Exploration

Contextual Division and the Analysis of Linear Time

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Abstract

I employ a contextually divided analysis to reconsider the relevance of linear time in biological concerns and its irrelevance in a realm defined by quantum and cosmological properties. Linear time is explored as a necessary byproduct of biological world-modeling; a cognitive construct crafted and utilized by sentient organisms to manage successful narratives of nutrition, procreation and self-protection. Order and disorder are proposed as the fundamental conceptual components of a cognitively constructed linear experience of duration.

Key Words: contextual division, linear time, cognitive, sentient organism, nutrition, procreation, self-protection, order, disorder.

Introduction

The subject of *time* is truly troublesome to those that think on it. The more we attempt to know its secrets the less familiar it becomes. The trouble with *time* is very much akin to our trouble with *matter* which on close inspection also dissolves into thin air – objects reveal themselves to be as much about empty space as the supposedly empty space around them, a difference only distinguished by patterns of energy. We perceive and engage objects in a specific conceptual way (solid, extended, immutable, impermeable, consistent over time, etc.) that disallows for an understanding of the actual properties and dynamics that make an object possible. In similar fashion, we perceive and engage time as a one-way arrow from the past through the present and into the future. Much like our assumption of matter as solid and immutable, this regulable, linear conception of time is so fundamentally interwoven into our experience of the world that questioning it at all seems a misguided and highly irrational endeavor.

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Yet, with the rationality of physics as our guide, we are hard pressed to find any actual proof of time as a regulable one-way arrow and quite a lot to indicate that whatever it is, it is definitely neither fixed nor regulable and cannot be confined to a single unified direction. When called on to justify our assumptions about linear time physicists refer to the principle of entropy in thermodynamics. In short it is the principle that ordered thermonuclear systems dissipate into disordered thermonuclear systems and the direction of this dissipation is an irreversible one-way arrow. As the sole scientific example of proof for time's one-way arrow it is specious for many reasons. Physicists agree that a reverse in the dissipation direction, going from disorder to order, is not impossible, merely 'unlikely' (a far cry from the level of 'certainty' we expect in scientific proofs). And the 'likely' direction of dissipation does not apply to the biological realm wherein the creation of order from disorder is commonplace (the entropic concept is therefore clearly limited in its scope of applicability – lacking in the 'universality' that we also expect in our scientific proofs). The terms 'order' and 'disorder' at the center of the entropic claim are ill-defined and ill-understood (something I will touch on later in this essay). And, most embarrassingly, the assumption of linear time is already built into the principle of entropy from the start. (We cannot compare the ordered and disordered states of the self-same system without embedding them in a preconceived notion of linear time.)

Contrary to our intent to illustrate a fundamental dynamic, the entropic principle sadly reveals the qualitative weakness in our thinking about time. The cosmological sciences afford us ample proof that our conventional notion of time bends and warps, stops and reverses, in a highly malleable interwoven relationship with space, mass, gravity and energy. More damningly, the quantum realm discredits our assumption that measurements of any kind are passive, objective acts of observation – including the measurement of time. The act of measurement collapses the potential of a quantum state into qualitatively different properties – waves or particles. And the particles cannot be measured for both position and momentum. To measure either eliminates the possibility of assessing the other; and yet we need both to indicate the common notion of movement through space over time. Our commonplace intuitive assumption that the world is a collection of discrete physical objects subject to causal actions unfolding in linear time does not apply to reality as described by the cosmological and quantum realms, and it cannot be illustrated by thermodynamics or any other scientific example of fundamental principles.

"Well, so be it," we collectively say, "life goes on," and so it does. But unfortunately, we are not able to conveniently quarantine time's peculiar inconsistencies solely within the obscure realm of non-classical physics and thermodynamic principles. Our common interactions with the shared world (supposedly objective by virtue of being inter-

subjective) provide us with an equally inconsistent and unreliable standard for the experience of time. Everyone experiences and accepts as normal the strange speeding up or slowing down of perceived time that accompanies a changing degree of individual busyness or languor. But this translates into an unreliable communal standard of experience because the inter-subjective realm of cultural expectations is nothing more than a bell-curve average of individual distortions and preferences that arise in a specific cultural setting. A change of cultural and geographical circumstances can result in a noticeably disorienting experience of time's elasticity, as can happen when one travels from a busy urban center to a relaxed island in the West Indies (or visa-versa). A day in an unaccustomed cultural context of time can seem three times as long or disturbingly brief regardless of the regularity of clocks across the globe. In fact, an awareness of the regularity of clocks is what makes the variations of time in our private and communal experiences especially obvious to us. We do not experience time as standard and regulable and clocks remind us of this. But then, of course, if clock time were fixed in our individual or communal experience, we wouldn't need the clocks. A global synchronized system of clocks is ostensibly designed to coordinate travel and commerce, but it also inadvertently functions to call us back to a standard beyond our individual and communal distortions.

Furthermore, even within the shared range of distortions in our communal perception of time, different subcultures and age groups experience time in vastly different ways. School children experience the months of summer as an endless ocean of time while the elderly claim experiencing an entire decade as having passed by in a heartbeat. Clearly, the warps of human memory apply additional unavoidable distortions to our personal and communal perception of time. Memory is hugely unreliable for simple facts, figures and circumstances yet we rely on short and long term cognitive mechanisms of memory to provide us a reliable sense of time passing. Time itself can reasonably be asserted to be nothing more than the imperfect byproduct of an unreliable system of memory that provides a useful order and structure to what would otherwise be distinct and disjointed present moments, just random isolated impressions and events. Given the lack of hard-science support for the concept of linear time, an exploration of the mind's role in creating and coordinating the impression of time as linear and one-way is a reasonable endeavor.

A study of the mind and cognitive processes provide even more cause to repeal our unfounded assertions about time than do physics and thermodynamics. For example, we are somehow given the very real-seeming conscious impression of deliberately choosing to perform an action in advance of performing that action when all the while the order is inexplicably reversed. We are neuro-chemically/neuro-electrically activated to perform body movements in advance of our consciously deciding to make those

movements (according to the work of Benjamin Libet and others). The assumption of top-down conscious command *and* the trusted arrow of time are both brought into serious question here. Both may be manufactured impressions arising in consciousness for the sake of advantageous behaviors rather than accurately representing intrinsic properties of selfhood or absolute truths regarding the fundamental properties of the world.

But even the most thorough exposure of our time concept's embarrassing unreliability does nothing to undermine or dislodge the robust quality of our working assumption that it is linear and one-way. Despite the copious evidence available to discredit its veracity, our strongly guarded intuition is to accept time as linear and regulable and to assert it as fundamental. We defer to clock time and happily assume it to be a fixed quality of the universe, an unquestioned foundational property of reality. We hold our faith. An inquiring mind might not only question our assumptions about time, but also inquire into what it is that so strongly and so strangely adheres us to this very questionable assumption. Why is such a flimsy concept so resilient and so useful? Rather than proactively ignoring the evidence that speaks so loudly against it (as the culture agrees en masse to do), I suspect it is more interesting and fruitful to probe the question of time in new ways in order to see where such questions might lead.

Yet how does one go about questioning a supposedly fundamental phenomenal property that is so inextricably interwoven into our experience of reality – the very same reality we use as the empirical standard to judge and compare all phenomena? Funny you should ask! *Contextual Division* is a very handy analytical contrivance with many uses and this is just one of them. Hark! – a necessarily wordy explanation approaches just ahead. I will do my best to make plain the concept of contextual division and then I will illustrate its application in a reassessment of the concept of linear time.

Contextual Division

Contextual division is a reconceptualization of analytical parameters in order to discern new information, new relationships and new meanings. It is not a theory of the testable sort. It is simply a new angle of assessment, a new perspective on old problems. Unlike theories, it comes with no assertion of absolute truths about the nature of reality. It is a mere contrivance, an analytical tool to be disposed of as soon as the kind of analysis it produces is no longer relevant or warranted. It is a particularly useful and relevant tool as it can reveal much about our conscious condition.

Contextual division is a tool for knowing certain kinds of things and is modeled on more common and familiar ontological processes. Our baseline method-of-knowing anything is to divide and classify phenomenal properties into dichotomous pairs of opposites:

soft/hard, large/small, beneficial/harmful, order/disorder, and so on. By dividing an otherwise indistinguishable spectrum of object properties and dynamics into convenient pairs of opposites we provide ourselves a context in which to assess phenomenal aspects of our environment as they occur in direct relation to our own unique needs and uses. Acts of awareness are used in this way to create a useable, creature-specific world-model. It is only in comparison with its opposite that the quality being expressed in our world-model is fully defined for us and can then be applied and utilized in our orientational calculations. We tend not to think of it that way but there you are: without a concept of softness, there is no concept of hardness; without a concept of light there is no concept of dark, etc. And most importantly to all world-modeling equations, without a sentient entity signifying this difference for a particular reason, there is no concept of anything.

Without a signifying entity (a sentient being to perform the conceptualizing, modeling and distinguishing acts) there are no world-models, because world-modeling is a *process* requiring a world-modeler. Without a signifying entity there are no *concepts*, because the signifier provides the *conceptual criteria*; there are no distinguishing features of an environment without a signifying agent's criteria for distinguishing relevance. The project of formulating pairs of opposites and thinking of them as distinctly separate phenomenal characteristics (independent of each other and separate from ourselves as signifying entities) is hugely beneficial, but there are many reasons why we cannot depend on this process to describe the world in an accurate way. The most significant and damning of these reasons is that the process of world-modeling precludes acknowledging to what extent the self/world dichotomy at the heart of it is also a conceptual contrivance. The process of distinguishing opposites from the perspective of a biological 'self' set in a 'non-self' world is an inescapably subjective exercise performed by organic entities, with unique and limited perceptual capabilities, for very specific reasons. It is inherently NOT objective because it is a purposeful conceptualization, a cognitive construct, a manipulation of information, a mistaking of concept for fact, a projection of preference and need, rather than a passive objective observation of a world. Though it should not be construed as constituting an objective reading of either the world around us or our actual condition, it is a very useful artifice for by this process creatures like us flesh out a configuration space in which to maneuver and manipulate, self-sustain and procreate, adapt and evolve, etc. Later in this essay I explore the importance of signifiers (and their criteria for relevance) in relationship to the concept of linear time. But for the sake of explaining contextual division it is sufficient to understand that signifiers, with specific purposes for signifying anything, are inescapably bound up in whatever conceptualizations are produced in the process.

Contextual division can help us to circumnavigate the conundrum of being inescapably bound up in self-made world-modeling conceptualizations. Contextual division is an analytical tool designed with an awareness of the role of signifiers and an awareness of the basic dichotomous method of fleshing out our world. And contextual division is informed by the assumption that sentience is at the service of creating a functional world-model in precisely this way. By taking our very ingrained habit of distinguishing a world via dichotomies and projecting it onto an even larger scale represented by two distinct realms of logical relevance (rather than property types), we extend the realm of our analytical grasp and incorporate into our world-model all the properties and phenomenal features that our biological necessities would otherwise compel us to disregard. Our commonly-shared orientational world-modeling equations compel us to ignore certain aspects of reality like quantum and cosmological features (non-linearity, non-causality, dark matter and dark chemistry, etc.) and we ignore the backstage world-modeling aspects of cognition itself (the meaning-generative dynamics of concepts and beings). We typically ignore these features or treat them as puzzles or anomalies because they are bio-functionally irrelevant. Bio-function supplies the signifying purpose of our world-modeling equations and whatever falls outside that purpose is generally considered less real. Contextual division is a way of rectifying this so that our world-modeling can expand to include all phenomenal qualities.

In short, *contextual division* is an intentional separation of conceptual and phenomenal properties into two distinct dichotomous categories distinguished not by physical/phenomenal characteristics but by the signifying criteria that informs their use – the logical relevance or irrelevance of property concepts in relation to bio-functional needs. This particular dichotomizing action results in a *biospecific* category unique to biological world-model manifestations and an *extracontextual* category for everything else. The important point is that the categories are not defined by the properties themselves but by the logic or illogic of their use in their direct relation to biofunctional purposes. Please note this dichotomy is an analytical device, not an assertion about the true nature of reality. Its use is pragmatic and its value is only to the extent that it can produce more fruitful analysis. I use it in this essay to formulate an analysis of time from a significantly different conceptual perspective, one that contradicts and exceeds the limitations of empiricism. I will briefly explain the separate contexts and the logical criteria that define their difference. Then I will apply the analytical perspective it generates in a reconsideration of linear time.

The Biocontext

The *biospecific* context envelops all the conceptual/phenomenal properties and characteristics relevant to our needs and uses as biological entities, such as: causal-material property concepts (time, space and matter concepts expressed in classical

physics and biochemistry); self/world boundary concepts and the complex concepts involved in owning specific volitional capabilities; the concept of free will to utilize our unique volitional capabilities to solve specific kinds of problems; and the especially vital concept of a positive valuation of living that inspires all successful organisms (including us) toward *advantageous* volitional engagement (rather than random ineffectual or inadvertently destructive activities). The *biospecific* contextual category envelops the entirety of the biologically relevant world-model, includes all its conceptual components, and is informed by an awareness of the necessity of world-modeling processes to create and engage this world-model (ergo, it is informed by an awareness of its artificial and contingent nature in relation to the world in-and-of itself).

The Extracontextual

The extracontextual context is a catchall for everything else, for everything external and irrelevant to fundamental biological world-modeling concerns. It is best represented by that which so obviously contrasts with biocontextual features like: non-linear, non-causal quantum phenomenal characteristics; non-linear, non-causal, non-material cosmological properties and dynamics; and the non-linear, non-causal features of our own perception and cognition – like the vibrant, dynamical procreative interrelation of meanings, concepts and beings that social anthropology and cognitive neuroscience bring now to our attention. These features are every bit as real and legitimate and aught now to be incorporated into our understanding of reality. Contextual division is one way of doing this. A unified theory of everything would be another method of incorporation but that is proving mysteriously elusive. Contextual division clarifies the unification mystery by illustrating the illogic of the unification quest (or even less politely, the extent to which unification is simply an overweening biocentric desire for a simple explanation of quantum properties in biorelevant terms). Instead of the property types (classical and quantum) that are used to define the unification problem, contextual division utilizes the *logic, meaning and purposefulness* behind the signification of property types – a biological agent's signifying criteria for relevance.

Contexts of Logic

The logic, meaning and purpose of living systems provide a category of phenomenal dynamics, properties and assumptions that are distinct, specific and pragmatic. This biocentric logic is most apparent when we regard the interrelation and interdependence of world-modeling concepts that so clearly rely on one another in order to manifest as real and useful. Biocentric logic is therefore best illustrated by observing the disappearance of this logic as soon as we remove any one of the interdependent concepts that support it. For example, without a concept of physicality (extension in three dimensions) there is no concept of boundaries, without a concept of boundaries there is no concept of causation, without a concept of causation there is no concept of volition,

without a concept of volition there is no concept of freewill, and so on. None of the supposedly fundamental features (including the concept of linear time) make sense or have purpose outside the uses that biocentric logic animates within the world-modeled configuration space of their *combined* use. The logic of these concepts is bound up in the purposefulness of their combined use in biological necessities. We, as biological creatures ourselves, are so caught up in the logic, purposefulness and conceptual usefulness of these supposedly fundamental features that we are typically unable to see to what extent they are contrived and limited assumptions. We are so caught up in them that in the face of very damning evidence given to us in our own best rational terms of analysis we persist in a staunch refusal to see their gross inaccuracy. Biocentric logic is so compelling and so necessary that we don't typically enjoy the luxury of seeing it at a distance, of understanding it as a closed system of contrived assumptions, of knowing it as merely one example of many possible logical matrices. Our deep biological investment in this logic compels us to mistake its conceptual components for the truth about the world – the true nature of reality. For the sake of a more interesting analysis the biocontext is considered here a unique context of logic that only applies to living systems and therefore cannot be used to analyze all the properties and dynamics that fall beyond the borders of bio-relevance.

For the purpose of contextual division, everything beyond the parameters of the realm defined by organic logical purposes represents the dichotomous opposite – the realm of the *extracontextual* that awaits a more clear-headed application of non-biocentric logic to incorporate and activate the usefulness or relevance of its features. Dividing otherwise indistinguishable phenomena into dichotomous pairs is standard ontology. In the case of contextual division however, the common division of opposites is represented by these separate categories of logic that are specific to the logic and purposefulness of phenomenal functional properties. Biological life supplies its own unique purposefulness and so the characteristic phenomenal components of the biological world-model are logically bound up in that purposefulness. We model a world based on biorelevant exigencies. Quantum and cosmological characteristics are not bound by life-logic and cannot be properly understood by applying the same logic and characteristics that inform the success of life-systems. In short, for the sake of a new form of analysis, contextual division divides the world into a category of biophysical functional logic and a category for everything else that we now know about reality but which contradict (or are anomalous to) our bio-physical causal-mechanical assumptions.

Just like the more common dichotomizing of phenomenal pairs, contextual division does wonderful things for us. It fleshes out a more objective and useful world-model in which to maneuver and manipulate, and it provides a broader, more insightful

perspective onto our situation as sentient creatures in a world of wildly diverse phenomenal characteristics. What's more, by artificially tethering the logic of the causal-material world of properties (which includes the concept of linear time) to the logic of their direct functional uses in biological organisms, we can begin to see with greater clarity the self-creative world-modeling processes that are by necessity the primary task of conscious processes in sentient beings. By aligning acts of awareness to biological purposes and aligning biological purposes to the construction of bio-relevant world-models we are provided a more useful conceptual approach to the study of consciousness; we can begin to discern the purposeful evolution of awareness from the world-modeling processes of simple organisms into the spectacular cognitive bells and whistles in the vibrant cognitive-perceptual self-model mode of human conscious experience.

Contextual division affords us a unique intellectual distance from the assumptions we are typically caught up in as biological entities. From this new perspective we can begin to see certain phenomenal properties (like linear time) in their direct relation to bio-physical needs rather than as inherent properties of the world itself. By proactively choosing to separate reality into these two distinct categories we can more accurately assess the realm of biologically driven concerns as a separate and self-contained construct – a distinct conceptual environment, an entity unto itself, *the biocontextual configuration space*. By simply choosing to categorize phenomenal characteristics in relation to the logic of their use and relevance (biological and non-biological), we can begin to see how the specific and limited grouping of phenomenological properties that are tied to the purposes of biological functional success would (and do) distort our objectivity when assessing the properties and dynamics of a reality that includes the quantum, the cosmological, and the cognitively dynamical realms. Biological habits of thought induce us to apply biophysical/biocontextual logic to a realm of properties that by their own intrinsic nature elude such logic. The artificial categorizations of contextual division allow us to intellectually disassociate ourselves from all the assumptions and instincts that go hand in hand with being a biological organism, in order to see the source and accuracy of those assumptions more objectively and to circumnavigate them more efficiently.

Just as we (in our role as biological organisms) can see little point for non-causal, immeasurable quantum properties within the ordinary world of daily concerns, neither can a purpose (or any evidence) be discerned for our biologically relevant causal-dynamic properties in a world as defined by quantum and cosmological characteristics. Both the biorelevant and the extracontextual are legitimate realms but neither context is particularly relevant to the other. The biospecific realm is informed by a context of logic reflecting the purposes of organic entities and the extracontextual realm is wide open, of

vastly different characteristics, and awaits a context-appropriate matrix of logic with which to animate its use. To force a unified theory of everything onto these disparate and unrelated realms is to do nothing more than force the concepts relevant to the biocontext onto a realm in which the logic does not apply. And the reverse is also true; to claim that elusive quantum properties are the mysterious basis of consciousness (for one example) is an equal distortion of the biocontext, a context in which the logic of living systems *(not* the properties of physics, classical or otherwise) most accurately defines the configuration space. Contextual division allows us to explore the drastic qualitative differences of these two distinct logical/phenomenal realms and allows us to use this difference to understand ourselves and the world in an unusual new way. It is an openly and admittedly artificial creation of dichotomies in order to reassess the configuration space we call 'reality', and in this particular example, to more accurately reassess the *time* aspect of this shared conception of 'reality'.

New Questions

Armed with a contextually divided realm of analysis, we can begin to ask questions regarding the bio-relevance of any concept. What does linear time mean to us as organic entities, what might its advantages and uses be to biological systems, how would biological entities formulate such a concept; and in what way might our biologically relevant explanatory conceptualizations be distorting our understanding of the properties and dynamics that we now know legitimately exist as *extracontextual* realities? We are in the habit of assuming our limited *biocontextual* phenomenal parameters are the proper parameters by which to judge all things. We are mistaken in this and it will take some getting used to the prospect of thinking differently about it. Our intuition tends to lead us back toward a biophysical-causal assumption of the world which then must be augmented by mysterious metaphysical concepts in order to psychologically subdue the vast uncertainties and wild vagaries that are the natural byproducts of so inaccurate and incomplete a world-model. *Contextual division* provides clarity here by allowing us to set up camp (so to speak) in a purpose-neutral, meaning-neutral, non-biocentric, non-anthropocentric *extracontextual* territory of analysis and to observe all biorelevant properties and dynamics with an eye toward their unique phenomenology and uses rather than solely in terms of our previously unquestioned biocentric causal-physical concerns. From this perspective it becomes abundantly clear that bio-contextual expectations, and the urgent biological needs that inform them, induce us to overinvest in biocontextual analytical criteria, mistaking them as absolute truths about the nature of reality. By just knowing this, we can begin to see our world, our world-modeling, and ourselves for that matter, in a new and more objective way.

In the light of the analysis that contextual division affords, it is apparent that we have mistakenly been granting explanatory sovereignty to properties and dynamics that are only relevant to our own functional uses. Our standard approach to explaining phenomena is biocentric in that it is typically with an eye toward advantage or control in some aspect of biological, personal, social, medical, environmental, economic, or political function. Typically, the object or property of concern must ultimately *do* something for *us* if it is to be counted as worthy of concern and so traditionally its relevance must be measurable via the matrix of properties that define a realm in which 'doing things for us' is actually possible. While there is nothing inherently misguided about such pragmatism, the expectation of human (ergo biological) utility puts false limitations on the larger quest for knowledge of the universe in-and-of itself. We cannot assume we possess full knowledge by only assessing the few phenomenal characteristics that are specifically useful to creatures like us. Much (perhaps most) of the universe may never prove useful in the causal-physical or bio-functional sense but knowledge of these non-bio-relevant features can infinitely extend our cognitive grasp of our condition as sentient beings in a universe of wildly divergent properties that extend far beyond the realm of biocontextual relevance.

We happen to already possess extensive knowledge of extracontextual phenomenal properties (quantum, cosmological and cognitive qualities), but our biocentric habits of thought prevent us allowing these new properties to fully inform our conception and experience of reality. We have thus far confined our communal notion of reality to the small subset of properties directly engaged in our basic bio-functional concerns. And we have not bothered to discern in what way our functional concerns distort all objectivity when we apply these same properties (physicality, causality, linear time) as standard measurement assumptions in our approach to a broader version of reality. Contextual division allows us to observe, analyze and adjust for these biocentric distortions in our assumptions about the world.

By applying the logic of contextual division it becomes apparent to what extent an inquiry into alternative conceptualizations of *time* falls outside the parameters of biocentric relevance and necessity. Such an inquiry may never prove causally-functionally *useful,* yet such an inquiry can profoundly alter our conception of what it is we are up to in terms of accuracy or inaccuracy regarding our overall world-model. If linear time is a conceptual contrivance then what is the true nature of the world? What can and will be altered by such an inquiry is the very context in which we judge anything 'useful' in the first place. A contextually divided inquiry exposes us to a vastly expanded realm for our knowledge of the world, and, by this exposure, simultaneously expands our self-knowledge. Our identity is defined by a boundary-response to a specific sort of world. Engaging a vastly altered conception of the world evokes a vastly altered sense of

identity. An exploration of the non-linear, non-regulable concept of time will not *do* anything for us in the ordinary causal-mechanical biocontextual sense, but it promises to change the very nature of *doing* and *being* by changing how we understand *doing* and *being*. An expanded understanding of the context in which we function will inevitably transform how we understand ourselves as functioning entities.

Time

We feel intuitively and instinctually certain that time is regulable and linear and configured in a one-way arrow, pointing from the past through the present into the future. It is worth employing contextual division to look at this linear-time concept with a fresh extracontextual, non-biocentric eye, so we can determine in what way it might solely be derived from (and solely relevant to) biocentric imperatives. Quantum physics, cosmological properties, and various aspects of cognitive dynamics, by running awry of the causal/mechanical empirical logic that is so central to bio-physical function, allow us to question the concept of linear time as an absolute truth. By lending full legitimacy to this very different set of phenomenal properties and dynamics we are allowed to discern the relevance of linear time in two distinct realms – the biocontextual and the extracontextual. By conceptualizing two distinct realms we are better able to determine whether the explanatory conceptualizations we inherit by virtue of being biological systems (like linear time) are fit conceptualizations for objective analysis of a universe chiefly expressed and governed by non-biologically relevant properties.

Setting up a dichotomy of logical realms quickly reveals to what extent we have evolved within a limited context of bio-functional imperatives and reveals to what extent we are intuitively bounded within the limited parameters of properties necessary for achieving bio-functional goals. By simply seeing and accepting the limitations of biocontextual parameters, very different assertions about our condition emerge. Primarily and most obviously, we cannot assume we are as rationally or as objectively oriented as we had thought. We have evolved morphologically, perceptually and cognitively to recognize and resolve only those exigencies that fall within a very narrow, self-tailored slice of phenomenal reality. Living organisms are only compelled to engage a small, distorted subset of all available phenomenal properties. We have only been developmentally enabled, via pragmatic evolutionary upgrades, to engage the small portion of properties and dynamics involved in biophysical function (object boundaries, causal properties, linear time, self-models, etc.). As biological organisms we are highly attuned not only to bio-relevant causal-physical properties but to the logic of their interplay in bio-functional narratives of nutrition, procreation and self-protection. The concept of one-way linear time is especially useful in a bio-functional context. Bio-functional narratives are only meaningful, purposeful and efficacious when the correct causal-physical actions can be played out in a specific linear order – in an extended, one-directional, linear

concept of time. To be a living thing is to be inescapably situated within this time-line concept. To be a living thing is to be an active co-participant in constantly creating and engaging the functional configuration space in which the concept of linear time plays an integral role.

Obviously it is very useful to be as adept and articulate in our interrelationship with all the concepts and properties that enable successful organic life narratives, and linear time is one of these properties. Our mistake is to assume that because bio-functional properties are so vitally necessary to us as organisms that they are also the appropriate properties by which we should be judging, measuring and determining the properties and characteristics of the universe itself. We tell ourselves stories about the universe as a series of astronomically scaled causal-physical events played out in linear time, from the big bang through the current expansion of the universe toward an eventual re-condensing of the universe and a final inevitable implosion. We are used to understanding our world as the product of a causal-physical linear-timed narrative of events, a story with a beginning a middle and an end, when linear time may be the most irrelevant feature of description for understanding a universe that is almost entirely devoid of such biological concerns. We are living things. We indeed have a beginning, middle, and an unfortunate end. We are in the natural but misguided habit of telling our own stories and projecting these same conceptual narrative patterns onto the universe. We cannot know the universe in that way. It is not an objective or neutral approach to the universe's own unique non-linear, non-causal, non-material, non-biocontextual characteristics.

By utilizing a contextually divided analytical perspective the concept of one-way linear time can be conceived of as the result of a biological imperative to construct a proper narrative order of actions for achieving nutrition, procreation and self-protection; scenarios entirely irrelevant to inorganic worlds (that is, the rest of the universe, as far as we know it). When viewed in this way, linear time can, for the sake of analysis, be regarded and studied as a necessary concept built into the biological world-model for the purpose of organic self-actualization and success. Linear time can be viewed as an organically self-generated and self-sustaining concept. To understand time in a biological world-model context we can look at the concepts and imperatives that would logically inform the uses and purposes of linear time in biological systems. We can ask and begin to answer *how* and *why* an organism might come to conceive and perceive time in this linear one-way format.

Order and Disorder

One feasible method of conceiving linear time in a context of sentient biological systems is by applying our baseline method-of-knowing mentioned earlier: dichotomy building.

With a useful creation and comparison of dichotomous properties, organisms flesh out the configuration space of fundamental organic concerns. In the case of linear time we can look to the dichotomous property pair of *order* in relation to *disorder*. *Order* and *disorder* represent a phenomenal pair of opposites that have a direct and obvious relationship to survival in biological systems. The recognition of order and disorder in biological systems could arise via recognition of important repetitious events and rhythms (sun rises, tides, seasons, respiration, etc.) in a dichotomized contrast with an equally useful recognition of random events (predator interactions, environmental upheavals, disease, weather changes, etc). An awareness of the random quality of certain events is defined by their stark contrast with an awareness of repetitious, predictable events. Each is useful in its own right, but these concepts can then be utilized in recombination to construct a map of duration. The awareness of unfamiliar random events is overlaid onto the field condition of familiar repetitious events to create a constructed sense of duration. Duration would be recognizable and discernable precisely because of the interruptions to rhythm (order) that random events (disorder) provide. This stark and useful comparison of a dichotomized property pair results in a conceptual matrix in which a sense of time 'passing' can be proactively constructed as linear and one way. A cognitively constructed recognition of time's passing provides an organism a priceless advantage. Suddenly an organism (or system of organisms) can self-organize volitional activity into repeatable successful actions and into a series of actions that add up to more elaborate nutritional, procreative and self-protective behaviors. Suddenly organisms *have* behavior. Without a constructed sense of time 'passing', without proactively perceiving an order of events as linear and one-way, there is no structure for the possibility of behavioral experimentation or development of the sort that allows for complex adaptations in the face of adversity (the very essence of evolution and biodiversity). With the application of contextual division we can begin to rationalize the possibility that linear time may be a creature-subjective, cognitive construction for specific purposes. From this we can begin to formulate very different assumptions about the world, and most importantly to a science of consciousness, we can begin to see the vital and central importance of world-modeling processes to all living things.

Order and disorder concepts at the root of our conceptualization of time have not been well understood because they have not been defined as cognitive constructs, acts of signifying which, because they are signified for specific purposes, cannot stand alone as independent objective description. Nothing other than our own preference indicates that repeatable events are any more 'ordered' than non-repeatable ones. A more natural 'order', particularly in the realm of life-systems, is for no individual biological event to repeat itself in precisely the same way, ever. The regular affairs of biological life systems are in a constant state of flux that a forward arrow of time comes closest to conveying.

Organisms can re-approach the same dilemma in the same way but the context of the problem and the context of the solution are in constant flux; here are no do-overs of already manifested instances in life-systems. In the biological realm all is in essence unrepeatable so, ironically, the biologically 'real' order of things is *change* not *stability* or *repeatability*; but we show a distinct (and distorted) preference for order of the stable, repeatable, predictable, *unchanging* kind.

The concept of 'order' in reference to biological systems is just as readily used to describe this constant unrepeatable flux of events (order as in 'a direction of non-repeatable events' rather than order as 'repetitious predictable events in the environment'). The same word in fact represents three very different aspects of bio-relevant phenomenal description. 'Order' can signify the inevitable unrepeatable forward-flux, linear orderliness of biological events; it can signify the dependable orderliness of something familiar, repetitious and predictable in nature; and it can indicate the dynamic of control or command ('order' as in 'I will it to be so'). All three versions are employed simultaneously. The linear concept of time is the means by which an organism willfully controls the constant forward-flux version of order by proactively associating it with the psychologically comforting qualities borrowed from the familiarity of things predictable. The 'onward' sense of order is willfully overlaid with the pipe dream hope of the 'stable, repeatable' idealized version of order. If we accept that we create a direction of time to reflect the conceptual necessities of biological survival then what suddenly becomes equally evident is how vital and meaningful a concept 'order' of any kind is to life-systems. It is built of deep-seated, creature-specific meaningfulness.

The obvious preference for order shows up as a clear value judgment (order is good; disorder is bad). From the biological perspective, the positive dynamics of *order* need to be recognized and emulated while the negative dynamics of *disorder* need to be avoided or responded to in creative and calorically expensive ways – disorder shows up as something requiring attention, usually an emergency, often deadly. We find examples of order in our environment and use them as the stable orientational foundation from which to assess and overcome the inescapable qualities of disorder that beset all living things. The not-so-obvious upside of disorder is that it is therefore the vital dynamic that challenges and extends our creative, cognitive and morphogenetic abilities. The disorder dynamic can be seen to inspire exigency-specific, species-creative, evolutionary adaptations that ultimately inform the entirety of the biosphere's great diversity. Disorder inspires creative-adaptive solutions and those solutions are often genetically encoded as a base model of operations for future generations – providing an upgraded morphological manifestation of order.

We are creatures caught up in biorelevant logic and meaningfulness. The meaningfulness of order and disorder play a useful role in the construction of a time concept, a vital aspect of the bio-functional configuration space. Our habit is to think of time as something distinct from our acts of signifying. We speak of the 'nature of time' and in so doing we inadvertently assume that time can actually have recognizable inherent qualities unrelated to our agenda for signifying it in the first place. We project the concept outwardly and disassociate ourselves from its construction and meaning. Whether or not our conceptualization of time represents anything actual about the world itself is irrelevant. We *must* signify one-way linear time because one way linear time is critical to our biological format. It is a necessary mode of organic logic, a context-appropriate parameter of biological narratives. Contextual division awakens our attention to the otherwise hidden agenda informing the biocontextual world-model and thereby clarifies the purposefulness of modeling a world in one way rather than in another. By acknowledging deep-seated organic purposes and meanings in all our signifying acts we can then see the extent to which we project a need for *particular* qualities onto the configuration space that are indeed significant to creatures like us. We over-invest in these features with a conviction that allows us to mistake them as inherent truths about reality. Without this new analysis we will continue mistaking our signifying acts as passive, objective assessments of a 'real' world, naively believing we are registering the world's 'inherent' qualities.

This functional naïveté causes us to overlook the procreative projective aspect of all signifying acts and concepts and in so doing we are also caused to overlook the entire qualitative spectrum of conscious processes in nature. When we fully face the subjective quality of our signifying processes it becomes increasingly obvious that consciousness emerges for no other reason than to coordinate and orient life systems within a life-appropriate configuration space. Consciousness shows up as nothing more than signifying acts and these signifying acts are for a purpose, and biological survival has provided that purpose all along. Reality and the true nature of things are completely irrelevant in this biocentric signification process. Yet, the more our configuration space can *seem* like the full extent of reality, the more we can invest in it as an absolute truth, the more we invest the more efficacious it becomes as a world-model, and then the more adept we become at manipulating the few features that fall within the phenomenal parameters of this supremely useful (and beautiful) fiction.

We prefer to think that as humans we are separate from the riff-raff of nature and all its primitive mechanical world-modeling engagements. Surely we must, for all our sophistication, be significantly different in our understanding of reality. And yet, though it may seem that this conceptualization of time in nature (the overlay of random *disordered* events onto a field of regulable *ordered* events) is a primitive, exotic,

unfamiliar conception; it is precisely the way we organize our own calendars. We form a grid representing regular solar and lunar events and overlay it with the random events that we mark onto these calendars as reminders. Our sense of time passing, and our functional engagement with this sense, is no different than it has ever been in our biological and cognitive evolution. We have merely supplied self-reference, precision, signs and symbols, and the invention of mechanisms of regularity. We simply offloaded the biologically common function of linear time concepts onto shareable media like calendars and clocks. We can pat ourselves on the back for this if we like but we are not in fact *significantly* different from (nor more accurate than) other living things in our general conception of a world-model.

Our use of entropy in thermodynamics as proof of linear time is of the same common cognitive construction. We attempt to indicate the passing of time using the self-same concepts of order and disorder, but in entropic theories we replace the orderliness of planetary and lunar movement with the orderliness of thermonuclear structures, and we replace the disorder of random biorelevant events with the disordered dissipation of thermonuclear structures. It needs to be pointed out that our base-description concept-ualizations of order and disorder are purely biocentric, entirely bio-subjective affairs that cannot be applied willy-nilly in this way. Order and disorder define one another by a negation of opposites and cannot be conceived or understood independently, that is, without each other and without an organism acting as a dichotomizing signifier for a specific purpose. The concept of order does not show up without a concept of disorder to oppose it to (and vice versa) and the qualities they represent would lack the animating relevance without the purposefulness of a signifier's imperative for distinguishing them. From the perspective of the universe an ideal state of order might be the fully dissipated disordered state of thermonuclear systems – an indistinguishable but uniform soup of dissipated energies as an ideal of order. Since our concepts of order and disorder are not independent of biological pragmatism, they are not objective assessments of the world. They are artificial and contingent conceptual constructions manifesting biological creature-specific preferences. This does not disqualify the use of the concepts. It clearly behooves an organism to formulate such a dichotomy, to recognize the difference between regulable and random events and to emphasize the stability of regulable events in a manner that gives advantage in our managerial disposition toward the numerous irregulable aspects of biological existence. Order and disorder concepts are pragmatic and useful, but contingent on an organism's need for a specific kind of configuration space, a contingency that ultimately renders the concepts inappropriately subjective in their role as standards of measurement and assessment.

Our biocentric, cognitively constructed, subjective concept of linear time is employed as a standard of assessment in a multitude of ways: in our basic bio-physical functional

narratives of nutrition, procreation and self-protection; in our conception of personal and inter-personal experiences; in our communal histories of culture and bio-physical evolution; and in our cosmology, our explanations of the universe itself and in the explanations of our situation within it. In the light of the dichotomy that contextual division affords us, our conceptualization of the universe as embedded in one-way linear time is a fundamentally flawed conceptualization – a gross category error. Entertaining a notion of linear time as a purely biospecific conceptualization allows us to analyze this linear conceptualization in relation to specific bio-functional necessities and simultaneously allows us to better understand the logic of its *irrelevance* in non-biologically-oriented phenomena occurring in the quantum and cosmological realms.

There is nothing at all to indicate that linear time should be applied in our descriptions of the universe or in objective explanations of our own condition as sentient beings set in a universe of wildly diverse phenomenal characteristics. We are mistakenly assuming a particular *type* of world throughout. We need to determine whether any or all of our basic explanatory concepts (time, causation, three-dimensionality, self-models, object boundaries, etc) hold up as universal description or whether they should be unequivocally circumscribed (because of their inherent explanatory limitations) to a subset realm of *biospecific* conceptual necessity. We currently tell a certain kind of life story, a one-way, time-line narrative about the cosmos from the big bang through its current expansion to a final implosion. We mistakenly project a human story with a birth, a midlife, and a death when these time-lined life metaphors and in-built narrative assumptions misconstrue the actual properties and characteristics of a mostly inorganic, non-living cosmos. Similarly, we should no longer assume we can comprehend the quantum realm using the logic of linear time or the causal properties that the assumption of linear time contributes to in our thinking. We can understand quantum properties in their own unique terms rather than in terms we apply by force of biological habit or out of desire for the simplicity of a unified theory. In short, we should no longer assume that a linear concept of time can be used as a basis for understanding the cosmos, the quantum realm, or ourselves. We could be far more objective in our approach to all aspects of reality by understanding the degree to which certain biologically appropriate world-modeling concepts (like linear time, causation, object boundaries, and order) are cognitive constructs for the purpose of successful biorelevant survival narratives rather than inherent properties of the world itself.

It is admittedly discomforting to pick apart these seemingly innocent, fundamental assumptions about reality, because, despite their failure as absolute truths, we are obliged to continue utilizing them. We strongly prefer the notion of absolute truths and it is deeply discomforting to see how the critique of a single element like time brings every other element of our beloved reality concept crashing down into the psycho-

logically unsettling realm of artificially constructed relative assumptions. Our supposedly foundational basics (like linear time, causal ordering, three dimensions, self/world boundaries, freely willed volition, a positive valuation of life, etc.) only make sense fully combined with one another, each concept inspires and requires the other concepts and their combination is what renders the bio-functional configuration space so logical and so useful. Thus, this *one-assumption-at-a-time* nit-picking brings the entire world-model down in one disconcertingly swift blow. Ultimately, despite our discomfort, we will need to question all our conceptualizations and assumptions in this way – be it linear time, free-will, self-models, three dimensions, causal/mechanical physics, and so on – to determine whether they represent anything accurate about the world in some truly objective sense or whether these concepts are merely biologically contrived subjective descriptions that can only accurately represent and refer to the limited aspects of organic pragmatism in which they are primarily used.

Implications

The analysis of time that contextual division produces comes with significant implications for the empirical project, for consciousness studies, and for the reformulation of communal values. There is a strong indication that an inherent biological *meaningfulness* resides in our *order* and *disorder* concepts embedded in our concept of time. The juxtaposition of the positive and negative *meanings* attached to order and disorder informs a conceptualization of time as configured in a one-way arrow. We align with the 'goodness' of order to attend to the 'badness' of disorder. In so doing, we create a biologically useful conceptualization of duration formulated expressly for the purpose of navigating through biological exigencies. If our concept of time is in fact dependent on biologically subjective *meanings* and biologically relevant *narrative necessities* then such a conceptualization is not capable of informing a truly objective view of the phenomenal properties of the universe itself. If the one-way arrow of narrative time is only relevant to organic processes, and if we truly want to understand the universe and our condition in it, we ought not to rely on interpretations of the universe (or anything else) that depend on such a bio-specific, bio-centric, subjectively meaning-laden concept.

Empiricism is founded on the notion that when we funnel our individual sense perceptions through the intersubjective filter of repeatable experiments we will arrive at an objective truth about the world. However, if the concepts that inform the construction and interpretation of perception are prepackaged with biocentric meanings shared by all living things then our intersubjective agreements about reality are as subjectively invalid as the independent individual subjective experience we are so used to rationally denouncing with empirical glee. Both individual *and* communal levels of analysis would miss to what extent inherent biocentric meanings distort our level of

objectivity. It hardly matters whether the empirical project intentionally or inadvertently disregards the inherent values and meanings that the pre-given criteria of signifying creatures infuse into all acts of signifying. Either way, this meaningfulness-oversight renders the causal-mechanical, meaning-stripped criteria of the empirical project invalid by its own standards of objectivity; it is particularly invalid in its attempts to engage the logic of living systems and the conscious condition that animates this realm. We ought now to be reviewing all our supposedly objective empirical concepts to determine whether or not deeply embedded biocentric value judgments are invisibly distorting the explanatory efficacy of our supposedly impeccable analysis. It is quite safe and logical to assume that no concept or dichotomous pair of conceptual opposites can or would arise in the conscious awareness of biological organisms unless there is a point or purpose to make such distinctions. Concepts arise precisely *because* they *mean* something to a signifying entity or group of entities. To pretend for the sake of empirical study that the concept(s) of *order* and *disorder* are meaning-stripped, value-neutral aspects of physics and nature is to delude ourselves. To apply the order and disorder concepts (which are employed in every aspect of science but especially in astrophysics, quantum physics, thermodynamics, and chemistry) without recognizing their inherently loaded biological value lends a false sense of objectivity to those scientific endeavors. Our mistake is in pretending any property concepts (like order and disorder) are inherently value-neutral and that we can use them to determine something objective about the universe or about ourselves.

Empirical science has proven to be very effective for analysis and control of proactively meaning-stripped causal/mechanical properties, but the danger is in confusing this limited range of causal-mechanical effectiveness with an accurate description of our actual condition. And even if we are just talking about the world-model as it is currently and commonly perceived (as three-dimensioned, linear timed, with self-world boundaries, causal properties, volitional capabilities, free-will, etc.) the clues to a truly objective analysis of this condition would best be found in a clearer analysis of the biospecific meanings, preferences and imperatives that lead us to such a distinct, and specific world-model – a model that remains resilient even when strong contradictory evidence in physics, neuroscience, theoretical mathematics and philosophy have long been inducing us to think and believe otherwise about our actual condition and the ultimate nature of reality. In short, the empirical world-model does wonderful things for us (it allows us to exert control over causal-physical aspects of the world), but it fails to inform us about our 'actual' or even our 'perceived' condition in a meaningful way. It cannot elucidate our context. It does not and cannot reflect the inherent meaningfulness that life-systems co-create and self-organize around.

The study of consciousness exposes classical physics, causal function and linear time as unreliable base descriptions of cognitive dynamics. Cognitive neuroscience's investigations into perception and cognition reveal the hitherto hidden process involved when sentient beings model a world for functional use and this process exposes a very different matrix of functional elements. Creating and sustaining a functional cognitive model of the world has as much to do (or more) with the interplay of *concepts, meanings, identities, signs, perspectives* and *purposes* than it has to do with causal-material description. To over-emphasize causal-material description in the realm of consciousness studies is to obscure the very essence of a conscious condition. It is certainly true that successful biologically-relevant world-modeling depends upon organisms being able to formulate and adhere to a sense of the world as physical and causal (and therefore linear-timed) in order to perform the biological basics of nutrition, procreation, self-protection, and so on. However, in doing so, we (being biological creatures ourselves) mistakenly grant explanatory sovereignty to certain features of biological experience (like linear time, three dimensional space, matter as solid and immutable, self-models and self-world boundaries, free will, etc.) that are more appropriately considered bio-centrically distorted *byproducts* of having cognitively modeled a configuration space for successful biological function, rather than having modeled an objective description of the external world's inherent features. Advances in cognitive neuroscience begin now to show us the errors in our assumptions, that is, they indicate to what extent the unique properties, characteristics and dynamics of experience are the *proactive creative product* of perception and cognition rather than *passive objective* observations of a world and its intrinsic properties.

Equipped with highly evolved cognitive mechanisms we actively create and sustain a causal-material, bio-functional world-model while simultaneously performing many other complex and vital orientational calculations as well. In addition to a causal-physical configuration space we must also maneuver within an equally important social, moral, linguistic, emotional, spiritual, economic, political, life-affirming, self-affirming dynamical map of the world. Asserting the primacy of the causal-material aspects of our world model (the foundational assertion of the empirical project) over and above these other vital aspects of living experience misguides us in our research by radically limiting our view of reality, but even more detrimentally, it limits us in our values - leading us to believe that value itself is pre-decided by causal-material properties (by the relative rarity or usefulness of objects and substances), and that the boundaries and brute forces of causal-mechanical description should naturally translate into legitimate worldly power. Our communal beliefs about reality manifest as specific sorts of political and economic institutions and assumptions. Asserting the primacy of causal-material properties is a choice with specific consequences, consequences that we now see can unfold in disastrous ways for the economy, the environment, and the nature of

individual experience. Empiricism has morphed into a belief system that has had many wondrous benefits but it is proving unstable, unjust, unsustainable and deadly. The values that causal-material beliefs manifest in us are ultimately anti-life for failing to acknowledge (much less cherish) the vital intrinsic properties of living systems (like consciousness for example).

A radical reassessment of the empirical project is necessary for the advancement of consciousness studies, to expand the legitimacy of life-system dynamics in science, and to rectify the destructive communal behaviors that our causal-material beliefs about the world (now instituted globally) are reaping on the life systems of our planet. Best we not lay waste to life itself solely for the sake of a hubristic, causal-material sense of mastery and dominance. Thinking green is of course a terrific development but as yet it is nothing more than a thoughtless expedience, an upgraded causal-material pragmatism in response to climate change and dwindling resources. We are merely becoming more efficient causal-materialists when it may be more expedient to radically rethink our fundamental concepts about the reality of living things.

Moving Forward

As an alternative to the intentionally meaning-stripped, supposedly neutral, supposedly objective empirical analysis, we can proactively choose to understand ourselves as embedded in a world of biological meanings. We can proactively choose to see how, by logic and necessity, inbuilt biocentric meanings inform, create, and decide the format of our world-model – *including* the very basis of our empirical analysis. (Biocentric meanings inform, create, and decide the concepts of time, causation, physicality, etc.) Let us see where such a renewed analysis can lead in terms of an explanation of our condition. Instead of describing consciousness as nothing more than a chain of meaning-stripped biophysical reactions in the human brain, we can intentionally define consciousness via the meanings and concepts employed in world-modeling processes observed throughout nature. Understanding biological systems as primarily a complex interrelation of signifying entities allows room for all the dynamics of meaning that inform the construction of creature-specific world-models. Such an approach is far more explanatory and is far more compelling in scope as it includes all living things and their necessary interrelation rather than limiting our concerns and interests to our anthropocentric obsession with the human brain and the causal-mechanical aspects of human cognitive function.

This *meaning-asserted* rather than meaning-stripped approach need not replace the empirical project, but it promises to be the more interesting and fruitful road toward an understanding of conscious processes as it allows for a new engagement with a universe of vastly different conceptual possibilities that by their intrinsic nature lie beyond the

grasp of empirical criteria. Throughout the empirical project we agreed to pretend that the world could actually *be* stripped of meaning and purpose. This was indeed the most efficient way of disentangling our communal concept of reality from the terrific muddle of transcendental interpretations that preceded the age of reason. The incredible advantages of focusing on and subduing causal-mechanical properties are easy to glean from our outstanding success at causal-mechanical dominance as a species. However, the unfortunate byproduct of over-investing in causal-mechanical meaning-stripped features is that the interconnectivity, rarity and inherent meaningfulness of self-creative organic systems are grossly undervalued and too easily destroyed. By purposely ignoring the unique interconnected, qualitative aspects of living things we blindly sanction the destruction of that which makes our own existence possible. With the rapid rise of a global culture that unapologetically embraces materialism, we are suddenly and urgently behooved to reconsider our world-model conception in order to correct the self-destructive/world-destructive communal behaviors that they inspire, before we are all subsumed by the effects.

Contextual division can assist us in this urgent task of world-model revision. The analysis it provides facilitates a conceptual approach that will lead to a better understanding of our actual condition as conscious creatures within the exponentially expanded phenomenal realm that includes 20th century physics and 21st century neuroscience. This is the point and purpose of contextual division, to expand our world-model to include all that we already know and to grant new ideological space for subject-appropriate and context-appropriate methods of inquiry and understanding.

The concept of linear time is as finely interwoven into the fabric of our daily lives as it is deeply embedded in the criteria for analysis in the empirical project; so disproving linear time via the empirical method is neither possible nor anywhere on the agenda. Contextual division is just one possible reconceptualization. Adherents of empiricism might claim that the reconceptualization of time that contextual division affords us here is nothing but an empty cognitive exercise and has nothing to do with the empirical project of causal-material reduction for the purpose of pinning down absolute truths about the nature of reality. By the terms of their own limited causal-mechanical/-physical criteria they would be right. However, causal-mechanical/physical empirical criteria (and the sorts of questions that suit empirically defined answers) are not what we can use to pin down a conscious condition, the properties that define such a condition, and world-modeling dynamical processes that are the purpose of such a condition. Yes, contextual division may be a purely cognitive project, but it is cognition and consciousness that we now hope to understand. Understanding consciousness on its own terms is the most logical approach. Ultimately, this new, admittedly non-empirical project with new subject-appropriate criteria can redirect not only our

cognition, but can re-inform the full extent of human endeavor toward a new, non-empirical, non-causal, non-mechanical redirection of values as well. We are cognitively and morally altered as beings by learning to expand and re-conceptualize our condition in more objective and advanced ways.

When contextual division is applied to the question of time we are given a new view on our old methods of analysis. As for the absolute truths of empiricism, it turns out, when properly viewed, we have been making those up as we go along. In a realm defined by sentience and signifiers there are no absolutes, just a combination of imperatives (thus far informed by biocentric concerns) and the various pragmatic, contingent, conceptual tools we have formulated to meet those imperatives. The empirical project and its attendant habits of thought are clearly pragmatic in a certain realm of endeavor, but we must learn to see the contingency of the criteria and the undeniable limitations of their effective application. My hope is that this alternative assessment of time provides an indication of the inroads we must make toward a necessary revision of our analysis. Causal-mechanical/physical purposes and criteria were instrumental in our rise as a species, but a naïve over-investment in them as absolute truths is holding us back from an exciting new avenue of cognitive and experiential expansion.

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