NOTES FROM THE EXISTENTIAL UNDERGROUND: THE UNIVERSE AS A COMPLEX EMERGENT SYSTEM

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> "Most of them simply do not see what sort of risky game they are playing with reality – reality as something independent of what is experimentally established."
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> -- Albert Einstein[1]

ABSTRACT: As academics navigate the existential tangle between speculation and experimental fact, the prospect of synergy between complex emergent systems wisdom and useful aspects of physics has never been better. One way to stimulate a new phase is to look outside of academia. The complementarity and contributions of two *underground* theories, one cosmological and one metaphysical, are discussed herein, with a focus on conceptual barriers to their comprehensive assessment and adoption.

KEYWORDS: Complexity; Theoretical physics; Cosmology; Metaphysics; Falsifiability; Causation; Possibility; Teleology; Logic; Crisis; Meaning

CRISIS IN PHYSICS

At the turn of the 21th century, physics was not in obvious crisis like it is today. Its theoretical branch was settled on its 20th century metaphysical plateau, intent to erect intellectual "real estate," to develop fully what it had. At the same time, the broader scientific frontier-lands were rich in explorations of complex emergent and complex adaptive systems. Diverse fields honed the opportunity yielding a wide range of applied perspectives and methods that wove their way through academia and beyond into other cultural institutions.

Theoretical physics was strangely out of sync with the broader frontier movement. Insular institutionalism (the development plateau) remained the favoured source of

1 Albert Einstein, '22 Dec 1950: Dear Schrodinger,' in K. Przibram (ed.), *Letters on Wave Mechanics*, New York, Philosophical Library, 1967.

stability, an approach fed perhaps by insecurity over internal inconsistencies. The metaphysical underpinnings obliquely but steadfastly held to by physics did not support complex emergent systems approaches.

Despite high expectations and investment, the experiment-driven science of unobservables was proving unable to provide definitively formative answers. Reticence toward potentially groundbreaking ideas from outside the institution went unquestioned.[2] Philosophy of science did not fail to develop adaptive strategies to missing causative proofs in relation to physics' speculations (what if the "real estate" isn't real?), and perspectival, representational and functional rhetoric took hold.

With crisis looming large and existential questions only getting more unwieldy, refuge was sought in pluralistic notions and glorified damage control offered to redress the existential shortcomings of physics. In 2014 in a *Nature* comment, Ellis & Silk called for renewed commitment to integrity. In their conservative assessment, what is needed is a "new narrative for the scientific method that can deal with the scope of modern physics."[3] Others observed that physics would be able to steer clear of speculative labels so long as lines of causative (i.e. Frisch) or functional (i.e. Woodward) reasoning were maintained.

Institutional physics, concerned with "real estate," so far remains blithe to the existential crisis it mirrors culturally. People yearn for something more robust and meaningful than physics' parade of subatomic predicates. Popularisers of science as well as those concerned with uniting knowledge and spiritual traditions have stepped into the substance vacuum. A variety of evocations of universality combined with complexity, emergence, and self-organization have emerged. The resulting existential curiosities are seen in metaphors such as holography, supersymmetry, and entanglement which, ironically, continue to fall short of providing the needed clarity and likely add to the confusion.

No one disputes that science progresses. The quiet question at the centre of the current crisis is: what is modern theoretical physics really contributing to it any more? The general premise I offer is that complex emergent system-inspired work, from the *underground* as well as other fields, has the potential to serve the field well. Innovative and holistic metaphysics that integrate broadly with physics will eventually support a stable existential revisioning and align physics and cosmology with other fields. The specific premise is that works to support such shifts already exist and are useful to explore by way of example if not exemplar.

2 Based on conversation with distinguished academic cosmologist in US in 2011.

3 George Ellis & Joe Silk, 'Defend the integrity of physics', *Nature*, vol. 516, 2014, pp. 321-3.

EMERGING STORY: AN EXISTENTIAL UNDERGROUND THAT IS COMPLEX

What few are aware of or, if they are, openly regard with suspicion is that during physics' "real estate" heyday, with the information age in full swing and notions of complexity intriguing a wide range of people in and outside of academia, many brave (and sometimes crazy) souls began to contemplate the possible configuration of the universe itself as a complex emergent system. I am referring specifically to those who did so by rendering dominant physics' and metaphysics' paradigms moot, or imposing the requirement of serious re-modeling. Upon approaching the development plateau with their creations, entry was blocked, and they had little choice but to persist *underground*, if at all.

Institutional physics denied and then justified its own speculative nature, relying on the notion of a big bang as an existential and teleological catchall. Both in and outside the institution, unquestioned assumptions morphed from opportunities into threats. I can attest to this from my own experiences, together anecdotally with those of a half dozen others I can name by name. [4] The creative efforts of universe-level complex emergent thinkers were not just resisted but vilified.

The universe as a complex emergent system is a truly fascinating, engaging line of inquiry that is by its very nature a land of possibility. As such, an assortment of radical revisionings of physics and metaphysics to support them came into being. Many include invented phraseology to capture meanings that synthesize unnecessary separations or establish different ways of discerning. A chronicling of them, however poignant or illustrative, is beyond the scope of this paper. The vast majority are hard to come by in academic circles, having generally been relegated to unused cardboard boxes in the corners of career physicists' offices.[5] The nature of the complex emergent universe *underground* that emerged is an intense mix of isolation and raw possibility.

The rest of the paper before you focuses on two such works published within a year of each other. My own, titled "Implications of a novel view of the cosmological energy density and pressure relationship," was first self-published in 2003.[6] Prior to that, two top-notch peer-review journals had refused to look at it and one lesser-known one had returned it with a discouraging review.

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4 A certain circularity is important to grasp. Physicists themselves make continuous, self-important calls of "we must unite physics; it will yield the ultimate glory and satisfaction." Through the hyperbolic lens that results, any underground claims at achieving it are reflexively treated as crackpots or glory-seekers.

5 Based on conversation with distinguished academic cosmologist in the US in 2010.

6 Michelle Kathryn McGee, 'Implications of a novel view of the cosmological energy density and pressure relationship', *https://www.academia.edu/19379248*, 2003. (Hereafter referred to as Novel View.) Its first published location was the no longer existent appliedwonder.com. In 2012 I re-published it with minor edits to healinggeneration.com and in 2015 to academia.edu.

The second, the work of Christopher Michael Langan titled "Cognitive-theoretic model of the universe", was published after more than a decade of development by a now defunct journal.[7] A current version is available more readily at Langan's website.[8] At times the work garnered controversy, at times complimentary support outside of academia.[9] In CTMU Langan does not require re-working of cosmological causation in order for his model to be fulfilled but also does not rule it out. In relation to physics, Langan cites almost exclusively from the rich metaphors of the late 20th century physicist John Wheeler. [10]

Of Wheeler and physics, Langan cites the following four core concepts: the self-excited circuit, the participatory universe, law without law / order from disorder, and it from bit. He then suggests that:

> the higher-order relationships required to put it all together in one big picture have proven elusive. The logical difficulty of answering all of the questions and meeting all of the criteria at once, in parallel, using integrated, logically tractable concepts, has simply been prohibitive.[11]

In CTMU he tackles them all. By combining aspects of Langan's work with my own physico-cosmic model, a more thorough, and as such satisfying, treatment of the universe as a complex emergent system is achieved.

The implications of this kind of complex emergent logical and structural basis are major, including the groundwork for reframing current interpretive biases to match dynamic, and in ways *intrinsically elusive*, causative means.

METAPHYSICS AND PHYSICS MEET IN TELEOLOGY

In Novel View I limit the metaphysics in my approach to teleology, specifically to the question of *ex nihilo* creation at the level of flux, or how to get something from nothing. In CTMU, Langan develops a metaphysical framework built on logic that is recursively meaningful. In sum, he establishes a new way to understand cosmic scale existential phenomena, that is, phenomenalization itself, while in Novel View I evoke an inexorably metaphysical cosmology.

Langan also anticipates something critical that I only later, when studying modal primitivism, came to fully appreciate.[12] The overarching capacity of a complex emergent

7 Christopher Michael Langan, 'Cognitive-theoretic model of the universe: a new kind of reality theory', *Progress in Complexity, Information and Design*, Sept, 2002. (Hereafter referred to as CTMU.)
8 http://ctmu.net
9 Malcolm Gladwell, *Outliers: The Story of Success*, New York, Little, Brown and Co., 2008.
10 Langan, CTMU, pp. 7-11.
11 Langan, CTMU, p. 11.
12 Guy Rohrbaugh and Louis deRosset, 'A New Route to the Necessity of Origin', *Mind*, vol. 113, no. 452, 2004, pp. 705-25.

universe is for "converting potential to actuality."[13] In a logic similar to the modal connection between naming and necessity, a means of logical existential connection between structure and potential accounts for how meaning and structure not only intersect but remain in continual integrated flow with each other just as reality does in relation to our perception of it.

It would be impossible for me to cover the content of either work deeply enough here to substitute for readings of the originals. Rather I offer the reader a guided tour that emphasizes how the works are notably non-contradicting and thereby yield needed parallels and synergy between metaphysics and cosmology.

The descriptions in both Novel View and CTMU coincide well as to the types of universal complex emergent capacities that appear from our assessments, as shown in Table 1. For example, what Langan describes in terms of a Telic Principle ("choice to exist"), I refer to as source resolution. He describes Unbound Telesis and telic recursion; I describe mode expression and source integration.

Table 1. Correlational complex emergent capacities

Langan phraseology	**Langan-style metaphysical definition**	**McGee correlate**	**McGee-style cosmological definition**
CTMU	Supertautological reality-theoretic extension of logic	Novel View	Comprehensively-connected physico-cosmic framework
Logic	[ordinary sense]	Behaviour	[ordinary sense]
Unbound Telesis	Realm of nil constraint from which the universe refines itself	Mode expression	Grants exclusive, self-perpetuating coherence behaviours to dark energy and radiation
Telic principle	Spaciotemporally distributed self-selective "choice to exist"	Source resolution	A particular instance of distinguishability, unique in space and time.
Self-configuring, self-processing language	A reflexive intrinsic language; telic-recursive, reality-generative grammar	Non-linear cosmological coherence	Mode, vehicle, particle cosmology for source integration (see Table 2)
Telic recursion	Mutual refinement through stress between syntax (laws) and state (local telors)	Source integration	Purveyor of distinguishability; meta-resolution of past circumstances and events

13 Langan, CTMU, p. 37.

In short, Langan postulates a self-configuring, self-processing language (SCSPL) that can be explicated outside of physical bases so far known by science. My physico-cosmic model fulfils its mandate, introducing new physical means.

NOVEL VIEW IN BROAD STROKES

My own postulations spring from the notion of a cosmological complementarity that bridges form and non-form, existing and non-existing. From the dynamic but completely subtle (only at the scale of flux itself) relation between form and non-form, emergence of both material and immaterial complexity is natural, layered and subtle.[14] Such flux is capacitated to be rich and generous beyond the scope or need of external management.

Novel View elucidates the relationship between cosmological energy density and pressure as having three interrelated layers of expression. Table 2 outlines the expressions, behavioural tensions and physic-cosmic balances at work in a non-linear cosmological coherence.

Table 2. Non-linear cosmological coherence

Expression	*Behavioural tension*	*Physico-cosmic balance*
Mode, or Vessel	position / momentum	Unresolved source variation of energy density and pressure
Vehicle	gathering / dispersing	Pressure varies with regard to resolved source
Particle	persistent / transient	Energy density varies with regard to resolved source

Phenomena indicative of the unfettered expression of the cosmos's formative behavioural tensions within the coherent yet complex emergent existential structure are common and essential equally to our perceptions, understanding and activities and to the universe's own logic and phenomenalization process. From the complex dynamic that arises between dark energy (position) and radiation (momentum) under constraining locally active circumstances, particles (persistent), photons (transient), heat (dispersing) and gravity (gathering) arise, resolve/unresolved, and function as an existentially differentiated, complex emergent whole.

HUBRIS OR SYNTACTIC COMPREHENSIVITY-REFLEXIVITY?

> If our metaphysics or present patterns of thinking about causation do not serve our purposes (or even undercut them…), we should replace these with concepts and patterns of thinking that better serve our purposes. The question is, who's in charge

14 E.g. real and illusory; patterns and meta-patterns; scaling phenomena of all sorts.

> here anyway. I say it is us (constrained, of course, by ordinary empirical facts), not metaphysics.[15]

In one sense, such a perspective is totally insufficient; in another, it is a perspective to prize. It is insufficient inasmuch as its hubris ignores incongruousness at different scales, such that the relationship between individuals and the whole can be so fuzzy as to be useless. Using the example of academia, there's the relationship of personal belief to institution, then institution to the whole, with other layers inserted too, like family, department, college, etc. Like a game of telephone, with the individual on the receiving end and the whole on the giving end, the messages reaching us lose their original coherence.

It is a prize perspective in that, with the complex re-alignment of "empirical fact" towards a logic that informs and serves greater overall coherence, we are anything but trapped by our own misguided thinking and assumptions. With a little hubris, we can grasp that everything has an intrinsic and meaningful relationship with the whole. Langan captures the prize perspective in many of his concepts including *Syntactic Comprehensivity-Reflexivity*:

> if the "noumenal" (perceptually independent) part of reality were truly unrelated to the phenomenal (cognition-isomorphic) part, then these two "halves" of reality would neither be coincident nor share a joint medium relating them. … reality is more than just a linguistic self-contained sycdiffeonic relation comprising a closed descriptive manifold of linked definitions containing the means of its own configuration, attribution, recognition, processing and interpretation. It is also a self-processing theory identical to the universe itself.[16]

Langan's CTMU is undeniably complicated. I see it as an act of generosity -- with words. He moves through concepts in a way that is meaningfully recursive, a dynamic that matches his description of the universe's self-reflexive state of communicating. The resulting complexity is appropriate if inconvenient to ingrained, less subtle and far-reaching patterns of thinking.

I observe in Novel View that attachment to quantifiable phenomena engenders the insufficient kind of hubris:

> Upon observation, half of the equation is always missing – not certainty but the connectedness, the circumstantial certainty based on source and distinguishability that is the ultimate context for the form and behaviors we observe.[17]

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15 James Woodward, 'A Functional Account of Causation; or, A Defense of the Legitimacy of Causal Thinking by Reference to the Only Standard That Matters—Usefulness (as Opposed to Metaphysics or Agreement with Intuitive Judgment)', *Philosophy of Science*, vol. 81, no. 5, 2014, pp. 691-713. (p. 711)

16 Langan, CTMU, p. 22-23.

17 McGee, Novel View, p. 12.

CONCEPTUAL BARRIER: UNFALSIFIABILITY

A few conceptual difficulties persist in acknowledging the expansive, or to use Langan's metaphysical language "conspansive," views that Langan, others, and I postulate. Falsifiability is one. The *underground* views I refer to involve unobservable aspects of the universe and as such are necessarily causally unfalsifiable. Anything that is self-referentially causative without explicit existential context is not falsifiable. This is the case with anything that is not directly observable, regardless of its origin in relation to institutional inquiry.

Thus unfalsifiability is a straw man against underground theories. The issue is that a double standard is exercised in keeping such theories underground, justified in part by the assumption that proper institutional training will be a prerequisite to proper insight. Both Langan and I have eschewed advanced degrees and institutional affiliations.[18]

Rather than falsifiability, such theories can be confirmed in that they are reasonable, useful, and widely impactful. Woodward makes such a claim concluding let's not throw the useful science baby out with the bathwater of existentially causative confusion.[19] At the macro level in the sciences, usefulness is and will itself remain a useful standard; at the existential level in physics, deviation from causal usefulness started long ago. To be fair, the situation is not comfortable for anyone involved.

Another area of resistance is a variation on falsifiability. Theoretical physics has allowed mathematical formalizations to become a stand-in for falsifiability. To satisfy those who find the institutional metaphysics too limiting or confused (which they are), theories are invited to play the game of using mathematics to accomplish necessary framing of abstractions at work in the "spaces" created by the inherent formalization of the math itself. One can thus be comfortably constrained by either probability-driven acausal or time-asymmetry-driven causal frameworks. Within it however is also the unseemly blossoming of the fantastical, which is ironically justified in its over-reach by conclusions such those of the casual stalwart Frisch:

> The predominant – and indeed perhaps the only – way to extend our epistemic reach, when we lack complete initial data, is with the help of time-asymmetric causal structures. Thus, the representational resources employed in physics have to be richer than the standard account allows.[20]

Use of mathematics, despite the reassurance offered by its formalized structuring, can hardly claim to add a unique or complete function of justifying unlimited imaginary flights. Inasmuch as mathematical symbols and functions in phase spaces are an

18 I have been on staff at universities in the US for 18 years in support of projects that are unassociated with Novel View or projects related to it.

19 Woodward, "Functional Account."

20 Mathias Frisch, *Causal Reasoning in Physics* Cambridge, Cambridge University Press, 2014. (p.235)

insufficient formative language from which to conceive fully of the universe, use of more general language and inquiry grounded in complex emergent systems wisdom is warranted. Such inquiry has the potential to benefit society through better fine-tuning of as well as interdisciplinary capacity in science.

Langan and I each explore throughout our unprecedented work how mathematics informed by universe-savvy metaphysical logic or teleologically-satisfying cosmology might well be consistent with a description of the universe as a complex emergent, perhaps even adaptive, system. Yet we each effectively supplant reliance on overly permissive metaphysics that do little other than defer to "representation resources". We show that demons commonly evoked in math and physics can be replaced with rational complexity through meaningful and recursive conceptual selectiveness that resonates with dynamic flux-level merging of causation and representation.

CONCEPTUAL BARRIERS: NON-CONSERVATION OF ENERGY AND GIANTS

Conservation laws are restrictive notions inherited from classical physics long ago in reference to macro phenomena. Novel View requires lifting the requirement for conservation of energy and mass at the level of the unobservable. Though in 2012 Rupert Sheldrake named conservation of energy and mass as one of ten scientific dogmas in need of re-consideration, science as yet remains attached to it.[21]

Through the interrelationship of form and non-form to source resolution within Novel View and, in parallel, to CTMU's Unbound Telesis, we each suggest that conservation is not required all the way down in order for conservation laws to hold at a macro phenomenological level. Requiring energy and matter conservation at the level of the unobservable is without logical basis. It is consistent with a force-based, mechanism-only universe rather than a complex emergent one.[22]

In biology and other fields, what arises in response to assumptions of existential conservation and force is this: without a metaphysically-sound, cosmological basis on which to account for changeability that is orderly, synthetic ideas get evoked to account for organization within the universe. Moreover, fields of inquiry remain asunder.

For instance, Sheldrake is troubled by physics' inability to understand the roles of dark energy and dark matter. He is ready to challenge conservation laws. Yet he then quickly evokes explanatory power through the notion of a biologically significant force as

21 Rupert Sheldrake, *Science Set Free: 10 paths to new discovery*, New York, Deepak Chopra Books, 2012.

22 Frisch details the insights brought through questioning forces and mechanisms in his exploration of the Ritz-Einstein debate of 1908 and 1909. The debate led to concessions by Einstein that were all but forgotten after the untimely death of Ritz. Chapter 7, The radiation asymmetry, p. 167-200, in Frisch, *Causal Reasoning in Physics*.

yet untapped by science to account for non-conservation. Of metabolic studies unable to account for all forms of energy in its human subjects, he concludes:

> No one seemed worried about the problems revealed by Webb's research. The conservation of energy was not a question of evidence but an article of faith. However, a modern-day vitalist could assert that there is a vital force at work in living organisms, over and above the standard forms of energy known to physics. A yogi could speak in terms of *prana*, or an acupuncturist in terms of *chi*.[23]

Such thinking elucidates the long-suffering (to existentialists) tendency to add more unknowns as a way of accomplishing greater complexity. In the face of challenges to conservation of energy and mass, the existential cry must remain at the forefront. Let us not continue to release physics from accountability by generating complexity *artificially* by adding more unknowns! Using synthetic notions, such as chi, to explain non-conservation usurps existential accountability, ultimately derailing us from the potential usefulness of modeling the universe as a complex emergent system at the existential level.

Science's elevation of humanity as well as life-centred inquiry (as consisting of organizing principles as well as knowing of the self) does not bode well for courage in dealing honestly with the cosmos at the level of flux. For instance, as a student in biology, I was taught about primitive scientific inquiry and that it must be avoided lest we fall into the embarrassing trap of believing in spurious theories such as spontaneous generation. One might imagine that something alive comes from dead material *ex nihilo!* Yet this is exactly what is happening in the sense that life as well as non-life are made up of otherwise life-neutral flux-level activity.

Distancing biology from existential inquiry has proven useful yet forgetting that we have done so has unfortunate consequences, straining the dialogue between it and theoretical physics. In short, conservation laws applied usefully at an organismal or social level are not necessarily applicable at the level of flux -- in the case of existential inquiry, we must not limit that form cannot come from non-form.

A final criticism to engage about the existential *underground* is that it does not rely on history. No "giants" on whose shoulders we stand. Such a requirement is an excuse to refuse dynamic existential dialogue in favour of sticking with ingrained assumptions and popular approaches. Even without engaged academic dialogue, so long as theories have sane keepers, the *underground* too matures naturally over time.[24]

Said another way, universal laws don't have human pre-cursors. I do not wish to convince anyone by righteous associations that I or anyone else in the existential *underground* am right, nor do I wish for others to expect us to bow to their demi-gods of

23 Sheldrake, *Science Set Free*, p. 76.

24 Today Langan distances himself from "intelligent design" associations made in CTMU, and I am unenthused about my treatment of "molecularization" in Novel View.

knowledge when what we want to do is trust for ourselves in something unprecedented, and pursue opportunities to share when what we have been able to derive has intrinsic value.

CONCLUSION

The complex emergent systems dynamics that are likely central to the universe's existence have been applied as an interpretive means in a variety of fields. They so far have evaded institutional physics and cosmology as formative means that provide coherent underpinnings. It doesn't help that attachment to current causative and functional frameworks is easily justifiable[25] and forgiveness of cross-theory inconsistencies has been entrained. Pluralism is the favoured, overarching trend in academia, such that ruthlessness toward coherent vision seems reprehensible.

Physics' institutional fixity leads to a bridge-like approach to achieving complexity, emergence and big picture clarity. The underlying assumption is that there is an otherwise impassable gulf. Langan elucidates the workings of a complex emergent universe based on metaphysical logic, and the cosmological model I postulate in Novel View fits it. The resulting complementarity is a form of logical proof. In light of this, the impassable gulf itself would seem to be an illusion.

Another intriguing layer to what can be accomplished with a coherent complex emergent model of the universe is fulfilling the so far unmet existential necessity of transforming possible to actual. Stuart Kauffman identifies and explores such a necessity from a biological perspective, with the concept of "adjacent possible."[26] Without CTMU, possibility evades metaphysics; without Novel View, it evades theoretical physics and cosmology.

Theoretical physics and the philosophies that support it must work very hard to attain logic. The irony is intense. In the "conservative" scientific belief that logic is what sets humans apart from lower life forms, or the "progressive" belief that it's our only hope of saving the planet, much of the hard work of logic is nothing less than incoherence among sources of academic hubris. When progress or saving us from ourselves supplants the more fundamental understanding that we are part of a cosmic logic much bigger than ourselves, when the projection of well-meaning onto our incomplete but hard-sought logical ways, we find ourselves in the awkward position of defending the indefensible.[27]

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25 Mathias Frisch, "The Most Sacred Tenet'? Causal Reasoning in Physics', *The British Journal for the Philosophy of Science*, vol. 60, no. 3, 2009, pp. 459-74.

26 Stuart Kauffman, *Investigations*, New York, Oxford University Press 2000.

27 For instance, Ellis & Silk express their concern over being able to "defend science from attack" in Elllis & Silk, "Integrity of Physics," p. 323.

Physics can pursue an exceptional framework in an efficient and sensible manner. Given the wide range of human experience possible, science at large must allow that existential insights can and must extend beyond provable frameworks. This is the only way to more sensibly work beyond the insular experiential limits of institutions steeped in career logic. Evidence of a new phase, where seemingly far afield complex systems frameworks are moving into the academic mainstream, can found in the recent work of Theise and Kafatos who, like Langan and I, conclude that the universe is "comprised of a holarchy of complementary, process driven, recursive phenomena."[28]

In modal terms, the universe consists, at its most fundamental, of the necessary condition that it is made up of unobservables and thus unfalsifiable. On the one hand, it looks like a bitter pill for science to swallow given its strenuous mission historically to separate itself from religious conviction and superstition. On the other, the sort of existential primitivism Langan and I each offer looks like useful discernments long past due that science, and the societies it serves, will be capable of navigating.

An interesting social analysis emerges, for example, when looking at Novel View's physic-cosmic model and CTMU's SCSPL as two sides of the cultural coin. It's a blending of East and West. Emptiness is a key concept in Eastern religious traditions, and the physico-cosmic model of the Novel View has at its root a novel conception of emptiness as containing the on going capacity for form. Monism is key to Western religious traditions, and the SCSPL of CTMU has at its root, and resonating with Wheeler's participatory universe, a conception of singular intelligence as a function of multiple experiencers.

As the 21st century approached, Langan, I, and countless others were inspired by the emerging modern logic around complex emergent systems. When succeeding, such efforts achieve for the individual what Murray Code characterizes as a search transcending not just institutionalism but fixity of beliefs.[29] Such is a call to the existential *underground*. Within an egalitarian intellectual forum such as Foundations of Mind, a useful grounds for such dialogue, this paper emerges, an answer to the call, and resonant with desires for synergy beyond what we might today believe is possible.

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28 Neil D. Theise and Menas C. Kafatos, 'Fundamental awareness: A framework for integrating science, philosophy and metaphysics', *Communicative & Integrative Biology*, vol. 9, no. 3, 2016, pp. e1155010.

29 Murray Code, 'In search of a living reason: or: why you can't get there from here', *Cosmos and History*, vol. 12, no. 1, 2016, pp. 1-36.