

The Normative Turn in Enactive Theory: An Examination of its Roots and Implications

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Abstract

Inspired by the philosophy of Hans Jonas [1], Andreas Weber and Francisco Varela proposed a teleological reading of autopoiesis in a seminal 2002 paper [2] that has since initiated a normative turn within enactive theory, led principally by Ezequiel Di Paolo [3] and his colleagues at the University of Sussex and the University of the Basque Country [4, 5, 6, 7, 8]. This paper traces the development of enactive concepts of value and normativity from their roots in the canonical work of Varela, Thompson, and Rosch [9], showing the importance of these concepts for enactive theory of mind while, at the same time, exposing a problematic ambiguity in their definition. In brief, the problem is that when explicitly defined enactive normativity is purely negative or proscriptive, while enactive concepts of adaptivity and its role in the enrichment of autonomous identity, not to mention our experience of value, seem to require something more than this. On the other hand, positive or prescriptive norms seem to be incompatible with the fundamental enactive tenet of autonomy. Thus normativity and value present a conundrum for enactive theory.

Before turning to this conundrum, however, it is important to recognize the contributions that the normative turn has made to enactive theory of mind. Its main import is that mind is first and foremost a process of value generation. The world “brought forth” by enaction is the indeterminate set of value contrasts that can be discriminated in and through a historical trajectory of self-regulated structural coupling. Moreover, insofar as self-regulation entails reference to a unique individual or “self” whose endurance constitutes a core value, we can say that values of self and world come into being together, though not necessarily all at once. The enactive process of value generation is ongoing and open-ended: self and world evolve together. Therefore autopoiesis does not exhaust self-making; rather it is the origin of a circular process by which a self and its values are continually redefined [2]. One of the most important contributions of the normative turn, then, is the suggestion that when viewed as an interactive, adaptive process of value differentiation, cognition is necessarily a process of *self-making* as well as sense-making: in effect, self-making is how sense-making works.

Among its many attractive features, this view of enactive mind helps to define enactive theory by further sharpening the contrast with standard views of cognition as problem-solving. When enactive theorists claim that cognition is the “normative engagement of a system with its world” [3], they are referring primarily to this circular process of value-guided value generation, whereas most views of cognition as problem-solving,

if they refer to values at all, assume that values of the organism and environment are somehow already “built-in” [5]. Especially when combined with other strands of enactive theory [10], the normative strand of enactive theory helps to define enactivism as a distinct approach within cognitive science, as it provides a self-grounding, normative framework within which various forms of structural coupling can be understood as meaningful. But what is this concept of value that would play such a central role in enactive theory? The answer is not yet clear, and here is where the problems arise.

According to the most precise definitions [3, 5, 8, 9], enactive normativity is purely proscriptive, as all values are discriminated in relation to the viability conditions of autonomous individuals. This approach is considerably enriched by the proposal that a single organism can be comprised of multiple autonomous individuals or “selves” [5]. Still, because the “mother-value” [2] of each autonomous individual is just the stable persistence of its own dynamically constituted, formal identity, it engenders a rather limited kind of normativity that only disvalues those states that deviate from viability. For this proscriptive definition of normativity, among the many states that satisfy the viability conditions of a living system, *there are no differences of value*. Indeed, more positive values and norms—those that go beyond mere persistence, aiming at some kind of enrichment of identity—are rejected by Varela et al.’s original formulation of enactive theory [9]. However, in the pivotal paper of Weber and Varela [2], the character of enactive value becomes highly ambiguous even as teleology takes centre stage, making it difficult to say whether or not their position stays within the bounds of the original, purely proscriptive framework. Subsequent explorations of enactive normativity add crucial dimensions of adaptivity and agency, thereby clarifying the crucial link between self-making and sense-making; yet they too leave this problematic ambiguity unresolved.

The upshot of this analysis, then, is that while the normative turn calls attention to the importance of value for enactive theory, it leaves a number of questions about the nature of value and its role in sense-making unanswered. What exactly has changed in the wake of Weber and Varela’s argument for the intrinsic teleology of autopoiesis? Does this normative turn promise a return of genuine teleology to biology and cognitive science or just a more sophisticated way of explaining its semblance? Can a purely proscriptive form of normativity suffice? Can the “mother-value” of mere persistence really “scale up” to account for our experiences of value, especially creativity and enjoyment? Can it account for innovation, adaptation, and growth as anything but accidental? On the other hand, can more positive kinds of value and normativity be made compatible with basic tenets of enaction, especially autonomy? The purpose of this paper is to raise these questions as crucial matters for the continuing development of enactive theory.

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The paper is organized into three parts. We begin with an analysis of normativity in the classic formulation of enactive theory, *The Embodied Mind* [9]. This work rejects the Darwinian concept of adaptive optimality that underlies the problem-solving orientation of mainstream cognitive science and its representationalist view of cognition, and opts instead for a purely proscriptive form of normativity tied to the viability conditions of a self-organized system. Then, in the second part, we consider the attempt by Weber and Varela [2] to establish intrinsic teleology as a fundamental trait of autopoiesis based on insights taken from Hans Jonas's phenomenology of life [1]. The argument of Weber and Varela is pivotal, as it seems to go beyond proscriptive normativity in its interpretation of self-maintenance as self-affirmation. The basis of this interpretation is the apparent connection between the persistence of precarious forms of identity and Jonas's notion of "concern for existence." Here we subject this notion of "precariousness" to further scrutiny, and question whether it does indeed provide the grounds for positive self-valuing. Finally, the third part considers critical revisions to Weber and Varela's argument, especially as presented in Di Paolo's [3] case for self-monitoring and adaptivity—or self-making—as the basis for cognition qua sense-making. This latest phase of the normative turn offers a newly refined version of the enactive theory of mind [4] and shows considerable promise for the extension of enactive theory into new spheres of value such as play [5], yet the problematic ambiguity remains. A close reading of Di Paolo's concept of adaptive self-making leads to the conclusion that, strictly speaking, an autonomous system never aims at a new version of itself. Instead, it aims only at the restoration of an underdetermined and therefore somewhat open form of identity, and by chance this restoration may involve a restructuring that is favourable for the system. This is just proscriptive normativity plus fortuitous change. Also, by Di Paolo's own definition [3], it seems that whatever happens within the value-neutral region of system viability [8] is not actually behaviour. Finally, it is highly doubtful that a purely proscriptive form of normativity can "scale up" to account for our experience of value. These problems suggest that enactive theory may need to move beyond proscriptive normativity, and to do this it may need to revise its basic concept of value as the stable persistence of a dynamically constituted, formal identity.

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