

CONCEPT AND CAPACITY: THE ECOLOGY OF KNOWLEDGE

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PAPER GIVEN AT THE 10TH INTERNATIONAL WHITEHEAD CONFERENCE, JUNE 6, 2015,
CLAREMONT, CA

We cannot think first and act afterwards. From the moment of birth we are immersed in action and can only guide it by taking thought. We have, therefore, in various spheres of experience to adopt those ideas which seem to work within those spheres . . . We cannot think in terms of an indefinite multiplicity of detail; our evidence can acquire its proper importance only if it comes before us marshaled by general ideas These ideas we inherit—they form the tradition of our civilisation. Such traditional ideas are never static. They are either fading into meaningless formulae, or are gaining power by a more delicate apprehension. They are transformed by the urge of critical reason, by the vivid evidence of emotional experience, and by the cold certainties of scientific perception. One fact is certain, you cannot keep them still.

– Alfred North Whitehead, *Science and the Modern World*

In this paper I ask, What is an idea? What is knowledge? My aim is to persuade you that the best way to understand an idea is to describe the ecological relations among thought, action, and perception. To present my position, I draw on literature from the philosophy mind, particularly enactivism, to propose that knowledge is a skill of engagement. It is an attunement to new contrasts made possible by the coordination of multiple species, practices, and technologies. Similarly, I define conceptualization as a speculative capacity, a performance of the body that leaps the subject beyond immediacy into the spaces of difference afforded by the present. I conclude by

suggesting that the ecological view of knowledge has important consequences for the politics and ethics of first-person experience.

Enactivism

A brief introduction to the framework known as enactivism will help to advance our discussion. To introduce enactivism I describe four core concepts that taken together provide a basis for understanding the enactive approach to cognition. These concepts include embodiment, autonomy, lived experience, and sense-making.¹

In the enactive framework, the living body's engagement with the surrounding environment is central. In this view, the brain is a necessary but insufficient condition for the possibility of cognition because the brain's activity is intimately dependent upon and related to the actions of the body, on the one hand, and the body is intimately related to and dependent upon its engagement with the environment, on the other. The embodied view of mind is thus also an extended view of mind. Mind on this account is an open-ended and context-specific engagement between the body, which includes the brain, and the environment, which meets the body's actions.

Autonomy is also central to enactivism. In this context, autonomy refers to the adaptive and self-organizing capacities of the organism. Every organism is organized in a way that requires continuous reproduction and maintenance. Organisms are not simply given as what they are; instead, organisms achieve their existence in an ongoing way through a variety of metabolic and developmental processes that must be pursued. A corollary

¹ For a more detailed introduction to the current state of enactivism see Colombetti's *The Feeling Body*, 1–20.

here is that each organism has an immanent purpose—a basic self-interest or aim—that makes it a center of value that generates ends from within its own sense of significance. An organism's behavior can in turn be understood in terms of these needs, values, and concerns.

The third concept is lived experience. Lived experience, on my reading, is central to enactivism for two reasons. The first reason I call the existential imperative. The existential imperative is important insofar as it allows us researchers to track third-person accounts of cognition as a physical process alongside first-person accounts that render available what being alive is like from the point of view of phenomenal awareness. As I'll describe in more detail in the next section, perception is a skill that requires cultivation, and the methods which enable that cultivation—which include contemplative or religious practices, experiment, learned know-how, phenomenology, art, music, athletics, and so on—are central to the body's engagement with the world since it is through these capacities that we participate in our surroundings.

The second reason I call the practical imperative. The practical imperative refers to the position taken by enactivism that perception cannot be understood as the passive reception of sensory information but must rather be understood as a type of involved action implicated within the lifeform's position in the world. In this view, perception is an active process of engagement with the object of perception that has a transformative effect on the state of the organism. The practical imperative suggests that the mode of engagement deployed by the organism in first-person experience is ingredient in the organization of the organism as rendered in the third-person

description. Another way of saying this is that first-person experience is not epiphenomenal to the processes of cognition but is in fact participant in and influential of the procedures by which organisms come to understand and engage environments at the level of their physiological organization.

The practical imperative is perhaps better argued for by describing the fourth key concept of enactivism, sense-making. Sense-making refers to the capacity of organisms to enact a meaningful world with a point of view.² The enactivist sees sense-making as a capacity composed of two entangled processes. First, sense-making includes a discriminatory ability for contrast, discernment, and categorization. Second, sense-making includes an evaluative ability to identify relevance, to take interest, and to have concerns. Sense-making thus requires both affect, the ability to take an interest in and be affected by others, and cognition, the ability to make pragmatic inferences about encounters with diverse agents.

What the enactive view suggests is that the capacity for appraisal—or the ability to track meaning in an environment—is a basic form of somatic understanding, where understanding is defined as the coordination of perception, affection, and cognition towards the comprehension of an object.³ That is, the enactment of value and significance is centered within the body's intelligence. In addition to being a wide-spread capacity among organisms, sense-making is in most cases a collective or multispecies phenomenon. In other words, sense-making is often participatory sense-making, an

² Colombetti, *Feeling Body*, 15.

³ See *Ibid.*, 18, 101 and Colombetti and Thompson, "Feeling Body," 45–68.

intersubjective process of enactment that requires reciprocity and coordination across multiple species.

Varieties of Presence

The four concepts of embodiment, autonomy, lived experience, and sense-making bring us into the orbit of Alva Noë's account of cognition. Contrary to approaches that see understanding as a discursive capacity of language-bearing organisms, Noë's approach to understanding is neither limited to nor dependent upon high-level cognitive abilities.⁴ Instead, Noë advances an approach that instantiates a mode of understanding at the level of somatic skill, and this helps make sensible the enactivist's claim that all organisms engage a meaningful world from a point of view.

Noë's suggestion is that we should define understanding as any activity that discloses the world to awareness.⁵ By equating understanding with disclosure instead of with linguistic ability or abstract reasoning alone, Noë issues a view of perception that consists in a plurality of modular focal points of ability. Some modes of disclosure are cognitive or linguistic in nature and others are somatic or perceptual nature. In Noë's view, what each of these approaches have in common is precisely their ability to disclose and engage with a phenomenon in a particular way. They are each a modality or style of engagement.⁶

Through Noë's work we are able to see that the capacity for some degree of understanding is available to most if not all organisms, and this in turn allows for a fuller account of ecology that posits the categories of

⁴ Noë, *Varieties of Presence*, 45.

⁵ *Ibid.*, 24.

⁶ *Ibid.*, 35.

meaning, value, and significance as basic to ecological and evolutionary process. By linking understanding to perception at the level of an organism's body, Noë suggests that many forms of understanding and apprehension do not require abstract or discursive reasoning to emerge.

For Noë abstract thought is a style of access to phenomena just as physical movement is, and both styles of access are entangled within the body. Noë's suggestion here is that knowing minds are not different in kind from moving bodies. Noë writes, "Thought is not prior to perception; nor is perception prior to thought"⁷ and that "Thought is not prior to experience; experience is itself a kind of thought."⁸ To say that perception is like thought or that thought is like perception is simply to say that both are skillful means for grappling with what is and what is not, with what is present and what is absent.⁹ Emphasizing the thought-like nature of perception and the perception-like nature of thought, Noë suggests that aesthetic experience is the paradigm case of all perceptual experience.¹⁰ To have an experience is to have an aesthetic experience.

Noë's work on styles of access suggests that phenomenal awareness is an achievement and not a given ability. It is more like a craft or a skill with a plurality of possible manifestations than it is a universally available power. What shows up in phenomenal awareness is in part a result of the skills of perception one uses to engage the phenomena available in the surrounding environment. Thus on the one hand, how we approach an event and what gets disclosed within our awareness are deeply connected. However, on the other,

⁷ Ibid., 69.

⁸ Ibid., 116.

⁹ Ibid., 35.

¹⁰ Ibid., 129.

in keeping with the enactivist's emphasis on autonomy, the phenomenon in question cannot be subordinated to our manner of access to it.

One way to think about a concept, then, is as an ability to achieve a certain kind of relation to things. Specifically, it's a way of introducing new kinds of contrast in perception and action in a way that reorganizes the causal relations that sort perception and action in the first place. In this context, I use the word *contrast* to denote an ability to detect a greater number of details, to be affected by those details, and to articulate the body in such a way so as to act on those details.¹¹ In this way, a concept is a way of acting upon the capacity for interaction. Thus while the ability for sense-making appears central to all organisms, the ability to re-organize perception through the skillful use of new concepts may be unique to only a few organisms, and it seems particularly evident a force in human beings.¹²

Knowledge and Experience

As we've seen, the enactivist's aim is first to consider the role played by the biological body in the organism's organizing capacity. By emphasizing the organizing role of bodies, the enactivist suggests that forms of experience are species-specific, constituting a diversity of modes of possible experience that

¹¹ My emphasis on contrast is inspired by Bruno Latour in "How to Talk About the Body?", 205–229. Latour does not discuss concepts per se but his emphasis on contrast and articulation in practices of the body is the same as my use here.

¹² Noteworthy here is also Whitehead's discussion of the increase in selective emphasis he argues is an essential capacity of humankind. For Whitehead, the human species distinguishes itself from other forms of life in terms of (a) the capacity to engage in the *content* of experience and also its *structure* and (b) the ability of cognitive precision that marks a transition from *multitude* to *number*. Whitehead writes, "Mankind enjoys a vision of the function of form within fact, and of the issue of value from this interplay. That day in the history of mankind when the vague appreciation of multitude was transformed into the exact observation of number, human beings made a long stride in the comprehension of that interweaving of form necessary for the higher life which is the disclosure of the good" (*Modes of Thought*, 77). The interplay among structure and content and multitude and number is beyond the scope of this paper, but will be taken up again in a different context.

render space, time, and meaning relative to the organism, and where the appearance of each is related to the organism's organization as a dynamic and living body. On the face of it, this account seems very similar to the accounts of experience traditionally given by philosophers.

In the Kantian framework, for example, the conditions under which things are given in experience precede the conditions under which they are thought; however, the way things are thought influences *how* they are given in experience. The question for the Kantian, then, is how do phenomena move from objects of thought (concepts) to objects of experience (intuitions)? That is, how are new conceptual abilities brought into sensible experience? In Kant's system, empirical concepts, or concepts derived from experience, are deployed by *comparing* representations to one another, by *reviewing* past representations, by *abstracting* particulars that are common to multiple instances, and by issuing *judgments* or normative assessments about classes of phenomena. Conversely, a priori concepts, including the forms of intuition (space and time), expressed in the transcendental aesthetic, and the categories of the understanding, expressed in the transcendental analytic, are, as their names imply, transcendental, that is, they are not derived from nor found within experience. They are what is presupposed before thinking and experiencing can take place.

However, from the ecological view, the transcendental cannot be a formal or universal structure in a traditional Kantian sense. Ecological awareness, I submit, implores us to entangle the empirical with the transcendental in distinctly non-Kantian way. If we were to reconceptualize the Kantian transcendental approach in the light of ecological awareness,

then we would have to concede that there are no genetically predetermined causes for behavior nor any universally existent structures that make experience possible.¹³ Instead, there are flexibly recruited prototypes for action that are context-dependent and variable.¹⁴ Organisms on this view are not bearers of a priori categories or intuitions imposed by natural law so much as they are soft assemblies or composites of a large but finite number of physiological possibilities that emerge within a bounded but plastic space of engagement.¹⁵

In this respect the Kantian framework is fundamentally mistaken. Nevertheless, many aspects of the Kantian framework are still helpful to us today. We need only understand that intuitions provide sensory data to concepts and that concepts provide organization to intuitions. Intuitions without concepts would leave us with raw, un-delineated sense impressions—patches of color, smell, and sound rather than forests, flowers, and rain. Concepts are the means by which sense data are synthesized prior to their emergence in phenomenal awareness, or, better, concepts are means by which new synthetic contrasts can be brought into the phenomenal sphere.

A consequence of the ecological approach to concepts and intuitions, then, is that the human body is always an intersection of acquired knowledge and physical perception, and this means that the body never sees a thing naked, as though merely receiving information passively. Instead, what is seen is the phenomenon alongside our available knowledge about it, which

¹³ Colombetti, *Feeling Body*, 57.

¹⁴ As Medin, Lynch, and Solomon note in “Are There Kinds of Concepts?”, “The cognitive accessibility of feature correlations [between concepts and sensory information] is *expertise* dependent, rather than universal and absolute” (129).

¹⁵ Colombetti, *Feeling Body*, 58.

gives the body the capacity to render it in a specific way, with attention to particular details and traits, and with a concern or interest in certain features over others. One way to visualize this intersection is to underscore that organisms entangle perception with cognitive activity in a way that renders phenomenal awareness as a somatic action performed by the body coupled with the knowledge and experience it has been able to acquire.

In other words, a phenomenon is given within the body's knowledge ecology, which helps present it to awareness. In this context, where knowing and sensing are linked, knowledge represents the acquisition of a conceptual capacity, an ability to engage difference and contrast in a meaningful way. The ecology of knowledge marks a space where concept and sense intersect, a phenomenal sensorium that participates in the bringing forth of a subject as a subject through interactions with the world.

The self on this view is itself an achievement or a practice. It is a habit of enaction. Evan Thompson calls this activity "I-making," or the process by which the "I" that endures through time and space continually reconstructs itself and comes to see itself as a thinker of thoughts and a performer of actions.¹⁶ The self-concept is itself a learned skill, an attunement to contrasts that delineates the self from the not-self in a located and situated way, constellated within a specific and historical ecology of action. The I is more like a trajectory than a fixed thing.¹⁷

¹⁶ Thompson, *Waking, Dreaming, Being*, 325–326.

¹⁷ Again, my inspiration here comes from Latour in "How to Talk About the Body?", 206.

From Concept To Capacity

The question now becomes, how does conceptual understanding inflect itself onto empirical observation? More specifically, how do we account for the diversity of capacities that make empirical observation so variable across individuals? That new modes of perception can be learned is evident in the fact that the empirical observations of the botanist, the painter, or the architect are not the empirical observations of the lay person. Each one, in his or her own way, brings to empirical observation a particular sense of refinement, a constellation of knowledge, training, and experience that exceeds the capacity for discernment possessed by the untrained eye.

How is this discernment achieved? How does one *become* a botanist, a painter, or an architect? What are the actions that must take place in order to entrain empirical observation with the capacities required for each skill? In each case, the training process includes a large number of directed practices and behaviors, as well as a large number of machines, instruments, and institutions, but it also includes a substantial theoretical compartment with ideas. The compartment with ideas is neither prior to nor constitutive of practice. Instead, this compartment is an event that occurs within the limits of empirical practices and environmental affordances, within the thrush and flow of reality.

The task of learning is in large part predicated upon guiding the thrush of the real through the production of spaces that facilitate repetition and practice. Repetition and practice in turn encourage a transformation of the body through the internalization of the concept. In an ecological context, learning is the achievement of stable changes in the capacity for perception

where perception is an enacted performance of certain capacities for delineation and connection. The concept ingresses and becomes a part of the empirical skillset of the trained individual. In Noë's words, "A concept is a technique for grasping something. It is a tool or technique for action."¹⁸

In other words, conceptualization is a speculative skill, a performance of the body that leaps the subject beyond immediacy into the spaces of difference afforded by the present. Concepts are ways bodies mobilize perception to achieve certain aims and that render access to specific types of contrast. In their multiplicity, concepts are layers of learned capacities for refinement that intersect with the tissues of the human organism. They develop new spectrums of concern and enable vectors for decision-making that were previously unavailable.

In this way, learning marks an ecological space where knowledge cuts transversally across sight, sound, smell, touch, and taste. This means that knowledge is not a separate layer of representations that sits on top of the sensory systems of the human body but is rather a part of the tissue of perception itself. Knowledge is a material phenomenon, learning an ecological event, and both arise contemporaneously with perception. The intersection of concept with sense, then, is the basis for the ecological understanding of knowledge and its relation to the organism.

Situated Conceptualization

Empirical studies support the idea that knowledge and conceptual ability are part and parcel of the body's organization. Knowledge manifests in

¹⁸ Noë, *Varieties of Presence*, 35.

the body through the construction of new neural connections associated with the acquisition of knowledge¹⁹ and with the neural organization associated with perceptual categorization.²⁰ Other studies have mapped relations between lexical organization and conceptuality ability,²¹ the role of situated context in conceptualization,²² and the diversity of concept kinds.²³ Neuroscientists also know that concepts embody knowledge about the behaviors of other entities;²⁴ that they refer to the neural basis of abstract, categorical representations; and that they detect the basic characteristics of events and store them as generalized classes.²⁵

In short, concepts are flexible and distributed modes of bodily organization grounded in modality-specific regions of the brain;²⁶ they comprise semantic knowledge embodied in perception and action;²⁷ and they underwrite the organization of sensory experience and guide action within an environment.²⁸ Concepts are tools for constructing in the mind new pathways of relationship and discrimination, for shaping the body, and for attuning it to contrast. Such pathways are recruited in an ecologically specific way as part of the dynamic bringing-to-apprehension of phenomena.

¹⁹ Tranel, Kemmerer, and Adolphs, “Neural Correlates of Conceptual Knowledge for Actions,” 409–432; see also Lambon Ralph, “Neurocognitive Insights,” 1–11; Miller et al., “Neural Correlates of Categories and Concepts,” 198–203.

²⁰ Miller et al., “Neural Correlates of Categories and Concepts,” 198–203.

²¹ Caramazza and Hillis, “Lexical Organization,” 788–790.

²² Barsalou, “Situating Concepts,” 236–263.

²³ Medin, Lynch, and Solomon, “Are There Kinds of Concepts?,” 121–147.

²⁴ Tranel, Kemmerer, and Adolphs, “Neural Correlates of Conceptual Knowledge for Actions,” 410.

²⁵ Caramazza and Mahon, “Organisation of Conceptual Knowledge in the Brian,” 198.

²⁶ Kiefer and Pulvermüller, “Conceptual Representations in Mind and Brain,” 807.

²⁷ Hoenig et al., “Conceptual Flexibility in the Human Brain,” 1799. See also Lambon Ralph, “Neurocognitive Insights,” 1–11.

²⁸ Miller et al., “Neural Correlates of Categories and Concepts,” 920.

In accepting the ecological nature of concepts, we are also confronting the classical view of conception. Based as it is on the presence of necessary and sufficient conditions—i.e., the law of noncontradiction (nothing can be both A and not-A), the law of identity (whatever is A is A), and the law of the excluded middle (everything is either A or not-A)—the classical conception gives way to a situated view of the concept based on probability and use.²⁹ The meaning of a concept, then, is a local matter. Conceptualization is always situated conceptualization. Crucially, conceptual capacities are not just memories or records of past events but are modes of organization and differentiation. They are active in the constellation of experience and in the re-organization of bodies.³⁰

If concepts are one way we can act on our interaction with other agents, and if this action can realize a greater variety of presence in our phenomenal awareness, then articulating the sensitivities of the body through conceptual acquisition renders the body able to detect a finer number of details within the environment; or more simply, perception is able to be *about* a greater plurality of phenomena. The result is an ecology of heightened contrasts and increased levels of discriminatory detail. An internalized concept, a metabolization of the concept into the body's capacities, results in new

²⁹ The situated view of concepts has much in common with what Eleanor Rosch named the prototype theory of concepts. In the prototype view, instances of a concept obtain of only some of the defining features required to be an instance of a class. The priority among features is contextual, which allows us to note that instances of a concept have things in common without reducing evident differences to their proximity to an essentialized and unchanging set of exclusionary traits. See Rosch et al., "Basic Objects in Natural Categories," 382–439.

³⁰ As Barsalou in "Situating Concepts" notes, "The concept is the ability to construct a wide variety of situated conceptualizations that support goal achievement in diverse contexts" (242), and further, "The conceptual system does not represent categories in an abstract, detached, generic manner. Instead, the conceptual system constructs situated conceptualizations dynamically, tailoring them to the current needs of situated action" (251).

abilities to discriminate and adjudicate between particulars. In this way, knowledge is a resource for new movement and learned judgment.

To learn a new concept, then, is to fold the organism into a new mode of organization. When a philosopher introduces a new idea—a new alternative, as Whitehead put it—it is better than that we speak of a novel reorganization of the body than of the acquisition of a stable unit of knowledge or information. The idea represents the possibility for a kind of metamorphosis of the body. It multiplies the features available to perception by introducing differences and contrasts. Here the idea meets the body's existing matrix of capacities, melding and contorting the shape of the understanding into a new regime of awareness, making possible new styles of access, shifting what becomes salient in the semantic topography of concern, attention, and decision-making. The idea is an achievement of the body as it enacts phenomenal awareness. It is a mode of knowledge that organizes experience and guides action in the world.³¹

Conclusion

In this paper I reviewed key concepts central to enactivism, including embodiment, autonomy, lived experience, and sense-making. I then described Alva Noë's account of understanding as disclosure, which allowed us to see that perception, movement, and thought are ways of achieving access to what is, to what is not, to what might be, and to what should be. Accepting Noë's account of disclosure, I suggested that concepts are capacities for introducing

³¹ Miller et al., "Neural Correlates of Categories and Concepts," 920.

new contrasts into phenomenal awareness. They are ways of acting upon the body so that new modes of engagement become possible.

The concept, then, is a tool, in Noë's sense, a technique for grasping new details among phenomena, but it is more than that, too. It is also a technique of transformation, a force that transforms the individual through the technique of thinking. To paraphrase Isabelle Stengers, the concept is a practice of thought which makes the maker in the act of thinking.³² This self-making dimension of Stengers's thought realizes itself in what she calls the ecology of practices, or the ways in which we are captured and transformed by our own modes of engagement. The organism capable of exerting such conceptual disclosure upon its own mode of engagement is a unique place within the overall evolutionary picture, a place where matter becomes concept in the mode of phenomenal awareness.

While the aim of this essay was primarily descriptive, we can see that the ecological account of thought, action, and perception has immediate consequences for ethical and political theory. Time limits my ability to engage with these topics here, but in future projects my aim will be to explore how first-person skills—including the kinds of sensorimotor, empirical-observational, and conceptual skills explored in this paper—are deeply tied into and made available by the geographic distribution of resources and the political prioritization of certain bodies over others. Taken together with the arguments made in this paper, I can thus make the claim, perhaps as an opening to further discussion, that first-person experience is simultaneously aesthetic, historical, and political in nature. There is an ethics to perception

³² Stengers, "Introductory Notes on an Ecology of Practices," 183–196.

and action waiting here to be fleshed out, one that drives the body politic all the way down into the physiology of the human organism.

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