axiomatic relativity.

In a scientific theory pertaining to the laws of nature and featuring unexplained explainors, the most fundamental of these laws (in the given axiomatization) will hold as a matter of brute fact. But, as we just saw in Section 1.9, in a theistic system, the existence of God is its avowed unexplained explainor and thus is *its* brute fact. Hence, as we noted, Swinburne declared ([1991], p. 127): ‘The choice is between the universe as [explanatory] stopping point and God as stopping point.’

The nomology consists of the law-like regularities exhibited by the physical, biological, and bio-psychological constituents of the universe. It is of cardinal importance here that these nomic patterns *inhere* in the behaviour of the world’s furniture and do not exist independently alongside it. Theists and atheists can agree that the laws do not hover over the universe, as it were, in some separate realm. Swinburne ([1991], p. 43) rightly rejected this hypostatization: ‘Talk about laws of nature is really only talk about the power and liabilities of bodies.’

In short, the laws are inextricably intertwined with the material *content* of the universe. Hence we can speak of their intrinsic entanglement as “the *ontological inseparability*” of the nomology from the world’s furniture.

But just this inextricability has a very important corollary pertaining to *a posteriori* teleological arguments for the existence of a designer-God, a corollary that seems to have been overlooked heretofore. If the theistic

God is to endow the laws of nature with teleological features—such as permitting the formation of intelligent life—then he must do so precisely BY MEANS OF creating the material content of the world *ex nihilo* as his handle on the laws. Thus, the designer-role which the theist attributes to the Deity cannot be fulfilled by God without his being the creator *ex nihilo*. Yet the *a posteriori* argument for a designer-God cannot **also** shoulder the probative burden of warranting divine creation *ex nihilo*, an *onus* which was borne by the received cosmological argument. Indeed, if the teleological argument had the probative resources to argue not only for a *designer-God* but also for a *creator-God ex nihilo*—the latter being the conclusion of the cosmological argument—then the teleological argument would make the cosmological one SUPERFLUOUS! But it does not. Instead, the two arguments complement one another as follows: The proponent of the design argument for the existence of God is engaged in *adding* to the cosmological conclusion, which is that God-the-creator exists, the *further* *a posteriori* conclusion that a *designer-God* exists, who is also a creator-God. Hence, an argument for God-**the-designer** that uses as a premise the existence of God-**the-creator** does not “beg the question” as to the existence of a designer-God,

Accordingly, the assertion of divine creation *ex nihilo*, which is the *conclusion* of the failed cosmological argument for the existence of God, is now seen to be a tacit *premise* of the traditional teleological argument that seemingly *goal-directed* features of the world call *a posteriori* for a cosmic *designer*. In other words, if God is to implement his inferred role as cosmic designer of the nomology, he must be assumed to be the creator *ex nihilo* of the substantive fabric and texture of the universe.

But absent a successful cosmological argument for the occurrence of divine creation *ex nihilo*, the telcologist must bear the enormous additional probative burden of somehow warranting the very framework of creation *ex nihilo* in which the teleological arguments are inevitably anchored. In short, the telcologist is in dire need of some kind or other viable, cogent *substitute* for the received cosmological argument, an argument whose most persuasive versions (by Leibniz and Swinburne) turned out to be genuinely flawed in Section 1.9. Yet, no such substitute is extant.

2.2 The probative burden of the theological explanation of the world's nomology

The theological volitional explanation of the nomology, which we shall develop in the next section, has to shoulder a multiple heavy probative burden as follows:

(a) Since the theist purports to explain the laws of nature as the product of divine intention, the ontological inherence of the laws of nature in the cosmic

furniture commits him/her to the claim that God brought the nomic structure into existence *by means of creating ex nihilo the world's furniture* from which that structure is inseparable; thus just like the theistic argument for a *designer-God*, the theological volitional explanation of the nomic structure is in dire need of a successful substitute for the failed cosmological argument for divine creation *ex nihilo*.

(b) According to theism, God is the creator *ex nihilo* of all logically contingent existing entities, whenever they exist, though of course he does not create himself. If that claim were true, then God would *automatically also* be the simultaneous creator *ex nihilo* of such laws of nature **L** as govern the content of the universe, precisely because the nomic structure **L** is *intrinsic* to the furniture of the universe.

(c) Yet we must heed a caveat: it would *not* follow from the reliance of the theistic volitional explanation of the nomology on creation *ex nihilo* that if the universe is *not* the product of divine creation *ex nihilo*, then no sort of supernatural agency—such as the phantasmic demiurge in Plato's *Timaeus*—might have been the craftsman of the laws **L** by *transforming prior chaos* into a cosmos. But, the traditional theist is unwilling to countenance a divine cosmic craftsman who merely transforms a pre-existing chaotic world into a nomic universe, holding that an omnipotent God had no need for pre-existing substances to create a universe. Hence the notion of a mere cosmic transformative craftsman is unavailable to the theist, and hence would not enable the theistic explanation of the nomology to dispense with the *equivalent* of a cosmological argument for creation *ex nihilo*.

But, as we saw in Section 1.9, the received cosmological argument for divine creation *ex nihilo* is erected in response to PEQ on the quicksand of SoN. And since this cosmological argument is thus *ill founded*, neither the divine volitional explanation of the nomic structure, nor the aforementioned teleological argument for the existence of God can build on it *cumulatively*; instead, they must then bear the enormous *additional* probative burden of somehow warranting the very *framework* of creation *ex nihilo* from which the theistic volitional explanation of the world's nomology and boundary conditions is inseparable. But no such warrant is in sight.

Philip Quinn ([forthcoming]) has tried to parry my claim that the commitment to a divine volitional explanation of the nomic structure confronts the theist with the probative burden of providing the equivalent of a successful cosmological argument for creation *ex nihilo*. Quinn denies that burden and chides me for the 'error' of 'underestimating the number of sources from which justification for the existence of the God of theism can be derived'. And he explains that the contributions from these various sources 'can combine to yield a cumulative case argument'.

Yet the issue before us is specifically the warrant, if any, for the theist's purported explanation of the world's nomology as having been intended by God in the mode of agent-causation to be exactly what it is. And how does Quinn think his envisioned cumulative argument can *dispense* with the *specific* demonstration that the theistic volitional explanation of the nomology must show the creation of the nomic structure to be part and parcel of the divine creation *ex nihilo* of the material content of the world? Any such specific demonstration, it seems, does bear the same heavy probative burden as the received cosmological argument, which failed.

But, serious though it is, the need for a successful substitute for the failed cosmological argument is *merely one of a whole array of defects of the theistic explanation of the nomology*. We shall turn to these other failings after first articulating the proposed volitional theistic explanation of the nomology as developed by Swinburne and Quinn.

2.3 The theistic explanation of the cosmic nomology

In a 1993 *Festschrift* for me, Philip Quinn set the stage for advocating a theological explanation of the nomology, which purportedly transforms scientific *brute* facts into specifically explained regularities. Quinn says ([1993], p. 607):

The conservation law for matter-energy is logically contingent. So if it is true, the question of why it holds rather than not doing so arises. If it is a fundamental law and only scientific explanation is allowed, the fact that matter-energy is conserved is an inexplicable brute fact. [. . .] If there is a[ny] deepest law, it will be logically contingent, and so the fact that it holds rather than not doing so will be a brute fact.

Quinn now proceeds ([*ibid.*]) to draw two inferences from the *scientific* brute fact status of the most fundamental laws of nature, assuming that there are such 'ultimate' laws. He writes:

There are, then, genuine explanatory problems too big, so to speak, for science to solve. If the theistic doctrine of creation and conservation is true, these problems have solutions in terms of *agent-causation*. *The reason why there is a certain amount of matter-energy and not some other amount or none at all is that God so wills it, and the explanation of why matter-energy is conserved is that God [creatively] conserves it [as required by SoN].* (italics added)

In the same vein as Quinn, Swinburne ([1996], pp. 21–2) characterizes explanation in terms of agent-causation as 'intentional' or 'personal'. And speaking of the laws of nature **L**, Swinburne endeavours to prepare the ground for that

sort of theistic explanation of facts of nature ([1991], p. 125):

Why does the world contain just that amount of energy, no more, no less?
[The laws] L would explain why whatever energy there is remains the same;
but what L does not explain is why there is just this amount of energy.

Evidently, Quinn and Swinburne presume to *quantify* the ‘amount of matter-energy’ univocally. But even in elementary Newtonian mechanics, after integration of the equation of motion to derive its law of conservation of dynamical energy, the numerical value of the total energy is dependent on the arbitrarily (i.e. humanly) chosen *zeros* of the component potential and kinetic energies. How then is divine volition to explain that “there is just this [numerical] amount of energy”? Does God create to within the zeros?

But let us consider more generally the context of the volitional theological explanations offered by Swinburne and Quinn in answer to their question of why the actual world’s nomology is what it is. This question singles out the presumed ultimate laws and facts of nature for explanation. And our two theists demote science for its inability to answer their question. As they make clear (Swinburne [1991], p. 125; Quinn [1993], p. 607), they consider their theistic volitional explanation of the ultimate nomology to be a major explanatory advance over scientific brute fact. Yet neither Swinburne nor Quinn *spelled out* their very ambitious deductive theistic explanation of the nomic structure.

Therefore, I now offer a reconstruction of essentially the deductive explanatory reasoning that, I have good reason to believe, they originally had in mind. Quinn (private communication) authenticated my reconstruction in regard to the view he held before 2003. After codifying Swinburne’s and Quinn’s original versions of the purported theistic explanation of the basic laws of nature, we shall address their more recent accounts.

As for the earlier versions of Swinburne’s and Quinn’s explanation of the nomology qua product of divine agency, let me significantly refine my earlier formulation of it (Grünbaum [2000], p. 20). To determine whether their explanation redeems the very ambitious claims they made for it, let us have in mind, for the sake of concreteness, Swinburne’s own example, originally endorsed by Quinn, of explaining theologically the supposed specific amount of total energy in the universe, which they depict as a *scientific* brute fact. Or, just for argument’s sake, suppose that the non-linear partial differential equations codifying Einstein’s theory of the gravitational-cum-metric field *were* ultimate laws of nature. How, then, did Swinburne and Quinn envision that explanatory recourse to divine agency would *transform* these and all other specific putative scientific *brute* facts into volitionally *explained* facts?

I have schematized their original presumed theistic explanations in a deductive argument, using the familiar term ‘explanandum’ to denote *what is to be explained*, which is asserted in the conclusion of the deductive argument

below. But in this schematic reconstruction, the purportedly explained actual specifics of the most basic laws and facts are patently *not* stated in either the Conclusion or in the Premises, if only because they are not known; instead each of the Premises and the Conclusion speak of the unspecified laws of nature by means of *place-holders*. Yet, whatever these specifics actually are, this explanatory schema is presumably the theistic solution—in Quinn’s words—to ‘genuine explanatory problems too big, so to speak, for science to solve’ (Quinn [1993], p. 607). With these understandings, the supposed volitional explanation becomes schematically:

Deductive Theistic Volitional Explanation of the Presumed Ultimate Laws and Facts of Nature

Premise 1. God freely chose (intended or *willed*) that the contents of our world exist and that they exhibit the laws which inhere in them.

Premise 2. Being omnipotent, God was, and is, perpetually able to cause directly (i.e., creatively bring about *ex nihilo*) the existence of the world’s contents, so that they exhibit the laws which inhere in them.

Premise 3. If God chooses that *p*, and is able to cause it to be the case that *p*, then *p*.

Conclusion/Explanandum: The contents of our world exist and exhibit the laws which inhere in them.

This deductive argument invites some elaboration:

Premise 1 is to be understood more explicitly as entailing that God chose or intended or willed the realization of the possible world which is in fact actual so as to be nomologically precisely what it is, rather than the actualization of another possible world featuring alternative fundamental laws or facts, such as a different value of the presumed numerical total energy (Swinburne [1991], p. 125; Quinn [1993], p. 607).

Swinburne uses the lowercase letter *e* to denote the *explanandum*, which states the facts to be explained by the explanatory argument. And he articulated the substance of Premises 2 and 3 above in the following two statements:

(a) ‘clearly whatever [the explanandum] *e* is, God, being omnipotent, has the power to bring about *e*. He will do so, **if he chooses to do so**’ ([1991], p. 109; bold added). And the *e* that God chooses to bring about will be *compatible* with the assumed omnibenevolence of his aims (*ibid.*).

(b) ‘God, being omnipotent, cannot rely on [mediating] causal processes *outside his control* to bring about effects, so his range of easy control must *coincide* with his range of *direct control* and *include all states of affairs which it is **logically possible** for him to bring about*’ (*ibid.*, p. 295; italics and bold added).

Claiming that the nomology inherent in the world’s content is explained as the product of divine intention, the theist’s explanation requires that God brought the nomology into being *by means of creating ex nihilo the cosmic*

furniture in which it inheres: Evidently, in the absence of a *cogent*, viable *substitute* for the failed received cosmological argument for divine creation *ex nihilo*, the theistic volitional explanation of the nomology relies crucially on the *conclusion* of the cosmological argument as its underwriter. Thus, the theistic volitional scenario inherits the epistemic liabilities of that argument, set forth in Section 1, much as does the *a posteriori* argument for a *designer-God*, as we saw in Section 2.1.

Yet Swinburne claims to offer a *scientized* epistemology for creation *ex nihilo* ([1996], p. 2):

The very same criteria which scientists use to reach their own theories leads us to move beyond these theories to a creator God who sustains everything in existence. ([ibid.]; italics added)

Moreover, Swinburne asserts theistic *pan-explainability*, declaring ([*ibid.*]):

using those same [scientific] criteria, we find that the view that there is a God explains *everything* we observe, not just some narrow range of data [italics in original]. It explains the fact that there is a universe at all [via SoN], [and] that scientific laws operate within it. (cf. also his [1991] chap. 4 on ‘Complete Explanation’)

But, as we shall see further on, in a paper of early 2003 which was cited in Section 1.7.4 a propos of the epistemic status of SoN, Quinn parted company with Swinburne and modified his earlier version of the theistic explanation of the nomology. It will turn out that, in this latest version, Quinn distanced himself, in effect, from Swinburne’s afore-cited 1996, purportedly *scientized* epistemology of theistic *pan-explainability*.

Yet in Swinburne’s Reply ([2000], pp. 481–5) to my lengthy essay of the same year (Grünbaum [2000]), he claimed to offer a clarification (p. 482) of his account of explaining the nomic structure theologically. Alas, on the contrary, this supposed clarification will be seen to muddy the waters. As will emerge under ‘Objection 4’ below, it features a *conflation* of the Bayesian *confirmation* of the hypothesis that God exists, on the one hand, with the volitional theistic *explanation* of the specific content of the basic nomic structure, on the other. Hence, as in the case of Quinn, we shall discuss Swinburne’s views in *two* stages, deferring scrutiny of his supposed clarification.

As against the thesis that theism solves ‘genuine explanatory problems too big [...] for science to solve’, I now offer a series of further cardinal objections to the purported divine volitional explanation of the nomology. Even if that theistic explanation did not depend on demonstrated creation *ex nihilo*, these impending additional major objections thoroughly undermine it. In developing these animadversions, let us be mindful of Swinburne’s afore-cited claims that theism is of a piece, epistemologically, with scientific theorizing, while transcending science by offering *pan-explainability* and transforming scientific brute facts into specifically explained states of affairs.

2.4 Further major defects of the theological explanation of the fundamental laws of nature

OBJECTION 1. How does Swinburne reason *epistemically* that God *actually chose* to bring about the specific *de facto e* of the explanandum? He surely needs to validate this premise in order to attribute the prevailing *e* causally to divine creative volition. Obviously, that premise is not vouchsafed at all by Swinburne's *conditional* assurance that God will bring about *e*, '*if he chooses to do so*' (italics added). Equally patently, it would beg the question, if one were to answer our question here by claiming that God must have chosen to produce *e*, since *e* is actually the case! In sum, although the premise that God *actually chose* to produce *e* is explanatorily crucial for Swinburne and Quinn, no independent evidential support for it is in sight.

Indeed, just this epistemic gaping hole *alone fundamentally undermines* Swinburne's purported theistic volitional explanations of the *specific* content of the world's *ultimate* nomic structure, and of such presumed basic facts as the envisioned specific amount of total cosmic energy.

OBJECTION 2. To the detriment of Quinn and Swinburne, the volitional theological explanation of the nomology features a *built-in sort of ex post facto defect* which prevents the evidence in the explanandum *e* from providing a check on the validity of the explanatory theistic premises! And this liability is not only anathema in the epistemology of scientific theories, *but is unacceptable in any sort of explanation based on evidence.*

Thus, let us consider a hypothetical situation in which the steady-state world of the 1948 Bondi and Gold theory were actual, a world which we had occasion to discuss in Section 1.7.4. If that world were actual, the theistic explanatory premises would be that omnipotent God willed the law of the constancy of mass-*density* as well as the Hubble expansion of the galaxies. Alternatively, suppose that the actual world were one exhibiting mass-energy conservation as well as Swinburne's and Quinn's envisioned specific amount of total energy. In the latter event, our theists would explain this *different* state of affairs equally confidently by telling us that the Deity intended and chose to implement mass-energy conservation, rather than the *density* conservation of the steady-state world.

Thus, whichever of the two cosmologies actually materializes, *the evidence in the explanandum e provides no check on the validity of the explanatory premises!* And the crux of this *immunity* from evidential check is *achieved formally* by the following bizarre device: *Whatever the content of the explanandum in the conclusion, that same explanandum is **identically built** into the premises!*

In this way, the theistic explanation of the nomology is purchased effortlessly in advance on the cheap. But no building of the explanandum identically into the premises is found in the respected sciences, as illustrated by the

following explanations in physics and biology:

- (1) the Newtonian gravitational explanation of the orbit of the moon;
- (2) the deductive-nomological explanations of optical phenomena furnished by Maxwell's equations, which govern the electromagnetic field, or, in a statistical context,
- (3) the genetic explanations of hereditary phenotypic human family resemblances.

In short, the range of the explanatory latitude of the theistic volitional explanation is prohibitively permissive, in clear contravention of Swinburne's afore-cited declaration ([1996], p. 2): '*The very same criteria which scientists use to reach their own theories lead us to move beyond these theories to a creator God who sustains everything in existence*' ([*ibid.*]; italics added). Moreover, the building of the explanandum identically into the premises is unacceptable in any sort of explanation based on evidence. Nor can it be made acceptable by abjuring 'scientism'!

OBJECTION 3. As we recall, Swinburne ([1991], p. 125) wrote:

Why does the world contain just that amount of energy, no more, no less?
 L [the basic laws of nature] would explain why whatever energy there is remains the same; but what L does not explain is why there is just this amount of energy.

Let us denote by E_o the putative specific amount of total energy in the universe, which Swinburne and Quinn ([1993], p. 607) each consider well defined, and which they characterized as a *scientific brute fact*. Their point in so doing is to claim that explanatory recourse to divine agency would *transform* this specific unexplained fact, as well as the specific content of scientifically ultimate laws of nature, into volitionally *explained* items. Thus, we recall, Swinburne ([1996], p. 2) wrote grandiosely: 'the view that there is a God explains *everything* we observe, not just some narrow range of data.'

To make good on his thesis of such explanatory *specificity*, Swinburne would need to be able to justify the following contention: given the hypothesis h that God exists in conjunction with assumed relevant background knowledge k , the specific pertinent e is a *deductive consequence* of the conjunction of h and k ; i.e., the probability of the *explanandum* e on this conjunction is 1. Presumably, Swinburne's example of explaining the specific total amount of energy E_o theistically is intended to make the general point of such deductive explainability far beyond E_o : it is to illustrate his global contention that the theistic hypothesis h 'explains *everything* we observe' (italics in original).

But how does Swinburne see himself as vindicating this mind-bogglingly ambitious claim? Surely one is entitled to have expected him *to spell out the*

details of the explanatory argument for at least one major case. Very disappointingly, that very reasonable expectation is dashed. Instead, immediately after having avowed theistic volitional *pan*-explainability, he greatly weakens his explanatory thesis. Speaking of the universe, he now maintains just that the existence of God explains *generically* that *there are* laws of nature, and we learn that *h* explains much more modestly ‘that there is a universe at all [via SoN], [and] that scientific laws operate within it’. And in his earlier opus on *The Existence of God*, in a summary of several of its chapters, he wrote, again generically ([1991], p. 287): ‘What science cannot explain [but theism can] is why the laws of nature are of the character they are.’

Yet it simply won’t do to offer a theistic argument for the likelihood of a generic nomic structure, even if successful, as a substitute for redeeming the vaunted theistic *pan*-explainability of the *specific content* of the fundamental scientific laws and facts, items which science avowedly leaves unexplained as brute facts. Indeed, it is regrettably misleading philosophically to offer demonstrably hollow *pan*-explainability as an improvement upon the scientific explanatory enterprise.

OBJECTION 4. For the sake of the discussion, suppose that Swinburne had articulated a formally valid deductive theistic volitional argument for the basic laws and facts *e* of the universe. Importantly, even the provision of such an argument would not suffice to qualify the deduction as *explanatory*.

A deliciously hilarious example cited by Wesley Salmon over thirty years ago ([1971], p. 34) makes this point tellingly by featuring a *pseudo-explanation* of why John Jones did not become pregnant during the past year. The purported cause is that he took birth control pills all year, and the causal hypothesis is that no man who takes such pills ever becomes pregnant. It then follows impeccably that Jones did not become pregnant last year. But plainly, the birth control pills are causally irrelevant here.

An elementary classroom example of a causal pseudo-explanation is that, other things being equal, victims of the common cold who are coffee drinkers recover from it within one month because drinking coffee is therapeutic for the common cold. Note that although this pseudo-explanation is stupendously predictive, it is nonetheless unacceptable causally: as we know, the afflicted cold sufferers recover equally well if they do *not* ingest any caffeine at all.

Quite generally, ever since Francis Bacon taught, it has been known that, at least in the case of *causal* hypotheses, the *mere* deducibility of some data from some such hypotheses (together with known initial conditions) does *not* suffice to qualify the hypotheses as explanatory; nor does it qualify the data as supporting evidence for the hypotheses. To believe that it does is to indulge in dubious *hypothetico-deductive pseudoconfirmation*. What is being overlooked by such a belief is that, although the causal hypotheses (in conjunction

with the known initial conditions) entail the particular data, the hypothesized causal factors are often actually *causally irrelevant* to the data which are to be explained.

If the causal hypotheses are to be explanatory, they need to meet further well-known epistemic requirements, such as furnishing suitable ‘controls’ instantiating actual causal relevance. Thus, in the present case, the theist’s claim that God is the creative cause of the existence of the world and thereby the architect of its laws of nature should offer evidence *against* the rival *null* hypothesis that *no* external creative cause *ex nihilo* is required. If SoN *were* at all evidentially warranted, it could serve to *rule out* that rival null hypothesis. But, as shown in Section 1.7, SoN is baseless and hence unavailable to rule out the rival hypothesis that no creative cause *ex nihilo* is needed at all.

OBJECTION 5. The premises in the theistic volitional explanation yield that a divine volitional state, though itself uncaused, issued in God’s creatively causing *ex nihilo* the existence of our nomological world. Yet, again, given the demise of SoN, *transformative* causation is the only kind of causation for which we have evidence—be it agent-causation or event-causation—rather than creative causation *ex nihilo*.

Thus, as emerges from the preceding considerations in Objections 1 to 5 inclusive, Swinburne did not score a point against atheism when he wrote ([1991], p. 287):

The only plausible alternative to theism is the supposition that the world with all the characteristics I have described just is, has no explanation. That however is not a very probable alternative. We expect all things to have explanations.

But this assertion does not even cohere with Swinburne’s claim ([1996], p. 49) that the existence of God has no explanation, as we saw in Section 1.9.

OBJECTION 6. As mentioned in Section 2.3, more recently Swinburne ([2000], pp. 481–5) offered a reply to my prior objections of the same year (Grünbaum [2000], pp. 17–29) to his account of theistically explaining the world’s ultimate nomic structure and other scientific brute facts. Recall his showcase paradigm example of the putative total cosmic energy E_o ([1991], p. 125) and, more generally, his claim of theistic volitional pan-explainability ([1996], p. 2) of the *specifics* of ‘*everything* we observe’. Astonishingly, in his Reply to me, he *sabotages* his erstwhile grandiose vision of a theistic explanatory edifice as follows ([2000], p. 482):

The hypothesis h which I consider to explain the data e is not, ‘there is a God and he causes e ’ (which is what Grünbaum may be supposing on his p. 20), but ‘there is a God’ (as he explicitly recognizes on p. 36). Given h , it

follows that God can bring about *e*, but how probable it is that he will, depends on whether (in virtue of his perfect goodness) he has good reason to do so. (God's perfect goodness, I claim, follows from his omniscience and his perfect freedom, that is his freedom from influences other than rational considerations.) Quite a bit of my writing is devoted to showing that he does have such good reason—e.g. that simple regularities in nature give to finite beings the power to grow in power and knowledge, etc., and that that is a good thing.

As we know, Bayes' theorem in the calculus of probability, if used to probabilify *hypotheses*, is a device for updating the *evidential* appraisal of a hypothesis on the basis of new, or previously unavailable, or unconsidered evidence. Thus, as Wesley Salmon ([2001], p. 79) has emphasized, 'Bayes' theorem belongs to the context of confirmation, not to the context of explanation.' And this important distinction is, of course, *not* lessened at all by the fact that, once a hypothesis is sufficiently confirmed, it can qualify *epistemically* to serve as a premise in an explanation.

In my earlier critique of Swinburne (Grünbaum [2000], p. 35), I cited Salmon's reiteration ([2000], p. 79) of Hempel's caveat that 'Explanation-seeking why-questions solicit answers to questions about why something occurred, or why something is the case. Confirmation-seeking why-questions solicit answers to questions about why *we believe* that something occurred or something is the case.' And, being mindful that Bayes' theorem belongs to the context of *confirmation*, I wrote (*ibid.*):

Swinburne [. . .] muddies the waters. He tries to use Bayes' theorem both to probabilify (i.e., to increase the confirmation of) the [hypothesis of the] existence of God, on the one hand, and, on the other, to show that theism offers the best [simplest] explanation of the known facts, assuming that God exists. And his [Swinburne's] account of the notation he uses in his statement of the theorem reveals his failure to heed the Hempel-Salmon distinction.

In his Reply to me (Swinburne [2000], p. 482), Swinburne turned a deaf ear to the relevance of the Hempel-Salmon distinctions. And it was thus lost on him that *I* was explicitly speaking of the theistic hypothesis which he was trying to *confirm* (incrementally) *à la* Bayes, when I went on to say (Grünbaum [2000], p. 36):

It is vital to be clear on what Swinburne takes to be the hypothesis *h* in his Bayesian plaidoyer for the existence of the God of theism. He tells us explicitly: 'Now let *h* be our hypothesis—"God exists" ([1991], p. 16).'

But, contrary to Swinburne's Reply to me ([2000], p. 482), I absolutely *never, ever* 'explicitly recognized' that the hypothesis *h* which he took to be *sufficient to explain the data e* was just the *parsimonious* one 'there is a God' or 'God

exists'. This *confinement* of the explanatory premises to *h* never even occurred to me, because such a parsimonious hypothesis obviously could not possibly redeem Swinburne's mantra that theism explains the *specifics* of 'everything we observe' ([1996], p. 2).

After all, as I pointed out emphatically under my OBJECTION 1 above, to make good on that omnivorous explainability, it is hopelessly insufficient to declare with Swinburne ([2000], p. 482) that 'Given *h*, it follows that God *can* bring about *e*, but how probable it is that he will, depends on whether (in virtue of his perfect goodness) he has good reason to do so' (italics added). Nor does it help rescue Swinburne's forlorn all-encompassing explanatory pretensions to point out, as he does, that 'he [God] does have such good reason' as, for example, 'that simple regularities in nature give to finite beings the power to grow in power and knowledge'.

To have even a hope of redeeming his explanatory mantra, Swinburne does indeed require at least the following *conjunctive* theistic hypothesis, which he mentions but rejects ([2000], p. 482): 'God exists *and* he chose to cause *e ex nihilo*'—a *stronger* hypothesis which I articulated in the deductive volitional explanation I have set forth above. In short, in effect Swinburne has now *repudiated* his erstwhile signature-doctrine of all-encompassing theistic explainability, rather than having offered a relevant cogent rebuttal to me.

For his part, Quinn ([forthcoming]) has come to appreciate these serious defects in Swinburne's views, so that, by 2003, he developed a quite different conception of the theistic explanation of the ultimate nomic structure and basic facts of the world. Now Quinn mentions three positive answers to the question 'Why does the possible world that is in fact actual obtain, rather than another?', and he suggests ([*ibid.*]) that, presented with three answers to it, the majority of contemporary theists would prefer the explanation that 'God had a sufficient reason to actualize it [i.e., the *de facto* existing world], *but this reason is utterly beyond our ken*' (italics added). Yet this sort of surrogate explanation belongs to fideist rather than natural theology! Therefore, I cannot see why a theist would expect anyone who does not *antecedently* believe in God to embrace theism as *explanatory*, if it features, as this forlorn surrogate explanation does, resort to the old chestnut that God's sufficient reason passes all human understanding.

To be sure, the intellectual humility expressed by it is ingratiating. But that explanation forsakes any conjecture as to God's specific reason for choosing the actual nomic structure, *as against an alternative one*. And yet Quinn's erstwhile *plaidoyer* for a theistic explanation was precisely, like Swinburne's, that it transforms scientific brute facts into specifically *explained* states of affairs. As I have argued, it does nothing of the kind: neither Swinburne nor Quinn have redeemed at all their vaunted promise to explain theologically what science leaves unexplained.

3 Conclusion

In Parts 1 and 2 of this essay, I have argued for ‘The poverty of theistic cosmology’ in the following *two* respects: neither the theistic answer to the question ‘Why is there something contingent rather than nothing contingent?’, nor the theological explanation of the ultimate nomological architecture of the world withstands evidential scrutiny.

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University of Pittsburgh
2510 Cathedral of Learning
Pittsburgh, PA 15260-2510
USA
grunbaum@pitt.edu
FAX (USA)
(412)371-6692

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