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After Nature

On Bodies, Consciousness, and Causality

Abstract: *Within John Dewey's pragmatic naturalism, consciousness, meaning, and value were conceptualized as ontologically real phenomena. During the century that has passed since Dewey's time, naturalism has come to be dominated by physicalist and realist perspectives within which the reality of consciousness, meaning, and value are problematic. Given this historical tension in naturalism, the present paper does the following: (1) describes why consciousness, causality, and the body were all at home in Dewey's naturalism, and why Dewey's naturalism fell out of favour during the century that followed, (2) describes a sample of unsuccessful twentieth-century attempts to get consciousness back into naturalism, including the contemporary embodiment movement, (3) presents a recently developed holist, post-naturalist philosophy of embodiment (i.e. Wild Systems Theory) that challenges the physicalist and realist assumptions at work in most contemporary forms of naturalism, and (4) presents WST as an intra-disciplinary framework for scholarship, and as a potential means of addressing the scholarship-culture tensions that have emerged during the zeitgeist of naturalism.*

Keywords: metaphysics, ontology, emergence, aboutness, self-sustaining systems, autocatalysis

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> '…we have no word by which to name mind–body in a unified wholeness of operation…' Dewey (1928/1984, p. 27)

Despite the many decades that have past since John Dewey's claim, it nonetheless still rings true. The scholarly community lacks a means of discussing the body that acknowledges, in one concept, its qualia-drenched, phenomenal properties (i.e. lived experience) and its causal, physical properties (i.e. the body as composed of matter). To be sure, many are aware of this and appeal to unity via two-word locutions such as Dewey's 'mind–body'. Shusterman (2008) does so via the phrase 'sentient soma' and provides the following caveat, '…one should construe "soma" as already implying life and some degree of purposive sentience, thus enabling us to distinguish soma from mere body (which can exist in a lifeless, unfeeling state)' (Shusterman, 2008, p. 184).

Though separated by roughly a century of philosophical enquiry, the two-word locutions of Dewey and Shusterman clearly constitute attempts to capture unity — to overcome the first-third-person, consciousness-causality divide that has historically plagued scholastic efforts to understand the relationship between consciousness and the body. Dewey developed his approach to mind–body in the context of the naturalist movement that emerged, during his lifetime, as a reaction to the idealism of the nineteenth century. Given his belief in the philosophical primacy and reality of lived experience, a position he came to via his early engagement with idealism, he considered reality a unity that entailed experience (i.e. consciousness). Shusterman (2008), on the other hand, developed his concept of sentient–soma at the other end of naturalism's history, after naturalism had come to be dominated by physicalism and realism, and the reality of lived experience was considered metaphysically secondary to the reality of the physical and the mind-independent, respectively.

Clearly, both Dewey and Shusterman attempted to unify consciousness and body in reaction to versions of naturalism that challenged such unity. Given the increased influence physicalist and realist forms of naturalism came to have on consciousness studies from the time of Dewey to the time of Shusterman, the present paper will do the following: (1) describe why consciousness, causality, and the body were all at home in Dewey's naturalism, and why Dewey's naturalism fell out of favour during the century that followed, (2) describe a sample of unsuccessful twentieth-century attempts to get consciousness back into naturalism, (3) present a recently developed holist, post-naturalist philosophy of embodiment (i.e. Wild Systems Theory) that challenges

the physicalist and realist assumptions at work in most contemporary forms of naturalism, and (4) present an intra-disciplinary framework for scholarship that speaks to the ubiquity of meaning in reality.

Dewey's Naturalism

Dewey was one of the premier American philosophers of the early twentieth century; although trained in idealism, he worked to develop a naturalism that unified mind–body and strongly supported scientific practice. His brand of naturalism often left him at odds with other naturalists who felt science was a tool for physicalism (i.e. the philosophy that all things are physical, and physical effects can only have physical causes) and/or realism (i.e. the philosophy that reality exists independently of observers, and the purpose of science is to discover reality's intrinsic, mind-independent properties).

Dewey found himself at odds with naturalists of the physicalist and realist stripe because he himself was neither a physicalist nor a realist, at least in regards to the role of science. For Dewey, science was a technologically enhanced refinement of the daily practice of intentional discovery, of producing changes in phenomena in order to discover the relationships that remained in the face of such changes (Dewey, 1929). As regards physicalism, while he did believe science could be used to reveal causality, he felt no need to reduce reality to physical versus non-physical causes and effects. For Dewey, reality constituted a unity that entailed all phenomena, including those the dualists had sorted into physical and phenomenal categories, and the physicalists wanted to collapse into one. This left him with an epistemic rather than ontological approach to causality:

> The search for 'efficient causes' instead of for final causes, for extrinsic relations instead of intrinsic forms, constitutes the aim of science. But the search does not signify a quest for reality in contrast with experience of the unreal and phenomenal. It signifies a search for those relations upon which the *occurrence* of real qualities and values depends, by means of which we can regulate their occurrence. To call existences as they are directly and qualitatively experienced 'phenomena' is not to assign to them a metaphysical status. It is to indicate that they set the problem of ascertaining the relations of interaction upon which their occurrence depends. (*Ibid.*, p. 103–4)

Given Dewey's epistemic, pragmatic view toward causality and science, it follows he did not subscribe to the realist assertion that the scientific method revealed mind-independent, intrinsic properties of reality. Instead, Dewey proposed a 'transactional' view in which the

task of science was to investigate 'phenomena' rather than basic 'essences' that exist independently of mind.

Dewey's non-physicalist, non-realist, pragmatic approach to science rendered him an optimistic advocate of scientific practice. And the value of science was its ability to generate possibilities for future action. By generating controlled changes in a given phenomenon and revealing the relations that were maintained across various changes, one increased the types of actions one could generate with that phenomenon. Thus, in Dewey's naturalism, science was pragmatic, causality was epistemic, and consciousness was just as real a phenomenon as a brick.

Despite's pragmatic optimism, he was well aware of the potential consequences harboured by naturalisms driven by physicalist and/or realist motives; specifically, the elimination of consciousness, meaning, and value from the list of real, efficacious phenomena:

> The notion that the findings of science are a disclosure of the inherent properties of the ultimate real, of existence at large, is a survival of the older metaphysics. It is because of injection of an irrelevant philosophy into interpretation of the conclusions of science that the latter are thought to eliminate qualities and values from nature. This created the standing problem of modern philosophy:— the relation of science to the things we prize and love and which have authority in the direction of conduct. (Dewey, 1929, p. 102)

Hard and Soft Naturalism

At the time Dewey was developing his pragmatic version of naturalism, other naturalists were championing physicalist and/or realist versions of naturalism that denied non-physical causes of physical effects, and asserted that the essence of reality is its mind-independence, respectively. Again, the emergence of these forms of naturalism was a reaction to the idealism that prevailed at the time. Somewhat ironically, however, the very conceptual decisions that led analytic philosophers such as Frege and Russell to dismantle the holistic approach to meaning entailed in idealism seems to have ultimately denied naturalism access to meaning. Specifically, they replaced the meaningful monism of idealism (meaning-full in the sense that the idealists refused to construct an ontology that denied the reality of meaning, experience, and value), with a naturalist ontology that began with a *meaningless* mind-independent reality (meaning-less in the sense that meaning is argued to be a subjective property that observers bring to reality, that reality does not entail within itself). As previously stated by Dewey's pragmatist predecessor, Charles Pierce (1958), this move

toward the ontological primacy of meaningless, mind-independent reality made it difficult for *meaning* to be considered a *necessary* property of reality. This is because the realist commitment to a *nothing-but*, mind-independent approach to reality leaves open the *logical possibility* of epiphenomenalism; the position that all the physical, causal work of reality can go on without the necessity of their being any accompanying phenomenology or meaning (e.g. Chalmers, 1996). In response to such possibilities, certain scholars conceptualized meaning as a *relational* property that exists alongside of and emerges from interactions between physical properties, one example being Peirce's (1958) assertion that meaning resides in triarchic relations between symbols, their referents, and their interpretants. The problem faced by relational properties, however, is that they too leave open the logical possibility of epiphenomenalism. In short, the method physicalist-realist naturalism, what we will henceforth refer to as hard naturalism, adopted for addressing *meaning*, by its very nature, defined *meaning* out of the system.

Gardner describes the situation as such:

> Proponents of naturalism themselves accepted that the basic prima facie axiological meaning of naturalism is negative: an acceptance of human devaluation is present in writings by naturalists all the way from la Mettrie and d'Holbach to Freud, who states that psychoanalysis administers to the human ego the third blow of humiliation, following those delivered by Copernicus and Darwin (and Darwin himself said the same of his own discoveries). (Gardner, 2007, p. 24)

This axiological problem with hard naturalist approaches to meaning explains, to some extent, the move toward pragmatism expressed by Dewey and Shusterman. Unwilling to accept the *nothing-but* ontology of hard naturalism, yet simultaneously compelled to avoid the generation of an alternative, non-naturalist ontology, Dewey and Shusterman, as well as many other twentieth-century scholars, saw more value in developing a philosophy of practice, versus metaphysics.

In addition to pragmatism, reactions to hard naturalism's inability to address the reality of meaning and experience (i.e. consciousness) include what Gardner (2007) refers to as *soft naturalism*:

> What is called rich, non-reductive, or soft naturalism formulates itself in reaction against the presumption that nature consists of nothing but the hard physical bare-bones of things: it presents itself as correcting what it regards as an overly restrictive, unnecessarily austere conception of the natural order which other naturalists have, mistakenly, extrapolated from natural science. (*Ibid.*, p. 28)

According to Gardner (2007), soft naturalists reject the hard naturalist assertion that all of reality reduces to physical properties. In short, soft naturalism is an anti-reductionist view that conceptualizes meaning, as well as phenomenology and aesthetics, as emergent properties of natural systems.

To this, Gardner responds:

> If, then, it is demonstrated successfully by the soft naturalist that such-and-such a phenomenon is not reducible to the natural facts austerely conceived, this conclusion is *not an end* of enquiry, but rather a *reaffirmation* of an explanandum, i.e., a restatement that the phenomenon stands in need of metaphysical explanation. Irreducibility arguments, if successful, yield *data* that do not interpret or explain themselves, but call for interpretation: the soft naturalist needs to say something on the subject of *why there should* be, in *general*, phenomena that have substantial reality, but do not owe it to the hard natural facts. (*Ibid.*, p. 30)

Contemporary versions of the *soft naturalist* strategy of getting meaning back into naturalism without challenging the metaphysics of naturalism are also at work in the fields of cognition and communication, as scholars move away from the computer metaphor and the practice of conceptualizing mental work in terms of internal, symbol-manipulating systems. Instead, these new models place greater emphasis on the body and the constitutive role it plays in cognition and communication. In cognitive science, these models ground the work of cognition in ongoing, dynamic couplings between the brain, body, and world, and are loosely united under the notion of *embodied cognition* (Clark, 1997; 2000; Jordan, 1998; Juarrero, 1999; Myin and O'Regan, 2002; O'Regan and Noë, 2001; van Gelder, 1998; Van Orden and Holden, 2002). In communication studies, such models ground communicative work in the '…embodied interactive practices being used by a species to build in concert with each other the actions that make up their lifeworld…' (Goodwin, 2006, p. 28), and are collectively referred to as *embodied communication*.

While, on the one hand, the notion of embodiment might seem to get meaning back into naturalism by grounding it in the body (as opposed to triadic relations among signs, referents, and interpretants, or information-processing algorithms), it still does not explain why bodies are *necessarily* meaningful. That is, while one might argue that the meaning of thoughts emerge out of body dynamics, it is still logically possible that all of the causal, physical, *nothing-but* work of the body could go on without their being any meaning. In short, a

naturalist description of the body, even one steeped in the notion of embodiment, cannot give us necessarily meaningful bodies.

In order to get meaning into bodies, meaning needs to be something of which bodies are constituted, not something that emerges from their physical properties. It is this idea — that meaning is constitutive of what bodies are — that needs to be developed if we are to get meaning back into bodies and, in the end, metaphysics. In what follows we describe Wild Systems Theory (WST), a framework for conceptualizing bodies that renders them inherently meaning-full.

Wild Systems Theory: A Meaning-full Ontology

Wild Systems Theory (WST — Jordan, 2008; Jordan and Ghin, 2006; 2007) is a recently developed philosophy of embodiment that conceptualizes bodies as *self-sustaining*, *multi-scale embodiments* of the phylogenetic, cultural, and ontogenetic *contexts* in which they emerged and in which they sustain themselves. Self-sustaining systems, according to WST, are systems of work (i.e. energy transformation) that produce products that serve to sustain the work that produced the products in the first place. At the chemical level, self-sustaining work has been referred to as autocatalysis (Kauffman, 1995), the idea being that a self-sustaining chemical system is one in which reactions produce either their own catalysts or catalysts for some other reaction in the system. At the biological level, self-sustaining work has been referred to as autopoiesis (Maturana and Varela, 1980), again, the idea being that a single cell constitutes a multi-scale system of work in which lower-scale chemical processes give rise to the larger biological whole of the cell which, in turn, provides a context in which the lower-scale work sustains itself and the whole it gives rise to (Jordan and Ghin, 2006). Hebb (1949) referred to the self-sustaining nature of neural networks as the 'cell assembly', the idea being that neurons that fire together wire together. Jordan and Heidenreich (2010) recently cast this idea in terms of self-sustaining work by examining data that indicate the generation of action potentials increases nuclear transcription processes in neurons which, in turn, fosters synapse formation. At the behavioural level, Skinner (1976) referred to the self-sustaining nature of behaviour as operant conditioning, the idea being that behaviours sustain themselves in one's behavioural repertoire as a function of the consequences they generate. Streeck and Jordan (2009) recently described communication as a dynamical self-sustaining system in which multi-scale events such as postural alignment, gesture, gaze, and speech produce

outcomes that sustain an ongoing interaction. And finally, Odum (1988) and Vandervert (1995) used the notion of self-sustaining work to refer to ecologies in general.

Meaning as Embodied Context

Given this notion of conceptualizing bodies in terms of self-sustaining, multi-scale work, WST asserts such systems constitute *embodiments of the contexts* within which they emerged and in which they sustain themselves. Autocatalytic networks, therefore, constitute embodiments of the chemical context of the pre-biotic soup. Plants constitute embodiments of the wide-scale availability of electromagnetic radiation (i.e. sunlight) and the rich chemical context of the soil from which they take in the chemicals necessary for sustainment. Herbivores constitute embodiments of the constraints a system needs to address in order to sustain itself on plant life. And carnivores embody the constraints necessary to sustain oneself on the energy encapsulated in herbivores (i.e. nervous systems, muscles, and bones). At every level in this multi-scale hierarchy of embodied context, the contextually emergent systems (Atmanspacher, 2007; Bishop and Atmanspacher, 2006) are necessarily 'about' the multi-scale context they embody and in which they sustain themselves.

WST relies on the concept of 'contextual' emergence, as opposed to simple 'emergence', because it clarifies why self-sustaining bodies necessarily entail 'aboutness'. Specifically, a contextually-emergent phenomenon is one in which certain of the necessary conditions for the phenomenon exist at a lower level of scale (e.g. the autocatalytic properties of certain chemical systems), while additional necessary properties exist at a higher level of scale (e.g. the ratio in the pre-biotic soup of the number of diverse chemical types available, to the number of possible reactions between them). Kauffman (1995) argues that when this ratio hit a critical value, large-scale networks of self-sustaining work, what he defined as self-metabolizing systems, or living systems, spontaneously emerged. The point to be made is that a scientific description of such systems cannot reduce to one level of scale. The lower-level autocatalytic properties of certain chemical systems, and the large-scale availability of such systems and their relative distribution in the pre-biotic soup, both constitute necessary conditions for the emergence of self-metabolizing, self-sustaining, living systems. As a result, the dynamics of such systems are necessarily 'about' the larger-scale context in which they emerged. In short, they constitute self-sustaining embodiments of those contexts.

It is this notion of 'embodied context' or 'embodied aboutness' that WST equates with *meaning*. That is, given such embodied contexts are necessarily about the contexts they embody, there is no epistemic gap between an organism and its environment. Organisms do not need to be 'informed' by environments in order to be about environments because they are necessarily 'about' the contexts they embody. Rather, what self-sustaining systems need do is sustain relationships with the contexts in which they are embedded in ways that lead them to sustainment.

According to WST, meaning is *constitutive* of embodied context (i.e. bodies). As a result, living systems are necessarily meaningful (Jordan, 2000), not because a body is alive or dead, because it is physical, or because it is biological. Living is meaning because it is *sustained, embodied context*. To be sure, one could argue that if meaning is synonymous with embodied contexts, then rocks too have meaning. That is, rocks are also contextually emergent bodies that constitute an embodiment of the contexts in which they emerged and exist. This issue constitutes a true choice point for WST. For on the one hand, if WST moves toward making meaning exclusive to living systems, it divides the natural order into *meaningful* and *meaningless* categories and ends up having a meaning/non-meaning divide not unlike other embodiment positions that posit the advent of living systems as the advent of valence (Shusterman, 2008; Thompson, 2007), or analytic philosophies that begin with mind-independent reality and search for a way back to meaning. While such a divide often feels important and necessary because we want to fit our world of experience into our model of the world, it nonetheless always proves logically unnecessary. The proposed 'meaning' is given no causal role and becomes epiphenomenal. And as Gardner (2007) makes clear, the soft naturalist position of asserting the irreducibility of certain properties to physical properties, while simultaneously refusing to challenge the underlying metaphysics of physicalism, leaves soft naturalism vulnerable to the ephiphenomenal challenge. In short, if meaning is not constitutive of what bodies are, then meaning is unnecessary in their scientific description.

On the other hand, if WST allows meaning to be ubiquitous, it runs the risk of sounding panpsychic. While this latter choice may not be the most fashionable in current philosophical discourse, it actually seems the more reasonable if one equates meaning with 'aboutness'. That is, if to 'have meaning' is to 'be about' then one would be hard pressed to find something that resides in context that is in no way 'about' that context.

In order to make this latter option work, it needs to be made clear that WST's approach to meaning relies on the concepts 'context' and 'aboutness'. This differs from naturalist ontologies that tend to rely on concepts such as physical or material. When one begins the quest for meaning with these latter concepts, mind-independent reality is considered to be physical, material, and void of meaning. This leads one to bring meaning into the natural order via a property such as life, sentience, or subjectivity. This then has to be presented in a framework that explains how life, sentience, or subjectivity are either something qualitatively distinct from the physical, or are somehow identical with it.

If, on the other hand, one approaches the issue of meaning with the concepts 'context' and 'aboutness', one seems more likely to come to the conclusion that all 'things' reside in context. If this is so, then all 'properties' are contextually dependent. No context — no things — no properties. And if all properties are contextually dependent, then there are no 'intrinsic' properties (i.e. properties that reside within a thing in a context-independent fashion).

Embodied Contexts versus Intrinsic Properties

Though the assertion of there being no such thing as intrinsic properties may sound strange, the issue has a long standing history in the philosophy of science. For example, mass is often considered an intrinsic property (i.e. an object's mass is independent of its context), while weight is taken to be an extrinsic property (i.e. an object's weight is determined by the way its intrinsic properties interact with context). Recent theory in physics, however, posits that all particles receive their inertial mass because of how they interact within the Higgs field, '…a scalar field that "permeates all of space" and "endows particles with mass"' (Jammer, 2000, p. 162). According to Bauer (2011), the dependence of a particle's mass on its interactions with the Higgs field renders that mass externally grounded. That is, the instantiation of the particle's mass is not independent of the particle's environment (i.e. context). This lack of context independence renders mass *relational* and *non-intrinsic*. Bauer further claims that his Higgs field argument vindicates an idea known as ultra-grounding (Harré, 1986), the idea that a property may be grounded by a property, or properties, of reality as a whole. Other anti-intrinsic positions on fundamental properties are proposed by Schaffer (2003) and Dehmelt (1989), who claim there may be no fundamental level to reality at all, only infinite levels of microstructure. Prior, Pargetter and Jackson (1982) propose the

Global Groundedness Thesis, which claims that all dispositions (i.e. properties) are grounded (i.e. externally grounded) rather than ungrounded (i.e. intrinsically grounded).

The point of discussing the intrinsic versus extrinsic nature of mass is to make it clear that the notion of context-independent, intrinsic properties is, at best, debatable. This controversy leaves us two options. If we go the intrinsic route (i.e. there exist properties that are context-independent), our conceptualization of reality entails a final, context-independent property from which a model of reality as a whole can be constructed, and science becomes the realist quest for this final, context-independent property. If we go the extrinsic route (i.e. all properties are context-dependent) there is no final property to seek. WST clearly takes the latter route. For by assuming all properties to be context-relative, all properties are inherently full of aboutness. As a result, all 'things' are 'about'. There is no 'thing' that is not 'about'. All 'things' are inherently meaning-*full*, and meaning (i.e. aboutness) is constitutive of reality.

The Evolutionary Scale-up of Embodied Context

Given WST's anti-intrinsic framework and its assertion that aboutness is ubiquitous and constitutive of reality, WST needs to clarify how the aboutness entailed in a rock differs from that entailed in a living system, as well as how the latter form of embodied aboutness scaled-up to the level of human consciousness. To begin, WST conceptualizes *meaning* as a gradient of *embodied aboutness* that has scaled-up over the course of evolution from the rather small-scale aboutness of single-cell organisms to the larger scale, abstract forms (i.e. qualia and self-reference) of human abountness that are often conceptually bracketed from the rest of reality and labelled as 'consciousness'. This latter form of self-sustaining aboutness is different from the aboutness embodied in a rock because of the micro-macro coupling entailed in the embodiment. In a single-cell organism, the internal dynamics (i.e. the micro scale) and the organism as a whole (the macro scale) are coupled in such a way that changes in the micro scale (e.g. low energy levels) give rise to changes at the macro scale (e.g. behaviours such as swimming and tumbling) that recursively influence the micro scale (i.e. give rise to energy intake) and, in the end, foster the sustainment of both levels of scale. In short, the micro-macro coupling is self-sustaining. In the case of a rock, the micro-macro coupling is not recursively self-sustaining. The coupling generates no dynamics that serve to sustain a particular aspect of

either the macro or micro organization. So, while both rocks and livings systems constitute embodied aboutness (i.e. they are 'about' the contexts from which they emerged and in which they exist) the latter entails a form of recursive coupling that affords the system a means of self-sustainment.

It was possible for self-sustaining systems to scale-up from the level of single-cell organisms to the level of human beings because their status as energy-transformation systems simultaneously rendered them a potential fuel source for any system that embodied the constraints necessary to sustain itself on such embodied energy. As an example, the emergence of herbivores gave rise to a context that afforded the emergence of carnivores. A significant constraint of being a carnivore, however, was the need to capture a moving fuel source. Doing so required, and still requires, anticipatory structures regarding the future location of the moving target.[1] Jordan and Ghin (2006) assert that the embodiment of anticipatory dynamics in the neuro-muscular architecture of organisms capable of propelling themselves as a whole toward anticipated locations constituted the phylogenetic emergence of *anticipatory* aboutness. That is, the self-sustaining dynamics of one system came to be 'about' the future dynamics of another system. WST equates such anticipatory aboutness with the traditional notion of *mind*, and proposes that phenomena that have received labels such as *memory*, *thought*, *phenomenology*, and *self-awareness* constitute evolutionary recursions (i.e. scale-ups) of the anticipatory dynamics embodied in self-sustaining systems. Given that all self-sustaining systems constitute embodiments of context and are, therefore, necessarily 'about' context, their anticipatory dynamics likewise entail 'aboutness'. Thus, as self-sustaining systems evolved and became increasingly abstract (i.e. about increasingly abstract events such as tomorrow, next week, and/or next year), meaning, too, became increasingly abstract.

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[1] Jordan and Ghin (2006) describe how the cortico-cerebellar circuits of the brain afford it the ability to embody repetitive body-world dynamics in its own functioning. Thus, as cortical activity projects to the spinal cord on the path toward generating limb movement, it simultaneously projects to the cerebellum which, in turn, recursively projects back upon the cortex and primes it with cortico-cerebellar regularities that have been embodied in such circuits in the past. As a result, cortical states find themselves continuously primed by previous cortico-cerebellar states. In short, the present is continuously primed by the past, thus rendering the present inherently anticipatory. Kinsbourne and Jordan (2009) describe the ubiquity of such cortico-cerebellar circuitry in brain dynamics and proposed it as a design principle of the brain.

Wild Systems Theory and Dewey's Naturalism

While the attempt to conceptualize consciousness as a form of sustained aboutness might seem unusual, one could argue it is not unlike Dewey's (1929) attempt to unify consciousness and body in a way that avoids the problems in consciousness studies that were introduced by the twentieth-century turn toward hard naturalism and its assertion that all statements regarding the constituents of reality must be made in terms of the physical and/or the mind-independent. Hard naturalists were led to this position because they aligned their view of reality with the physical side of dualism. This then forced them to figure out how meaning, consciousness, and value could fit into physicalism and/or realism. Dewey's naturalism did not define reality in opposition to the non-physical. Instead, Dewey intentionally avoided dichotomies such as mind–body, physical–mental, objective–subjective, and instead proposed a 'transactional' view:

> …where systems of description and naming are employed to deal with aspects and phases of action, without final attribution to 'elements' or other presumptively detachable or independent 'entities,' 'essences,' or 'realities,' and without isolation of presumptively detachable 'relations' from such detachable 'elements'. (Dewey and Bentley, 1949, p. 133)

Clearly, Dewey's concerns regarding 'essences' and 'relations' is consistent with WST's critique of the notion of context-independent properties. Both WST and Dewey's transactional approach assert the reality of experience, consciousness, and value, and defend their status as real by appealing to the contextually dependent nature of all phenomena, including bodies and consciousness. This further explains why WST shares Dewey's pragmatic approach to the practice of science. The commitment emerges necessarily from WST's anti-intrinsic stance, for if there are no intrinsic properties, science becomes the practice of discovering regularities, none of which can ever be assumed to be the final context-independent regularity from which all other regularities emerge. As regards causality, WST also assumes Dewey's epistemic stance. That is, while WST agrees with Dewey's assertion that one can intentionally generate changes in phenomena in the search for regularities (i.e. causality exists), WST further agrees with Dewey's unwillingness to metaphysically conceptualize causality as a property of physical 'things'. Given WST's anti-intrinsic, contextually dependent stance on 'objects', there are no 'physical' things in the sense that 'physical' distinguishes some types of things from others. Thus, there is no need to account for the

changes we find in reality via metaphysical commitments to a particular type of physical causality.

Towards a Trans-disciplinary Scholarship of Meaning

Given WST's affinity with Dewey's naturalism, it is tempting to present WST as a neo-pragmatic alternative to contemporary physicalist and realist naturalisms. While this seems a straightforward move on the one hand, it is not at all clear on the other that a Dewey-esque naturalist redux will prove sufficient or appropriate to overcome the problems introduced into consciousness studies by the advent of hard naturalism. For despite the problems it introduced for consciousness studies, hard naturalism nonetheless successfully rid most scholarly frameworks of any reference to supernatural forces (i.e. reality is constituted of only natural phenomena). Given this success, it is not at all clear we actually need naturalism anymore. That is, we no longer need to defend scientific practice from religion and philosophy, at least in the scholarly community. Thus, instead of framing WST as a form of naturalism, and begging the issue of its dialectic counterpart, we propose to frame WST as a twenty-first-century holism. By holism, we mean to imply the belief that all of reality constitutes a unity in which all things are inherently interrelated. It is within this dense web of interrelations that phenomena such as meaning, consciousness, and value reside, not as by-products or relational properties of independent physical systems, but as the inherent 'aboutness' (i.e. contextual dependence) of reality in general.

Such a turn toward holism can be found in many disciplines. Bauer's (2011) extrinsic account of mass, Prior, Pargetter and Jackson's (1982) Global Groundedness Thesis, and Schaffer's (2003) and Dehmelt's (1989) critique of a fundamental level to reality can be seen as attempts to move philosophy and physics away from the context-independent notion of intrinsic properties, toward a more contextually-bound, holist perspective. Bishop (present volume) introduces the notion of *causal cooperation* as a way to challenge traditional physicalist prohibitions against causal overdetermination. The notion of causal cooperation increases the assumed impact of context and moves physicalism to a more contextually-bound perspective. At the cognitive level, Wallot and Van Orden (this volume) propose that context is constitutive of cognition, a position rather similar to WST's notion of embodied context. Wallot and Van Orden develop their contextually-bound approach to cognition by invoking Jarvilehto's (1998) assertion that organisms and their environments constitute

unitary systems whose functioning cannot be reduced to isolable aspects of either. At the person level, Martin (this volume) challenges physicalist theories that pit agency against determinism. He does this by conceptualizing individuals as multi-scale self-determining systems (i.e. physical, chemical, biological, psychological, social, and cultural hybrids) who are perpetually embedded in multi-scale contexts and whose dynamics are too complex to be accounted for solely in terms of efficient causality. Richardson and Manglos (this volume) also propose a non-physicalist approach to personhood. Specifically, they assert that in order to overcome the current, instrumentalist driven, 'disembedded' approach to self, scholars need to adopt a fully 'relational ontology' that treats reality as constituted of relations, 'all the way down'. Richardson and Manglos's appeal to a fully relational ontology clearly constitutes a move toward a more contextually embedded, holist account of personhood, and it is quite similar to WST's holist denial of intrinsic properties.

The move toward holism in scholarship is at work in disciplines other than consciousness studies. In the field of literary criticism, for example, there is a contemporary school of thought known as *ecocentrism*. According to Riordan, this movement

> …[does not] mean ecocentrism in the political ecological sense, as a strand of activism, but rather, as a question of values. How do we value the world around us and how does that value relate to the way we value ourselves, our history, our perception of the world? As Carolyn Merchant puts it, an ecocentric ethic implies that: 'the whole environment, including inanimate elements, rocks and minerals, along with animate plants and animals, is assigned intrinsic value' (1992, 74–5). Ecocentrism is a holist ethos: connections and process are the foundations of an ecocentric understanding of the world and our place in it. (Riordan, 2004, p. 46)

Clearly, common to both WST and ecocentrism is a holist metaphysics that looks to establish meaning as intrinsic to being. In WST, meaning is addressed in terms of contextual emergence and implicit aboutness, while in ecocentrism, it is addressed via appeal to 'connections and process'. Not surprisingly, these notions of 'implicit aboutness' and 'connections and process' are rather similar to the idealist notion of 'internal relations'. According to Hylton:

> If *a* is internally related to *b*, then the relation to *b* is part of *a*'s internal nature. Since '*a*'s internal nature' is just what *a* essentially is, it follows that *a* is not independent, but is what it is only because of its relation to *b*. Internal relations are thus unstable: as relation they set up their objects as independent entities; as internal they make it clear that their

> objects are not independent, but can be considered only as part of a larger totality. Thus it is that 'internal relations… point towards a higher consummation beyond themselves' (ETR, pp. 239–40). (Hylton, 1990)

The point here is not to call for a return to idealism. Rather, the point is to call attention to what appears to be a growing desire in academia to move beyond naturalism, toward holism. For it is within the context of holist metaphysical systems such as idealism, Dewey's naturalism, ecocentrism, and WST that meaning is constitutive of reality.

A benefit of WST is that by directly addressing the hard naturalism from which it emerged, specifically the notion of intrinsic properties, it provides a methaphysics that is consistent with the practice and data of science, yet speaks to the ubiquity of meaning in reality. As a result, WST may provide a context for the emergence of a field of scholarship devoted to addressing the dynamics by which systems of work sustain themselves. Such systems can range in scale form the physical, to the chemical, the biological, the psychological, sociological, anthropological, and beyond.

To be sure, scholarship at each level of scale will need its own vocabulary to address the unique, yet contextually emergent, dynamics at that particular level of scale. Despite these conceptual differences, scholars in these different domains will share a metaphysics that will not pit them against one another as to who has privileged access to 'truth'. All scholars have access to truth. Not in the hard naturalist sense that truth is to be measured by the degree to which statements 'correspond' to mind-independent reality, but in the 'coherence' sense that what distinguishes the degree of truth in a statement is the degree to which it does not contradict itself, as well as the multiple levels of context in which it is embedded. Of course, this latter form of truth is much more difficult to have, but when we examine the dynamics by which the sciences actually generate 'facts', we find the process to be multi-scale and context-dependent. Experiments must be replicated, results must be presented within a theoretical framework (which influenced the experimental conditions under which the data were collected), manuscripts must be submitted to peer-review, and final publishing decisions must be rendered by editors. At no point does this multi-scale, contextually emergent process get us to context-independent, intrinsic reality. It does, however, get us to more coherent conceptual frameworks (i.e. ways of conceptualizing phenomena that produce the least amount of contradiction). In addition, as Dewey foretold, the practice of science gives rise to unprecedented abilities to alter the contexts in which we live and develop.

Toward Scholarly-Cultural Coherence

In addition to providing a more coherent metaphysics for scholars, WST also provides a more coherent framework for the relationship between the conceptual schemes of scholars, and the conceptual frameworks of culture. For within our current naturalist zeitgeist, citizens find the entire conceptual scheme by which they organize themselves under assault as some scientists and analytic philosophers remove concepts such *consciousness, volition*, and *self* from the lived contexts in which they work (i.e. the daily lives of interacting humans). Finding them lacking according to the modes of logic and mathematics, such scholars then propose such concepts constitute nothing more than folk-psychological constructs that, in the end, will be revealed for what they truly are; specifically, physical brain states (Churchland, 1995; Metzinger, 2003; Wegner, 2002).

To be sure, one could regard this plea for scholarly-cultural coherence as nothing more than hyperbole — the forlorn railings of yet another holist adrift in a world of facts (Köhler, 1966). But research indicates the efficacy of language in people's daily lives. Vohs and Schooler (2008) found that participants who read a passage portraying all behaviour as the consequence of environmental and genetic factors cheated more on a subsequent test than those who read a passage supporting the notion of free will. Maasen (2007) reveals that as the scientific account of consciousness becomes more and more neuroscientific, the societal conceptualization of 'self' likewise becomes more physiological:

> Consciousness studies are hence not only the product of epistemological and methodological struggles (scientific dimension) but also part of the current re-alignments regarding the notion of consciously acting selves in society (societal dimension). (*Ibid.*, p. 252)

Clearly, what we say about 'reality' in the scholarly community does matter to culture. How to deal with this influence constitutes yet another difference between hard naturalism and WST, for given hard naturalism's physicalist-realist framework, it sees itself as being in the business of investigating and revealing the 'true' context-independent, intrinsic properties of mind-independent reality. It therefore conceives of its language system as being closer to the truth than that of culture. Thus, when hard naturalists speak of 'consciousness', 'volition', or the 'self', it is assumed they speak with a greater degree of authority than culture.

WST, on the other hand, takes a much different approach to language. According to WST, meaning is a gradient whose complexity

varies with the spatio-temporal scale of the contexts with which a body can sustain relation. Thus, while the dynamics of a single-cell organism allow it to sustain relation at the rather immediate level of context at its cell wall, humans are able to sustain relation with *abstract* contexts such as *today*, *tomorrow*, and *next year*. By abstract contexts, we mean contexts that are not available in one's immediate present — what are traditionally referred as *ideas*. They are able to do so because the bodies and brains humans entail are able to embody patterns that persist over various contexts (e.g. the face of a friend, the sound of a particular song, or the style of a particular artist). The ability to embody patterns that persist across different contexts (i.e. generate memories) affords the individual the ability to work to maintain relation with abstract contexts (i.e. memories and thoughts). Thus, for example, the idea to 'get a college degree' has the power to constrain the contexts one finds oneself in over a roughly four-year period (e.g. the particular college one attends, the courses one takes, and the rooms in which those courses take place).

According to WST, the capacity for abstract sustainment (i.e. thought) evolved synergistically with external contexts (i.e. environments) as the couplings between human bodies and the contexts in which they are embedded recursively shaped one another (Jordan, 2008; Malifouris, 2008; Read and van der Leeuw, 2008). That is, just as the large-scale availability of herbivores constituted a context that afforded the emergence of carnivores, the wide-scale availability of cultural artiefacts such as agriculture, architecture, science, and the arts, constituted contexts that afforded the emergence of increasingly abstract self-sustaining systems.

From this perspective, language is one of many contextually emergent phenomena that constitute culture. As such, it has its 'meaning' in the contexts in which it emerged. To be sure, contexts change, and so do the meanings of words. But when scholars take concepts such as 'free will', 'self', and 'consciousness', which emerged out of daily human interaction (i.e. culture), isolate them from lived context, and change their meaning, it constitutes a category error to tell culture their 'meaning' is wrong. The criterion for the truth-value of language was never correspondence with mind-independent reality. Rather, it was its degree of coherence within context (Oakeshott, 1933). That is, how well can a concept label the distinctions that groups of interacting humans need to be able to make in order to cooperate in abstract context? *Here, there, up, down, twice, again* — these are all externalizations that afford us the ability to sustain abstract contexts together.

This is where their meaning lies, and why they constitute meaning in the first place.

When we take these words out of the context of interacting humans, and attempt to assess their truth status via their degree of correspondence with mind-independent reality, they fail. Not because they are metaphysically inaccurate signs, but because we are submitting them to an incoherent metaphysical test in the first place. WST provides a way out of the dialectic-laden metaphysics of naturalism by shifting the issue of metaphysics from 'mind-independence' to 'context-independence', and what was described as 'mind' in naturalism is described in WST as a contextually-bound, scaled-up, self-sustaining embodiment of the aboutness that is inherent in all of reality. By making this move beyond naturalism, WST provides a means for the conceptual schemes of science and culture to be seen as systems of self-sustaining work, whose truth-status is determined by their degree of coherence across contexts, not their degree of correspondence with an un-knowable, mind-independent reality. If it turns out to be the case that culture adopts certain scientific concepts, it will not be due to the attainment of metaphysical certainty on the part of science. Rather, it will be due to the increased degrees of freedom the practice of science brings to culture's ability to transform context.

Conclusions

By asserting all 'things' reside in context, WST avoids the *nothing-but*, meaningless view of reality naturalists have been logically led to via the notion of mind-independence. This, in turn, allows WST to propose a metaphysics of meaning in which the homological unity across different scales of embodied aboutness (e.g. mind and body) is readily apparent. In addition, it provides a conceptual space in which diversity in the forms of sustained aboutness is to be expected, as different contexts give rise to different forms. The advantage here is that it admits to the potential emergence of infinite forms of embodied meaning. Given their emergence in context, such systems will be full of *value*. A clash between systems of value is to be expected as distinctions made in one system may quite possibly be categorized differently in another. As a result, in the end, we will not find a mind-independent reality upon which we can rest, find the objective, mind-independent answer to issues of value, and assume ourselves to be finished. The struggle for meaning is the struggle of being. And instead of looking for it, in a *nothing-but* world of meaningless 'things', our problem becomes more difficult. For according to WST, we *are*

meaning. Thus, the problem of value becomes a problem of deciding what it is we will work to sustain.

For it is hard to discover
the winged vertebrates of prehistory
embedded in tablets of slate.
But if I see before me
the nervature of past life
in one image, I always think
that this has something to do
with truth. Our brains, after all,
are always at work on some quivers
of self-organization, however faint,
and it is from this that an order
arises, in places beautiful
and comforting, though more cruel, too,
than the previous state of ignorance
W.G. Sebald (1983, p. 2)

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