



## Teaching Phenomenology to Qualitative Researchers, Cognitive Scientists, and Phenomenologists

by Shaun Gallagher and Denis Francesconi

### Abstract

*The authors examine several issues in teaching phenomenology (1) to advanced researchers who are doing qualitative research using phenomenological interview methods in disciplines such as psychology, nursing, or education, and (2) to advanced researchers in the cognitive neurosciences. In these contexts, the term “teaching” needs to be taken in a general and non-didactic way. In the case of the first group, it involves guiding doctoral students in their conception and design of a qualitative methodology that is properly phenomenological. In the case of the second, it is more concerned with explaining the relevance of phenomenology to an audience of experimental scientists via conference presentations or published papers. In both cases, however, the challenge is to make clear to the relevant audience what phenomenology is and how it can relate to what they are doing.*

The teaching of phenomenology can take several forms. For example, in an undergraduate course on phenomenology it is possible to focus on the philosophical origins of phenomenology and its development across a number of authors. This approach contains many problems and issues for exploration. In studying Husserl's phenomenology, for example, we can note in his work the constant repetition of beginnings and re-statements about how to do phenomenology. The Cartesian approach gives way to the psychological approach, which gives way to the lifeworld concept. In this way, static phenomenology gives way to genetic phenomenology. It would also seem that a clear transcendentalism gives way, at various points, to an emphasis on embodied experience. In a graduate course one can pursue issues of Husserlian scholarship that demand close analysis of Husserl's texts. Alternatively, it is possible to focus on the early connections between analytic philosophy and phenomenology, and their later contentious divorce.

One could wrestle with the various transformations that phenomenology undergoes in the existential writings of Heidegger, Sartre, and Merleau-Ponty. One could also trace the influence of phenomenological ideas through various post-phenomenological thinkers and movements such as Levinas, Derrida, and the postmoderns. In all of these approaches there is no shortage of controversial issues to explore.

A different way to teach phenomenology is to focus on the phenomenological method and its applications. There is, of course, also some history involved here. However, the focus may be more pragmatic than scholarly. For example, one could explore phenomenology by looking at its interdisciplinary uses. This could include the use of the phenomenological concepts of Alfred Schutz (1932/1967) in sociological analysis or the work of Roman Ingarden (1931/1973) on aesthetics and literature. Another possibility would be to trace the development of phenomenological psychology and the contemporary use of phenomeno-

logy in qualitative research. The focus could also be on the recent employment of phenomenology in the cognitive sciences, a combination that has given a boost to the currency of phenomenological philosophy.

In this short paper we examine issues in regard to teaching phenomenology (1) to advanced researchers who are doing qualitative research using phenomenological interview methods in disciplines such as psychology, nursing, or education, and (2) to advanced researchers in the cognitive neurosciences. In these contexts, the term “teaching” needs to be taken in a very general and non-didactic way. In the case of the first group, what it involves is attempting to guide PhD students in their conception and design of a qualitative methodology that is properly phenomenological. In the case of the second group, it is more a matter of explaining the relevance of phenomenology to an audience of experimental scientists via conference presentations or published papers. In both cases, however, the challenge is to make clear to the relevant audience what phenomenology is and how it can relate to what they are doing.

### Phenomenology and Qualitative Research

PhD students in psychology, education, nursing, business and other disciplines are frequently searching for good methods for doing qualitative research. They often come to phenomenology without any knowledge of phenomenological philosophy, or sometimes without any background in philosophy at all. One part of the task of teaching phenomenology is therefore to provide them with enough of a background so that they have a good understanding of some basic concepts, along with some of the technical terminology. In some cases, they get over-enthusiastic about using the technical terms and overdo it to the point of become obscure. It is important to cure them of this inclination. This kind of overuse and misuse of terminology is truly part of a bad practice that assumes that certain disciplines have solved all of the problems surrounding these concepts. It fails to recognize that there are often continuing disputes and debates about most of these concepts.

Once they have some background and some sense of the concepts and issues, the primary question is how they can use phenomenology to do their research. This can take numerous forms, but one way is to work primarily with the process of the phenomenological interview. The research questions (in contrast to the interview questions) usually take the following forms:

What effects does a certain intervention have on the lived experience of subjects?  
Do the changes in the lived experiences of the

subjects reflect an improvement, and in what way?

It is important to provide the students with a good understanding of what “lived experience” means and to help them devise a good set of interview questions that will access that lived experience. Students will often devise questions that ask the subjects about how they think of specific things in their life. These students equate the subjects’ opinions or thoughts about their life with their lived experience. This goes entirely against the spirit of the phenomenological epoché, which calls for a suspension, not only of the investigator’s theories and pre-conceived opinions, but also of the subjects’ theories and pre-conceived notions regarding their own lived experiences. What a subject thinks about something is not the same as his or her experience of that phenomenon. In the phenomenological court, so to speak, only certain things count as evidence, and theory, opinion, or hearsay are not accepted. An investigator needs to learn how to teach or lead his or her subjects to report their lived experiences.

A researcher who was studying how certain physical practices shape people’s lives, proposed the following question:

Why did you think that coming to this training centre would resolve the issue?

This question actually directs the subject away from his or her lived experience and asks instead for his or her opinion. In order to steer the researcher towards a more phenomenological inquiry, we suggested the following:

At this point you might ask the subjects to describe what their experience around this issue was like. How did it make them feel? How pervasive was it in their life? Was it just a nagging issue in the background, or was it taking over their everyday experience? In what way? Can they provide an example? Was it purely an internal issue, or did it affect the way they experienced others, or the world?

The researcher also included the following question:

How do you feel that this issue has been addressed through the practices here?

We suggested:

Have the practices changed you? If so, can you describe that change, and can you give me an example from your everyday life of how this practice has changed you?

All of the questions were modified in this way. We were concerned about two things: firstly, accessing the subjects' experience rather than their thoughts about their experiences, and, secondly, accessing as much detail about their experiences as possible. In order to accomplish this, it is essential that the questions are phrased in such a way as to help the subjects to focus their answers on the faithful description of their experience.

Our thinking about this kind of phenomenological interview has been influenced by Claire Petitmengin (2006, 2009) and the work of Depraz, Varela and Vermersch (2003). Petitmengin (2006, 2009) provides a set of clear and rigorous instructions regarding setting up the interview. She highlights the fact that, during the interview process, it is easy to drift away from the precise description of lived experience and to start providing reasons or theories about the experience. The task of the interviewer is to bring the subject back to the lived experience.

Petitmengin's (2006, 2009) focus highlights an aspect of phenomenological interviewing that is not often mentioned. In reading Husserl or his commentators, it is possible to get the impression that performing the phenomenological reduction is a first step, and that once this step is taken we are suddenly in a different (transcendental) realm where we can proceed with the phenomenological work. However, it is important to recognize that the phenomenological reduction is a constant task that needs to be renewed throughout the research process. The researcher must work to stay within the phenomenological attitude (see Gallagher & Zahavi, 2008).

Petitmengin (2006, 2009) provides extremely useful guidelines for the interviewer regarding the setting, and how to encourage the subject to pay attention to lived experience without introducing biases. The use of open questions – questions that do not include pre-conceived concepts – is important in this regard. Instead of asking "Was this a painful experience?", the question should simply be "Can you tell me in some detail what was involved in this experience?" The interviewer can also help the subject simply by repeating her own words back to her. This process can result in clarifications being made. The subject can also be helped to identify and focus on a particular feeling, even if she does not have a word to express it, simply by providing a deictic reference to it, such as "this strange feeling you just mentioned".

These are a few of the guidelines mentioned by Petitmengin (2006, 2009), building on the work of Natalie Depraz (2004) and Pierre Vermersch (1994). These interview techniques have been applied in specific studies of epilepsy by the Varela group in Paris.

## Phenomenology and Pedagogy

Teachers, educators and researchers all conduct a form of practical work, namely teaching itself, which is directly related to ordinary life. In order to do this they require practical tools. It is also not possible to act from an educational point of view without having a theoretical framework that enlightens the pragmatic goals and ethical perspectives of the work. For more than half a century, phenomenology has maintained a stable and productive relationship with education (Tarozzi & Mortari, 2010), both in a theoretical and in a practical manner. There is a long tradition of "Phenomenological Pedagogy" or "Phenomenological Education" both in Europe and in North America. Within these approaches one finds interest in different roles that phenomenology can play in education and the social sciences in general. Most broadly, within Europe, phenomenology is generally viewed as a philosophy of research, while in the social sciences developed in North America phenomenology is mainly seen as an empirical approach aimed at exploring subjectivity and people's lived experience (Mortari & Tarozzi, 2010).

This paper investigates some ways in which phenomenology can be useful to the educational field. It also investigates ways of teaching phenomenology to educators and educationists. We provide just a few suggestions about two main points that can be considered for teaching phenomenology to such groups, including PhD students in the education field. These two points concern, firstly, the awareness of one's own mind (taking care of the mind) (Mortari 2002), and secondly, some strategies for planning research using a phenomenological method.

Two points need to be mentioned in relation to the first concern: cultivating an awareness of our mental posture and the mental dynamics that are to be found in our experiential relationship with the world. Firstly, the essence of phenomenology is found in its practice. In this regard, the proper question is not "What is phenomenology?" but, instead, "How do we do phenomenology?". This question requires an answer on the pragmatic level. From an educational point of view, phenomenology should be seen as a way to educate our perspective on reality, to reflect on our relationship with the world, to change and refine our point of view, to build and define our mental posture, and to broaden the way we look at the world (Tarozzi & Mortari, 2010). Phenomenology should not be seen as a retreat into introspection that treats consciousness or experience as an isolated phenomenon. Instead, due to the fact that phenomenology emphasizes the intentionality of consciousness, it is about our relationship with the world.

Secondly, because phenomenology focuses on

experience in-the-world, it puts the teacher in a position to recognize his or her own epistemic responsibility. It is of fundamental importance that teachers and students become aware of, and take responsibility for, their perspectives on the world. Phenomenology therefore offers teachers a way to reflectively take into regard their own points of view, and their own way of conducting their relationship with the things of the world. Within the relationship “consciousness-of-something”, the subject has an ethical and noetic responsibility for his or her own role, a responsibility for the posture of his or her own mind. The mind, inevitably dynamic, depends on our self-awareness and knowledge, and the role of the subject in the knowing process is something that can be improved through taking care of the mind.

In relation to strategies for educational research and the use of the phenomenological method in such research, it is important to consider the specific relationship between the scope of the experience under investigation and the scope of the question(s) used to investigate that experience. For example, if the topic under investigation is the subjective experience of wine tasting, or, alternatively, the role that drinking wine plays in the life of the subject, the appropriate time-span of experience needs to be considered. This includes determining whether it can be a short time-span of experience, as in the case of wine tasting, or whether a longer time-span is called for, as in the case of examining the effects of a life-practice like drinking wine.

Moving beyond the question of time-scale, it becomes clear that some cases require a focused and relatively structured inquiry on the specific experience, which may be sensory (as in the case of wine tasting), motor, emotional, or cognitive. Other cases (as in the examination of drinking practices) require an open question on the broader experience (for example: “Describe your personal experience with wine during your life”). The level of structure and complexity of these questions should be the object of discussion within the research group and should be directly related to the aims of the research.

From a phenomenological point of view, there are other important issues concerning analysis of experience in the field or the re-creation of the experience in the laboratory. These issues include asking subjects to describe a specific experience immediately after the experience itself, or recalling past experience that may have been forgotten. Phenomenology can involve a mix of strategies related to the study design. For example, through focusing simply on factors that involve the temporal scope of the experience and the related scope of the interview question, it is possible, depending on our interests, to combine them in ways defined across

four possibilities: (a) long-term experience and open question; (b) long-term experience and focused question; (c) short-term experience and open question; and (d) short-term experience and focused question. These strategies may help to reduce the “temporal distance” of the experience and allow the investigator to ask about something that is still present in the subject’s mind (both in short-term and in middle-term memory). Such strategies allow researchers to manipulate the space for interpretation of the experience as well as for narrative practices that may improve phenomenological description. Some brief examples are provided below.

#### *Long-Term Experience/Open Question*

This strategy is typically used for the investigation of pathologies or diseases and their etiology, specifically concerning autobiographies. For example, this strategy could be used to investigate the experience of people who are alcohol-addicted in order to discover when, how and (possibly) why they started to drink in a pathological manner and the way in which they have lived with this pathology. This is the tradition of phenomenological psychiatry, and is derived from the Swiss psychiatrist Ludwig Binswanger. In relation to education, the use of this combination can assist in understanding the pedagogical challenges involved in teaching pathological subjects, as well as providing a way in which to approach the study of wide-temporal experiences in the purely educational field. A good example of a phenomenological study of long-term temporal experience and open questions is the research conducted by Mortari and Sità (2010) concerning the relationship between professors and parents in schools.

#### *Long-Term Experience/Focused Question*

In the same way, it is possible to investigate a large temporal window of experience with a high degree of specificity by using a more structured question. A therapist, for example, may make use of the following prompt: “Think about your entire experience of alcohol use, and try to describe what happened only during those times when you were drinking at home with your children there with you but without their mother. Try to give as much detail as you can about those specific moments”. Alternatively, in a purely educational context, the researcher might be interested in investigating the role played by some specific courses of study – for example, only the courses about north-east Italian red wines – on the entire wine-experience of the tasters. A specific course may have changed the student’s ideas about wine partially or completely. Here the question could be: “Could you describe the effects of the wine course on red Italian wines on your general experience of wine?”

### **Short-Term Experience/Open Question**

This type of research is particularly difficult, as there is a risk that, based on a specific stimulus, the subject may start to create theories or thoughts that are not relevant with respect to the experience under analysis. However, this combination is often used in educational research on metacognition, where the researcher is interested in meaning-building or sense-making about a specific and short experience or stimulus, such as a movie, a song, an art work, or a specific bodily movement. There is thus a well-defined – spatially and temporally – experience, and the use of an open question therefore allows the subject to give a broader sense to his own experience with reference to his life. This strategy includes a phenomenological-hermeneutical research approach (see Van Manen, 1990, for a description of this approach in education research), where the subject's interpretation of the experience is more important than the description of the experience itself. For example, something as simple as a glass of wine can be an experience deep enough to produce a metacognitive effort aimed at creating a meaningful interpretation. In this example, the subject may be asked to talk not only about the experiential properties of the wine, but also about memories that emerge as a result of the taste or colour of the wine.

### **Short-Term Experience/Focused Question**

The last combination is a good fit for experimental work within the cognitive sciences. In the cognitive sciences, the role of *hic et nunc* experience (such as visual perception of shapes, or aural perception of notes or songs) may be important, and researchers are sometimes interested in analyzing a precise stimulus with focused questions. For example, a research study could be designed to focus on a change in the immediate experience of wine tasting caused by taking a course for wine-tasters. The research can be conducted in either the field or a laboratory. Subjects may all be required to taste the same wine and immediately afterwards describe their own experience in a detailed way. In this case, the report may be focused more on the description of the experience than on its interpretation. If the experience is repeated, with subjects divided into groups based on whether or not they have taken a specific course, the question has to be the same for everyone and must be well-defined: "What precise tastes do you experience in this wine?" In this example, the wine experience for every subject has to be a short experience, and the question and the answer have to be focused on and restricted to the emergence of the experience, with the goal of discovering how the particular course has changed the experience of the wine.

To conclude this section, it is necessary to underline

the importance of a new approach to educational issues that can involve the phenomenological perspective, namely the dialogue between the education sciences and cognitive neuroscience (Fischer et al., 2007; Francesconi, 2009). Although this "mixed-area" is relatively new, it deserves further exploration by scholars of education sciences. Various important research centres are already investigating this field (e.g., the Harvard Graduate School of Education, the Teachers College at Columbia University, the School of Education at Cambridge University, and the Centre for Bio-Education at the University of Naples), and scholars in the education sciences cannot ignore this research. The next section focuses on the way in which phenomenology may be integrated into this research.

### **Phenomenology and Cognitive Science**

Francisco Varela (1996; Varela, Thompson, & Rosch 1991) was one of the first researchers to suggest that phenomenological methods were of positive importance for empirical work in the cognitive sciences, and especially in experimental settings that involve neuroscience (see also Gallagher, 1997; Gallagher & Varela, 2003; Petitot, Varela, Pachoud, & Roy, 1999). Prior to that point, phenomenology was already being used for critical purposes in cognitive science in order to identify areas that cognitive science was unable to address (see e.g., Dreyfus, 1972; 1992). Varela's suggestion that phenomenology can play a more positive role in cognitive science research would necessitate a transformation not only of phenomenology but also of cognitive science. In order to achieve this aim, the conceptualization and application of phenomenology need to be taught to two very different audiences – to empirical scientists, and (perhaps surprisingly) to phenomenologists themselves.

### **Teaching Phenomenology to Phenomenologists**

While teaching phenomenology to phenomenologists may sound both presumptuous and paradoxical, what is implied is that phenomenologists themselves have to be made aware of all of the various possibilities offered by phenomenology. Many phenomenological philosophers, for example, have been happy to let analytic philosophers of mind engage in the work of cognitive science, and to instead focus their own attention on the textual and historical scholarship of phenomenology. This latter work is vitally important, but it should not involve ruling out the actual application of phenomenology in various contexts, even if these contexts involve the transformation of phenomenology. One of the main issues in this regard concerns the naturalization of phenomenology, or exploring various ways in which phenomenology can be integrated with empirical science.

Husserl was well known for his critique of naturalism, and especially of positivistic, scientific definitions of knowledge. However, Husserl was also concerned about providing a sound basis for doing science – and this includes empirical science. This is because scientists need to be conscious in order to do their work – they can only do their work by relying on what consciousness delivers to them – and therefore a science of consciousness (i.e. phenomenology) must be the first science, and it must be a transcendental, in other words non-empirical, science. Transcendental phenomenology was therefore defined in contrast to natural, empirical science. Doing transcendental phenomenology is clearly not the same thing as doing empirical science. However, “in contrast to” does not mean “in opposition to”. Although Husserl was opposed to scientism, he was not opposed to science. Indeed, it would be a perversion to think that Husserl would not want the insights of phenomenology to be used in empirical investigations. Husserl (1931/1970) himself suggested that “every analysis or theory of transcendental phenomenology, including the transcendental theory of the constitution of an objective world – can be produced in the natural realm, when we give up the transcendental attitude” (§57). It is therefore feasible to suggest that, after pursuing the phenomenological and transcendental reductions, and working out our phenomenological insights, we can adopt a naturalistic attitude and take those insights into the empirical sciences to see how they play out. This last step should not be seen as “doing phenomenology”, and phenomenologists should not object to it, given that it may lead to important applications of phenomenology.

While some phenomenologists do not object to phenomenology’s positive influence on the cognitive sciences as described above, they do resist the idea of what Varela termed “mutual constraints” (1996). Although phenomenology may be able to inform cognitive science, surely cognitive science cannot constrain phenomenology. For example, whatever I may learn about the brain, this cannot change the experience that I describe as a phenomenologist. This suggests that neuroscience can never improve phenomenology. Perhaps, if phenomenology were just pure description, then more knowledge about how the brain works would not help in the doing of phenomenology. However, phenomenology has never been just pure description. Both Husserl and Merleau-Ponty (who is a good model of a phenomenologist who learned from the empirical sciences) always positioned their descriptions as informing a phenomenological philosophy that may include argument and theory, as well as description (see Gallagher & Zahavi, 2008).

A phenomenologically informed philosophical claim may therefore be constrained by empirical science.

The term “constraint” in this case does not necessarily have a negative connotation. Science can both confirm and question phenomenological insight. For example, recent neurological discoveries about canonical neurons (neurons that are activated when I reach to pick up a tool and when I simply see the tool) in the premotor cortex can substantiate claims about kinaesthetic correlations of perception made by Husserl in his 1907 lectures on *Ding und Raum* [Thing and Space]. At the same time, science could place limits on the kinds of claims that phenomenologists would be able to make about the detail and exhaustiveness of their descriptions. For example, experiments on change blindness and inattention blindness – respectively, the inability to notice changes that occur even when looking directly at the changing scene (Grimes, 1992), and the inability to see obvious things because we are attending to something else (Simons & Chabris, 1999) – should make phenomenologists consider what they can and cannot claim about the scope of experience. It seems quite possible that I am in-the-world, to use Heidegger’s term, in ways that I cannot grasp solely through phenomenological insight.

### *Teaching Phenomenology to Cognitive Scientists*

There are several ways that cognitive scientists can use phenomenology. These include the use of phenomenology to guide the construction of non-representationalist models relevant for use in artificial research. In this respect, Dreyfus, Varela, and others have had some positive effect on AI, showing why computational models cannot work, and suggesting more embodied and dynamical approaches. The focus of this paper is, however, more specifically on how phenomenology can contribute to experimental design in behavioural and neuroscientific studies.

One of the first tasks involves overcoming a serious misconception about phenomenology – that it is a purely subjective form of introspection. Dennett (1991, 2001) has misconstrued phenomenology in this way. Instead, it is important to explain to cognitive scientists that phenomenology actually provides a methodologically controlled alternative to simple reliance on introspective reports (see Gallagher & Overgaard, 2005; Noë, 2006). This is apparent in Varela’s (1996) proposal, which he terms neurophenomenology, and which involves using an explicit phenomenological method in the experimental situation.

The classic example of a neurophenomenological experiment was conducted by the Varela group (Lutz, Lachaux, Martinerie, & Varela, 2002) when they trained subjects in phenomenological method in order to guide their reflections on lived experience during a perceptual task. The method involved three distinct

steps: (1) the epoché – setting aside preconceived ideas and theories; (2) the reduction – turning of attention towards the experience itself; and (3) intersubjective verification. Some of the steps outlined by Petitmengin (2006, 2009) were used to develop a set of “phenomenological clusters”. Based on the subjects’ own reports in response to open questions during pre-tests, the subjects generated their own vocabulary that the experimenters then used to define response categories for use during the main perceptual tasks. The phenomenological reports were then correlated with objective brain and behavioural measures that showed high correlations between specific brain dynamics, behavioural reaction times, and phenomenological reports on attention. This experiment demonstrated that cognitive scientists could learn something new (specifically about common subjective distractions that occur during experimental testing) by using phenomenology. Related experiments have been conducted regarding the lived experience associated with epileptic seizures (Petitmengin, 2010; Petitmengin, Navarro, & Le Van Quyen, 2007).

Thus, Francisco Varela’s (1996) conceptualization of neurophenomenology is a new tool that can be used by cognitive scientists in the study of perceptual consciousness. However, it is not necessarily a procedure that can be used to study non-conscious behaviour or certain pathologies that would prevent the subjects from learning or employing the phenomenological method. The notion of “front-loading phenomenology” (Gallagher, 2003; Gallagher & Zahavi, 2008) may therefore be a useful alternative in other studies. In this research method, subjects do not have to learn phenomenological method, nor do they have to do phenomenology during the experiment. Rather, scientists make use of phenomenological insights and distinctions (either developed by phenomenologists, or developed during the course of neurophenomenological experiments) to inform their experimental design.

One example of this can be found in a series of experiments on the neural correlates of the sense of agency (Chaminade & Decety, 2002; Farrer & Frith, 2001; Farrer et al., 2003). These brain imaging studies employed a phenomenological distinction between sense of agency (SA), defined as the experience of causing or controlling an action, and sense of ownership (SO) for movement, defined as the sense that it is I or my body that is moving (Gallagher, 2000). These two aspects of experience are differentiated on the basis of reflex or involuntary movements, such as when one is pushed from behind. In such cases, there is SO (a sense that it is my body moving), but there is no SA for the initial movement. The researchers designed various experimental tasks based on this distinction, such as asking subjects to

control the movement of an icon on a computer screen. In some cases the subjects actually controlled the cursor, while in other cases they did not control the cursor. For example, a study by Farrer and Frith (2001) showed that SA correlated with activation in the anterior insula, an area responsible for the integration of a number of sensory-motor signals. This suggests that activation of the anterior insula is a neural correlate for SA.

### *Mutual Enlightenment*

Another result of these experiments, however, may be of more interest to phenomenologists. The original context for developing the phenomenological distinction between SA and SO involved arriving at an explanation of schizophrenic delusions of control in which there is SO for the bodily movement, but no SA. In other words, these delusions involve a disruption of SA (which, at the neurological level, may involve a disruption of processes in the anterior insula). The way in which this problem was described in the literature on schizophrenia (see especially Frith, 1992) led to the phenomenological distinction of SA and SO being framed in terms of motor control (Gallagher, 2000). However, Chaminade and Decety (2002) and Farrer and Frith (2002) introduced a different dimension of SA by focusing on the intentional aspect of an action. This concerns the sense that my action is making a difference in the world – for example, the sense that I control what happens on the computer screen. More generally, the experiments suggested that SA is connected to the effect our action has on the world – whether our goals or intentions are actually accomplished. This goes beyond thinking of SA simply in terms of motor control, and suggests that the phenomenology is more complex than portrayed by the initial SA/SO distinction.

This research suggests two things regarding the issue of mutual constraints. Firstly, even if the original phenomenological description of SA and SO was adequate in the context of explaining delusions of control – or at least adequate to answering some specific questions about such delusions – the experiments, which were conducted in other contexts, suggest that perhaps the original phenomenology was not fully adequate to the phenomenon of agency. Secondly, and more generally, it suggests that phenomenological investigations may be constrained by the particular questions they attempt to answer. In this regard, the science seems capable of raising the same kinds of questions that hermeneutics raises with regard to phenomenology and the traditional claim of a presuppositionless method. Thus, in the example above, scientific experiments, even when starting with a phenomenological distinction, were able to offer a different insight into SA – namely, that it

includes not only motor control aspects, but also intentional aspects pertaining to accomplishing a goal. If this aspect was not included in the original phenomenological distinction, then the science should send us back to the phenomenological drawing board. In other words, this is a good example of how phenomenology can offer valuable insights to empirical science, and how empirical science can also suggest further phenomenological refinement.

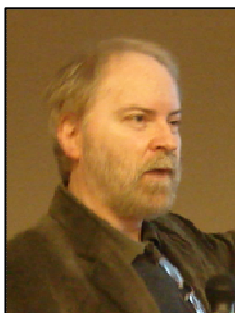
It would be possible to argue that the original phenomenological analysis was inadequate to begin

with. This is indeed the case, and may be a result of the particular problem that was addressed. However, no phenomenologist can lay claim to a perfect or universally adequate phenomenological description. Empirical science can thus act as a constraint on the real practice of phenomenology. Stated more specifically, it is possible that empirical science can point to the inadequacy of a particular phenomenological analysis. However, from a more positive perspective, this suggests that phenomenology and cognitive science can offer each other some mutual enlightenment (Gallagher, 1997).

## Referencing Format

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