

Enactive affectivity, extended

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Central to the enactive approach is the claim that cognition is *sense-making*. Here I argue that this claim entails that cognition is intrinsically *affective*. Also, contrary to what some have claimed, this claim does not commit enactivism to an internalist view of cognition. Furthermore, it does not commit enactivism to an internalist view of affectivity either. Rather, enactivism allows affectivity to “extend” beyond the boundaries of the organism.

1 INTRINSICALLY AFFECTIVE COGNITION

According to the enactive approach, living systems are cognitive systems in virtue of their *autonomous* and *adaptive* organization.² More specifically, living systems are *sense-making* systems, namely systems that enact or bring forth their own world of meaning, or “Umwelt” [6].

Importantly for present purposes, this characterization entails that, according to enactivism, cognition is *intrinsically affective*. By ‘affective’ I do not mean necessarily ‘emotional’, where ‘emotion’ refers to the capacity to display specific ‘emotions’—fear, anger, joy, envy, etc. Affectivity as I understand it is a more general category than emotion, and refers broadly to a *lack of indifference*, and a *sensibility* or *interest* for one’s existence. In this broad sense, it is not necessary to be in a specific emotion or mood to be in an affective state; one is affected when something merely strikes one as meaningful, relevant, or salient.

The affective character of enactive sense-making manifests itself in various ways. For one, enactivism characterizes living systems as *immanently purposive*, namely as having purposes that they themselves bring forth as a function of their autonomous and adaptive organization. Their most general purpose is to sustain their organization; more specific purposes depend on each system’s distinctive structure and milieu. Immanent purposiveness entails affectivity. It entails that living systems are concerned, or care, about their existence, and that they strive to maintain their organization and to regulate their interaction with their surroundings.

Second, the notion of Umwelt is also thoroughly affective. The Umwelt is the world as it strikes the living system as relevant for its purposes. It is not a flat landscape of neutrality but a world of significance tailored to the living being that enacts it. As such, the Umwelt represents what the living system sees as relevant or salient, what matters to it and what it cares about.³

2 EXTENDED LIFE

According to Wheeler [8], enactivism is incompatible with the view that cognition can *extend* into the world [9-10]. This incompatibility is due to the fact that for enactivism cognition and life are “co-located”: the boundaries of the living organism are also the boundaries of the cognitive system; because the living system cannot extend, the cognitive system cannot either. In this sense, enactivism remains an internalist account of cognition.

Enactivists have rejected this internalist charge, claiming that enactivism does allow life to extend, more specifically it allows organisms to integrate or *incorporate* non-biological processes into their adaptive autonomous organization [3, 5, 11]. Di Paolo [5] offers the example of aquatic insects that can breathe underwater by trapping air bubbles on their tiny abdominal hairs (plastrons). He characterizes the air bubbles as a *mediating* structure that, because of its intimate coupling with the insect’s respiratory system, has become part of the organization of a “new form of life”—namely, of a new adaptive autonomous entity (“new” compared to the insect without the bubbles).

3 EXTENDED SENSE-MAKING

It follows that enactive *cognition* (i.e., sense-making) can also “extend”, namely, it can be realized by hybrid biological/non-biological composite systems. Consider for example a diving beetle. As a living being, it is a sense-making system that enacts a certain Umwelt with various meanings in it. This is the case both when the beetle walks on the ground, and when it dives underwater into a pond. In the latter case, the Umwelt of the beetle is enacted partly thanks to the mediating presence of the air bubbles, as these are integrated or “incorporated” into the new adaptive autonomous structure. As such, the underwater beetle (in effect, the composite system beetle-*plus*-air-bubbles) brings forth a new (compared to the beetle-on-the-ground, or the underwater-beetle-with-no-air-bubbles) set of norms for self-maintenance. In enactive terminology, this is the same as saying that the underwater beetle makes sense of, or cognizes, the world in a new way.

Compare the Umwelt of a non-aquatic insect that happens to find itself underwater. A non-aquatic ant, for example, can survive underwater for some time by reducing its oxygen intake and by closing its spiracles to keep water off. Unlike plastron respiration, however, this strategy cannot go on indefinitely. The same pond thus has a different value for the submerged ant than for the diving beetle. For the ant, the pond invites a certain protective behaviour; it is a threatening environment, one that needs to be left. For the beetle, it is a comfortable, even enticing, environment where it can thrive and choose to dwell. This is another way of saying that the ant and the beetle enact different worlds, i.e., they make sense of, or cognize, their surroundings in different ways. Importantly, this difference depends on the

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²By “enactive approach” I refer here to the view originally proposed by Varela et al. [1], and developed more recently by Thompson and Di Paolo [2-5].

³See Colombetti ([7], chap. 1) for a more detailed discussion of the affective nature of enactive cognition.

integration, within the organization of the beetle, of the air bubbles; in this sense, we have here a case of “extended sense-making”.

4 EXTENDED AFFECTIVITY

Given the affective nature of sense making (section 1) we also, then, have a case of “extended affectivity”. The different affective character of the Umwelten enacted by the ant and the beetle respectively should be apparent by now. I said that the pond is “threatening” to the ant, and “comfortable” and “enticing” to the beetle. In other words, the pond affects (strikes as significant) the diving beetle differently from how it affects the ant. We can also say that, correlatively, the underwater ant wants to get away from the pond and is frightened, worried, defensive, whereas the beetle does not want to get away from the pond, and is comfortable and confident in it. Unlike the ant’s, the beetle’s affective condition (of confidence) is extended, in the sense that it is realized by the composite hybrid system “beetle-plus-air-bubbles”.

One way to characterize the affective nature of this scenario in some more detail is in terms of the different *affordances* that the pond offers to the submerged ant and beetle respectively. Affordances are possibilities of action provided by the environment to an organism, depending on the latter’s sensorimotor structure and abilities [12]. For example, to organisms like us a chair typically affords sitting on (whereas it affords jumping on or scratching to a cat, and crawling up to an ant); a flight of stairs affords stepping up and down, etc. The Umwelt can be seen as a landscape of events that invite the organism to relate to them in different ways—not simply “motorically”, but psychologically, as forces that “attract” or “repel” in an affective sense. Thus, for example, a predator is something that compels the organism to run away, and also to experience a need to keep a distance; a source of food affords the action of moving towards it, and also a desire to ingest the item, and more generally an experience of enticement and attraction. Similarly, Lewin [13, p. 77] described the lived environment as a landscape of “imperative environmental facts” or “demand characters” that prompt or stimulate the organism to act and feel in various ways (see [14]). These imperative environmental facts create a “field of forces” that constitute the world for the agent not just as a physical but as a “psychobiological” environment. Thus an organism’s psychobiological environment does not just prompt or afford certain kinds of motor actions (sitting, grasping, pinching), but also affective states of attraction and repulsion. The psychobiological environment depends on the needs and “state of tension” of the organism. Thus, the same physical space has very different demand characters for organisms with different needs and states of tension.

Going back to our submerged ant and beetle, we can now say that their Umwelten differ in what they afford, or better in the “field of forces” they exhibit. The Umwelt of the ant has mostly a repelling demand character, which the Umwelt of the system beetle-plus-air-bubbles lacks; the Umwelt of the beetle-plus-air-bubbles has an attractive demand character. For present purposes, the point of interest is that, in the case of the underwater beetle, the demand characters of its Umwelt are brought forth by the composite system beetle-plus-air-bubbles. Take the air bubbles away from this system, and the Umwelt of the underwater beetle rapidly takes on a different profile of

demand characters, with many lines of force reversing their direction and repelling the insect from the pond. The addition of a mediating structure changes the psychobiological environment of the beetle, thus also changing its affective condition.

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