Enactivism

**Going Beyond Theory**

Constructivism and Empirical Phenomenology

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> **Context** • Epistemologically, constructivism has reached its goals, particularly by emphasizing the idea of participatory observation, circularity, and the fact that construction is based on experience. However, rather than research, the main occupation of constructivists and second-order cyberneticians seems to lie in making the case for their epistemological idea, which has been exhausted in many aspects. 

> **Purpose** • To counteract this exhaustion and an increasingly apparent lack of energy, it is argued that constructivism requires a dedicated field of research, a field where it would be possible to test constructivist concepts empirically and thus go beyond mere theoretical discourse. 

> **Method** • Based on a review of basic constructivist premises and a critical examination of the field of empirical phenomenological research, the article connects their respective findings. 

> **Results** • The article proposes that empirical research on lived experience (i.e., empirical phenomenology) requires a constructivist epistemological foundation and might therefore be a logical continuation of constructivist endeavours. In such a way, both fields might benefit considerably. Not only would constructivism acquire an empirical tool for testing its ideas, such a partnership might also provide empirical phenomenology with a more suitable epistemological platform than the realism-based research framework of cognitive science (of which it has become an integral part). The possibilities and problems of introducing empirical research into constructivism are also discussed. 

> **Implications** • The article presents an opportunity to re-think the role and future of constructivism. It suggests educating a new generation of constructivist researchers whose principal goal would be the attempt to study lived human experience. That could also open a path to the experimental grounding of many constructivist insights. 

> **Key words** • Empirical phenomenology, radical constructivism, non-trivial systems, neurophenomenology, phenomenological reduction, Francisco Varela.

**Introduction**

1. The participatory position, namely the realisation of being included in the very system one is researching, or of being “included in a larger circularity” (Foerster 1992: 10), has reformed cybernetics into so-called second-order cybernetics. Such an epistemological perspective is extremely close to, if not synonymous with, the notion of constructivist epistemology. A relatively simplified depiction of this correspondence is shown in Figure 1.

2. This figure requires some comment. Namely, it does not necessarily portray the chronological development of ideas, but their epistemological evolution (extensive analysis can be found in Froese 2010). The term **constructivism** is used to denote an epistemological credo and various underlying perspectives, i.e., “the idea that the mental world – or the experienced reality – is actively constructed or ‘brought forward,’ and that the observer plays a major role in any theory” (Riegler 2012: 237).

3. Traditional cybernetics (i.e., first-order cybernetics) has proven to be fertile ground for the development of several research fields, perhaps most notably for cognitive science. On the other hand, this is hardly the case with second-order cybernetics and constructivism. Obviously, the realisation of one's participation in the observed system does not carry equal weight within different fields of study. Still, there are certain areas of research where it appears to be of the utmost relevance. Reminiscing on the early years of second-order cybernetics, Heinz von Foerster describes the realisation that...

**4**. A brain is required to write a theory of a brain. From this follows that a theory of the brain, that has any aspirations for completeness, has to account for the writing of this theory. And even more fascinating, the writer of this theory has to account for her or himself. (Foerster 2003: 289)

**5**. The aim of the present article is to argue that any research on experience necessarily calls for a constructivist epistemological foundation. At the same time, radical constructivism (as a set of epistemological ideas) requires empirical grounding. Such a joint enterprise can be seen as the next logical step proceeding from present-day constructivist endeavours (see Figure 2).

**In search of the science of the non-trivial**

**6**. This article attempts to demonstrate that constructivism as a set of ideas necessarily requires a follow-up in empirical research and that a perfect candidate for this job exists. Despite being certain that the logic of this demonstration is sound and the arguments presented are valid, it would go against the spirit of the epistemology defended here to think that the character-
Framing the author's beliefs and personal history do not play an essential part in the concepts being defended. It is in accordance with the fundamental idea of second-order cybernetics to give up the view from nowhere and to acknowledge the personal history of the author (Kordeš 2005). Similarly, it is in line with the ideas of radical constructivism to give up the ambition of proposing the one and only correct theoretical solution; in other words, to expect it to reflect the objective state of affairs (Glanvsell 1991). In the same vein, it might be sensible to mention that the author of this text encountered (and turned to) second-order cybernetics and constructivism as a computational cognitive scientist in search of a possibility for a more meaningful way of studying consciousness. One cannot help but feel a special fondness for the poetic style of von Foerster’s writings, for the “radical” version of constructivism (in the sense of “thoroughly consistent,” Riegler 2012: 246), and for phenomenological inquiry as proposed in Natalie Depraz, Francisco Varela and Pierre Vermersch (2003). But after years of studying and advocating the constructivist idea, I feel a certain restlessness and a desire for a venue for empirical research and evaluation within this epistemological frame. This probably accounts for the search for an empirical grounding for constructivism as elaborated in the present article. Still, it seems that others have also been troubled by such feelings. In his 2001 paper, Stuart Umpleby states somewhat re-signedly:

“After about twenty years of making the case for second order cybernetics, it seemed to me that we had largely succeeded. The idea of perspectival observation – what a person sees depends upon his or her background – had become widely accepted in scientific circles even if cyberneticians did not receive much credit for the change in thinking.” (Umpleby 2001: 88)

“Despite mainstream efforts of natural science (with an emphasis on physics) being directed to bypassing the need to account for the role of the observer, some exceptions have to be mentioned, perhaps most notably endophysics (Kössler 1987) or complexity research (i.e., Newman et al. 2006).”

Figure 1 • A possible view of the relationship between cybernetics and constructivism.

Figure 2 • The proposed collaboration: constructivism as an epistemological framework for empirical research on experience.

1] Despite mainstream efforts of natural science (with an emphasis on physics) being directed to bypassing the need to account for the role of the observer, some exceptions have to be mentioned, perhaps most notably endophysics (Kössler 1987) or complexity research (i.e., Newman et al. 2006).
able, and unpredictable. How shall we go about it?** (ibid: 71)

« 10 » Von Foerster suggests three possible strategies for dealing with this, so-called, fundamental epistemological problem: 1. ignore the problem; 2. trivialise the world; and 3. develop an epistemology of the non-trivial. Amazing progress in (natural) science was made possible by taking the first option; that is, by denouncing any questions concerning its epistemological foundations and by largely ignoring mutual influence between the researcher and the research system.

« 11 » However, there are certain areas where the ignorance strategy proves to be a little trickier. For example, at the beginning of the twentieth century physicists were faced with a surprising case of the unavoidable influence of the observer and observation: in the quantum realm, the influence of observation could not be ignored. One of the reasons was that the disturbance of even the slightest measurement is close to the order of magnitude of the phenomenon being measured. More importantly, the mathematical formalism of quantum mechanics represents every quantum entity as dispersed over a spectrum of different states and only the act of measurement "collapses" the entity's wave function into the actuality of one single state. It is theoretically impossible to predict which state it will be in (before the measurement, we only know the probabilities). This raised questions of predictability and determinism. Such strange properties of the quantum world seemed to endanger basic assumptions about the world as well as the established way of doing empirical natural science.

« 12 » Ever since, a plethora of interpretations and solutions has been proposed in an effort to make sense of or, if possible, avoid "unnatural" elements (Einstein, quoted in Schlip 1998). One such interpretation is the ensemble or statistical interpretation (introduced by Max Born, described in Pais 1982), suggesting that the wave function should not be read as a property of any singular entity, but should only be applied to large ensembles. In that way, probabilities are transformed into averages that can be predicted and accurately measured. Such a view avoids the issue of the collapse of the wave function and enables researchers to deal with the observed system as deterministic.

« 13 » Let us recall that for von Foerster, the line between trivial and non-trivial phenomena marks the division between systems that are independent of their history of interactions and those in which such a history cannot be ignored, resulting in their unpredictability. Within this view, we may conclude that the statistical processing of quantum mechanics represents von Foerster's second strategy: trivialisation. Further, it can also be shown (Kordes 2005) that the division between trivial and non-trivial can be translated into the question of in which systems we can disregard the influence of the observer and in which not.

« 14 » The trivialisation strategy does not resolve von Foerster's "fundamental epistemological problem" but avoids it. The strategy is based upon the requirement that the observed system has to be predictable and independent of the observer (if not of the measurement). It selects only those systems from the observed area that meet this requirement. By accepting such a strategy, science becomes a kind of filter: letting through only that part of the experienced world that is repeatable, predictable (at least in principle), and in which the influence of the observer can be either ignored or avoided. Statistical interpretation has filtered individual events – thus allowing the continuation of empirical naturalistic research, but only at the price of prohibiting research on individual quantum events. The spirit of the ensemble interpretation (observing behaviour at a statistical level only and thus ignoring individuality) is not only adhered to in physics. Very similar conventions are upheld in other areas, most notably in psychology and, lately, in cognitive science.

« 15 » The problem of quantum mechanics is especially interesting because it brought the examination of epistemological foundations to the very core of natural science. Solutions proposed by the pioneers of quantum physics are neither naïve nor ignorant.2 Constructivists therefore cannot settle for an excuse and blame the exclusion of their ideas on the epistemological insensitivity of the scientific community. For physicists (and recently, cognitive scientists) resorting to trivialisation is not so much a question of ignorance as of there simply not being a viable alternative so far, one that would allow for empirical research and at the same time accept the findings of constructivist epistemology. Until there is such an alternative, there is no point in waiting for scientific methodology to adapt to constructivist epistemological realisations (as sound as they might be) of its own accord. The trivialisation strategy – for now – seems to offer the best means of keeping science successful.

« 16 » As the third strategy of dealing with the non-trivial, Von Foerster suggests the development of an epistemology of the non-trivial. The premise of the present article is that such an epistemology already exists – namely constructivism. The problem lies in its apparent incomparability with classical scientific endeavours. To date, we are still unable to work out how scientific research might take some of the insights of radical constructivism into account. Such a research approach would be ready, for example, to give up the assumption of a solid researched substance, undisturbed by observation and the properties of the observer. A constructivist science should find a way to take account of the researcher's active role, involvement in the observed phenomenon, and the constant dynamism resulting from such acts of observation.

« 17 » While the search for a potential blending of naturalistically oriented science and constructivist ideas goes on, let us take this opportunity to suggest an alternative idea: to find an area of research where the naturalistic paradigm (i.e., von Foerster's first and second strategy) has been proven to be unsuccessful. If we look at the trivialisation processes used by contemporary science as a filter that allows only those areas of the experienced world to pass through that appear to be observer-independent (i.e., they allow post festum trivialisation), a sensible approach might be to look for an area that is ruled out by this filter. This must be an area for which the role of the observer is so intrinsic that it is impossible to deny it: the area of empirical research on experience.

2 Some of the proposed solutions are epistemologically very innovative and can even help in understanding introspection and consciousness. Further discussion on those topics exceeds the scope of the present article, but can be found in Bitbol & Petitmengin (2013), Bitbol (2014), Kordes (2015), etc.
Constructivism points towards phenomenology

In this section, I attempt to climb up onto the shoulders of giants and demonstrate how constructivist ideas can be seen as signposts for research into lived human experience. I will demonstrate that most authors from the radical constructivism spectrum in the final instance arrive – albeit by different roads – at the phenomenological attitude, i.e., the view that experience is primary. In Francisco Varela’s words, one can describe such an attitude as the re-discovery of the primacy of human experience and its direct, lived quality that is phenomenology’s foundational project. This is the sense within which Edmund Husserl inaugurated this thinking in the West, and established a long tradition that is well and alive today not only in Europe but world-wide. (Varela 1996: 355)

Examining the work of some pioneers of constructivism, their alignment with the phenomenological attitude seems quite obvious. For example, Alexander Riegler (2012: 238) describes Ernst Mach’s epistemological position as a phenomenological perspective, according to which the world consists only of our sensations, knowledge does not refer to material entities but to sensations only. Accordingly, Riegler brands Mach’s branch of constructivism as phenomenological constructivism.

Despite the fact that all constructivist approaches share the belief that the mental world or experienced reality is not a one-to-one representation of a mind-independent reality, they do not share a unified opinion about the relationship between the two. With this in mind, Riegler (2012) divides constructivist approaches into dualist and non-dualist ones. The “dualist” approaches “maintain that constructed mental structures gradually adapt to the structures of the real world” (ibid: 240), whereas “non-dualist” approaches hold a more agnostic attitude to discussions of and even the very existence of a mind-independent reality. This agnosticism does not of course imply its denial but the denial of the possibility to “rationally know a reality beyond our experience” (Glaserfeld 2001: 41). Constructivists who take this denial quite literally thus take up the phenomenological attitude. For the continuation of our reflections, it is important to know that from such a position, the experienced reality is seen as the only area that can be researched, while mind-independent reality “arises as an explanatory proposition of our experience of operational coherences” (Maturana 1988: 39). The alignment of his vision of constructivism with the phenomenological attitude was expressed even more radically by von Foerster in his so-called constructivist postulate, which already drifts towards idealism: “Experience is the primary cause and the world is a consequence of it” (1996: 34, see also Glaserfeld 1995). (ibid: 240) Constructivism and – as will become clear later – contemporary empirical research on experience consists of a wide array of concepts and research projects, which makes it even harder to make any general conclusions about the basic assumptions upon which they are built. But in view of what was presented above, it does not appear ungrounded to conclude that the core representatives of both fields proceed upon the same realisation of the primacy of human experience. While some (constructivists) take this realisation as one of the epistemological factors, others (empirical researchers into experience) regard it as a definition of their research subject. In constructivist texts, with perhaps the exception of Mach, one as a rule does not find many suggestions (on how) to research that which is “primary.” Most constructivist authors do not perceive research on experience as a basic task, but tend to see constructivism more as a “horizontal meta-science” (Riegler 2012: 237). The proposal advocated in this article is that it would make sense to consider the possibility of upgrading constructivism into an empirical research method, which would allow it to upgrade or refresh its epistemological foundations with research on human experience.

Empirical phenomenology needs constructivism

While awareness of the primary position of experience seemingly reflects one of the most essential notions of constructivism, it is by no means its own discovery. In Western philosophy it is possible to trace the long line of this idea’s evolution perhaps as far back as Xenophanes or the skeptics (such as Pyrrho, Agrippa or Sextus Empiricus who are often quoted by von Glaserfeld). In later periods, it has resurfaced several times in diverse ways.

One of the more important instances of this includes Johann Wolfgang von Goethe’s scientific project. At the end of the eighteenth century he tried to propose an alternative to Cartesian-Newtonian science and its doubt in experience. Goethe endeavoured to pursue morphology and optics in a rigorous and systematic way from the point of view of focusing and sensitising the observer. The most relevant for the present discussion is his idea of the relationship between the observer and the observed. To him, research was a dynamic process of intensification towards idealism: “Experience is the primary cause and the world is a consequence of it” (1996: 34, see also Glaserfeld 1995). As a “horizontal meta-science” (Riegler 2012: 240) warns of the need for clearer articulation: “…in the German-speaking literature on constructivism, the distinction is often made between Wirklichkeit (from the German “wirken,” meaning “to have an effect on”) – the world as the domain of our experience and reality (from Latin “res” = thing) – the world as the domain of things in themselves.” It is also important to emphasise that the above-mentioned distinction is just a terminological one, it does not imply any epistemic stance.

3] At this point it is necessary to point out the diversity of expressions used to denote the distinction between the experiential and the subject-independent. In this target article, the following terms are taken to have a similar meaning: on the experiential side – phenomenal world, mental world, experienced reality, etc.; on the side of the external, objective world – noumenal world, mind-independent reality, real world, or sometimes just world. Riegler (2012: 240) warns of the need for clearer articulation: “…in the German-speaking literature on constructivism, the distinction is often made between Wirklichkeit (from the German “wirken,” meaning “to have an effect on”) – the world as the domain of our experience and reality (from Latin “res” = thing) – the world as the domain of things in themselves.” It is also important to emphasise that the above-mentioned distinction is just a terminological one, it does not imply any epistemic stance.

4] Goethe intimates a concept of order according to which not only the object of observation changes and moves but also the subject of observation. Both the observer and that which is observed changes, transforms and develops. Goethe’s claim that perception [Anschauung] itself could change or be enlivened is based on the prior assumption that perception and understanding [Verstand] are always related. (Wellmon 2010: 161)

5] Goethe’s “poetic” science received ample derision and was later almost com...
pletely forgotten. It could in no way stand up to Newton's approach, which managed to ignore the depth, quality, and uniqueness (i.e., properties of the non-trivial) of individual experience, thereby ensuring the proliferation of natural science.

> « 25 » It would appear that each new wave of enthusiasm for the natural sciences also brings fresh interest in research on experience. The transition from the nineteenth to the twentieth century did not bring just a massive onset of the natural sciences and technology, but also an increase in interest in experience, as demonstrated in the work of the German introspectionists, William James, the so-called Kyoto school (described in Varela, Thompson & Rosch 1991), and others. Of all the authors from this period, it is Edmund Husserl who deserves our particular attention here: he succeeded in making a most comprehensive articulation of the primary status of experience and pointed out the problems of the approach taken by natural science in the research on this area. He demonstrated the uncritical, unexamined way in which the natural science paradigm takes up everyday ontological and epistemological intuitions (the so-called natural attitude). Phenomenology was conceived as a fundamental science of essences, which could be fathomed by practicing phenomenological reduction, i.e., by bracketing the natural attitude. By introducing phenomenological reduction, Husserl set up methodological grounds for the foundation of such a research project. Phenomenology grew to become a strong philosophical movement, but unfortunately, "it would be an exaggeration to claim that Husserl produced a universally accepted methodology" (Vörös 2014: 98).

> « 26 » Despite Husserl's argumentation against the gathering of psychological data on parts of experience and despite psychological scepticism about the validity of data gained by introspection (e.g., Nisbett & Wilson 1977), attempts at empirical research on experience have gained new ground in the past few decades. As early as the 1970s, a strong qualitative research tradition started, mostly in psychology and education (i.e., Giorgi 1970; Manen 1997), developing specific concepts and approaches. Yet more relevant for the purpose of this article is the recent development of phenomenological research techniques connected to the progress of cognitive neuroscience. Almost paradoxically, the very faith in the possibility of reducing experience to neurological processes represents one of the causes of increased interest in the subjective that can be noticed recently. Even though neuroscience often treats experience merely as a troublesome epiphenomenon, it has become apparent that at least a certain level of knowledge about direct experience is required for measuring its physiological correlates (Vörös & Markič 2014). Due to this, cognitive neuroscience has "accepted the role of introspection or reporting personal mental experience as a form of data" (Barinaga 2003: 45). Besides accepting phenomenal data, it is becoming increasingly apparent that acquiring this data is far from trivial. Russell Hurlburt (1979, 2009) and others (i.e., Petitmengin 2006; Lah & Kordeš 2014) have shown that it does not suffice to simply ask about experience. Much more sophisticated, iterative techniques are required, preferably involving some training of the participants.

> « 27 » Partially due to the needs of cognitive neuroscience, these past two decades have witnessed the development of a whole new range of empirical approaches, methods, techniques, and ideas. So far, researchers of experience have not yet formed a uniform group with a common methodology or a specifically defined research objective. On the contrary, the array of research techniques aimed at experience covers a wide range of approaches, from simple quantitative questionnaires (i.e., Christoff et al. 2009; Killingsworth & Gilbert 2010) to in-depth dialogical methods. Quantitative approaches mostly do not reach beyond questions such as, for example: "Where was your attention focused just before the probe?" with possible answers "on task" or "off task" (Christoff et al. 2009) or "How do you feel right now?" (the participant is required to choose a point on the scale ranging from "very good" to "very bad"; Killingsworth & Gilbert 2010). Such a simple perspective of experience is quite compatible with the methods of neuroscience and thus very common. It is obvious that in such research it is not necessary to accept the phenomenological attitude – on the contrary, in research where one is required to collaborate with neuroscience it is very useful to adhere to its basic assumptions.

> « 28 » Qualitative, in-depth research approaches on the opposite side of the spectrum include the elicitation second-person techniques developed by Vermersch (2009) and Claire Petitmengin (2006), the descriptive experience sampling method by Hurlburt (Hurlburt & Heavey 2006), the more clinically-oriented research approaches by Josef Parnas (Parnas & Gallagher 2015) and Daniel Stern (2004), and others (some of which are reviewed in Varela & Shear 1999 and more recently in Froese, Gould & Barrett 2011). This is the group of approaches on which I will be concentrating. These are the approaches conceived especially for research on experience and that have been modelled using phenomenological insights.

> « 29 » The approaches in question agree upon and follow the basic methodological directions suggested by phenomenology. Still, they mostly do not fully adopt the phenomenological attitude. This explains why these research approaches could perhaps be more appropriately described as phenomenologically inspired approaches or phenomenological psychology (Zahavi 2004).4

> « 30 » Further on, when presenting my vision of the fusion of experience research and constructivist epistemology, I will use the term empirical phenomenology to denote that having "empirical" and "phenomenology" in the same phrase is not an oxymoron. I intend to indicate that bracketing the natural attitude can still allow for the systematic gathering of empirical data. Approaches such as the elicitation interview or descriptive experience sampling will be considered as candidates that might – beside especially dedicated introspection techniques – become part of a kind of research that will no longer try to trivialise the field of experience. Thus, when using the term "empirical," I do not mean the methods oriented according to the requirements of the natural sciences. Instead, I use it to designate specially dedicated techniques of gathering phenom-

4 Some also speak of "first-person research" (Petranker 2003) in order to stress that what is examined is the subjective, the "inner." It might be more useful, however, to preserve this terminology for delineating the focus of the research: third-person (examining the experience of others), second-person (dialogical co-research), or first-person (examining one’s own experience).
enal data, thus distinct from what Hurlburt & Schwitzgebel (2011) call “armchair introspection.”

31 In his neurophenomenological programme, Varela (1996) stipulates his hope that one day, systematic research on experience will represent a complement to its neuroscientific counterpart. But for this to happen, it would need to reach the standards of conventional science: repeatability, intersubjectivity, and, as a result, the derivation of general laws, perhaps even predictability. Similar hopes are shared by many other phenomenological researchers. Their more or less articulated assumption speaks in favour of the possibility of capturing the essential structure and dynamics of human experience. Their research is therefore expected to reveal stable, recurring structures that would be valid intersubjectively and intersituationally. It might be possible that in order to get there, entirely new methods and ways of research will be needed, but there are few people who actually doubt that reducing experience to a trivial phenomenon (in von Foerster’s words) is possible.

32 Varela (1996), and more thoroughly Varela and Jonathan Shear (1999), enumerate the problems encountered in the research on experience, and the critics who warn about them. Among them Varela mentions Daniel Dennett (1991), who believes that phenomenology is unable to give any meaningful contribution to science due to the lack of consensus about what method to use. Perhaps Varela is a little hasty in rejecting Dennett’s criticism:

In a book that is in many other respects so sauvé and insightful, this display of ignorance concerning phenomenology is a symptom that says a lot about what’s amiss in this field. (Varela 1996: 334)

33 The fact remains that currently in the area of empirical phenomenology there is no consensus about what technique of collecting data and/or analysis to use. Neither is there a coordinated division of the area of research – similarly to in the time of the German introspectionists, the units and parameters according to which different researchers compartmentalise experiential space still vary widely today. This state of affairs partially discloses an even more acute fact: the influence of personal history and theoretical framework on the results of the research. This also begs the question of who is actually the researcher in cases like this: is it the scientist conducting the interview or rather the participant who is supposedly rummaging through her experience and reporting it? (The manner of observation is of course affected by the personal history of both.)

34 Besides, many phenomenological studies indicate that some psychological constructs conceal experiential modalities that are individually completely diverse. One could take the example of the phenomenology of thinking. Temple Grandin (1996) has discovered at least three utterly diverse types of experiential structures of thinking in autistic people, while Hurlburt and Heavey (2006) arrived at the same conclusion based on the results obtained from the entire population (unfortunately, Hurlburt’s and Grandin’s typologies are far from compatible). From this it could be concluded that interweaving of the researcher’s typologisation of experiential landscape, the observer’s punctuation, and individual variability of experience brings into question the very possibility and sense of intersubjective validation of phenomenological data.

35 This Gordian knot points to an even more elementary problem with the research on experience: the so-called “excavation fallacy” (Depraz, Varela & Vermersch 2003), i.e., the problem of mutual influence between the researcher and the researched. John Searle sees this problem as the ultimate proof that systematic scientific research on experience is indeed impossible.

The very fact of subjectivity, which we were trying to observe, makes such an observation impossible. Why? Because where conscious subjectivity is concerned, there is no distinction between the observer and the thing observed... Any introspection I have of my own conscious state is itself that conscious state. (Searle 1992: 97)

36 Interestingly, the above-mentioned central issue of the research on consciousness cannot be found in reports from empirical phenomenological studies. All existing research techniques either ignore or attempt to minimise the interaction between the researcher, the research itself, and the researched. In other words, they use one of the first two strategies to solve von Foerster’s “fundamental epistemological problem.” It would thus appear that empirical phenomenology is actually trying to follow the standards of validity taken over from natural science – a science developed for research on the trivial. A methodological toolbox based on eliminating the subjective element is being used in research on the subjective. And although Varela (1996) points out the novelties of research on experience and warns against preconceived notions of what is normal and what is not, he does not dare go much further. It looks as if the fear of being disclosed as unscientific has created a blind spot for some of the essential characteristics of experience:

Experience is simultaneously the framework of our observation, the observing eye, and the object of observation.

By researching it, experience changes.

The change in experience in turn changes the observer and therefore the observation.

The above circularity is not a → b, b → a; it is a → a – experience observing experience.

Our current experience is a point in the history of experience, which is constructing itself.

Acquiring knowledge about experience is not so much about creating a categorical system as about expanding awareness to reach even more subtle skills of bracketing the natural attitude and enhancing meta-experience (the experience of experience).

Knowledge about experience is itself a new experience. In Jack Petranker’s words, by observing experience we are becoming “conscious differently” (Petranker 2003: 5).

37 If one tries to trivialise research on experience, most of the above-mentioned points become lost. Rejecting the attempt to ignore the above-mentioned points, there are two approaches to take: either agree with Dennett and give up research on experience, or bite the bullet and develop a non-trivial research strategy, a strategy that ought to include three:

38 Observation – Accepting the constructive role of observation and giving up the notion of duality between observation
and the observed. The next two requirements can be seen as corollaries of the first one and can prove to be more controversial.

« 39 » Intersubjectivity – Giving up the stipulation of intersubjective validation as a necessary condition for meaningful research. This does not imply that systematic research on experience cannot and will not yield intersubjective and/or repeatable results. The new strategy we are searching for should, similarly to standard science, strive for stable, intersubjective patterns (or “invariants”; Varela 1996: 337). But – and this is crucial – it should not reject results that do not live up to that standard simply because we do not know how to incorporate them into standard (trivial) science. Many, starting with Husserl, assure us that phenomenological approaches can bring us to invariants, but so far no one has been able to prove that in a fully convincing and satisfactory way (as reflected in Dennet’s criticism mentioned above). It is important to understand that what is meant here is not an agreement on subjective judgements (in the vein of Thomas Metzinger’s “this one is the most blue one” 2003), nor an agreement on the explanations of mental phenomena (which is a classic psychological comment on introspective methods; i.e., Nisbet & Wilson 1977). When talking about intersubjectivity in the area of research on experience, I am referring to the most elementary notion of the term: agreement between researchers on the description of the experiential phenomenon. Invariants would then be the experiential modalities on which the majority of researchers would reach an intersubjective agreement. Such expectations are perfectly viable if we believe that what we are researching is “something out there” – something that is “there” regardless of the properties and the horizon of the observer. But if we are ready to give up this assumption and instead choose to regard the act of observing and the observed object as an indivisible unit, such expectations are no longer self-evident. The hope that still remains, despite everything, is that the multitude of research, comparisons, and analyses will eventually bring us to asymptotes in which the diverse observations will finally be aligned. But we should not regard this hope as more valuable than the data available to us – regardless of how threatening the alternative might seem. This is exactly the bullet we have to bite if we hope to achieve a science of the non-trivial. By starting from the assumption that the research will lead to repeatable and comparable data, we are merely repeating the trivialisation strategy. There is no other way to take up the challenge of the epistemology (and methodology) of the non-trivial but to face the fear that such research might not produce universally comparable data. We have to face the possibility that our fears might turn out to be justified – i.e., that an intersubjective non-trivial science is impossible. There is only one way for us to find out: to allow (at least at the start of such a research endeavour) for data that are not necessarily intersubjectively validated. Perhaps at least part of the reason for the 100-year struggle for the recognition of introspection methods lies in its attempt to follow the trivialisation strategy of the natural sciences.

« 40 » Transformation – Acknowledging the possibility of a personal transformation of the researcher. This has been foreseen by a number of theoreticians, contemplating the possibilities of a phenomenology-inspired science (i.e., Varela 1996; Petranker 2003; Bitbol 2012; Vörös 2014). But it has probably been forecasted most forcefully by Husserl himself:

**the total phenomenological attitude and the epoché belonging to it are destined in essence to effect...a complete personal transformation, comparable in the beginning to a religious conversion, which then, however, over and above this, bears within itself the significance of the greatest existential transformation which is assigned as a task to mankind as such.** (Husserl 1970: 137)

« 41 » The strategy in question should abandon the view from nowhere and adhere to von Glaserfeld’s observation that “We can only really explain experience through experience” (Glaserfeld 1995: 20). When comparing the enumerated characteristics of experience with the properties that constructivist science ought to consist of, as described in the second section, it is easy to detect a large amount of overlap. This overlap consists in the unavoidable role of the observer, the circularity, and dissolution of borders between observation and construction, between the observed, observer, and observation, etc. All of these seem to demonstrate that constructivism is indeed a suitable candidate for a functional framework for research on experience.

Constructivist science

« 42 » The vision of the evolution of constructivism put forward in the following section presents the use of constructivist concepts as an epistemological framework for which there exists an appropriate empirical substance – lived human experience. This proposal might be said to include the transformation of constructivism from meta-science into an empirical research discipline. From the point of view of empirical phenomenology, I propose an alternative to naturalisation: instead of having phenomenology adapt to the research methods of natural science, a new epistemological framework would allow it to derive new, better-adapted methodological strategies. Let me explain that my ambition here is not to oppose the naturalisation, i.e., the phenomenologisation, of natural science (as mentioned by Zahavi 2004 and Vörös 2014). Instead, I attempt to present a fusion between the phenomenological area of research (which also includes basic methodological guidelines) and the constructivist epistemological framework. Such a fusion would use methodological tools from natural science if possible – but no more than allowed by the limit of non-triviality.

« 43 » A concrete specification of the research strategy must remain a challenge for the future. At this stage, it is not yet entirely clear whether the definition of science can be extended to the point of accommodating a non-trivial strategy required by the characteristics of experience, as presented in the...
The notion of research is normally connected to the process of discovering the world “as it really is,” i.e., discovering the properties of the objective world. As we have seen above, constructivism – as well as phenomenology – brackets the certainty about the existence of any such thing. Taking this agnosticism into account, the question emerges: What is the meaning of research within constructivism? And what exactly is it the constructivism should be researching? The answer to the former question might be found in Glanville’s (1982) analysis of the act of observation through the metaphor of “whitening” the black box (before that, a similar model was proposed by Glaserfeld 1974). The observation is modelled as a search for a stable interaction between a white box (the observer) and a black box (the observed). While to the observer the act of observation might appear as the construction of a functional description of the observed, such a perspective is only viable when the observer excludes herself from the system. From the point of view of the system that includes both the observer and the observed, this is an attempt at constructing a stable interaction (or in von Foerster’s words: an “eigenbehaviour,” von Foerster 1976: 93). Observation (as well as research) is therefore a constructive interactional process of negotiation, with the aim of achieving a stable coupling (i.e., seeing, understanding, etc.) and as such, a skill that has to be trained.

Let us suppose that we have to a certain degree managed to quell the seeming opposition between the act of constructing and the act of research. But even if we are aware of this at the theoretical level, it is hard to transfer such a realisation to the world of everyday experience. From the experiential aspect, research is perceived as the endeavour to see/understand the observed object such as it is. The phenomenology of observation and research appears to be necessarily connected to the desire to see what is there (and not the intention of constructing). Trying to see/understand how things are appears to be the experience of (every) act of observation. It seems that the strong intention to find out is precisely that which drives any researcher to drill persistently into a question and does not allow them to be satisfied with the first superficial answer.

It would seem that the default mode of our everyday interpretation of lived experience is realistic. Husserl described this tendency to interpret experience as the observation of the external, observation-independent world with the term “natural” and sometimes also “everyday attitude” (Husserl 1982). And it is at this very point that constructivism meets phenomenology: unlike natural science, which does not question this default mode, both constructivism and phenomenology put such a belief within brackets. This gesture was dubbed “phenomenological reduction” by Husserl (ibid.), while Varela sometimes refers to it also as the “gesture of reflection.” Through such a gesture [...] the habitual way we (have to) relate to our lived-world changes. This does not mean to consider a different world but rather to consider the present one otherwise. As we said before, this gesture transforms a naive or unexamined experience into a reflexive or second-order one. Phenomenology correctly insists on this shift from the natural to the phenomenological attitude, since it is only then that the world and my experience appear as open and in need of exploration.**

The latter remark by Varela, namely that it is precisely this bracketing of the notion of the “real world” that opens up the space for exploration, is especially interesting for the present discussion. The gesture of reflection can be seen as a constructivist turn – the turn from focusing on the construct to taking an interest in the process of construction itself. Such a change in focus opens up the view to (constitutes the possibility of) new areas of the experienced world. From the constructivist perspective, this is a way to make the natural attitude become the object of research, which from this newly found point of view no longer appears to be a reflection of the actual state of the world, but a process aimed at ensuring a continuous, meaningful flow of experience. The object of constructivist research might not lie in parts of the world but in the very process of its enactment. How does the world emerge? How can the notion of a continuous flow of experience be maintained? In this way, research essentially becomes second-order research – research into that which one researches with. Most of the above-mentioned processes/phennomena are familiar to constructivists, but rarely empirically researched. And even when they are, there is no consensus about the perspective and methods that should be applied. I have tried to argue that the phenomenological perspective is a result of adopting what I have called “the constructivist turn.” That claim accepted, the proposed enhanced version of empirical phenomenology can offer the means and tools for constructivist research.

In the selection of research areas, this target article somewhat diverges from Varela’s plan since to a certain degree he neglects the fact that it is the research paradigm that determines the areas of research. In his project he assumes that the phenomena researched by phenomenology will at least to some extent coincide with those of neuro-science (e.g., Varela 1999). This assumption is not very appropriate as a starting point, considering phenomenology’s objections to the naive and unexamined stance of natural sciences (Zahavi 2004). It is important to let the areas of research spread out in accordance with the new epistemology rather than measuring them with a yardstick borrowed from third-person cognitive science.

The research approach and techniques of constructivist science as proposed here could partially be borrowed from empirical phenomenology, i.e., second-person techniques for gathering phenomenal data as envisioned by Petitot (2006), Vermersch (2009), Hurlburt (1997), and others. But since most of these research approaches are adapted to the trivialisation filter of natural science, the constructivist framework could enable research to adapt much better to the non-trivial properties of experience.

Two principal venues can be discerned here, i.e., two essential aspects of empirical phenomenology, where a more appropriate epistemological basis could come in useful. The first one is the problem: What are we actually observing? Most of the existing techniques are based on a more or less
explicit assumption that the stability of the researched substance is similar to that dealt with in the natural sciences, in the case of research on lived experience this is the assumption of reified experience. The majority of techniques thus presuppose that in the area of experience research, one can separate the researched substance from the researcher. Hurlburt (2009), for example, mentions the “pristine experience” and constructs his entire research technique on trying to minimise the influence of retrospection (and by that the influence of the research). A slight exception might be found in recent work by Petitmengin and Michel Bitbol (2009). They notice that their research technique changes the experience researched and appear to be open to questioning what it is that the retrospective methods are in fact researching. In Bitbol & Petitmengin (2013) we can detect a step away from the reification of experience, accompanied by the introduction of new ways of validation.

Nevertheless, it appears that most attempts at empirical research on experience have so far failed to open up a space for accepting the possibility that what is being researched is not necessarily a fixed structure, independent of the observer’s actions, gestures, and attitudes. Namely, it is a possibility that becomes evident once we bracket the notion of the observer-independent reality and once we allow for the possibility that the observation is part of the construction. As a constructivist, one should not be surprised that one’s observations are being invented, constructed, or rather enacted. The influence of observation, the observer’s perspective, and expectations should thus no longer be considered as merely a bias that needs to be minimised, but as a constitutive, inseparable part of the result.

Such a realisation underlines the problem already mentioned in this article: by letting go of the notion of the observer-independent world, one has to accept that what is being researched is not necessarily a shared area. There is a strong intuition that the laws governing our experience are shared and uniform, but that does not suffice as an argument on which to base a research project. Accepting the uncertainty brought about by the agnostic stance towards the real world is one of the most difficult aspects of the construction of a non-trivial science since we must accept the possibility that perhaps (despite our best efforts directed towards such goal) we will never reach invariant results and thus a fully-fledged scientific project. Still, science as an open-ended inquiry is all about gathering evidence and following it wherever it leads. Bearing this in mind, it would actually be unscientific to abandon our research even before it actually begins just because there are no guarantees that it will ultimately be possible to create a general, intersubjective model. After all, this would not be much different from the situation of biologists in the times of Alexander von Humboldt, gathering samples everywhere they went without knowing for certain if they would ever be able to produce a system, i.e., capture the general idea.

The first question (What actually is it that we are observing?) begs the next one: Who is the researcher? This is another problematic point of discussion from the perspective of standard science. Experience research, i.e., the first-person aspect, quickly brings us to the realisation that our everyday intuitions about experience are quite poor (cf. Hurlburt 2009) and that it is necessary to learn how to observe one’s own experience. But this can only happen if we are interested in our own experience. This means that the person whose experience we are researching must become a researcher of her own experience. It is only the “owner” of the experience who can make the gesture of reflection, she alone can search for more detailed subtleties, articulate them, and evaluate the exactness of their articulation. Contrary to most research situations in psychology, a participant in phenomenological research is not merely an informant but becomes the main expert on her experience. In the case of dialogical research techniques, the primary task of the interviewer is to ensure the participant (the researcher) has space for the inquiry into her experience.

In describing the beginnings of second-order cybernetics, when researchers first entered the circularity of the research process, von Foerster noted: “Clearly when cyberneticians were thinking of partnership in the circularity of observing and communicating, they were entering into a forbidden land.” (Foerster 2003: 289). Similarly, the researcher, as described here, would also be entering a forbidden land: research into one’s own experience. Such an endeavour almost certainly leads to a personal transformation and as such is existentially uncertain. To quote Varela (1996: 346): “sustained, disciplined learning does entail transformation, and so does everything else we do in a sustained mode.”

Adding to Varela’s investigation, Bitbol notes that the...

The researchers of such a research project should strive to become methodologically calibrated instruments by:

- taking up systematic training in phenomenological reduction/gestures of reflection (of which different modalities are described in Deprazi, Varela & Vermersch 2003); and
- systematically checking and studying the possibilities for sharing results and reporting on phenomenal data.

Such patient and persistent training in introspection represents an essential addition and upgrade to the second-person techniques. Varela (1996), in his neuropsychological project, defines the phenomenological research strategy with the following four points:

- bracketing the natural attitude, suspending beliefs;
- allowing immediate experiential evidence (which Varela 1996 calls “intimacy”);
- training in both of the above-mentioned points in order to enable stability; and
searching for invariants, allowing for intersubjectivity.

The first two points describe the act of phenomenological reduction. The third indicates the need for in-depth and existentially binding research. As stated in the paragraph above, I propose to expand the third point with training in the skills of reporting phenomenal data (as, for example, suggested by Vermersch 2009 and Depraza, Varela & Vermersch 2003). If one accepts the premises described in this article, reporting (together with all the “biases” and individual influences that accompany it; cf. Froese et al. 2009 and Froese, Gould C. & Barrett 2011) can be seen as another, integral part of the enactment.

As far as the fourth point is concerned, I suggest an agnostic stance. As mentioned above, there is still a lack of guarantees concerning the existence of such invariants in the area of inquiry into experience. The quest for possible intersubjectivity must take into account the specificity of such research as described above: the practice of phenomenological research involves a personal transformation; it changes the phenomenon originally observed, and through that, the observer herself, who becomes “conscious differently” (Petranker 2003). As a consequence, each process of validation is in fact a fresh inquiry into experience. The process of checking (i.e., experiencing) the results reported by such researchers will have to include embarking on the same path as that taken by the original researcher. If we follow Searle’s claim that the goal of science is to establish statements whose validity can be discovered and evaluated by any interest-ed researcher (i.e., statements that are epistemically objective) but are not necessarily ontologically objective (Searle 1992), we have to concede that the proposed endeavour still fits within such a framework. In the constructivist science envisioned here, reporting about the process, the technique, and the general path of research is therefore an essential feature. If we add to this the fact noted above that personal history, views, and expectations participate in enactment, then it is not only desirable but crucial to reflect and record individual details of the process as well as those of the characteristics of the observer.

Conclusion

Let me now draw together the highlights of this expansive and disciplinarily diverse article. Its idea is based on the observation that constructivism – as an epistemological framework – and empirical phenomenological research – as a methodological guideline in the area of research – might complement each other. In the article, I try to show how radical constructivism and transcendental phenomenology come together in bracketing the everyday inclination to accept a realistic interpretation of experience, i.e., the natural (or everyday) attitude. I agree with Husserl that, in order to bracket this default mode of the interpretation of experience, a conscious gesture of reflection is needed. In phenomenology, such a gesture is called phenomenological reduction, leading to a new view of experience (the phenomenological attitude). I believe that radical constructivism makes a similar turn when taking up an agnostic stance towards the existence of the real world (I suggest the term the constructivist turn). In many respects, the approach I propose, as well as its goals, are in line with the projects described in Varela (1996), Varela & Shear (1999), and Depraza, Varela & Vermersch (2003). However, it turns out that certain aspects of the research paradigm based upon radical constructivism are closer to Goethe’s idea of science as the mutual change, transformation, and development of the researcher and the researched.

Adopting constructivist epistemology points to the involvement of the research approach as well as the researcher’s point of view (i.e., also the personal history and characteristics of the observer) in an enactment circle. Observation is not to be seen as a distortion of the image of the phenomenon such as it “really” is. Instead, it is one of the factors in the construction of the phenomenon through an interactive process. On one hand, this emphasises the importance of explicating the researcher’s personal point of view (i.e., the horizon). On the other hand, it points out two characteristics of such research that seem to threaten the possibility of it developing into a fully-ledged intersubjective scientific endeavour.

If we accept the proposed fusion between phenomenology and constructivism, we must also accept that any research also carries an existential note: it almost necessarily leads to the personal transformation of the researcher. 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).
The article may be seen as an appeal to bracket the expectations about the exact form of findings of such research. I call for bracketing assumptions that are not based on evidence but on the fear of the fluidity and uncertainty brought about by the non-trivial. At the same time, I advocate the patient and well-documented collection of evidence when encountering the vast, still undiscovered area that is lived experience.

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