

## A Coherent Metatheory for Dynamic Systems: Relational Organicism-Contextualism

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### Key Words

Contextualism · Dynamic systems · Mechanism · Metatheory · Organicism ·  
Relational metatheory

A metatheory is a coherent set of interlocking principles that both describes and prescribes what is meaningful and meaningless, acceptable and unacceptable, central and peripheral, as theory – the means of conceptual exploration – and as method – the means of observational exploration – in a scientific discipline. In other words, a metatheory entails standards of judgment and evaluation. Scientific metatheories transcend (i.e., ‘meta’) theories and methods in the sense that they define the context in which theoretical and methodological concepts are constructed. Theories and methods refer directly to the empirical world, while metatheories refer to the theories and methods themselves.

There are many important features of metatheories, including the fact that they are ubiquitous – all theories and methods are formulated and operate within some metatheory – and the fact that they often reside quietly and unrecognized in the background of our day-to-day empirical science. An essential and sometimes unrecognized feature of metatheories, however, is that they emerge and operate at several levels of analysis. Metatheories, which are sometimes also referred to as ‘models’ or ‘paradigms,’ tend to form a hierarchy in terms of increasing generality of application. Thus, for example, a model that contains the basic concepts from which a theory of memory will be constructed is a relatively low level model because it applies only to memory. Models such as ‘dynamic systems,’ ‘developmental systems’ [Lerner, 2006] and ‘equilibrium models’ [see Valsiner, 1998] apply to a number of domains including social, cognitive, and emotional domains, and hence occupy a higher level in the hierarchy. The hierarchical dimension of any given set of metatheoretical ideas also forms a coherently interrelated system of ideas, and the model operating at the pinnacle of this hierarchy is usually termed a ‘world view.’ World views are composed of coherent interlocking sets of *epistemological* (i.e., issues of knowing) and *ontological* (i.e., issues of reality) principles.

Some 40 years ago, Ludwig von Bertalanffy – the acknowledged father of the ‘general systems’ approach to scientific understanding – pointed to the fact that ‘general systems’ – itself a broad metatheory – was being alternatively formulated within the context of two broader incompatible metatheories, the ‘mechanistic’ and ‘organismic’ world views [Bertalanffy, 1967, 1968; Overton, 1975]. The impact of this often unrecognized conflation was to obscure the specific nature and methods of general systems, and, thus to retard the development of this approach as a means of advancing scientific knowledge. Von Bertalanffy – who evidently knew nothing of Steven Pepper’s [1942] systematization of ‘mechanism,’ and ‘organicism’ – characterized the mechanistic formulation in terms of its principles of the primacy of ontological stasis, atomistic reductionism, and additive and linear organization. He characterized his own organismic perspective in terms of the principles of ontological activity and change, holism, and non-additive and non-linear organization. Over the years the organismic version of the general systems approach has been refined and modified [Luhmann, 1995] and today’s direct descendent of Bertalanffy’s approach is termed ‘dynamic systems’ and ‘developmental systems’ [Lerner, 2006; Oyama, 2000]. It is against this backdrop that David Witherington [2007] now confronts the fact that this contemporary descendent of general systems is itself receiving alternative world view directed formulations. While the mechanistic formulation has moved somewhat to the background – being explicitly identified as taking a ‘mechanistic approach’ is not fashionable these days – Witherington points out that among current research programs that carry the ‘dynamic systems’ label some [e.g., Thelen & Smith, 1994, 2006] function according to the standards of a ‘strict contextualist’ world view, and some [e.g., Fischer & Bidell, 2006; Lewis, 2000; van Geert, 1998] according to the standards of a more integrated organismic-contextualist metatheory.

While others have suggested that there are two widely divergent understandings of the nature of contemporary dynamic systems, only Witherington has clearly identified, and fully articulated and detailed the nature and implications of these alternative formulations. Witherington’s paper represents a major contribution to the conceptual clarification of an approach that has become increasingly important to the field of psychology. In any field, logical consistency and conceptual coherence are fundamental features of the body of *systematized* empirical knowledge that is scientific knowledge. Metatheories are the source this consistency and coherence because they establish the field’s the most basic categories and constructs. Consequently, a precise clarification of the metatheories operating within any field is critical. Witherington has provided this and has demonstrated that the differences that appear at the surface of dynamic systems approaches represent profound, not merely superficial, value differences in the whole explanatory structure of our developmental science.

There is little that I find to disagree with, and much to applaud, in Witherington’s argument. As a consequence, I would only add a few comments designed as an effort to extend some thoughts brought out in the paper. These have to do with the issue of what it means to be a ‘strict contextualist,’ and if, and how, it would be possible to ‘integrate’ organicism and contextualism [see Overton & Ennis, 2006a, b, for a detailed discussion]. With respect to a ‘strict contextualism’ it should be noted that Pepper [1942] himself recognized that contextualism is an unstable world view, at one moment sliding over into mechanism, at another moment sliding into organicism. I believe that it is the slide to mechanism that best characterizes Thelen’s

and others 'strict contextualism.' This is exemplified in the explicit – if sometimes fuzzy – atomistic reductionism to simple motor activity, and the aversion to finding any explanatory value in mental constructs, organization, or structure. In fact, the approach of Thelen and other 'strict contextualists' is arguably best thought of as operating within a form of eclectic mechanism-contextualism in which many of the contextualist principles merely act as covers for mechanistic principles.

The argument that the 'strict contextualist' interpretation of dynamic systems is, in fact, an eclectic mechanism-contextualism needs to be understood as a part of a larger argument, and this latter entails the proposition that Pepper was mistaken when he proposed that there are four relatively adequate world views, and these are formism, mechanism, contextualism, and organicism. In our own analysis we believe that for a number of reasons it is more productive to think of two broad families of world views – Split and Relational – [Overton, 2006] with mechanism-contextualism as an exemplar of split metatheories, and organicism-contextualism an exemplar of relational metatheories. Split metatheories are based in Cartesian thought, which divides the world into dichotomous either/or propositions (e.g., the real is mind, or body, or some additive combination of the two; nature, or nurture, or some additive combination of the two). They are exclusive, 'nothing but' approaches to the world and understanding (e.g., 'ultimately efficient and material causes are the only true explanatory forms,' 'ultimately mental constructs explain nothing, only action in the here and now explains'). Split metatheories support foundationalism (i.e., the assumption of an ultimate absolute real), atomism, elementarism, reductionism, ontological fixity, contingent change, contingent organization, and strict additivity and linearity. Within this frame, a contextualism that argues for the *privileging* of here and now activity is, in fact, arguing that current motor activity represents not an indissociable complementary part of the whole, but the ultimate privileged explanatory base. This is little different from the older mechanistic argument that behavior, and its efficient and material causes, represents an ultimate privileged explanatory base.

Relational metatheories are post-Cartesian and inclusive. Relational metatheories aim to transform classically fundamental dichotomies into indissociable complementarities through the relational principles of holism, identify of opposites, opposites of identities, and syntheses of wholes [Overton, 2006]. Relational metatheories support holism, analysis in the context of synthesis, ontological spontaneous activity, dialectic and necessary change, necessary organization, additivity/non-additivity, and linearity/non-linearity. Within this frame, a contextualism that argues for the centrality of the here-and-now activity is arguing that current motor activity represents one side, one potential focus – the external behavioral side or focus – of an indissociable complementarity. The other side/focus of this complementary whole is the necessary and transforming organization – system – that represents the organism. In this framing of contextualism there is no privileging of one side or the other, and no privileged explanatory base; inside and outside, and, efficient, material, formal, final explanation all play necessary, not epiphenomenal, roles in the full understanding of any event.

When framed by these broader metatheories then, a 'dynamic systems perspective' can receive a split interpretation as 'strict contextualism' (i.e., mechanism-contextualism), and a relational interpretation as organicism-contextualism. Mechanism-contextualism is what Pepper referred to as an irrational eclecticism; as he says,

“a combination of mechanism and contextualism reveals all the evils of eclecticism [1942, p. 148].” This combination makes no attempt to integrate the two metatheories; instead contextualist concepts and principles tend to derive their base meaning from mechanistic categories. There are numerous examples of this, but a most salient one is contextualism’s concept of ‘act’ or ‘action,’ a concept central to any dynamic systems perspective. Briefly stated, within split mechanism-contextualism, ‘act’ and ‘action’ become *reduced to* ‘motor activity,’ which is itself simply a matter of states and movement. In contrast, in an integrated relational organicism-contextualism ‘act’ references the characteristic functioning of a system. Here, following Brentano [1973], any ‘act,’ even acts at the most sensorimotor level, include goal directness. That is, an act in this interpretation represents the expression of an organized system, and while it may be viewed from the outside contextual focus as movements and states, from the organism-system focus it is identified as *intentional* activity [Overton, 2006].

If mechanism-contextualism represents an irrational eclecticism, organicism-contextualism can be consistently and coherently integrated into a unified whole, through relational principles [see Overton & Ennis, 2006a, for an extended discussion]. Two points made by Pepper are critical to this integration. First, he notes that “Contextualism and organicism are so nearly allied that they may almost be called the same theory, the one with a dispersive, the other with an integrative plan” [1942, p. 147]. At the same time he also argues against the possibility of integration because of “flat categorical contradiction[s]” [p. 281] between the two. It is, in fact, the integrative vs. the dispersive that appears to be the fundamental contradiction that generates others. But it is exactly here that relational metatheoretical principles transform the contradiction into a complementarity, and begins the principled integration of the two subsumed metatheories. Relationally it is not that the two metatheories constitute different plans, it is rather that integration and differentiation (dispersion, variation) are two sides of the same coin and, hence, two complimentary standpoints on the whole, that in the present case constitutes psychological functioning.

Considering the organism and its behavior as a relational dynamic system implies two basic propositions; the relational holistic proposition that the organism is an organized (integrated) system, not an aggregate or assembly, and the relational ontological proposition that the system is inherently active (dynamic) [Overton & Ennis, 2006b]. When an investigative focus is on the organized system, organismic categories prevail. The system is self-organizing in the sense that through its actions it *transforms* its organization in a non-linear dialectic fashion. Pepper argues that organicism does not take time seriously. This is correct. A basic category of organicism is change – development – but it is change of organization – transformational change – that is the focus of interest here, and while time may be a marker of this change, time in itself is not inherently interesting [Overton, 2006].

If the organism or dynamic system is the source of acts, acts move outward, contact the world, “and deal with the world as we meet it” [Pepper, 1942, p. 236]. From a relational perspective, acts function both as expressions of the underlying system, and as instrumentalities of the system. It is in their instrumentality that acts are supported by the categories of contextualism. It is here where the focus is on the particularity of acts and the relation of these acts to their ‘settings and context’ that categories of contextualism come to the foreground. The whole and parts of acts in contextualism, Pepper terms ‘quality’ and ‘texture.’ With respect to psychological

functioning, the whole is the adaptive act, while the parts are the particular acts that are directed towards this instrumental goal of adaptation. A central feature of any part-act is that it is 'linear' in that it has "a point of *initiation* [the organism in our integration], a transitive *direction*, and achieves an ending or *satisfaction*" [1942, p. 252]. When settings or context 'block' part-acts from achieving an adaptive ending behavioral variation or 'disorder' results, 'order' being a completed adaptive act. The variation arising from blocking – the 'dispersion' or differentiation of contextualism – identifies the central category of 'change' in contextualism, and it yields an 'emergent' 'novel' act which again moves towards the adaptive goal.

The relational integration of organicism-contextualism becomes complete when it is recognized that the novel act that achieves the adaptive goal in turn feeds back to the self-organizing system and provides the nutrients for further system re-organization and transformation. Thus, the movement from system to acts to system constitutes the 'circular causality' of the dynamic systems perspective. The circle, of course, is in actuality a spiral as the movement towards increasing states of adaptation is an endless dialectical process in the development of living systems.

The formulation of this relationally integrative organicism-contextualism demonstrates important symmetries and asymmetries of the relational whole that are important as the dynamic systems perspective pursues the course of empirical inquiry. While the two part-metatheories form a complementary relational whole, organicism is oriented towards inquiry into the universal, the necessary, system, form-pattern, and integration-differentiation. Contextualism addresses the particular, the contingent, acts in context, the functional-causal, and differentiation-integration. As fundamentally developmental perspectives, both complements take change as categorical, but it is transformational change that is of central concern from organicism's focus, and variational change from contextualism's focus. Both assert the centrality of holism, but the holism of organicism is about the parts-whole relations of self-organizing systems, while the holism of contextualism is about parts-whole relations of the adaptive act. Both posit 'emergence' and 'novelty,' but organicism examines the emergence of systemic properties in the transition from one system state to another, while contextualism explores novel acts that arise from variational activity. And, despite misgivings by Pepper, both metatheories incorporate categories of both order and disorder, which, when considered as complements, are referenced as integration and differentiation. Organicism's focus is the self-organizing system's movement from integration to differentiation to increasingly adaptive states of integration, contextualism's focus is on how the variational differentiation engendered by blocking ultimately leads to the integrated adaptive act.

On closing I would note that, quite clearly, I am among those who would, in Witherington's terms, 'espouse, an organismic-contextualist DSP' [p. 147]. I would hope that these brief remarks may go some way to meeting Witherington's challenge of the need for "more fully articulate[ing] ... [the] ontological framework" [p. 147] of such a perspective, in a way that provides a principled and coherent integration rather than an "amalgamation, which would bring with it the potential for conceptual obfuscation" [p. 147]. It is my belief that the most productive way of avoiding such obfuscation, as well as facilitating empirical progress in the field, is by proceeding along the lines of a relational metatheory that integrates organicism-contextualism in a manner which entails an inclusive grounding for the dynamic systems perspective.

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