

# Your Cosmos Needs You!

## From Nothingness to Quantum Existentialism

Dean Rickles

“Objects are only lifted out of nothingness by a human point of view.”

Johann Wolfgang von Goethe

Jakob Böhme, the shoemaking theosophist of Gorlitz, conceptualised humans as a kind of cosmic ordering force, saving creation from collapsing into the chaos of a divine abyss. Without our reflecting capacities, there is no way for the world to manifest itself. After all: what would it be manifested *to*? As Böhme understood it, God “hath manifested himself by the externall World in a similitude, that the spirit might see itself in the Being essentially, and not so onely, but that the Creature likewise might contemplate and behold the being of God in the Figure, and know it” (Böhme, *Epistles* 5:14 - in Ellistone, ed., 1886). This idea is a common feature of several well-known philosophical and mystical thinkers,<sup>1</sup> and it also finds its way into more contemporary thought (not least C. G. Jung’s work) through Lucien Lévy-Bruhl’s (1926) notion of *participation mystique*. However, what is less well known, and this will form the main focus of this paper, is that modern physics is well on its way to incorporating something like this basic feature of reality into its fundamental core. If successful, and we believe it has every right to be so, it will turn the current paradigm of scientific epistemology on its head. Fundamental to such a viewpoint is the breaking down of the division between subject and object (or observer and world), and in this sense we are

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<sup>1</sup> It is a core tenet of Sufi thinking, for example, as described in the metaphor of the perfect individual as a mirror (see Sells 1988 and Laude 2018). But the same idea, of a desire to be known, a yearning for self-revelation, can also be found in, e.g., Plato’s *Timaeus*, in Schelling’s *The Ages of the World*, and elsewhere. It is this very desire that triggers creation as “a will that wills something” (Schelling 1813, 143).

drawn also towards elements of existentialist thought. The notion of a participator in reality's construction takes this existentialism further (I call the position "quantum existentialism"), rendering the observer no passive spectator, not simply an actor in the grand drama of creation, but an author too (perhaps as part of a writing team; perhaps with a hierarchy and a principle author).

We all know of the famous line of William Blake, who took so much inspiration from Böhme: "If the doors of perception were cleansed everything would appear as it is: infinite" (*Marriage* pl.14, E39). It is perception that selects, through attention, what becomes manifest from the chaos, narrowing infinity down to a finite picture of reality. As Lord Kitchener puts it, with some paraphrase, "Your cosmos needs you!" Your cosmos needs you, that is, to carve out order from chaos; to lower the entropy of a world that constantly strives for equilibrium (i.e. maximum entropy and therefore maximal non-creativity and stagnation); to transduce infinite potentiality into some particular feature or event. The chaos here is the nothingness, understood in a radical sense, as a state in which there is not yet any manifestation of anything at all, including both events and their negation. Without this depth of nothingness, in which all possibilities are stored, there could not be any creation of a world. Time in this case becomes part of the conversion of potentiality to actuality. Here, again, we find that quantum mechanics provides a similar viewpoint, in which (for some interpretations at least), the nature of this conversion is formalised in terms of collapse of a superposition of possibilities into some specific outcome, generating a process as it develops.

This paper will explain this curious confluence of old and new ideas, showing how nothingness is the key concept that links them, with quantum mechanics being shown far more than just a theory of physics; rather, it is a deep principle of the cosmos and creation.

Another message of the paper is that such ideas of co-creation are not to be consigned to far-out philosophical (or, worse, new age) speculation. I want to indicate that properly understood, quantum mechanics is a theory that works through this deep notion of nothingness. Nothingness is really the central and most important feature of the theory. None of the results (especially the so-called "no-go

theorems,” but also the indeterminacy and the idea of phenomenon creation) really make much sense without it. Moreover, we then see very clearly why quantum mechanics is so hard to understand: its non-understandability is on all fours with the non-understandability (ineffability) of nothingness. No wonder we struggle to make sense of it! One can’t help getting into a tangle because we are trying to describe what cannot be described, trying to view the ineffable as belonging to the categories of Being and Non-Being.

### *1. Nothingness and Novelty*

Jorges Luis Borges begins his short story *The Immortal* by quoting from Francis Bacon's *Essays*, LVIII: “Salomon saith, ‘There is no new thing upon the earth.’ So that as Plato had an imagination, that all knowledge was but remembrance; so Salomon giveth his sentence, that all novelty is but oblivion.” (Borges, 2004, p. 118). Yet, we might put some pressure on Salomon’s remark here. We might wonder what counts as a “thing” (‘somethingness’) and what counts as “new.” We might question, too, exactly what “remembrance” (*anamnesis*) consists in. Certainly, a very nontrivial ontology is being presupposed here, which includes both a theory of time and modality. The implication is that everything possible is actual (the principle of plenitude), and there is infinite time (with no initial creation). Given these conditions, there will indeed be a repeated cycling through all possibilities. Any being sampling such possibilities, would indeed do so over and over again, and would only be able to experience ‘the new’ by drinking the draft of forgetfulness and inducing oblivion. However, if this is the first run of events, with an initial creative act, such that we are building as we go, then the conclusion does not follow. Each actualisation of a possibility is bringing it into being. In this case, we still need a robust notion of nothingness for there to be newness: it must not ‘pre-exist’ in whatever it is born from. The new is

seen as coming out of nothing. If this were not the case, it would not be new, but would be at best ‘latent.’<sup>2</sup>

We find a version of this problem in what is often considered to be the first philosophical writing on the problem of being and nothingness, in the fragments of Parmenides (see Gallop, ed. 1991). Our usual binary way of thinking in which being and nonbeing are the only possible states, as well as the idea that nothing comes from nothing (*ex nihilo nihil fit*) can indeed be found well-expressed in Parmenides. The context is instructive, for Parmenides was battling against the views of other Greeks. In particular, Anaximander’s idea of the boundless *apeiron*, which was postulated to be eternal and changeless, yet it was said to *generate* the opposites, and so the manifest world of duality, which it did so in cycles, as in an eternal recurrence theory. Parmenides’ view is similar, viewing the opposites, plurality, and change as a kind of illusion, but sees the generation and dissolution of the manifest world itself as illusory: appearance rather than reality. The opposites cannot exist latently in the changeless, boundless entity lest this simply becomes just another pluralist theory—this is a problem Parmenides identified in other Milesian so-called “Monistic” cosmologies: they are not true monisms since they require this same latent existence of whatever is generated from the monistic basis. Instead, the One-substance cannot change according to Parmenides: what is, just is, and can’t *have been* or can’t *come to be*. Again: if such opposite characteristics (e.g. wet and then dry) existed prior to being *separated out*, then the Boundless was not a true unity after all, but if they *did not exist* prior to being separated out, then how could they possibly come into existence without violating the principle of *ex nihilo nihil fit*?<sup>3</sup> Parmenides

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<sup>2</sup> We return to this issue later, since there is some broad sense in which even an extreme notion of nothingness will have all possibilities *in potentia*. But they will not have being in this case, but nor will they have non-being. They will be *beyond* being and non-being.

<sup>3</sup> Anaxagoras would state that *nous*/mind gives the chaos a push into form. This is an early avatar of participatory realism, in which the mind stands outside of the world of things.

could not understand how generation/corruption could be meshed with unity.<sup>4</sup> The underlying logic has passed into modern philosophy. But, we will see, other systems of logic allow this. Before we turn to these alternative ideas, let us briefly indicate how the modern debates have been influenced.

J. S. Mill argued, in his *A System of Logic*, that most of philosophy was based on a simple linguistic/logical mix up of the verb *To Be* in its functions as a copula on the one hand and as implying existence on the other. The separation of subject and attribute/predicate was first formulated in what is called the “Port Royal logic” (devised by Antoine Arnaud in his *The Art of Thinking*). One affirms or denies a predicate of a subject through the verbs *Is* or *Is Not*, so that “X exists” means “X is a thing” (propositions here are triples: <subject, join, predicate>). If “to be” and “to exist” have the same meaning, then we may say that from “X does not exist” it follows “There exists an X that does not exist” which gives something that both exists AND does not exist. Here lies the basic Parmenidean contradiction in which we are forced to impute being to a condition of nonbeing:

Whatever is, is (being—DR) and whatever is not, is not (non-being—DR). As a result, whatever constitutes the nature of reality must always “have been” since nothing can come into being from nothing. Furthermore, reality must always “be” since being (what is) cannot become nonbeing (what is not). ... [I]t can neither be thought nor uttered that anything is not. (Fragment 17)

Obviously, this is seen to be problematic when we are asking such questions as “Could there *Be* Nothing?”, since we seem to be pushed into talking about positive attributes of Nothing. This takes its most famous shape in the context of Leibniz’s problem of “Why is there Something rather than Nothing?” in his essay on “The Ultimate Origin of Things.” The very way of posing it in this form shows that Leibniz is stuck in the binary of being and nonbeing and the spectre of Parmenides’

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<sup>4</sup> Aquinas and Avicenna had a near-identical battle about God’s ability to create somethings, with Aquinas playing Parmenides (see Acar 2002).

contradiction looms large—i.e. we are being asked to consider why it is not the case that nothing exists.<sup>5</sup>

## 2. *The Being and Nothingness Binary*

Charles H. Kahn (Kahn, 2003, p. 109) traces the start of all this debate (Being versus Nothingness / Appearance versus Reality, and so on) to Parmenides:

The notion of Being, as formulated by Parmenides, seems to come from nowhere, like a philosophical meteor with no historical antecedents but profound historical consequences. It would be difficult to overstate the influence of this new conception.

But this seems to be simply based on an unnecessary restriction to the Greeks. Indeed, it seems more likely that Parmenides himself was writing as part of a much older context mixing mystical ritual (initiation) and intellect. When we probe more deeply into the source of Parmenides' views, we find a deeper notion of nothingness that better serves issues of creation and better fits the nature of our world. Certainly, Parmenides' fragment is not in the style of modern philosophy, but is written rather as a poem, *The Way of Truth* (as opposed to the way of mere opinion, that is), describing an underworld journey (*katabasis*) to visit "The Goddess" in her abode, passing through "the halls of the night" (1.9 .fr). When writing of the goddess he explicitly casts himself as an initiate (one who died while still alive) into still-then ancient mysteries, entering the place intended for souls after death while not suffering that fate (.27a -1.26 .fr)

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<sup>5</sup> For Leibniz, any explanation of the world must stand outside of it. The ultimate ground, that is, must lie in something external to what is being explained, and this ground itself must be metaphysically necessary rather than contingent. Furthermore, since the reason for an existing thing must come from something that also actually exists, it follows that there must exist some one metaphysically necessary entity (i.e. God) responsible for the world's existence, and about which we can probe no deeper in explanatory terms.

The alternative context for Parmenides' poem looks alien relative to the modern binary 'being/nonbeing' distinction. However, Kahn is surely correct about the influence that the binary view has had. If we consider a pair of modern creation stories from physics we see both the role it plays, but also how quickly it leads to problems. Firstly, in general relativity, Einstein's theory of space, time, and gravitation, succinctly summarised as "Mass tells space how to curve and space tells matter how to move" is behind the Hubble expansion model of our universe, with its reverse extrapolation to the Big Bang origin. Running the tape of our universe backwards seems to lead to a point before which space and time ceases to make sense. It looks like we can extrapolate, theoretically, all the way back to a zero-dimensional point: nothing. However, there is a very basic problem here, which leads to a breakdown of the theory which, as Peter Bergmann (Einstein's research assistant) once remarked, shows that general relativity contains the "seeds of its own destruction" (namely in the form of singularities). As a mass shrinks, e.g. in stellar collapse, the energy-density increases. Yet without any reason (e.g. a force) to stop the collapse, there will be no limit, either to the smallness of the collapsing star or the energy-density (which will itself result in infinite spacetime curvature, and so a singularity that we associate with a black hole which is understood to be a fully collapsed star in which the matter has been transmuted to pure mass-energy). This has led some physicists, notably John Wheeler, to suggest that there must be a deeper layer than the physics of space, time, matter, energy, and the laws linking them hiding inside the black hole horizon (or the corresponding early and small state of the universe). This layer would be 'pre-physics,' or 'pre-space' and it tries to get beyond physics in a sense, looking for the raw materials from which the physical world is constructed, which tend to locate the answer in really basic logical entities rather than anything spatiotemporal:

Glass comes out of the rolling mill looking like a beautifully transparent and homogeneous elastic substance. Yet we know that elasticity is not the correct description of reality at the microscopic level. Riemannian geometry

likewise provides a beautiful vision of reality; but ... is inadequate to serve as primordial building material.

(Wheeler, 1977, p.544)

In other words, while we ordinarily think of reality as being essentially spatio-temporal, this is inadequate, and we must push beyond such descriptions, which indeed take us further away from things and closer to something like nothing.

Let us now consider another popular origin story, based this time on quantum field theory. The basic idea of the theory is that there is a quantum vacuum whose fluctuations in energy correspond to the generation and corruption of the particles that make up our world. Because of the nature of quantum field theory *qua* quantum theory (and so being subject to the uncertainty principle, which inversely relates some so-called “conjugate” quantities, such as position and momentum or energy and time), there is always a little energy at each point of the vacuum, and so always a little motion.<sup>6</sup> For large times there can be small fluctuations in energy (which can correspond to the production of a particle of some mass). For very short times there is the possibility of enormous fluctuations, including, the creation model<sup>7</sup> goes, the entire universe emerging from one of these. This cosmogony is curious from the point of view of being and nothingness, since the vacuum, functioning as physics’ nothingness, is quite clearly very far from a bland, featureless void. It is teeming with life. What we (as good philosophers) might want to ask is:

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<sup>6</sup> The details are not important for this paper, but the idea is that the more we try to localise position the less grasp we have of momentum. A similar complementarity holds for energy and time, so that the more we localise to a small time, the larger the possible fluctuation in energy.

<sup>7</sup> The model is outlined and defended as a complete solution to Leibniz’s problem of why there is something rather than nothing in Krauss (2012). Krauss was explicitly aiming to produce an atheistic solution, in contrast to Leibniz’s own interventionist model. Again, it fails miserably since it simply assumes a wealth of machinery from our world which is the very stuff we are trying to explain, thus violating Leibniz’s idea (and a basic requirement of non-circular reasoning) that we should not help ourselves to what we are trying to explain in an explanation. We might place into this same category any theory that suggests fully Godlike powers of humans (or future versions thereof): from whence the material that is being worked with? From whence the laws, the possibilities?



why is there this quantum vacuum, together with the various laws governing its behaviours, and so on, rather than nothing (in the sense of *no thing whatsoever*)? I point out these examples to indicate that we do not seem to have made progress in the understanding of being, nothingness, and creation: quite the opposite, in fact.

### 3. Older Conceptions of Nothingness

Curiously, we find that the older conceptions are, in some ways, more sophisticated. For example, the Pyramid and Coffin texts go back almost to 2000BC, and reveal a depth of understanding of the issues surrounding matters of nothingness and its role in creation. Recall, also, that the Parmenides fragments were written from the point of view of an initiate and so constituted an expression of perennial wisdom of the ancients (possibly pre-dating the Egyptians too). We find a distinctly Parmenidean proto-theory in these early ‘texts’, with one coffin text creation story claiming:

Nothingness cannot Be.

Nor, however can nothingness be Many.

Many must be something.

While epigrammatic in their simplicity, these ideas are clearly tuning into the same concepts as Parmenides, and more modern thinkers. The Egyptians also had a notion of ONE, in which there was no change or division, timeless and which was ‘before’ duality, in which opposites unified:

O noble ones who are before the Lord of the universe (“the All”), behold, I have come before you. Respect me in accordance with what you know. I am he whom the Unique Lord made *before two things* (“duality”) *had yet come into being* in this land by his sending forth his unique eye when he was alone, by the going forth from his mouth ... when he put *Hu* (“Logos”) upon his mouth. ... I brought forth my spell myself. Magic [hk3w] is my name.

Papyrus BM 10188, Coll. 28/22 (my emphasis)

This deeper level, in which opposites are unified (i.e. before duality), obviously corresponds to something like Nothingness in the sense of No-Thingness, since things are always characterised by some specific attributes that serve to distinguish them from other things, which are grounded in duality.<sup>8</sup> Without such distinctions, there can be no division. But, of course, there appears to be division in our manifest experience. The story was that at the beginning of time, the god Atum emerged from the waters of chaos, known as *Nu*, to stand on the initial dry land, *Benben*, to commence the act of creation. *Heka* (related to *spell* or *hex*, indicating that the magical, creative act resides in the word) was the power used—*ka* is the vital spirit which the gods possess. The idea that the creative act involves some kind of breath or sound emission (the word/s of god) was replicated in various other creation stories, where *Hu* becomes *Om*, for example—and, of course, the *logos* is part of the biblical creation story. *Heka* too finds parallel in the *Nous* concept of Anaxagoras, though the passing on of the concept is far stronger in *Heka*'s role as the patron god of medicine (a role represented by two snakes).

We find an even more concrete example that suggests a realm beyond the being and non-being binary in the *Rg Veda* (1500BC). “The Hymn of Creation” is very explicit on this:

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<sup>8</sup> This unity of opposites was often represented by an hermaphroditic being, Phanes (or Protogonus), who created the other non-hermaphroditic deities. The Orphic Egg in the Ancient Greek Orphic tradition is viewed as the cosmic egg from which Protogonus emerges—the egg is often depicted with the serpent, Ananke, coiled around it, symbolising the necessity of a material order governing what is created from the cosmic egg, through Ananke's marriage with *Chronos* (time). In the Upanishad there also exists a supreme being, Parameshwara, but Brahman is the analogous being to Phanes (qua neuter entity). Again, this is such a being that cannot be defined conceptually, because that would limit it (it is “*neti neti*”: “not this, not that”). The creation then involves the splitting of Brahman through something like the Principle of Plenitude: “from a possibility of plurality, it came”. In the *Rg veda*, rather than an egg there is the universal womb called “*Hiranyagarbha*”: the source of manifest and, ultimately, illusory reality.

There was neither non-existence nor existence then;  
Neither the realm of space, nor the sky which is beyond;  
What stirred? Where? In whose protection?

There was neither death nor immortality then;  
No distinguishing sign of night nor of day;  
That One breathed, windless, by its own impulse;  
Other than that there was nothing beyond.

*Rigveda, Nasadiya Sukta 10.129 (Abridged, Tr: Krame)*

“Neither non-existence nor existence” is simply not part of the conceptual structure of Western, classical logic: Leibniz’s “Why is there something rather than than nothing” (Parmenides’ being or non-being logic) simply cannot conceptually cope with this expanded set of options. We have Not(P) together with Not(NotP), which plainly violates Aristotle’s Law of Exclusive Middle.

More recently we find Plotinus’ notion that emanation proceeds from The One, but through a relationship of logical dependence, rather than a temporal process—The One does not *need* to emanate into plurality, and so the splitting through emanation is not one of necessity, as it is with the splitting of Brahman. But, similarly to the neutral foundations we have seen, The One generates *Beings* rather than being, so it *grounds* being (as well as grounding the conditions for non-being). It seems we are led to transcendence in terms of emanations of plurality. The *power* coming from The One is not the *same* as The One. Once again, we appear to face the problem that Parmenides found in Anaximander: if there is truly One, then how can a plurality emerge if it is not already pre-contained, latently as a plurality in that One? We will see that the solution is that the unconditioned realm, while having the *potentiality* for all possibilities (including negative ones), by that very fact (i.e. having the potential for being and non-being) cannot be properly said to *have* or *be* either, even in a latent state: they have no existence as actual events or things.

The One is not being but the generator of being. This, we may say, is the first act of generation: the One, perfect because it seeks nothing, has nothing, and needs nothing, overflows, as it were, and a superabundance makes something other than itself.

Plotinus, *Enneads*, V. II, 1, 7-9

Why the emanating in the first place then, we might ask? To not be alone: it's a gift, but one like buying a present for the receiver that benefits the giver. The important point is, however, that the gift that is *gifted* is not a world: it is *a space of real potentialities* that can be worked with by the intelligences and souls that are emanated. However, as is a common theme in discussing such an unconditioned, ineffable realm, Plotinus follows the practice of remaining silent about the deeper first principle from which emanation comes. Again, however, it is important to note that whatever it is, it is not simply nothing, and not simply being, but rather some intermediate or alternative condition.<sup>9</sup> Moreover, this alternative is not to be understood as an absence, but rather a fullness. Indeed, even the naming of it as One is not correct, since being beyond quality it is also being unity and plurality (*cf.* Massie, 2010, p. 155, and also Banner, 2018).

#### 4. *Nothing is Real?*

The pre-Socratic Greek philosopher Parmenides taught that the only things that are real are things which never change... and the pre-Socratic Greek philosopher Heraclitus taught that everything changes. If you superimpose their two ways, you get this result: Nothing is real.

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<sup>9</sup> Here we might point to what Pascal Massie (2024, p. 143) has labelled “the ontology of non-actuality” which is precisely that which is not actual but not reducible to non-being. What I have been calling “potentiality” fits this mode. Massie also uses the term “virtuality,” though this term to my mind has too much of the very properties Massie is trying to deny, namely essential qualities or facts that can be pinned down—indeed, see Lehman-Wilzig (2022) for an argument suggesting that reality and virtuality are “two sides of the same coin”. Of course, we also speak of “virtual reality” which would then be an oxymoron. Massie ultimately subsumes both virtuality and potentiality into what he calls “*Spielraum*” or “play”.

There's ambiguity in this amusing quote. It could mean that nothing is real (i.e. nothing has a kind of reality of its own), or that there simply is no reality at all. Modern thinkers tend to go Parmenidean, as mentioned already: nothing can't be part of being, since that is a contradiction. But, as already intimated, there's realms of thought - Western and otherwise, that put nothingness as the most real: the ground of being and non-being beyond the Parmenidean binary. When you are dealing with something that grounds even opposites such as being and nothingness, you're obviously in for a hard time as a thinker. As Heidegger puts it nicely: "contradiction is the destruction of all thinkability"—if you're dealing with something beyond both being and nonbeing, then that is a kind of hyper-destruction for which there are no words.<sup>11</sup> And, indeed, the fact that one must seek alternative means of expression is well known in those lines of thinking that splintered off, running in parallel to most Western philosophy. In esoteric theology, for example, we find the following (here from an Irish barrister who had a transformative experience, causing him to believe he was a messenger of God):

[T]he state of Being of the Infinite and Absolute Reality—the Eternal Parent—during this state of the Infinite Unmanifest cannot be expressed in words, for it is beyond words. It can be thought of only symbolically—by means of Its only possible symbol, i.e., that of Infinite Space. Even symbolized, it can be thought of only in terms of negation; for being in the state of Absolute Being ... cannot be thought of as possessing any of the qualities, attributes, or properties of Thingness. (Kenealy, 1867, p. 109)

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<sup>10</sup> Philip K. Dick, January 1978 talk titled "How to Build a Universe that doesn't fall apart two days later". Reproduced in *The Shifting Realities of Philip K. Dick: Selected Literary and Philosophical Writings*, Vintage, 1995.

<sup>11</sup> Hegel has an alternative means to bridge the Parmenidean-Heraclitean chasm: his notion of absolute (pure) Being is, as he put it, for all practical purposes, the same as Nothing, since no attribution of properties can be given. To this he suggests a synthesis: the absolute (nothingness) is *becoming*.

Thus, we find a necessary turning to a symbolic representation of something behind the symbol that cannot be directly indicated. This was a common theme of Rosicrucian thought, as for example in the following:

Strictly speaking, the Infinite Unmanifest is a "Nothing" rather than a "Thing"; and yet not such a "Nothing" as implies "not-ness" or "naught," but rather such a "Nothing" as implies "The Possibility of Everything, yet without the limitations of Thingness." (Magus Incognito, 1918, p. 25)

Again, we find the Heideggerian tangle that occurs in trying to describe something that sits outside of being and non-being. The crucial remark here, for our purposes, is that of a ground that provides for the possibility of everything (*including* absence). These examples are still within what might be from a Western perspective (despite their obvious wider provenance). In Ancient Chinese thought we find discussions remarkably close to these recent accounts, including Heidegger, though with a great deal more wit. From the 4th Century BC we find the following:

Now, I have something to say. I don't know if with this I am positing a category or not positing a category. But, since "positing a category" and "not positing a category" themselves involve creating a category, then there is nothing with which to distinguish them. Nonetheless, allow me to try to say it: "There was a beginning. There was not yet beginning to have something beginning. There was not yet beginning to have a not yet beginning to have something beginning. There was something. There was Nothing. There was not yet beginning to have Nothing. There was not yet beginning to have a not yet beginning to have Nothing." Suddenly we have Something and Nothing, but I don't yet know, with this Something and Nothing, which is Something and which is Nothing. Now, as for me, I have already referred to something, but I don't know yet if I have said something or if I have said nothing.

Zhuangzi, *Qi Wu Lun* (2001, p. 55)

What is interesting about this line of thinking, which of course centres on the notion of *Dao*, is that it does not involve a creator as such, but is a cosmic ordering power or force. The *Dao* underpins being and non-being, so non-being is also something created here. The overarching idea

is to understand oneness, restoring harmony to the world. The system of thought is as much a guide to good living as much as a cosmology; the two facets (micro- or human and macro- or cosmic) are not independent of one another. The above passage from Zhuangzi forms part of a kind of *reductio ad absurdum* argument against origin stories (which would themselves involve an attempt to make rational sense of an unconditioned reality). If something had a beginning, then *before* such a beginning was something that was not yet beginning, and off to a regress we go—even trying to rationally distinguish “something” and “nothing” is seen to be problematic, because it must be founded on something. This way of thinking is thus opposed to the entire project of cosmogony (of why something rather than nothing) since such projects exceed what can be said.

Yet, there is pressure in modern philosophy to always explain and represent. This is one major source of the so-called Analytic/Continental split, which Heidegger was placed in the middle of, thanks to his much-lambasted remarks on the reality of nothing—namely: “Even nothingness itself is not present without being” - The Nothing itself *Noths!*” (“*das Nichts nichtet*”). His claim basically agrees with Parmenides in one sense (that nothing cannot be) but disagrees in another (nothing is substantive). Of course, this looks like a contradiction and was largely laughed at in analytic philosophy circles, but unfairly I think.<sup>12</sup> If you probe this deeply, it’s hard to express: and eventually becomes impossible to express - that is part of the point and the trouble: hence, Wittgenstein’s earliest mystical phase, where he tells us to just stop talking at a certain point. Misinterpreted perhaps, by Cambridge cronies as don’t bother even considering anything that cannot be formulated precisely in first-order logic. We are only just emerging from this barren wasteland which only split apart the virtues of clear-thinking from the deep questions that need to be asked and that form the lifeblood of philosophy.

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<sup>12</sup> Rudolf Carnap was the driving force of the critique in his 1932 manifesto that forged Logical Positivism in which philosophy must involve claims that are either directly observable or provable through logic (remodelling itself after the natural sciences): “The Elimination of Metaphysics Through Logical Analysis of Language”. See Chapter 3 of (Chase, 2013) for a good discussion of this historical episode.

## 5. From Schelling's Godhead to Quantum Superpositions

Whilst it might look superficially as though modern philosophy and science are completely at odds with these alternative ways of thinking about reality, they are closely aligned at a deeper level. The link can be found even in Heidegger. In particular, Heidegger's study of Friedrich Schelling, which informed much of his thinking about the expanded concept of nothingness. What we find is that the notion being outlined has the exact properties of the quantum state in quantum mechanics. This might sound far-fetched, yet we will see that the notorious interpretive problems of quantum mechanics (e.g. the measurement problem) are on all fours with the problems being tackled by the likes of Heidegger and Schelling.

The same problem of ineffability plagues both. But it is not simply ineffability: there is a close match between the closest formulations we can manage of both the quantum state and the state of nothingness.

Consider the following characterisation from Schelling:

The Godhead, in itself, neither is nor is not; or in another expression ... the Godhead is as well as is not ... it neither has being nor does it have not being ... it has being as that which neither has being nor does not have being.  
Friedrich Schelling, *The Ages of the World* (pp. 26-27)

If we replace "Godhead" with "Quantum State" here we would have a perfect description of a superposition state in quantum mechanics. Moreover, we can find, if we go down this line of thinking, an explanation for the indeterminacy of quantum mechanics: it is of a kind with human freedom and creativity (which was Schelling's target). Both can exist only because of this deeper ground. It is essential for creativity and creation. Human freedom does not come from quantum



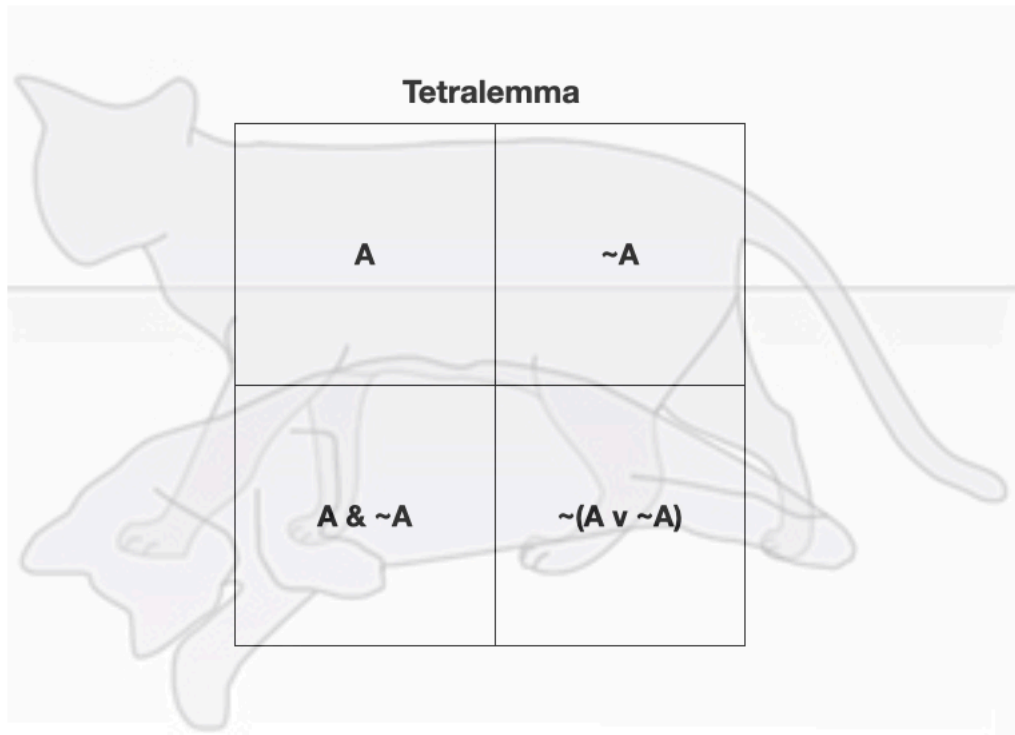
indeterminism, as is often erroneously supposed; rather both comes from the state of real possibility.<sup>13</sup>

Clearly in these cases there is something beyond classical logic. There are connections in fact to the “*Catuṣkoṭi*” of Indian logic, involving a *tetralemma* with four alternatives rather than the usual classical pair. Like Indian music, this logic affords us some more space to move, with four points (*koṭi*) rather than just the affirmation and negation of the Parmenidean binary. While Aristotle held a principle of the excluded middle, according to which any statement must be either true or false with no third possibility and the two alternatives exclusive, here the *Catuṣkoṭi* gives us an additional “both” and “neither.”<sup>14</sup> These four are still mutually exclusive in most applications, yet what Schelling calls “the Godhead,” appears to have them *all*, together, simultaneously. What is quite remarkable is that this set (which perfectly matches Schelling’s description) is like a density matrix in quantum mechanics describing the state of some quantum system while in an unobserved superposition. In this situation there is entanglement between the alternatives (the best-known example being Schrodinger’s cat in the box linked to a quantum process, which has the classical alternatives Alive and Dead). This means that there is *interference* between the two classical alternatives that we would expect to observe on looking into the box so that it can’t be said to *be* one or the other until we look, and neither can it said to not be. We can visualize the connection as follows (where A is being and  $\sim A$  is non-being):

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<sup>13</sup> I might note here that there is an interesting possibility regarding Quantum AI, in which machine learning is linked to quantum computers. In this case, because the AIs would be drawing from this deeper ground, as encoded in quantum states, they might well have access to states of true freedom and creativity like humans.

<sup>14</sup> Hamlet’s soliloquy wouldn’t sound nearly so good according to this logic, rendered as “to be or not to be, or [to be *and* not to be], or [neither to be nor not to be]? That is the question.” Clearly, the principle of non-contradiction also seems to be a casualty of this revised logic.



What is

interesting about this, and many other approaches that involve “the unconditioned”, is that they take the formed reality, the apparently solid world of classical options, as illusory (*Maya*) and the formless, ineffable realm as the *most real*, since it is the ground of the informed world. Quantum reality would provide a version of this idea, with the additional element of a process that shifts the unconditioned reality into a conditioned world (even if this world is non-fundamental). We turn to this additional process next, since this is where the participatory element enters.

### 6. *Quantum Mechanics and Reality Revelation versus Creation*

A common intuition is that when we observe some object, make a measurement, we are revealing how the world is. Though there might be some slight disturbance, depending on what it takes to make the measurement, the world was in some condition of its own before we made the measurement. As the physicist J. S. Bell put it: “When it is said that something is ‘measured’ it is

difficult not to think of the result as referring to some pre-existing property of the object in question.” (Bell, 1990, p. 209)

It was Bell who came up with the theorem that appears to show that this is not how things are in reality: the world does not have pre-existing properties and things of its own. This was the real root of Einstein’s famous distaste with quantum mechanics. It was not probability (despite his saying “God does not play dice with the Universe”). It was more case of God not needing man to create the world.<sup>15</sup> Einstein wanted a fully objective description (“physical reality”): if we remove man, all runs smoothly. Einstein assumes that there *is* a state of the universe as it is: an “objective universe out there” that measurements and observations reveal to us. Subjectivity can appear in the world, but it is illusory. Niels Bohr, by contrast, argued that the problematic nature of quantum phenomena resulted precisely from the attempt to picture the world as it really is *apart from observation*: a view from nowhere. Even what we would think of as the *results* of experiments, which then seem to be physically objective, are also merely “abstractions” constructed to describe phenomena in terms of observer and observed when that distinction doesn’t exist at a fundamental level, since they form a relative pair, rather than a relationship between absolute realities. For Bohr, quantum theory grasped a fundamental truth about epistemology, namely that it is always relational in this way.

However, Bohr tended to follow the path of silence about the nature of reality outside of this relational link between observer and observed. Quantum theory was as much a description of the limitations of knowledge as it was about the world itself. He notes “that all departures from common language and ordinary logic are entirely avoided by reserving the word ‘phenomenon’ solely for reference to unambiguously communicable information” (Bohr, 1963, pp. 5-6). That is: we must situate ourselves within the Parmenidean binary if we wish to speak to one another and

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<sup>15</sup> John Wheeler claimed that “Nothing made [Einstein] more unhappy than the thought that the observer-participator has anything to do with the establishment of what one is accustomed to call reality” (1986, p. 373).

make sense. This was taken to mean that Bohr was only concerned with the results of measurement and so was an instrumentalist. Nothing could be further from the truth. It was one of Bohr's protégés, John Wheeler, who developed Bohr's ideas further, into a theory of the participatory nature of reality, beyond the pure phenomena. To make sense of this idea, let us briefly mention a simple example of quantum mechanics in which we can see at work the idea that the quantum world does not have its being or non-being fixed independently of some additional participatory process involved that specifies how it is to manifest itself.

This situation has much in common with existentialism. Consider the following description of this position, which is most useful for our purposes:

The existentialist position challenges the traditional Cartesian view of a world full of objects and of subjects who perceive those objects. ... The existentialist position cuts below this subject-object cleavage and regards the person not as a subject who can, under the proper circumstances, perceive external reality but as a consciousness who participates in the construction of reality. (Yalom, 1980, p. 1)

This bears much in common with Bohr's insistence that the world cannot be divided from the observer of that world. However, whereas standard existentialism focuses on human identity and values, which do not pre-exist the acts of creation and construction leading to them, in the case of quantum mechanics neither does the world pre-exist acts of creation.

A new approach, taking the baton from Wheeler, who took it from Bohr<sup>16</sup>, is QBism (developed primarily by Chris Fuchs). This approach states that the theory of quantum mechanics is a kind of tool for an agents' navigating the world. The quantum states themselves are subjective. The world 'out there' is unknown, but quantum mechanics can you you things about *what you will experience* given certain interventions and experiments.

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<sup>16</sup> Wheeler (1986, p. 373) claims that Bohr, 30 minutes before his death, admitted that "was an objective description" of reality, rather than simply a scheme for communicating measurement results.

So quantum states are states of information, knowledge, belief, pragmatic gambling commitments, not states of nature. The quantum *system* represents something real and independent of us; the quantum state represents a collection of subjective degrees of belief about something to do with that system (even if only in connection with our experimental kicks to and from it). The structure called quantum mechanics is about the interplay of these two things—the subjective and the objective. What is “outside” of this is ineffable, something QBists avoid by simply denying that their theory is about anything other than experience, so that the external world, strictly speaking, is not modelled. Harvey Brown has argued that this renders the view untenable and, in fact, empirically incoherent. As he puts it: “QBism ... does not deny the existence of an observer-independent reality ... But I find the ineffable nature of the external world in QBism troubling” (2019, p. 80). Indeed, it is troubling, in the same way that philosophers are troubled by the notion of nothingness along the lines of Schelling.<sup>17</sup>

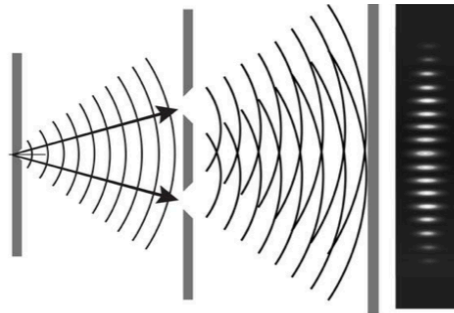
Brown misunderstands that what is empirical comes out of this ineffable chaos<sup>18</sup>, and it must: quantum mechanics *requires* a being before being, because it contains what would otherwise be contradictions such as the Cat-Alive + Cat-Dead, which cannot be or not be in an ordinary sense. Hence, the deeper nothingness is a ground of the empirical world and empirical science. Realism usually means there is a “world out there” (independent of the subject). This is what is questioned here, or rather what is “out there” is not what we usually think. It is in fact the *absence* of all, but at the same time the *potentiality* for all.

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<sup>17</sup> Little wonder that John Wheeler claims that he was “driven crazy” by the unobserved world (mentioned in an interview in *Alcade* magazine, November/December 1985, p. 12).

<sup>18</sup> As Jung puts it: “The multiplicity of the empirical world rests on an underlying unity [*Unus Mundus*—DR], and that not two or more fundamentally different worlds exist side by side... Rather, everything divided and different belongs to one and the same world.”

Let us give a simple example that makes some of these ideas clearer, by looking at the double-slit experiment:



We have a source that can emit light, at a rate of one photon at a time (alternatively, one can use electrons, which also have wavelike properties in quantum mechanics). Beyond this is a diffraction screen with two slits, intended to generate interference effects, much as if water were passing through. Beyond that is a detection screen which will indicate what happened in the experiment by revealing a definite *phenomenon* that can be communicated, according to Bohr's idea. Now, depending on where you put measuring equipment, you will manifest a different feature of reality (i.e. a different phenomenon will appear).

This is what we might label an 'informational approach': the asking of one question stands in a *complementary* relation to the asking of another. If we are measuring at the slits, then we make a "where is the particle?" measurement, and generate a response from the world according to that frame. Measuring at the screen, we measure wave aspects (momentum), and generate a response according that frame instead. We cannot do both simultaneously.<sup>19</sup>

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<sup>19</sup> On a more technical note, one can build up quantum mechanics from such ideas. The reception of an answer to a question put to the world demands *distinguishability*. The mathematical analysis of distinguishability demands probability amplitudes. Complementarity demands that these probability amplitudes be complex. Which leads a long way towards quantum mechanics itself. See Wootters (1983).

The world hasn't yet decided what it is in such scenarios: it is full of possibility and creation (understood now as the manifestation of a phenomenon) occurs only when we enjoin ourselves to it in some way. Note that this is not idealism: it does not reject 'a world,' we don't get to decide *which*, properties are manifested, but only what kind of properties. We still have the quantum indeterminacy. Neither, of course, did we make the stuff of reality itself. Fuchs puts it as follows:

[O]ur actions matter indelibly for the rest of the universe," for quantum mechanics "signals the world's plasticity ... [w]ith every quantum measurement set by an experimenter's free will, the world is shaped just a little as it participates in a kind of moment of birth. (Fuchs, 2011, p. 172)

But it is not quite *existence* preceding essence, as in orthodox existentialism; it is subtly different from such views. If anything, it is nothingness precedes existence and essence, and non-existence. This is akin to William James' "possibilism": there is real possibility in the world, and what that means, ultimately, is that there is a state (call it what you will) in which no thing is manifest. What is this other than freedom.

Referring back to *participation mystique*, we find Jung expressing almost the same idea as participatory realists:

If God's consciousness is clearer than man's, then the Creation has no meaning and man no *raison d'etre*. In that case God does not in fact play dice, as Einstein says, but has invented a machine, which is far worse.

C. G. Jung, to James Kirsch, 28th May 1953.<sup>20</sup> (1975, pp. 117-8).

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<sup>20</sup> Similarly: "Without the reflecting consciousness of man the world is a gigantic meaningless machine, for in our experience man is the only creature who is capable of ascertaining meaning at all"(Jung, letter to Neumann, 10th March, 1959). William James earlier made strikingly similar remarks: "The scientific world-picture vouchsafes a very complete understanding of all that happens—it makes it just a little too understandable. It allows you to imagine the total display as that of a mechanical clockwork, which for all that science knows could go on just the same as it does, without there being consciousness, will, endeavour, pain and delight, and responsibility connected with it—though they actually are." (James, 1983, p. 96).

What we can draw from this, is that if the creation does have meaning, then we are playing our part in it: this *is* our meaning (or at least a very significant component). And yet, Einstein is suggesting precisely a preference for a machine, with no space for play. Everything already laid out once and for all, a logically-closed system, no part of which could be altered without collapsing the whole edifice. This is quite clearly anti-existentialist. There are true essences on Einstein's account (hidden variables).

We find John Wheeler writing along these same lines, in adopting a role for participation mystique in physics:

Nature at the quantum level is not a machine that goes its inexorable way. It is wrong to think of the universe as "sitting out there." Instead, what we get depends on what question we put, what experiment we arrange, what registering device we choose. We are inescapably involved in bringing about that which appears to be happening.<sup>21</sup> (Wheeler, 1983, p. 184)

However, again, this is clearly not standard existentialism. Jean-Paul Sartre would say "The world is a mirror of my freedom". But this isn't quite correct. We and the world share the same kind of freedom, and both co-create one another. A world that is purely quantum mechanical would have no definite properties. It would be *dead*, as Blanchard and Jadczyk put it (1996, p. 613). But without the quantum mechanical world, we would be in the same condition. It is the relation, the participation that breathes life into the dead world.<sup>22</sup> Wheeler seems to agree, writing that:

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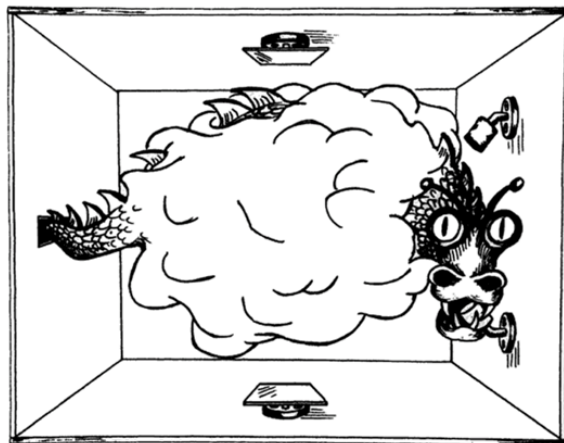
<sup>21</sup> Further clear remarks along these lines include: "Participatory Observership as the Source of All Useful Meaning" (Wheeler, 1977, p. 21) and "meaning itself powers creation" (Wheeler (1986), p. 366).

<sup>22</sup> In Rickles (2022) I explain how an understanding of our own death is required to breathe this life into the cosmos, since without the limitation on choice there is no necessity to bring some specific path or property into actuality, and one could sample the whole space, which leads to a dead world again. A deeper analysis of Wheeler's position can be found in Atmanspacher & Rickles (2022).



The vital act is the act of participation. ‘Participator’ is the incontrovertible new concept given by quantum mechanics. It strikes down the term *observer* of classical theory, the man who stands behind the thick glass wall and watches what goes on without taking part. [T]he observer-participator converts conceivability into actuality (Wheeler 1980b, p. 5)

Because of the split, it appears as though the subject-agent is involved. And they are: no agent-no phenomena as Wheeler might say. There is a necessary precondition for quantum existentialism: one must have *REAL possibility* to have real creation, for there to be something *New* under the sun. Conversion of pure potentiality (in the sense of the deeper nothingness) into actuality is what creation is all about.<sup>23</sup> There must be true chance. Something must be able to take place without a cause. Wheeler gives an amusing drawing<sup>24</sup> explaining the situation we find ourselves in as seekers of knowledge interacting with the world:



As he explains:

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<sup>23</sup> This is comparable to the Greek notion of *entelecheia*, which Leibniz’s philosophy made such deep use of. They are that which realizes or makes actual what is otherwise merely potential. This is similar to Aristotle’s distinction between matter and form, according to which each thing is decomposed into the elements of which it is composed (which primal stuff not yet an actual thing) and the form which makes it the thing it is. For living beings the matter must be informed by a vital function or soul, which is the entelechy of the living being.

<sup>24</sup> Bohr’s Great Smokey Dragon according to Wheeler: tangible at the teeth and tail, but unknown in between. (Wheeler 1980a, p. 358).

We have to recognize a new animal in the zoology of nature: beyond particle, beyond field of force, beyond spacetime geometry, the elementary quantum phenomenon. This great smokey dragon, Bohr's phenomenon, has its tail sharply localized at the point of entry to the apparatus. Its teeth are sharply localized where it bites the grain of photographic emulsion. In between it is utterly cloud-like, localized neither in space nor in time. The search for the message of the quantum is a continuing pilgrimage, marked so far by three great way-stations: indeterminism, complementarity, phenomenon. (Wheeler, 1983, p. 142)

It is my belief that the nothingness, understood along the lines of Schelling's beyond being and non-being, can serve to ground all three way-stations, and can include the freedom of the observer-participator. It provides the "something deeper than geometry, that underlies both geometry and particles [which] must provide the Universe with a way to come into being" (Wheeler and Patton, 1975, p. 538). We can in fact view this way-station triple as a kind of flow-chart: start from indeterminacy, then add will-choice/participator (which involves posing questions to the world), and then get a definite, manifest world out out (= Phenomenon or Tangible Reality). Wheeler spoke of "definiteness out of indeterminism," and this provides a way of thinking about what that might mean. There is a sense in which the nothingness contains all worlds, if only in *potentia*. It takes a relation-with-an-agent to select/realise: we (or beings with self-awareness and freedom) are the crucial component in rendering potential actual. Wheeler quoted approvingly from James's *The Dilemma of Determinism* :

Actualities seem to float in a wider sea of possibilities from out of which they were chosen; and somewhere, indeterminism says, such possibilities exist, and form part of the truth. (Quoted in Wheeler, 1974, p. 683)

We require a nothingness from which to select what is not yet anything or nothing, and we must be part of that same realm in such acts are to be free.

Again, we find a curious parallel between Jung and Wheeler here:

Man, I, in an invisible act of creation put the stamp of perfection on the world by giving it objective existence. This act we usually ascribe to the Creator alone, without considering that in so doing we view life as a machine calculated down to the last detail, which, along with the human psyche, runs on senselessly, obeying foreknown and predetermined rules. In such a cheerless clockwork fantasy there is no drama of man, world, and God; there is no “new day” leading to “new shores,” but only the dreariness of calculated processes.

My old Pueblo friend came to mind. He thought that the *raison detre*’ of his pueblo had been to help their father, the sun, to cross the sky each day. I had envied him for the fullness of meaning in that belief, and had been looking about without hope for a myth of my own. Now I knew what it was, and knew even more: that man is indispensable for the completion of creation; that, in fact, he himself is the second creator of the world, who alone has given to the world its objective existence—without which, unheard, un- seen, silently eating, giving birth, dying, heads nodding through the millions of years, it would have gone on in the profoundest night of non-being down to its unknown end. Human consciousness created objective existence and meaning, and man found his indispensable place in the great process of being (Jung, 1989, pp. 255- 256)

William James summarised the situation as: “The universe = “God and Company, Ltd” (2012, p. 154). Wheeler, ever the Jamesian, writes that we are a “participator in genesis” (Patton and Wheeler, 1975, 538). I began with a mention of Jakob Bohme. Cosmogogenesis is, for Böhme, the divines’ own quest to become whole, with us humans participating in this attempt, helping God through our focus. Böhme’s cosmology places a heavy responsibility upon humanity, as the completion of the sevenfold cycle depends upon our active cooperation. In this new participatory approach, quantum existentialism, is meaning and opportunity: we can see rosier future if we can see ourselves as participators involved in what happens next, and if we understand that the future is not yet written. This viewpoint is making its way into normal channels:

Theodore Roosevelt's decision to build the Panama Canal shows that free will moves mountains, which implies, by general relativity, that even the curvature of space is not determined. The stage is still being built while the show goes on. (Conway & Kochen, 2006, p. 1472)<sup>25</sup>

The problem is making the world *en masse* aware of this responsibility they have, so as to stop the damage to the environment for example. I find quantum existentialism offers up, not only a viewpoint closely aligned with a rich history of ideas from across time and space, but also one closely aligned with societal engagement and the future of humanity.

Note that this is not the common “humans are Gods” idea here. There is more humility since the entire approach is based on a basic recognition that we are limited in what we can know about reality. The source is forever hidden from view. Let us then leave the final word Edwin Arnold (Arnold, 1891, p. 211), who perfectly summarises the situation we find ourselves:

Measure not with words the Immeasurable;  
Nor sink the string of thought into the Fathomless.  
Who asks does err; who answers, errs;  
say naught!  
Shall any gazer see with mortal eyes?  
Or any searcher know with mortal mind?  
Veil after veil will lift—but there must be Veil upon Veil behind!

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<sup>25</sup> The quote comes from a discussion of the authors' “free will theorem” which states that if the experimenter can freely choose the directions in which to orient his apparatus in a certain measurement, then the particle's response (to be pedantic—the universe's response near the particle) is not determined by the entire previous history of the universe (Conway & Kochen, 2009, p. 226).

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