Time, Life and the Emotive Source

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Abstract. A Panpsychism, or neo-vitalism, is presented having to do with the penetration of time in living organism. Time is described having bifurcated or polarized into two windows: one that looks forward in time and follows a chain of determinism, and one that looks backward in time to frequencies and past habits. The emotive source is described as a singularity, the timeless middle-term holding the two windows together. This view is related to the laws of physics, the second law of thermodynamics, genetics and epigenetic switches. Warm-body quantum mechanics is implicated broadly, and in particular with the creation of adaptive mutations that are coxed by epigenetic cues.

1. Introduction

The visionary and counter-culture proponent[1], Terence McKenna (1946-2000), defined life as something that time got into.[2] Saw the legs off a chair, and throw the pieces on the ground, and nothing will happen, he noted. Come back the next day, and the pieces are still there where you left them, unchanged. Do that with something living, he noted, and it will bleed and die as time unfolds. Cutting body parts off of something living, he concluded, is to interrupt time and its connection to life.

In this paper, McKenna's hypophysis is taken serious, but without any intended cruelty of animals. Surprisingly so, his view is found very compelling, that time has gotten into life. The view sees time bifurcated in life into two windows. From life emerged mind and the view see time bifurcated in our psychology. The two-sided time implies a timeless middle-term, hinting of a panpsychism or the emotive source.

The philosophical proposal of panpsychism, as well as scientific accounts of consciousness based on quantum mechanics, are becoming more acceptable today as serious endeavors. To these we can add the emerging field of quantum biology. Regarding biology, its reasonable to assume that panpsychism becomes a neo-vitalism if there is any truth to panpsychism. To proceed, this paper reissues the second law of thermodynamics in Section 2 in terms that are friendly to neo-vitalism, without diminishing the law-like drive that increases entropy with time passage. Genetics is described in Section 3, but in summary form. An account of time-impacted life based

[1] This paper makes no endorsement of McKenna's advocacy of psychedelics.

[2] By comparison, Immanuel Kant viewed time as an internal intuition.

only on genetics, while missing epigenetics, is stilted at best. Therefore, Section 4 describes epigenetics, but in summary form. To relate neo-vitalism to what known about physics, including the 2nd law, it is necessary to reissue all these laws in Section 5. An account of how time possibly leaves its mark on epigenetic switching is presented in Section 6, including a universal grammar that engages proto-emotion and hinting of a necessary warm-body quantum mechanics. This leads to the possibility of some testable science, and a discussion of such possibilities are presented in Section 6.

2. Second Law of Thermodynamics

The second law of thermodynamics describes the fall of energy from an ordered state (low entropy) to a disordered state (high entropy), in a universe where energy is otherwise conserved. The 2nd law is irreversible, in that energy has never been observed to flow in the opposite direction, from a disordered state to an ordered state that's more that just a minor occurrence. A good example is a ball that is perfectly balanced on top of a hill (Figure 1). The balanced state represents a perfect symmetry, where the path to be taken in the down-hill role is still not determined. This symmetry represents an impartiality in the future possibilities, but its highly unstable. The slightest wind will tip the balance and break the symmetry, causing the ball to start rolling in some particular direction. Initially, the ball has high potential energy representing the a-prior order. As the ball starts rolling, the potential energy deceases and is transformed into some waste heat and kinetic energy when the ball accelerates. Eventually that ball will come to rest in one of four valleys, and at that point all of the incremental change in potential energy is transformed into waste heat. The one-way flow has never been observed to go in reverse, where the ball absorbs waste heat from the surroundings and rolls up hill, and then finds itself perfectly balance at the apex of the hill.

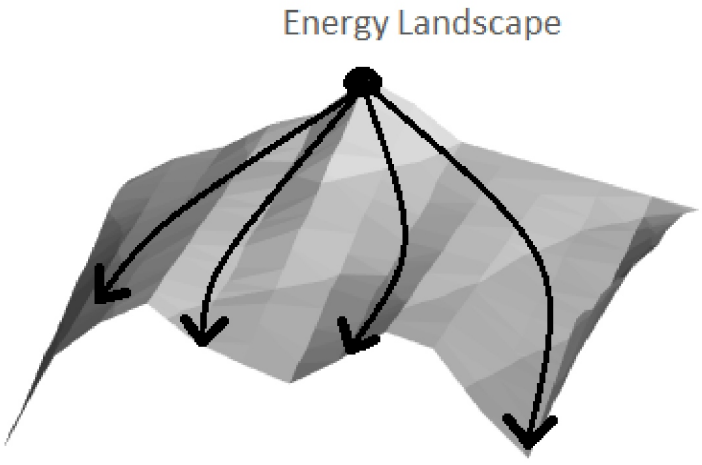

Figure 1. Energy landscaped showing black ball balanced on top of a hill, ever-ready to be tipped and to roll into one of four possible gullies before coming to rest in one of the respective valleys.

Statistical mechanics can represent the 2nd law as the behavior of free bodies inside a closed ensemble.[3] The free bodies can float around unrestricted, in random directions, bouncing off each other like Newtonian billiard balls. The migrations are restricted by transitions that are determined by probability. If all the free bodies are located in one corner of the ensemble initially, neatly stacked side by side, then that would represent a highly ordered state. With time passage the ordered state would decay and fall into a disordered state where the free bodies are smeared out in any such direction, almost uniformly over the space of the ensemble but deeply haphazardly. The 2nd law dictates that energy transitions from low entropy to high entropy, and never in reverse, and if you believe statistical mechanics this one-way flow is a matter of probability.

When the probabilistic version of the 2nd law is interpreted as a universal law, however, what is discovered are deep contradictions having to do with the low entropy of the initial conditions (Price 1996, Chapter 2). This made Boltzmann and others rethink the probabilistic law as a universal. If thermodynamic equilibrium is the normal state of affairs when the universe began Boltzmann figured, then statistical mechanic paradoxically predicts that entropy was much higher at some time in the distant past than today and coming with high probability, a direct contradiction of the 2nd law (Price, page 30). Or we can assume that the initial conditions, now given as the birth of the universe, came with low entropy (Albert 2000, Chapter 4). Where did that initial high order come from?

Smith (2008) described the 2nd law as two-sided, and holding the fatal equivocation of the meaning of "representation" given by statistical mechanics and the meaning of "recognition" given by a space that dissipates waste heat. William James Sidis (1925) made similar observations, and predicted a new principle that works in reverse of the 2nd law and existed in some pockets of the universe, and related this new principle to life and life's teleology[4].

Given that Kauffman (2008) describes a "ceaseless creativity" emerging at the criticality separating order and disorder, the 2nd law described by statistical mechanics can only be a one-sided interface showing the fall into disorder. The other side of the demarcation is where disorder is found uniting into order again, forming larger wholes, but agreeing with Sidis (1925) this must necessary happen in reverse-time to maintain consistency with both sides. Moreover, Sidis found the 2nd law to be a psychological law that's necessary to keep track of apparent forward causation. David Hume believed that

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[3] This formulation is due to Ludwig Boltzmann, coming from his address to a meeting of the *Imperial Academy of Science*, 1886.

[4] In a similar vein, Price (1996) also considers causal asymmetries implied by the 2nd law and postulated a possible backward causation or advanced action that involves quantum mechanics.

our understanding of causation came to us by regularities discovered with past experiences rather than by reason.[5] Time is found polarizing into two psychological windows, then. One side looks forward deductively and recognizes deterministic chains as Sidis found, but the other side looks backward to find itself in inductive habits, generalities and past frequencies as Hume believed. The two windows of time are necessarily unified by a middle-term that's undeclared by law, a middle-term that's necessarily timeless[6] and represents a deep singularity. The middle-term is also implicated as the emotive source[7]; i.e., if Alfred North Whitehead is correct in his belief that causality can be directly prehended by experiential occasions, however vague a feeling but an emotion laden feeling nevertheless.[8]

The 2nd law describes the behavior of mindless free-bodies that risk the heat death, and Sidis's psychological law translates into the emotional warning: remain mindful or bad things will happen. It's the kind of advice that a father will give to his son to stay on the straight and narrow path. It's the watchful eye of the shepherd that looks after the flock and plans ahead. Hume's version of the same law, but on the receiving side, is more feminine: we are all in this together; and harmony is preferable to strife.

3. Genetics and the Fitness Landscape

Wright (1932) was the first to describe the fitness landscape for a population where its average fitness is given by a position on a topology that's dependent on gene frequency. Natural selection and genetic drift can both influence gene frequency changes that can occur in a population over time, from one point on the topology to the next, presumably climbing higher on the landscape. Figure 2 provides an illustration of a simple fitness landscape that applies on the population level, but there are other varieties of fitness landscapes that have been studied (e.g., Kauffman 1993).

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[5] *An Enquiry Concerning Human Understanding*.

[6] In the sense that photos are timeless (Russell 2003). Photons act as messenger particles that communicate the electromagnetic force, and are also massless and spaceless. Gluons and postulated gravitons are also massless and also act as messenger particles for the strong force and gravity, respectively.

[7] Rather than describing this as a panpsychism, or a panexperientalism, preference is given to proto-emotionality as the fundamental because this is arguable less anthropomorphic and yet it carries the essential meaning that preferred directions are sought non-passively.

[8] *Process and Reality*, Chapter VII.

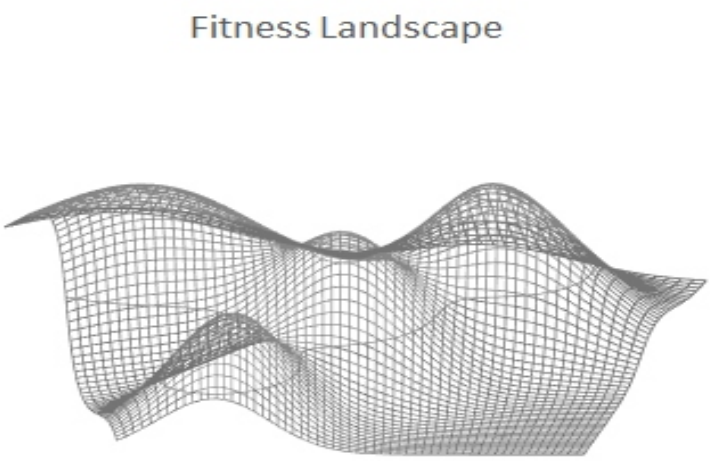

Figure 2. Hypothetical fitness landscape given by the height dimension and overlaying a two-dimensional surface that depicts gene frequency at two independent loci.

Independent of how variation offers itself to natural selection, the fitness landscape drives evolution. It represents a genetic determinism that points to a possible future state of a population that is more adapted. However, the fitness landscape is just one possible driver of evolution among genetic drift, genetic recombination, mutation and the survival instinct that's innate in life. It's a gross oversimplification to imply these processes are blind and indifferent, particularly if evolution is to now be connected to the mysterious 2nd law of thermodynamics (e.g., Wicken 1987; Brooks and Wiley 1988; Chaisson 2001), particularly if life's adaptability is found relating to quantum mechanics and the collapse of the quantum wave function (Goswami 2008; McFadden 2000), and particular if mutations are found not random but life-directed and even adaptive (Cairns, Overbaugh and Miller 1988; Martincorena and Luscombe 2013). Mutations that are accidental, or haphazard, tend to be detrimental to such an extent that natural selection is unable to remove them in numbers that can improve the adaptation of living organisms (Stanford 2008, Chapter 4). Its necessary for cells to utilize error correcting capabilities when mutations, or copying errors, occur in DNA (Radman and Wagner 1988).

The fitness landscape joints the energy landscape (Figure 1) in that both imply a direction in time. Genes found in the zygote somehow predict heritable traits that may be selected in the adult by natural selection. In that evolution of novelty can emerge unexpectedly from Darwinian pre-adaptions (Kauffman 2008), the fitness landscape must be able to coax the novelty into existence as if the landscape carried a remarkable foresight. Nevertheless, the fitness landscape is a tool of the one-sided rational mind that sees a chain of causation in a world well described by Newtonian billiard balls that bounce off of each other.

4. Epigenetics and the Waddington Landscape

Epigenetics controls developmental biology by way of switches that are actually put on the DNA. The switches turn genes off with methylation (Siegfreid and Cedar 1997), or they slow or accelerate the gene with a connection using histones by acetalyzation (Eberharter and Becker 2002). In other words, the epigenetic switches act as frequency modulators on the DNA by determining the frequency profile of protein production.

The genetic material, or DNA, was never well described as a blue print or program. Epigenetics reveals that genetic determinism is better described by the metaphor provided by a Fourier analysis of a time series that depicts gene function as an action in time, where the time series is described as a linear combination of a set of basis vectors (now the original DNA backbone), and where the linear coefficients are spectral frequencies attached to each gene by epigenetics.

After fertilization the zygote divides and becomes a blastocyst, differentiated only into an inner cell mass (ICM) and the outer trophectoderm. The ICM and the trophectoderm will differentiate further into the embryo and placenta, respectively. When ICM cells go through differentiation they specialize into tissue types, liver, brain, blood, hair, etc. While each cell in the body has the same DNA, they have a different combination of epigenetic switches. In the process of cell division, these switches are passed on to the daughter cells, i.e., the switches are more the less permanent. However, the daughter cells can have new switches added if the daughter cells differentiate further from the parent, in a process that is not reversible[9]; i.e., the new epigenetic switches are added during some of the steps of embryonic development where changes among cell types occur. The differentiation of cells during early development, starting with the zygote, resembles the irreversible fall into disorder having to do with the 2nd law of thermodynamics (Figure 1), a pattern of future possibilities provided by the Waddington landscape depicted in Figure 3. This characterization of irreversible differentiation as a ball rolling down an epigenetic landscape is due to Waddington (1957). Ferrell (2012) relates the dynamics carried by the Waddington landscape with an attractor, an observation that is not lost in Section 6.

[9] There are notable exceptions. When animals are cloned, or when stem cells are generated experimental from non-stem cells, the epigenetic switches are removed somewhat where experimental methods are discovered how to reverse epigenetic changes.

Figure 3. One cell (dark dot) from a blastocyst set to roll down the Waddington landscape and undergo irreversible differentiation following one of three paths that are provided by the two forks shown here. When the cell undergoes division it then assumes the identity of one of the daughter cells artificially, thus permitting a logical passage down the entire landscape.

Cells in the blastocyst are possibly in some still unexplored quantum entangled state, particularly if differentiation is recognized as partially a collective process but admitting to possible degrees of entanglement. This implies that daughter cells remain quantum entangled after cell division. With this interpretation, the blastocyst represents a quantum supper-position of possible realizations, differentiation being the collapse of respective wave functions when epigenetic switches are added to DNA (e.g., Asano et al., 2017). Jorgensen (2011) also implies that epigenetics involves quantum mechanics, even suggesting a backward in time flow of information from the environment.

Epigenetics is more complicated than presented in this summary, and a broad overview of the emerging subject is presented by Carey (2012) that also includes a description of the following side notes:

1. Some epigenetic switches can also be passed through sexual reproduction (e.g., Migicovsky and Kovalchuk 2013). A parent can acquire an epigenetic change that makes its way to the germ line, then past that change to a child that inherits the same characteristics in a Lamarckian sense.
2. Sperm and egg cells can also be imprinted differentially by epigenetic switches, in a way that's essential for development.
3. There is epigenetic regulation having to due with the deactivation of one X-chromosome, a necessary regulation for females that carry two X chromosomes.
4. The non-protein coding DNA, which is 98% of the DNA, transcribes into RNA that acts in epigenetic switching. These processes are not well understood.

5. Two-sided Laws and Quantum Mechanics

Einstein's special and general relativity are symmetric in time. The action principles of unified field theory look identical under CPT inversion[10], which includes time. In summary, all of the laws of physics are found symmetric in time as Sidis (1925) noted, apart from the asymmetrical 2nd law that is arguably two-sided. That is, the laws that come as action principles look the same in reverse time as they do in forward time, and they even hint of a possible teleology (Helrich 2007). Teleology can be recovered from the two-sided 2nd law as hypothesized in Section 2.

Something must also be said about symmetry breaking, because laws that look the same in both time directions, that look the same in their own specified symmetry so polarized to provide two views, say very little about how the laws themselves came into being by a process of symmetry breaking. In the grand unification epoch the universe is though to have expanded and cooled from a big bang (Chaisson 2001, pp 242-247). During this expansion, the four forces of nature emerged in the order gravity, the strong force, weak force, electromagnetism. This process involved spontaneous symmetric breaking, leaving the laws behind but coming with selected constants that modulate and calibrate the action of the laws. In the wake of these breaks we find: the speed of light, the cosmological constant for a flat universe, the relative strengths of the four forces of nature, the masses and coupling constants, Planck's constant. These are the affinities that nature selected. Most of these are thought fine-tuned for life (Barrow and Tipler 1986). The question comes, were these selections the result of random occurrences when symmetries broke, or were they innate preferences selected by the ground of being? The Weak Anthropic Principle tries to enforce the belief that its all accidental, because we would not be here to ask questions if the selections were different, we are just very lucky.

The symmetrical laws themselves look to be taking part of a greater symmetry breaking once a boarder view is taken on how they act. The broader view changes with law-restrained action, but something remains that's unchanged called the law. First understand, that from the point of view of agency that carries information, symmetry is when everything looks the same from all points of view. After symmetry breaks things stop looking the same as natures arrives at an affinity or preference, and this implies there needs to be some kind of polarity before symmetry breaking that holds the two sides together in an indistinguishable state. Symmetry breaking leads to a state of natural discernment, where one side becomes visible while the other disappears. In this view, that part of reality that became invisible does not mean necessarily that the unselected part of reality stops existing. Because the middle-term is beyond law and

[10] CPT is an acronym for Charge, Parity and Time. CPT inversion changes a particle into its anti-particle, changes an image into its mirror reflection, and changes forward time into reverse time.

cannot be excluded from reason, it only means that the unselected part of reality becomes part of a shadow. For example, the existence of dark energy and dark matter may be the left-over shadow that followed in the wake of symmetry breaking occurring in the early universe.

The broader view of symmetry breaking may very well be synonymous with the collapse of the quantum wave function, in these cases the collapse of the universe's own wave function by the action of gravity. This view is a restatement of John Wheeler's (1990) particpatory universe, where the constants of physics were selected by the ground of being because something was preferred to nothing; i.e., preferred by proto-emotion that connects time over a very wide duration. The collapse of the quantum wave function, more localized in brain tissues and involving microtubules in cells, has already been implicated as something fundamental to consciousness (Hameroff and Penrose 2014). Strapp (2007) also implicates the quantum wave function and its collapse to the phenomenon of consciousness, but Strapp points to the quantum Zeno effect within synapses rather than microtubules, and Strapp further relates his theory to Whitehead's process philosophy. Perhaps unsurprisingly now, the collapse of the quantum wave function may be the real driver behind irreversibility and the 2nd law (Albert 2000, Chapter 7), implying that order and disorder relate directly to quantum coherence and decoherence.

If our experience of free will is real, then it must be possible to transcend the apparent flow of forward causation, to reach back and set initial conditions by a reverse causation that is modulated by our emotions. Otherwise, Benjamin Libet's (1985) timing experiment will spell the end of our imagined freewill. Freewill is saved by quantum mechanics again, because its quantum mechanics that permits a reverse causation over a time duration (Wolf 1998).

In summary, the laws of physics are found two-sided, and the middle-term that holds the sides together is undeclared by law and is possibly the source of proto-emotion. Therefore, the historical and premature rejection of vitalism is now recognized as the fallacy of excluded middle. The possibility of reverse-mode causation necessarily implicates quantum mechanics, and the collapse of the wave function. For the same reasons, quantum mechanics is implicated in gene action and epigenetics, in all probability.

6. When Time Finds Itself

Up to this point, a mechanism has not been described how proto-emotion that's completely confounded with time is found relating to genetics and epigenetics. The proposed hypothesis is that the mechanism is part of a universal grammar given that time presents two windows. Only with the universal grammar better described can evidence be gathered to support this hypothesis.

The backward in time window relates to a signal sensitivity given by past frequencies

that modulate the effect of DNA. This modulation is precisely what is found with the epigenetic switches provided by methylzation and acetalyzation. Epigenetics is not limited by the DNA modulation, however, because something epigenetic may be on top of DNA modulation, and something may be on top of that.[11] At any rate, the backward in time window is closely matches with the *frequency domain* that characterizes time series analysis. The other type of time series analysis is called the *time domain* which is characterize by a forward progression such as the Markov chain.

The time domain or the forward in time window has to do with the forward flux of cause and effect given by the genetic determinism that presents itself: be it a population that's navigating the fitness landscape; or cells undergoing division and embryonic differentiation by navigating the Waddington landscape; or it's a cell involved with its mature metabolic function thereby following an energy landscape.

The two time windows will permit negative feedback in forward time, where the chain of determinism may reach back and reset epigenetic switches. This is classically defined regulation that still represents something habitual. However, this is not the emotive balancing act described next that will actually carry a reverse-time connection.

The more speculative part of the grammar has to do with the creation of new functions. This is described as the great centering of proto-emotion to arrive at the critical point separating order and chaos.[12] It must be that the backward and forward windows come together as time finds itself in a process of targeted synchronisation, the two widows oscillate. This brings a tension leading to an emotive climax where something new erupts on time's manifold and comes into being so targeted: a new mutation or an alteration in an epigenetic switch. This coming into being involves the collapse of the quantum wave function so hypothesized, with a time duration and quantum non-locality that is significant enough to likely enhance the utility of the targeted change that was sought by proto-emotion.[13]

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[11] Lipton (2005, Chapter 3) describes proteins that are embedded in the cell membrane, and act as information gates that relate to the outside environment and also impact on epigenetic signals inside the cell. Moreover, Pert (1997, Chapter 9) postulates that peptides circulating in the body communicate emotions.

[12] What Vattay, Kauffman and Niiranen (2012) describes as the "Poised Realm".

[13] Specifics are lacking, but particulars of warm-body quantum mechanics are better provided by future investigations. Unknown are where on DNA, RNA or proteins are regions of quantum supper-position? Is a quantum collapse limited to biochemicals inside one cell? Or are there any non-locality and entanglement effects among cells, among organisms?

Strict or quasi genetic and epigenetic determinism[14] is inadequate during periods of crisis by definition, leading to exhaustion, stress, and even proto-emotional surrender. The response that comes in the wake of the eventual release is hypothesized as part of the universal grammar, which is the aforementioned coming together and synchronisation of time's windows, and this grammar is followed by the cell and by human psychology[15]. There is known genetic regulation that can kick into gear during periods of stress, inducing adaptive mutation (e.g., Hopkins et al., 2013; Chen, Lowenfeld and Cullis 2009; Tadderi et al., 1997). But is this the result of relaxing the error correcting capabilities of the cell as Keller (2000, page 34) implies? Where genetic stability and mutability are otherwise held in a delicate balance (e.g., Chen et al., 2010) because they are complementary epigenetic effects that modulate the same genes? And what is "stress," if not a non-preferred state from the point of view of proto-emotion? The mere fact that these serious questions can be raised in the face of the aforementioned references in primal facial evidence that supports the contention that mutability and genetic stability is the work of proto-emotional centering and synchronisation leading to switching. If the delicate balance is broken because of an innate one-sidedness that has developed, then the emotive centering may fail.

Note that mothering of baby rats creates a mood disposition in adult rats, all related to epigenetic methylation found in the brain that impacts on how adult rats relate to stress (Weaver et al., 2004). Rats can either be calm and tranquil, or easily agitated, when reacting to a stressful situation. Epigenetics is again found cultivating the hypothesized proto-emotion, but now to determine an emotional response in adult rats. The recurring balancing act implies that proto-emotion is necessarily two-sided, corresponding to time's two windows. This regulation reaches into human emotions. Mindfulness meditation, that will necessarily bring with it emotive centering, can improve health by impacting on epigenetic switching (Kaliman et al., 2014).

Not that the great centering is limited to periods of stress and new creations, rather once a route is explored the coming-together that led the way can give itself over to genetic and epigenetic quasi-determinism and become a learned route as part of the Waddington landscape. Gould (1977) describes how ontogeny recapitulates phylogeny, perhaps only as an approximation, but an approximation made possible because the proto-emotive centering that occurred in biological evolution also gave its self to the

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[14] A strict-determinism is a one-sided set of entailments that enforce the principle of excluded middle as Kauffman (2014) describes, whereas a quasi-determinism permits an emotive middle-term that has achieved a high level of fidelity in a learned route. Given that all physical laws are context dependent and are two-sided with undeclared middle-terms, this distinction is probably moot. Nevertheless, a learned route that involved something emergent (beyond known laws) is probably better characterized as a quasi determinism.

[15] Benjamin Franklin is quoted, "We must all hang together, or assuredly we shall all hang separately."

Waddington landscape to be expressed as a quasi-determinism. Mitosis describes chromosomes that double in number during interphase, and line up on the equatorial plane during metaphase, that is, they center. The cell divides as chromosomes are pulled by spindle fibers (aggregates of microtubules), this being the eruption on time's manifold coming with the emotive climax. Meiosis is more complicated, but also involves centering on the equatorial plane. Arguably, mitosis and meiosis have become part of the genetic and epigenetic quasi-determinism, taking with them emotive centering.

Lastly, there is an issue that relates to how epigenetic layers may stack one on top of the other. Perhaps the layers are all related by this syntax, an alternating pattern: frequency modulation leading to a localized determinism (more strict than quasi), on top is more frequency modulation and an additional implied layer of determinism, etc. This layering is open to experimental investigation and discovery, but somehow they must all be connected by warm-body quantum mechanics. Furthermore, the layering cannot be replaced by an overlaying strict-form determinism that ignores the emotive middle-terms that represent jumps beyond one-sided entailments, because those bridges cannot be "pre-stated" as Kauffman warns (2014); at best, the layers can only be united by a quasi-determinism. Therefore, finding such a layering experimentally that is alternating (from frequency to determinism) hints of the deep singularity connecting to the timeless.[16] A quantum system poised on the edge of order and chaos (and coincidentally between coherence and decoherence) can support warm-body coherence of quantum waves over an extended duration, by synchronizing an incoming wave-form to system frequencies that swing between regularity and chaos making a system resonance (Vattay, Kauffman and Nirranen 2012). Hameroff (2014) sees the vibrations found in microtubule supporting warm-body coherence, and permitting the reality of conscious experience. Vibrations are needed in a "goldilocks zone" to maintain coherence, and re-coherence, a goal that is in reach of biological evolution (Lloyd et al., 2011). To the extent that the eventual fall into decoherence represents an implied determinism, we find that frequency modulation does support a variety of determinism, even a sequence of restrained Zeno effects representing transitions (McFadden and Al-Khalili, 2016, pages 292-298). The entire system must necessarily be composed of multiple layers, however, assuming that warm-body coherence is more widespread in the body. This stacking of layers is agreeable with Kauffman's (2014) alternative quantum mechanics, where new "possibles" (i.e., new states of coherence) present themselves in the wake of "actuals" that form (when decoherence arrives).

7. Discussion

Section 6 can be seen as an alternative interpretation of quantum mechanics having to do with the collapse of the quantum wave function as the synchronisation of time's

[16] Critics may even concede such a layering, if only because frequency switches followed by an implied determinism is all that has ever been discovered. However, it is possibly difficult to experimentally differentiate between strict and quasi determinism.

widows, when time looks back to find itself as an emotional interplay. However, the main fucus should remain on finding evidence, supporting the hypothesis or otherwise refuting it, and looking to alternative views of quantum mechanism may be less productive given all the varieties already described by Herbert (1985). This is not to say that what is proposed is radically different or incompatible with Goswami, Reed and Goswami's (1993) monistic idealism, or even with Kauffman's (2014) understanding that admits to a possible preference-laden panpsychism. As with Kauffman's proposed theory that carries the very significant triad[17], the hypothesis described in this paper is open to some testable science.

Warm-body quantum phenomena have already been found in biology (McFadden and Al-Khalili 2014); i.e., beyond the enzymatic reactions that utilize electron and proton tunneling. Photosynthesis is found involving coherent waves (rather than particles) that are able to efficiently reach reaction centers in green bacteria (Engle et al., 2007). The migratory pattern in birds may relate to quantum entanglement (Ritz et al., 2004). The sense of smell is possibly a quantum assisted phenomenon (Brookes et al, 2007). Microtubules have quantum properties enough to strongly implicate them in the orchestrated objective reduction model of consciousness (Hameroff 2014; Hameroff and Penrose 1996). The fact that quantum biology has become an entrenched science indicates some support for the ideas in Section 6. So there is general support for Section 6 given that quantum biology is real, and given references already sited in Section 6. Specifics are missing that relate to the proposed quantum-level action, and those are a matter of future investigations. Nevertheless, if consciousness is now so strongly implicated with quantum mechanics in the brain, implying even a preference-driven panpsychism, one has to wonder how such a system could evolve without a parallel neo-vitalism of a kind hinted at in Section 6? Seems unlikely!

The now vindicated Terence McKenna believed that evolution was taking us to an endpoint. His "transcendental object at the end of time" was acting as a strange attractor and pulling us into the future and our end of days. He was possibly wrong about the attractor being stuck at the end of time, when proto-emotion is possibly timeless and no less a strange attractor. What's nice about strange attractors is that they leave evidence behind in the substrate of evolution given as reflections, on all levels being a fractal pattern. Therefore, we might look to the evidence coming as reflections of the timeless pull on time's two windows, to support the view of Section 6. Remarkable so, we do find such evidence. The philosophy of Taoism is remarkable on how it relates to our psychology, and how it relates to the more deductive Yang and the more inductive Yin,[18]

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[17] Actuals, Possibles and Mind represent a very important advance beyond scientific monism and Cartesian dualism.

[18] The connection of deduction to the masculine, and of induction to the feminine, is better described in Smith (2010). Smith also described how the two tendencies may oscillate as a subjective experience.

all agreeing more or less with Section 6 as a universal grammar. This reflection is found impacting depth psychology of a kind promoted by Peterson (1999). Not merely is the reflection found in psychology, but also in the way our asymmetrical brain is wired together in a left and right hemisphere that specialized differently to look forward and backward in time, respectively. The brain's asymmetrical hemispheres are well described in McGilchrist (2009).

Religious traditions based on love[19] relate well to the timeless pull of a proto-emotionality, that comes with a universal grammar turned golden rule, and comes with a relational view of the world that agrees more or less with Whitehead's process philosophy.

A closing question: what came first, genetics or epigenetics? The possibility is that they co-evolved together, in a grand centering near the criticality where time was able to find itself through a process of synchronization. If the middle-term is the pristine source of all that is emotive, then the centering of proto-emotion is part of a universal grammar and far from a cheap variety of post-modernism. This implies that evolution carried its own direction and was highly non-passive, far from indifferent and blind as implied by Dawkins (1996).

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