not in the simple verification sense, but in the transformative sense. This, I think, will certainly make a “transformation science” of experience possible. For researchers to “become methodologically calibrated instruments” (§35) forms part of this. Taking the enactive logic of values being determined by a creature’s embodiment and self-organization to its logical conclusion also means that researchers should become participants (though in the right circumstances – not in every piece of research: research on functional elements of cognition is still justified, and will not require this kind of approach). Perhaps even, the existential, unsettling involvement that researchers may shy away from (§54) may be easier to bear if it is done together with others and it is clear that all participants/researchers in such an experiment will be transformed.

> « 17 » Thus, while the author’s proposal to start with systematically gathering samples, or to do the “butterfly collection stage of scientific development,” is necessary and important, we may already have ways to detect patterns emerging in the samples too, especially if we dive into the collecting together. My point is that, when Kordės says that “the person whose experience is being observed can no longer be treated as a mere subject – she must become a researcher herself (or at least a co-researcher)” (§61), this means not only that she cannot just passively have her experience examined, but also has to accept being transformed in the process (this is the sense of “becoming a researcher” here), but also that she will inevitably have to be “a co-researcher” (ibid., my emphasis). After all, a systematic investigation of subjective experience is by its very nature always-already a systematic investigation of the transformations undergone by the experiencing body/person as we attempt to probe it from the first, second, and even third personal perspectives.

> « 18 » For investigating experience then, Goethe’s poetic science could perhaps be re-envisioned as a co-poetic science. Or – with a more poetic description – as a convivial science of experience. Convivial not in the sense of “happily living together,” but in the rawer sense in which life is basic to the enactive understanding of sense-making: with its needful freedom, its precariousness, and its throes and thrusts, all the more so when living and experiencing with others.

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The Many Faces of Experience
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> Upshot: The priority Kordės gives to empirical phenomenology in the empirical assessment and grounding of constructivism stems from a restrictive conception of experience that has been questioned by other proponents of what he calls the “phenomenological attitude.”

> « 1 » In his rich target article, Urban Kordės argues for the need for an evolution of constructivism, and defines a very concrete possibility of evolution: instead of being confined to a meta-scientific stance, it would be time for constructivism to become more empirical and practical, up to the point of becoming an “empirical research discipline” (§42). In virtue of it being sometimes named a fusion (§30, §61) and in other places a complementarity relation (§59) between constructivism and first-person/second-person studies (or empirical phenomenology (§30)) on lived experience, constructivist ideas might be grounded and tested empirically, and constructivism could offer an appropriate epistemological framework for these studies.

> « 2 » I will not discuss here the suggestion of using constructivism as a epistemological framework for first-person/second-person studies on lived experience, since I am in basic agreement with it. As Kordės notes, these studies still often rely on objectivist presuppositions, such as the idea that lived experience is a substance waiting to be discovered, undisturbed by the observer and by the very process of observation and description. Proponents of these studies hasten to look for invariants and repeatability, without taking the time to question the very orthodox picture of scientific inquiry they take for granted in order to defend the scientific respectability of their approach. As Kordės acknowledges, Claire Petitmengin and Michel Bitbol (2009) might be considered as the first defenders of the suitability of assuming a non-objectivist stance when one studies consciousness using first-person and second-person methods.

> « 3 » My commentary will be targeted at the unclear character of what Kordės means by “experience” when he defines constructivism as an epistemological position that would be in need of empirical testing. If his reasoning is valid (as he believes it is, §6), I am afraid it is at the expense of important theoretical ambiguities on the meaning of “experience.” For Kordės, most constructivists would have arrived at what he calls “the phenomenological attitude,” namely “the view that experience is primary” (§§18, 21, 22). Very well, but what is experience here? He does not explicitly answer the question. He rather quotes various authors who, beyond their dismissal of objectivism, realism and scientism, have nevertheless entertained different conceptions of experience and knowledge. Quoting Francisco Varela (himself leaning on Edmund Husserl), we learn that “experience” is “human experience,” and that it has a “direct, lived quality” (§18). Agreed. According to the phenomenological attitude as Kordės defines it, experience is not only the terminus a quo, but also the terminus ad quem of knowledge, since for Kordės the phenomenological attitude includes the endorsement of the idea that it is impossible to “rationally know a reality beyond our experience” (§20). There is
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a potential idealist or even solipsist understanding of experience here, if experience is confined to what individuals live, perceive and think in their heads.

When presenting the phenomenological attitude, Kordeš refers to a specific debate within the constructivist community, concerning the (disputed) existence of a mind-independent reality to which mental structures would adapt (§20). I do not think this debate is crucial for defining what experience is. In order to better understand what Kordeš means by “experience,” I have preferred to focus on an orthogonal debate expressed by William James and John Dewey a long time ago: there are single-barrelled and double-barrelled understandings of “experience.” For the latter authors, “experience” is a double-barrelled process: it includes how men know, think, act and live, but also what they do, think, act and live (James 1912: essay 1; Dewey 1925: ch.1). Subjects and objects are woven together in experience as a primary process. Typically, single-barrelled views on experience rather prefer to see experience as a set of sensations, sense data or ideas produced in an individual subject (passive or active). Both options agree with Kordeš that experienced reality is the only area that can be researched (§20) and reject the realistic interpretation of lived experience Kordeš refers to in §46, but they will substantially diverge on the nature of this experienced reality: is it primarily a matter of mental structures or not?

In all honesty, not being a member of the constructivist community, I do not know how much Ernst von Glasersfeld’s constructivism is taken, by self-proclaimed constructivists, as the defining form of constructivism. Be that as it may, since Kordeš often strategically refers to von Glasersfeld in his paper (see for instance §20 and §41), I have used the latter as a guide for better guessing what he could exactly mean by “experience.” Arguably, I take it that von Glasersfeld – and Kordeš – endorse single-barrelled conceptions of experience that identify experience with a subjective and mental phenomenon (it is “in the heads of persons”), this experience being the exclusive material from which knowledge and the world we consciously live in is constructed (see for instance the opening lines of von Glasersfeld, 1995). Kordeš seems to share these tenets. Referring to other scholars, he attributes to constructivism the idea that “the mental world – or the experienced reality – is actively constructed” (§2). What is experienced, but especially for me here, experience itself, corresponds to the mental world. And indeed, at times, Kordeš generously equates – “on the experiential side” – “phenomenal world,” “mental world” and “experienced reality” (footnote 3). The “mental world” is notably composed of sensations: He agrees that the phenomenological attitude encompasses for instance Ernst Mach’s phenomenalism, which is very puzzling, if one takes the time to notice all that separates Mach’s theory of perception from Husserl’s: Husserl never agreed with the idea that perceptual experience and its noematic pole could be reduced to a set of private sense data.

The mental conception of experience has been discussed and criticized by many philosophers that did not come from scientist, objectivist or realist quarters (that is, they did not want to posit that the “what” of experience is a mind-independent reality; and they did not see the mind as a passive receiver or mirror). Some of them are even mentioned and quoted by Kordeš, without taking into account the fact they would importantly diverge with his understanding of experience. For instance, phenomenology (from Husserl to Maurice Merleau-Ponty) puts into question (in virtue of the very idea of intentionality) a primary distinction between an inside (which would be the place of experience and phenomenality) and an outside (be it knowable or not). The phenomenological epoché Kordeš mentions (§§446f) is anything but an investigation of a mental realm that would harbour lived experience. Similarly, one of the main virtues of Varelian enaction is to acknowledge the importance of (lived) experience without confining it to a “pre-given inner world” (Varela, Thompson & Rosch 1991: 4; my emphasis), and without embracing the picture according to which “the mind on its own constructs the world” (ibid.; my emphasis). For Kordeš, “the object of constructivist research might not lie in parts of the world but in the very process of its enactment” (§47). That is promising, but his enactment is for instance much narrower than Varela’s, since it only takes place inside of us: enactment is reduced to a set of mental processes. As I read Kordeš, it is from and in these mental processes that cognized reality emerges: we are no longer in the game of co-creation or of co-construction that he attributes to second-order cybernetics (§8).

These contrasts and distinctions can finally bring me to express the main point of this commentary: the methodological propositions and the practical turn Kordeš wants to insufflate into radical constructivism depend on strong theoretical commitments on experience that are not very explicit in his argument. If the “preamacy of experience” comes with the idea that experience is what happens in our individual minds, then it makes sense to argue that constructivism should be primarily tested in virtue of first-person/second-person studies on the ways individual consciousnesses construct their own worlds, or in other words in virtue of what he calls “empirical phenomenology.” But it is misleading to see this practical turn as a coherent consequence of what Kordeš calls “the phenomenological attitude,” an attitude that would have been embraced by “most constructivists,” but also by phenomenologists and enactivists: not because the latter would be reluctant to take a practical turn or would discuss, in a conservative fashion, the legitimacy of “empirical phenomenology,” but because the phenomenological attitude, as Kordeš understands it, comes with a narrow sense of experience, turning it into a subjective, internal and mental phenomenon. If experience is not understood as an inner and mental domain (be it constructed or not) from which the world would be enacted, I do not see why first-person and second-person empirical studies on consciousness would have a privilege or priority over, let us say, anthropology for studying how human experience and its objects are concretely constituted, and for empirically assessing the relevance of constructivist proposals. For instance, in order to assess the contribution played by observers and observations in the constitution of phenomena precisely, you do not need to start by considering what subjects live in foro interno: instrumented, embodied and enculturated, observation is not in our heads, and yet it is not a brute objective fact either.
What Kind of Epistemic Activity is Expert Introspection?

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> Upshot • A constructivist epistemology might help us better understand what kind of knowledge expert introspection cannot deliver. Indeed, there are well-known trade-offs with regard to the insights that can be gained through introspection. If trivialization is to be avoided, then it should be assumed that, contrary to standard science, introspection just is not a declarative kind of knowledge.

« 1 » In spite of its very name, there is no a priori reason to think that the purpose of an epistemology such as constructivism is to always say anything "constructive" about phenomenology. In other words, a constructivist epistemology in this context might also serve as a kind of negative inquiry by helping us better understand which can not be known in phenomenology or what kind of knowledge phenomenology cannot bring about. There is no shame in such a task (cf. Immanuel Kant’s Critique of Pure Reason); on the contrary, knowledge can sometimes increase dramatically once proper boundaries are set that avoid wasting time in blind, hopeless research.

« 2 » This should apply no matter what particular version of epistemic constructivism we consider, even though it could be argued that constructivism is already in the business of telling us what cannot be known, namely, a mind-independent reality. But it is not clear that all versions of constructivism are committed to the latter statement. Radical constructivism, for instance, is rather agnostic with respect to the existence of an external reality (Riegler 2012), therefore it should not even be in a position to say whether it is knowable or not. In contrast, all versions of constructivism seem to assume the participatory activity of the subject in the construction of the object of knowledge and thus the following remarks should apply to all of them.

« 3 » In this vein, the author provides a timely comparison between quantum physics and psychology. He shows that the former has already been faced with the critical situation where the observer’s intervention is not only unavoidable but cannot escape being factored into the very phenomenon under study. As an example, he advances the collapsing of the wave function by the act of measurement (§11). There is, however, another case that might shed a different light on the analogy between quantum physics and phenomenology. In other words, a constructivist epistemology might help us better understand what cannot be known simultaneously about two different properties of a particle, e.g., its momentum and its position. The more precise our measuring of the particle’s position, the less precise our estimation of its momentum and vice versa. This principle is of paramount importance and has profound consequences for our understanding of quantum-level reality. However, for the present purpose, my focus goes to its epistemological significance, which, as already stated, revolves around the way it defines boundaries for knowledge. This "negative" task is, of course, positive and so could be that of constructivism with regard to "non-trivial" phenomena such as introspection.

« 4 » The following are two already known issues that seem to suggest there is something akin to Heisenberg’s uncertainty principle. Very roughly, this principle states that there is a correlation – a trade-off – between what can be known simultaneously about two different properties of a particle, e.g., its momentum and its position. The more precise our measuring of the particle’s position, the less precise our estimation of its momentum and vice versa. This principle is of paramount importance and has profound consequences for our understanding of quantum-level reality. However, for the present purpose, my focus goes to its epistemological significance, which, as already stated, revolves around the way it defines boundaries for knowledge. This “negative” task is, of course, positive and so could be that of constructivism with regard to “non-trivial” phenomena such as introspection.

« 5 » The second trade-off concerns reflexivity. As the author suggests, performing phenomenological exercises to inquire into