are also mediated by the socio-cultural context's normativity (González 2014). Therefore, NP should attempt to understand what issues are involved in the human experience; in the physical and social environment; in the specific elements of embodiment and motor practices; and in the cultural context (González 2014). The task that NP has to resolve is to find an experimental and phenomenological paradigm that could take all of these components into account.

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Not-Quite-So Radical Enactivism

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> Upshot · Enactivism is a welcome development in cognitive science, but its "radical" rejection of representation poses problems for capturing phenomenality. The totality of our interactions exceeds our awareness, so circumscribing the activity that constitutes consciousness seems to require representational guidance.

« 1 » Phenomenology and neuroscience employ distinct vocabularies, from which follows… nothing metaphysical. Yet language can trick us into distinctions that ultimately do entail metaphysical or epistemic presuppositions. Michael Kirchhoff and Daniel Hutto nicely document how programmatic statements by neurophenomenologists and philosophers of mind slide from categorical or methodological distinctions toward separate ontologies, and they also argue persuasively that at the bottom of that slide is dualism and the foreclosure of all hope of addressing the "hard problem." I agree that a mind-matter identity theory preempts this impossibly hard problem, not by solving but by dissolving it. When we agree that there are two descriptions of one self-same entity, there is no "problem" about how the entity could be the same as itself. The science of consciousness accordingly seeks a translational theory, enabling us to render phenomenology as neuroscience, and vice versa.

« 2 » Broadly speaking, "neurophenomenology" *could* be understood as the working assumption that neuroscience can integrate phenomenal experience into the natural world, most particularly that corner of nature described by neuroscience. Under this broad construal, it is compatible with identity theory. However, in practice, "neurophenomenology" remains associated with its first expositor, Francisco Varela (1996). Varelian neurophenomenology attempts to suspend ontological commitments in favor of describing a research programme in which neither first-person nor third-person concepts are privileged. Identity theory affords ontological or theoretical "reduction," which in turn risks elimination of first-person data (see, e.g., Bitbol 2012). Avoiding that outcome breeds commitments to irreducibility, putting one at the head of the slippery slope that Kirchhoff and Hutto criticize.

« 3 » In this commentary, I propose to skirt these issues of the meaning and consequences of neurophenomenology in order to focus on the conclusions Kirchhoff and Hutto draw from the critique of (their interpretation of) neurophenomenology. That critique provides support for their preferred theory, "radical embodied-enactive approaches to cognition" (REC). This is a logical leap, but of course REC has been developed and defended elsewhere, and it is one manifestation of the contemporary enthusiasm for embodied, enactive, constructivist theories of mind. In this commentary, I would like to join with Kirchhoff and Hutto in looking ahead. What are the prospects for REC as an account of phenomenal experience?

« 4 » Discussions of phenomenal experience often underestimate their explanadum. For example, we are asked to explain the taste of coffee or the color of a sunset, independent "qualia." However perplexed we may be by "raw feels," they comprise only one sliver of the tapestry of consciousness from moment-to-moment. The smell of madeleines always occurs in a context, in which sensation activates a tower of perceptual overlays, from concrete to abstract, all embedded in a lived awareness of time past and future – all this is part of awareness from moment to moment. Embodied enactivism underlines the determining role of the body and action in constructing consciousness, themes sounded by Maurice Merleau-Ponty, James J. Gibson, and a cadre of contemporary philosophers (Merleau-Ponty 1962; Gibson 1979; Clark 2003; Noë 2004; Chemero 2009; Hutto & Myin 2013). This emphasis is consistent with classical phenomenology and a welcome break from a long Cartesian history of disembodied egos and their mysterious relations with the physical world.

« 5 » Examples are always useful for keeping the polyphony of consciousness in mind. Kirchhoff and Hutto invite us to conduct a quick phenomenological assay:

> "Imagine that you are currently holding a book between your hands. When your eyes are open, you see it. Imagine closing your eyes but still engaging actively with the book. […] What are you experiencing in this process?" (§40)

« 6 » One traditional answer suggests that at least part of the experience is made of representations of the book, generated by the reception of sensory input and located in the brain. REC rejects all three clauses of this formulation. Cognition is not confined to the brain, is not mediated by representations, and is not the stable endpoint of a passive process of reception. Instead, cognitive processes are shifting configurations of activities involving bodies and objects. The brain is still essential, but it is only one component, and its function is more to modulate the push and pull of muscle and thing than it is to build a world model and formulate plans to intervene in it.

« 7 » REC is an appealing picture of cognition overall, but what are its prospects with respect to providing an identity-theoretic "translation" of phenomenal experi-

ence? In §40, Kirchhoff and Hutto analyze their example as follows:

> "What are you experiencing in this process? You are feeling the texture of the book and even though you are only holding parts of the book you have expectations about the book's orientation, its size, and so on. How the book feels to you also has to do with the way you are applying finger pressure to prevent the book from slipping out of your hands. This involves 'working with your wrist and the rest of your arm to fight gravity and keep the book in place'."

« 8 » REC identifies the distinctiveness of the phenomenal experience with the distinctiveness of the activity of the moment. Our precise behavior and the resultant conditions of muscles and nerves are specific to holding an object of a certain weight and texture. Those are the proximal components of the activity, the bodily part. But the activity is also characterized by context: To undertake the experiment, I reached for a copy of *Ulysses*. My experience of the book in hand is partly a tug on neuroreceptors, partly a lifting of a certain weight, and partly a perception of Joyce's novel. So far, REC's scope of interaction and the scope of my experience coincide.

« 9 » But suppose that in haste the book I grabbed was not *Ulysses* but *Being and Nothingness*. Nonetheless I think, mistakenly, that I am holding *Ulysses*. (We can suppose that the two books are indiscernible by touch.) REC seems clamped to actuality, and must declare that the content of my experience is "holding *Being and Nothingness*." But in the moment, my awareness seems to me to be directed at *Ulysses*. The felt weight and texture, etc., I will ascribe to the wrong book, and this is a different state of mind from my experience of hefting the book under the impression that it is *Being and Nothingness*. To illuminate the difference, note that if you point out to me that I am not holding *Ulysses*, I'll be surprised and the contents of consciousness will shift accordingly. (For example, any property I directly experience in connection with the one book is now transferred to the other.) In short, two states of consciousness can have the same content even when the enactive-embodied engagement in the world has changed.

« 10 » And vice versa: two states of consciousness can have different contents even if the engagement is constant. (For example, you take *Ulysses* from me and declare that you will now hand me *Being and Nothingness*. But you hand me *Ulysses* again. The REC engagement has not changed, but my experience has.)

« 11 » A different problem arises as we try to circumscribe the limits of the engagements that translate to conscious content. As I handle a tome such as *Ulysses*, I am building upper body strength. My REC engagement includes this side effect, but the contents of my conscious awareness does not. Secondary effects proliferate from any action. For example, waving books about with my eyes closed could give rise to a variety of unintended consequences, like your wonderment at my zeal for testing certain theories, or the confusion experienced by the family dog. But once again, I *experience* neither of these environmental effects. My enactive bodily engagements exceed the contents of consciousness.

« 12 » Even in their own description of the experience, Kirchhoff and Hutto raise what seems to me to be a problem with anti-representationalism:

> "You are feeling the texture of the book and even though you are only holding parts of the book you have expectations about the book's orientation, its size, and so on." (§40)

« 13 » The feel here is a configuration of physical energies that includes both book and brain. But what about the expectation? This too is a configuration of physical energies, but what makes this configuration an expectation? Here it is very difficult to avoid representational content.

« 14 » REC restricts the contents of consciousness to what actually happens. But what we think is happening and what is actually happening in our physical environment often diverge. Sometimes more is happening around us than we experience; sometimes less; and sometimes what we think is happening is quite unlike the actual. It is not clear to me how we can resolve these disjunctures without distinguishing *what we think* from *what happens*.

« 15 » Inspired by REC, I could reframe expectation or misapprehension as action-preparation, or as shifting dispositions. So, REC theorists might propose that to regard the book in hand as *Ulysses* is to activitate *Ulysses*-appropriate priming and dispositions to act. However, at any moment I am primed for many possible actions, and disposed toward a vast number of possibilities. Like the unintended side-effects of my behavior, these arrays of potential acts are too numerous to crowd into the contents of consciousness. One might reply that only *some* of the primed behaviors are *Ulysses*-related, but which? If our sortal actually refers to *Ulysses*, then we have reintroduced representation: the relevant dispositions are those that are *about Ulysses*.

« 16 » Another potential REC response to these problems appeals to language, as a system of representations. Language is a regular element of our human niche. We use words (spoken, written) as special objects whose "rules of engagement" fit among all the other enactive scenarios, so embodied/enactivated agents can piggy-back on the representational resources of language to entertain counterfactuals, past and future events, negations, and the like (Lloyd 1989: ch. 6). Part of conscious experience, perhaps a large part, comprises subvocal talking to ourselves. Some, but once again, not all. My experience of handling a book is not a *sotto voce* simulcast report of what I am doing.

« 17 » The embodied and enactive vision of cognition is liberating, and important for cognitive neuroscience to incorporate. As Kirchhoff and Hutto note, it fits well with the dynamical systems approach. Phenomenal awareness is a special case where it seems that representational content is required to accommodate the distinction between what we think we are doing and what is happening. There is nothing intrinsic to representation that reopens the chasm of dualism, however. (Representation is compatible with dynamical systems theories, for example.) We are left with a not-quite-so-radical enactivism (NQSREC). Embodied enactivism for representation is not as radical as Kirchhoff and Hutto would like, but it may be inescapable if phenomenology is to be fully captured in the dynamic web of action.

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Identity or Dynamic Structure?

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> Upshot • It is not clear what Kirchhoff and Hutto mean by identity when they claim that there is no gap between the phenomenal and the physical. Understanding the relation between causation and diachronic constitution, I suggest that phenomenal-physical existence is better characterized as a dynamically articulated form, structure, or gestalt.

« 1 » On the one hand, I am generally sympathetic to Michael Kirchhoff and Daniel Hutto's challenge to neurophenomenology. I agree that Francisco Varela's original proposal to offer neurophenomenology as an answer to the hard problem, rather than to deconstruct it, was the wrong strategy. On the other hand, I think that to propose identity theory as a resolution requires some further explanation since I do not take Kirchhoff and Hutto to be offering the traditional Australian fare of a Place/Smart/Armstrong variety of identity theory. Such theories have usually posited mental state = brain state identities – a central-state materialism – whereas on the REC (i.e., radical embodied-enactive approach to cognition) view, I presume, one would have to develop what we might call a more nuanced distributed-state materialism. Would this be token identity? On that view, a particular dynamical brain-body-environment state (or process, or pattern, defined with its own particular history) constitutes a particular phenomenal experience. Would we be able to specify a type identity at any meaningful level of abstraction? Could we say that visual perception just is this type of dynamical pattern, although (bodily and environmental) components of the pattern may vary widely? That would be a change of pattern, however, which suggests multiple realizability, which is usually a defeater for type identity theories. Such issues would need to be worked out in some further detail.

« 2 » I want to look at a different issue that may indicate an alternative way to go. Kirchhoff and Hutto suggest that neurophenomenology's trafficking in causation or correlation simply accepts the dualistic assumptions that lead to thinking that there is a hard problem. "[N]europhenomenology leaves us wandering in the realm of correlations without providing the requisite kind of illuminating explanation" (§29). They also cite Antoine Lutz: "The introduction of reciprocal causation might be perceived as a subtle expression of dualism" (Lutz 2002: 150). For Kirchhoff and Hutto, it seems to be constitutional identity or bust. Yet certainly there is room for both correlation and causation in a non-dualist enactivist model since correlation and causality exist in purely material systems. Consider a material system composed of three dynamically related processual parts, B, C, and E. Changes in any one part can alter the entire system because it can alter the dynamics of the system as a whole.[1] If B is a machine process that starts to operate at a different speed, for example, it can easily cause C to change its behavior, and E might stop functioning altogether. Changes in B causally correlate with changes in C and E, and more generally in the dynamics that characterize the system. No surprise here; no dualism either. There may even be more complex recursive changes in the dynamics of the machine such that whatever that machine was generating – some work function – is now entirely disrupted.

« 3 » If B = brain, C = body, and E = environment, then the end result of such anomalous causal changes may be some form of mental illness. For example, schizophrenic delusions of control likely involve changes in the brain, changes in bodily movement and body awareness, and given the alien sense that someone else is moving my body, changes in social environment and the way these factors are coupled. It may not be easy to say precisely which way the causality runs, but as a particular dynamical pattern it is not bereft of causal relations that in fact constitute what it is. Now if one wanted to understand the precise details of how this system constitutes delusional experience, one would need to understand the anomalous neural dynamics, the role social environment might be playing, and what the phenomenology (the subject's experience) actually is when these other factors are arranged the way they are. In this case, neurophenomenological psychiatry might be just what we need, and its explanation of the dynamical disruptions in this brain-body-environment system would be explanations in terms of complex correlations and causal relations. Engaging in this type of neurophenomenology is not addressing the hard problem directly. On the one hand, one might think that it is ignoring the hard problem in a way that is easily consistent with the enactivist view. On the other hand, one might think that there is an indirect or implicit answer to the hard problem in such an explanation.

« 4 » A neurophenomenology that concerns itself with correlation and causation is consistent with Kirchhoff's understanding of the constitution-causality relation.

> "Constitution is an exclusively interlevel dependence relation: a relation between the putative higher-level distributed cognitive process and its lower-level sub-processes and their components. Causation, in contrast, is a strictly intralevel dependence relation between processes and their components at a lower level from the constituted process." (Kirchhoff 2015b: 322)

1| Kirchhoff (2015b) cites Carl Craver and William Bechtel on this: "The relation [of constitution] is symmetrical precisely because the mechanism as a whole is fully constituted by the organized activities of its parts; a change in the parts is manifest as a change in the mechanism as a whole, and a change in the [whole] is also a change in at least some of its component parts" (Craver & Bechtel 2007: 554).