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Interview with Shaun Gallagher

Part I: From Varela to a different phenomenology

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***Avant:* We have been discussing your and Francisco Varela's article "Redrawing the Map and Resetting the Time"²⁰, with a group of students recently, and we find it still very inspiring. How do you think, would you revise anything in this text today?**

Shaun Gallagher: Thanks for this question. I wrote this article with Francisco only a few months before he died, and it was an honor for me to do so. I think that phenomenology still holds a lot of promise for research in cognitive sciences. The only thing I would add to this article would be some mention of what I later called 'front-loading phenomenology'. This is a methodological approach that is slightly different from neurophenomenology as Varela describes it. I never had a chance to discuss this idea of integrating phenomenological insights into experimental design, but I think he would have understood it to be a good supplement to his idea of neurophenomenology.

Your last book, *Brainstorming. Views and Interviews on the Mind*²¹, is dedicated (among others) to F. Varela. What aspects of his rich scientific achievements should be in your view particularly popularized?

¹⁹ Special thanks to Marcin Miłkowski for suggestions.

²⁰ S. Gallagher & F. Varela. 2003. Redrawing the map and resetting the time: Phenomenology and the cognitive sciences. *Canadian Journal of Philosophy*. Supplementary Volume 29: 93-132.

²¹ S. Gallagher. 2008. *Brainstorming. Views and Interviews on the Mind*. Imprint Academic.

When Francisco died I was in touch with a number of his friends in Paris who let me know of his death. I then, under the signature of Francisco's friends and myself, posted notice of his passing on the electronic North American philosophy list. As a result, I received many responses from people all over the world. What surprised me about these responses is that they were from people working in a variety of very different disciplines, all of whom stated that Francisco Varela's work had had a profound influence on research in their discipline. Of course I had known of Francisco's work in neurobiology, phenomenology, and his relation to Buddhism. But I also heard from people working in cybernetics, artificial life, and even literature. I believe that his work (with Maturana) on autopoiesis was the thing that was most commonly mentioned.

Shaun Gallagher



(S.G. archives)

How would you comment today on statements like this: Francisco Varela's interest in Buddhism made his scientific work less clear?

I think his scientific work stands on its own. If you ever saw Francisco present his work at an academic conference, you would know that there was absolutely no question about his scientific clarity. He was also clear about his interest in Buddhism and his work with the Dalai Lama. Indeed, the Dalai Lama has been very clear about the importance of Varela to the project of exploring relations between science and Buddhism. The Dalai Lama has said quite clearly that at one level of interpretation, if science and Buddhist views came into conflict, then he would propose to revise Buddhist views – although there are some topics or other levels of interpretation where science can say nothing that would change Buddhist conceptions, e.g., concerning reincarnation. Varela, too, understood with clarity about what science can say and what it cannot say. This works both ways, and it's important for scientists to have a clear sense of the limi-

tations of science – just as much as it is important for Buddhism, or any other religious practice, to know the limitations of belief.

There are many critical voices nowadays concerning neuroimaging, saying that it brings along many overused interpretations of scientific data. How does this relate to Varela’s postulations in the area of his neurophenomenology?

Neuroimaging, like any other scientific technique, has its limitations. This is just a general principle: with any scientific technique you can only ask the questions that the technique allows you to answer. Certainly our research machines and methods can only answer questions that they were designed to answer – and these are limited ones. The danger is always that enthusiastic scientists (and philosophers) will be tempted to say that their particular machine or method will provide all of the answers we need. But this is a version of scientism; and time will always temper it, since machines are always improved enough to show the limitations of older machines. The lesson to take from this is the idea that to understand something like cognition we need many methods. We need to use the scanning machines, but also we need to use the different methods that such machines allow – including neurophenomenology. But we should not expect neuroimaging or neurophenomenology to provide all the answers, or even complete answers to specific questions. We need these methods, plus other methods and approaches – lesion studies, pathological studies, behavioral experiments, philosophical analysis, studies of language and narrative, and so on.

Could you elaborate more the concept of front-loading phenomenology?

Experimental designs are usually informed by specific theories. A good example is when a brain imaging experiment or a behavioral experiment is framed by certain assumptions about theory of mind approaches to social cognition. In contrast, phenomenological method requires the phenomenologist to bracket such theories and assumptions. But the result of that may be certain insights about the nature of experience itself, including intersubjective experience. So the idea of front-loading phenomenology is that experiments can be informed by phenomenological insights. These insights may take the form of certain distinctions. For example, the distinction between the sense of agency and the sense of ownership involved in action starts out as a phenomenological distinction as one reflects on involuntary movement. Such distinctions or insights developed in independently conducted phenomenological analyses, can easily be incorporated into the design of behavioral or brain imaging experiments. In such cases, I suggest, phenomenology is “front-loaded” – that is, incorporated into the design of the experiment, “up-front,” in the experimental design. Such experiments can still be third-person, looking specifically at, for example, brain processes or objective measures of behavior. There may not be any phenomenological reflection, or report, explicitly used

in the experiment itself – and this would make it different from a strictly neurophenomenological experiment. But the experiment may be viewed as confirming or raising questions about the original phenomenology – and such questions may be helpful for further phenomenological work (see Gallagher 2003 and Gallagher and Sørensen 2006²²).

Meditation as a method of neurophenomenology – what can you tell us in short about this possibility?

There have been very successful studies of mindfulness meditation using neurophenomenological methods. As you know, a student of Varela, Antoine Lutz, has been working in Richard Davidson's lab at the University of Wisconsin (and he has also been working with Evan Thompson on the theoretical side) to study the neuroscience of meditation. They, and others, have produced a lot of excellent science that shows the effects of meditation practice. This is one aspect of this work. This is the use of neurophenomenology to study the effects of meditation. But your question asks something slightly different, and points to another aspect – the use of meditation as a method for neurophenomenology. This idea goes back to Varela's book with Thompson and Rosch (*The Embodied Mind* 1991²³) where they suggest that meditation practice provides a phenomenological method that complements traditional phenomenology. In this case, long-term practitioners of mindfulness meditation may be able to isolate or enhance various experiences or cognitive or attentional strategies in order to allow for the scientific study of these experiences or strategies using, e.g., neuroimaging or behavioural experiments. I think this, like every other scientific approach, is both useful and limited. It's not clear to me, for example, what we might learn about everyday cognitive functioning, or everyday experience, if the procedure involves what we might call meditation-enhanced experience. This is not to say that it would tell us nothing, but that we need to be careful about what it does tell us, in the same way that we have to be careful about drawing conclusions about non-pathological experience from the study of psychopathologies.

The other component in Varela's method is phenomenological reduction. What do you think about applying phenomenological method to cognitive research?

I think that's part of neurophenomenology. Varela includes a version of the phenomenological reduction in his account of neurophenomenology, and this requires that the sub-

²² [1] S. Gallagher 2003. Phenomenology and experimental design. *Journal of Consciousness Studies* 10 (9-10): 85-99. [2] S. Gallagher & J. B. Sørensen. 2006. Experimenting with phenomenology. *Consciousness and Cognition* 15 (1): 119-134.

²³ F.J. Varela, E. Thompson, and E. Rosch. 1991. *Embodied Mind*. The MIT Press.

jects in the experiments be trained in this method. So, in Lutz et al. (2002²⁴), the subjects in the study were familiar with the use of phenomenological reduction and this procedure was used to derive certain descriptive categories that were used in the reporting of experiences. I think that incorporating the phenomenological reduction into these kinds of experiments on perception, for example, works very well. But it doesn't seem likely that it would be productive in a vast range of experiments. For example, if you are conducting experiments with children, or with subjects suffering from psychopathic delusions, it may be difficult or impossible to train them in phenomenological method. That's one reason I proposed the idea of front-loading phenomenology, since that would not require training subjects in this way.

One has the sense that part of your message in *How the Body Shapes the Mind*, is the idea not of building a bridge between two different lands, but of intending to erase the boundaries between body and mind? Is this correct?

One can think of this in a number of different ways. Erasing boundaries or building bridges – these are geographical metaphors – changing the landscape, and so on. One of the implications of the shift to embodied theories is that we need to re-conceive the concept of mind. It's not enough to say simply that it should be non-Cartesian; we need a positive vocabulary to describe something that is not the mind in the traditional sense of that term. In contemporary philosophy of mind, I think analytic philosophers have forgotten about Wittgenstein and Ryle, and now they seem stuck with the vocabulary of belief-desire psychology and, of course, the terms of representationalism. I don't think these terms can do justice to, for example, embodied action, enactive perception, situated and distributed cognition, or intersubjectivity.

The organic body, the spatial body, the body schema, the body image, the affective body... From perspective of common sense: there are the bodies that shape the mind. There is a wide diversity of embodiment and different levels of experiences structuring the body. What really shapes the mind? Our question is the paraphrase of the question of Frederique de Vignemont, who wrote a review²⁵ of your book four years ago. What would be today your quick response to this?

I agree that there are different conceptions of the body, and that one should try to get clear about which one(s) count(s) for shaping our experience. de Vignemont recently co-authored an article²⁶ with Alvin Goldman on embodied accounts of social cognition in

²⁴ A. Lutz, J-P. Lachaux, J. Martinerie, and F.J. Varela. 2002. Guiding the study of brain dynamics using first-person data: synchrony patterns correlate with on-going conscious states during a simple visual task. *Proceedings of the National Academy of Science USA*, 99: 1586–1591.

²⁵ F. de Vignemont. 2006. A Review of Shaun Gallagher, *How the Body Shapes the Mind*. *Psyche*, 12 (1). [Http://psyche.cs.monash.edu.au/](http://psyche.cs.monash.edu.au/)

²⁶ A.I. Goldman F. de Vignemont. 2009. Is social cognition embodied? *Trends in Cognitive Sciences*, 13(4):154-159.

the journal *Trends in Cognitive Sciences*. What they called embodiment was anything but embodiment. They basically reduce the body to brain representations and rule out any contributions from the body understood as either the lived body (*Leib*) or the biological body. They suggest that everything of importance for human cognition happens in the brain, which they refer to as ‘the seat of most, if not all, mental events’. They then suggest that embodied theorists should not mention the brain, since that is not the literal body; and they should not mention the environment, since that is not the body either. But they then rule out any contribution of bodily action, posture, anatomy, and any pre-processing that the body does. They also suggest that the problem of social cognition is the problem of reading the other person’s mental states. So their question comes to this: how does a body, without a brain, isolated from its environment (including the social environment), and unable to perceive the bodily behaviors of others, discover the mental states of others? Their answer, what they call the best (or ‘most promising’) candidate for an embodied account, paradoxically, is that social cognition depends on body representations in the brain – paradoxically, because they ruled out appeal to the brain in any true embodied account. In effect, what they call the best candidate for an embodied account is an account that excludes any contribution from the body. Obviously, if this is considered an embodied account, there is a problem.

If what is at stake is the lived body, I don’t mean to say that this is a different body than the biological body. They are the same body, discussed from different perspectives. The lived body is, and has to be, the same as the biological body. The perceiving agent exists as and experiences the structures and processes that constitute the biological body, so anatomy, body chemistry, processes of respiration, heart rate, possible postures and movements, all of which can be described from a third-person perspective, are also describable from a first-person experiential perspective, and also enter into our intersubjective (second-person) experiences of others. So when I see a beautiful woman (like my wife) my heart races, hormones rush around (literal biological changes), and I feel this, as a feeling for the woman rather than as a set of objective changes in my body; and my voice and gestures and postures express something about this feeling. None of this can be reduced to simple brain processes, as if my brain was not dynamically coupled with changing physiological processes, and feelings, and my past encounters, and the beautiful woman moving in front of me in the golden sunlight or on the smoky dance floor – that is, in an environment that is significant in specific ways. To say what my experience is, to define cognition in this instance, one needs to consider *brain*, *body* (lived and biological) and *environment* (social and physical), and nothing less.

How does the research on virtual reality and similar types of simulation (e.g. virtual re-embodiment) contribute to the conceptualization of embodiment?

Some of my research is conducted at the Institute for Simulation and Training. I’ve been getting involved in projects that use virtual reality, or mixed reality (which is a

combination of VR and real objects). I haven't been thinking of this research as addressing the question of how to conceptualize the body. But I have visited Olaf Blanke's lab in Lausanne, and participated in his experiments where he uses VR to generate an odd experience similar to the rubber hand illusion, but involving the whole body. Here it's interesting to think about the relationship between vision and touch and proprioception – and there have been a number of experiments like that. The rubber hand illusion, for example, challenges the experience of ownership for limbs; the whole body experiment conducted by Blanke challenges the experience of body location and the first-person perspective. I think these are interesting and important experiments for learning about just such questions; and of course, just such questions add up to the larger question of embodiment. Certainly, such experiments reinforce some phenomenological distinctions discussed in philosophers like Merleau-Ponty – for example, the distinction between body-as-object and body-as-subject. Let me add that my recent paper with Tom Froese in *Husserl Studies*²⁷ suggests the use of certain forms of computer simulation involving artificial life as a way to enhance our imaginative variations – that is, as an innovative way to develop the phenomenological method of eidetic reduction.

There are still controversies around the difference between neurophenomenology and heterophenomenology. Critics say that it is very difficult to show the empirical differences between first person and third person data. They ask are the experimental data analysed in neurophenomenology the actual conscious experiences or reports about them? It seems that for the scientist they are always reports.

That's right, the subjects provide second-person reports on their first-person experience. Second-person because they are involved in a communicative practice with the scientist and this is necessarily intersubjective. A report on experience is not the same thing as the experience. That's true too. Granted all of that, there are still two differences between heterophenomenology as outlined by Dennett, and neurophenomenology, as outlined by Varela. First, neurophenomenology involves some training in phenomenological method; heterophenomenology seems satisfied with theory-based or folk-psychological reports, at least as a starting point. This is true even if the "report" is a button-push, since some direction must be given about when or in what circumstance to push the button. One can look closely at the nature of that instruction. Even if it is scientifically rigorous one can still ask where the basic concepts come from, and be led back to some theory or some folk psychology. In neurophenomenology, folk psychology, and any theories, are bracketed by the phenomenological reduction, and there is an attempt to get at the subject's lived experience itself. Much of this is done in pre-trial testing, and precision is achieved in a number of ways. One would expect, on this ba-

²⁷ T. Froese & S. Gallagher. 2010. Phenomenology and artificial life: Toward a technological supplementation of phenomenological methodology. *Husserl Studies* 26 (2): 83-107. Published online, March 2010 (DOI 10.1007/s10743-010-9071-9).

sis, that the subject's reports would be more precise about the nature of the experience that is being scientifically studied. Second, we need to ask what is done with the reports, or what some have called, the first-person data. In heterophenomenology one attempts to move away from it *qua* first-person, as soon as possible. Dennett recommends that we treat it as third-person data and analyze it using third-person, scientific categories. In contrast, in neurophenomenology, the attempt is made to stay closer to the first-person data, albeit in a second-person process where the analytic categories are derived directly from the first-person reports.

Now it seems quite possible that heterophenomenology and neurophenomenology could come to the same scientific conclusions. That would tell us something very interesting, but as far as I know this kind of study – that is, one where we study the very same phenomenon using the two different approaches – has not been done. My own prediction is that if we did this kind of comparative study the neurophenomenological approach would deliver more precise or detailed, and in some important sense, more controlled results than the heterophenomenological approach.