

Special Issue II
2008

ISSN 1807-9792

abstracta

Linguagem, Mente & Ação

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Editor
Gottfried Vosgerau

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Editorial

ABSTRACTA's second special issue is dedicated to *The Phenomenological Mind* by Shaun Gallagher and Dan Zahavi (London: Routledge, 2008). We are proud to present this critical discussion of the latest book on one of the hot topics within the philosophy of mind today: the need for phenomenological considerations and methodology for any comprehensive theory of mind. Gallagher and Zahavi chose to call their seminal work "introduction to philosophy of mind and cognitive science", but—as will be clear from commentaries in this volume—this book goes far beyond the typical aims of an introduction. It is not only an introduction to readers new to the field, it is also a sophisticated attempt to introduce phenomenological methodologies into the philosophy of mind and cognitive science. In this way, it touches the heart of, and is a substantive contribution to, contemporary philosophy of mind.

We are grateful, first of all, to Shaun Gallagher and Dan Zahavi for their generous support in making this issue possible. Also, we would like to thank very much the contributors who devoted their time to participate in this discussion with the authors: Olaf Blanke, Andrew Brook, Jonathan Cole, Dan Hutto, Marc Slors, and Alessandra Tanesini. Last but not least, we are thankful to Alexis Maskell-Aparycki from *Taylor & Francis*, who very kindly supported us throughout the process of editing this issue. It was a pleasure and honor to work together with all of the aforementioned people. We are convinced that the resulting issue will likewise be enjoyed by our readers.

Gottfried Vosgerau
Executive Editor

1st June, 2008

PRÉCIS: *THE PHENOMENOLOGICAL MIND*
(London: Routledge, 2008)

Shaun Gallagher and Dan Zahavi

It is difficult to give a nice succinct précis of *The Phenomenological Mind* since it is composed of a set of chapters each of which addresses a different topic. The topics are linked in numerous ways. There is one way, however, in which all of the chapters are bound together to constitute a unified whole, and this might be considered something like a framework proposition. Phenomenology, understood as the philosophical approach taken up by Husserl and a number of people who loosely follow his lead, has something important to contribute to philosophy of mind and the cognitive sciences. The proof of this claim is to be found in the details of the various chapters. In some cases it consists of showing that a phenomenological approach provides a genuine alternative to the standard or current approaches to be found in these areas. In other cases, phenomenological methods may provide insights about certain key concepts; or insights that are suggestive for experimental work. To do any of this requires that we take an interdisciplinary approach and recognize that these various investigations do not move on a one-way track. Phenomenology can take as much as it can give. Investigations in philosophy of mind, psychology, cognitive neuroscience, etc., can offer productive directions to phenomenology. In the book we tried to avoid tying ourselves too closely to any one conception of phenomenology, and our aim was not to settle various debates within the phenomenological tradition. We are convinced that if phenomenology is to improve and develop its own analyses of human experience, it needs to enter into just the kinds of discussions that we address in this book.

This book builds not only on the work of the classical phenomenologists like Husserl, Heidegger, Merleau-Ponty and Sartre, but also on much of our own previous work on many of the topics that we take to be central to philosophy of mind. However, not only do we think that phenomenology and analytical philosophy of mind have overlapping concerns, we also think that there are relevant and productive differences. Thus, our intention was certainly not to displace or dismiss analytic philosophy of mind.

Indeed, we wanted to explore how phenomenology can enter back into a communication with analytic approaches in a way that goes beyond generalities.

We also rehearse a very short history that mentions Hubert Dreyfus's phenomenological critique of computationalist artificial intelligence, the advent of embodied approaches to cognition (to be found, for example, in Varela, Thompson, and Rosch [1991]), and the recent advances in neuroscience that seem to make constant reference to subjective experience and at the same time is consistently searching for a method to deal with this subjectivity.

Phenomenology is neither analytic philosophy nor empirical science. A phenomenological account of the mind is different from either a purely conceptual analysis, or a psychophysical or neuroscientific account. Phenomenology is concerned with attaining an understanding and proper description of the structure of our mental/embodied experience; it does not attempt to develop a naturalistic explanation of it in terms of biological genesis, neurological basis, psychological motivation, or the like. Nonetheless we suggest that this phenomenological account is not irrelevant to a science of consciousness. We will not get very far in giving a scientific account of the relationship between consciousness and the brain, for example, unless we have a clear conception of what aspect or feature of consciousness we are trying to relate to brain function. Any assessment of the possibility of reducing consciousness to neuronal structures (which we think is unlikely) and any appraisal of whether a naturalization of consciousness is possible (which is something that does not necessarily involve a reductionism) will require a detailed analysis and description of the experiential aspects of consciousness. Providing a detailed phenomenological analysis, and exploring the precise intentional, spatial, temporal and phenomenal aspects of experience, we suggest, should deliver a description of just what it is that the psychologists and the neuroscientists are trying to explain when they appeal to neural processes, information processing, or dynamical models.

The overarching claim of *The Phenomenological Mind*, then, is that phenomenologically based theoretical accounts and descriptions can complement and inform ongoing work in the cognitive sciences. We think they can do so in a far more productive manner than the standard metaphysical discussions of, say, the mind-body problem that we find in mainstream philosophy of mind.

The second chapter of the book is devoted to certain methodological questions which are directly relevant to the practice of experimental science. We set out to ask what actually happens in the lab, in the experiment, and how scientists go about studying the mind. If part of what psychologists and neuroscientists want to study is experience, what kind of access do they have to it? We provide a clear explication of phenomenological methods.

In Chapter 3 we discuss different concepts of consciousness. We review an ongoing debate in philosophy of mind about higher-order theories of consciousness, and, appealing to the phenomenological concept of pre-reflective experience, we suggest an alternative way to approach the problem of consciousness. We clarify the phenomenological alternative by considering examples that one often finds in the philosophy of mind literature – the common experience of driving a car, some experimental results about non-conscious perception, and the more exotic case of blindsight.

In Chapter 4 we explore one of the most important, but also one of the most neglected aspects of consciousness, cognition, and action – the temporality of experience. William James had described consciousness metaphorically as having the structure of a stream. He also argued that the present moment of experience is always structured in a three-fold temporal way, the so-called ‘specious present’, to include an element of the past and an element of the future. We present a phenomenological approach to this topic, which extends and deepens the basic account provided by James.

In Chapter 5 we examine perception. Contemporary explanations of perception include a number of non-traditional, non-Cartesian approaches that emphasize the embodied and enactive aspects of perception, or the fact that perception, and more generally cognition, are situated, both physically and socially in significant ways. We try to sort out which of these approaches are in agreement with a phenomenological analysis. This leads us to consider the debate between non-representationalist views and representationalist views of the mind.

Chapter 6 addresses one of the most important concepts in our understanding of how the mind is in-the-world – intentionality. This is a basic concept in phenomenology, deriving from the work of Brentano. It’s the idea that experience, whether it is perception, memory, imagination, judgement, belief, etc., is always

directed to some object. Intentionality is reflected in the very structure of consciousness, and involves notions of mental acts and mental content. We show how this concept has direct relevance for the contemporary debate between externalism and internalism.

Chapter 7 takes up the question of embodiment. Here we examine the classic phenomenological distinctions between the lived body (*Leib*) and the objective body (*Körper*). But we also seek to show that phenomenology can make room for the idea that biology and the very shape of the body contribute to cognitive experience. We explore how embodied space frames our experiences and we discuss cases of phantoms limbs, unilateral neglect, and deafferentation. We also pursue some implications for the design of robotic bodies.

Chapter 8 shows how certain phenomenological distinctions between the sense of agency and the sense of ownership can contribute to an adequate scientific account of human action. We show that human action cannot be reduced to bodily movement, and that certain scientific experiments can be misleading when the focus is narrowed to just such bodily movements. Here too there are a number of pathological cases, such as schizophrenic delusions of control, that help us to understand non-pathological action.

Chapter 9 concerns the question of how we come to understand other minds. We explore some current "theory of mind" accounts ("theory theory" and "simulation theory"), and introduce a phenomenologically-based alternative that is consistent with recent research in developmental psychology and neuroscience. This alternative builds on the idea that we can directly perceive the intentions and emotions of others in their bodily movements and expressions, and that our understanding of others is helped along by the pragmatic and social contexts that we share with them, and that are often expressed and enhanced through narrative.

In Chapter 10 we come to a question that has been gaining interest across the cognitive sciences – the question of the self. Although long explored by philosophers, this question has recently been revisited by neuroscientists and psychologists. What we find is that there are almost as many different concepts of the self as there are theorists examining them. To make some headway on this issue we focus on the basic pre-reflective sense of unity through temporal change that is implicit in normal experience. We examine how this pre-reflective sense of self can break down in cases of

schizophrenia, and what role it plays in the development of a more reflective sense of self, expressed in language, narrative, and cultural contexts.

Here are some of the conclusions that we work toward.

- **Methodology:** phenomenology is distinct from both introspection and heterophenomenology; it offers philosophically informed methodological tools that can disclose significant – but frequently overlooked – dimensions of experience; it can help to define good empirical questions and can contribute to the design of behavioural and brain-imaging experiments; and it can frame interpretations of empirical data in ways that are scientifically rigorous without being reductionistic.
- **Consciousness and self-consciousness:** phenomenology offers a clear alternative to higher-order theories of consciousness, and contributes to an account of experience which has wide ramifications for empirical science (including developmental psychology, ethology, and psychiatry).
- **The temporality of experience:** phenomenology offers a painstakingly detailed analysis of one of the most important aspects of consciousness, cognition, and action: the intrinsic temporal nature of experience that is the phenomenological complement to the dynamical nature that underpins our brain-body-environment system.
- **Perception:** in contrast to various representationalist models of perception, phenomenology defends a non-Cartesian view that emphasizes the embodied, enactive, and contextual nature of perception.
- **Intentionality:** phenomenology offers a developed non-reductionist account of the intentionality of experience that stresses the co-emergence of mind and world and suggests an alternative to the standard choice between internalism and externalism.
- **Embodied cognition:** perhaps more than any other approach, phenomenology has consistently championed an embodied and situated view of cognition. Although insisting on the phenomenological distinction between the lived body and the objective body, phenomenology also shows that biology, even beyond neuroscience, is important for understanding our mental life.

- **Action and agency:** phenomenologically sensitive distinctions between kinds of movements, and between the sense of agency and the sense of ownership, can provide important tools for a more adequate account of action and for the understanding of certain pathologies where the sense of agency is lacking. Such distinctions can also inform various neuroimaging experiments.
- **Intersubjectivity and social cognition:** phenomenology offers a non-mentalizing alternative to theory-of-mind explanations, complements evidence from developmental psychology, and suggests a reinterpretation of the neuroscience of resonance systems.
- **Self and person:** phenomenology offers clarifying analyses about self-experience and different concepts of the self that can inform the recent and growing interest in these questions in cognitive neuroscience. Specifically, phenomenology shows that the self is significantly involved in all aspects of experience, including intentionality, phenomenality, temporality, embodiment, action, and our interaction with others.

Our intention was not to cover all topics or to provide an exhaustive analysis of the topics that we do address. As the sub-title of the book specifies, our goal was to provide an “introduction” to phenomenological approaches to some of the central problems in philosophy of mind and the cognitive sciences.

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ARTICULATING AND UNDERSTANDING THE PHENOMENOLOGICAL MANIFESTO

Daniel D. Hutto

In the mid-nineties, Routledge brought out *The Mechanical Mind*. Authored by Tim Crane, this was a readable introduction, overview and rationale for approaching the philosophy of mind from a particular outlook. Specifically, it identified and defended the core and foundational assumptions that inform mainstream analytic philosophy of mind. The book advanced a kind of ‘ideological argument’ in that its author recognized that attraction to its central idea “depends on accepting a certain picture of the world; the mechanical/causal world picture. This picture sees the whole of nature as obeying certain general causal laws – the laws of physics, chemistry, biology, etc. – and it holds that psychology too has its laws, and that the mind fits into the causal order” (Crane 1995, p. 62).

Endorsement of causalism about the mind lay at the heart of this view. Thus Crane acknowledged, “the causal picture of thought is the key element in what I am calling the ‘mechanical’ view of the mind” (Crane 1995, p. 58). Mental life is, accordingly, not merely expressed or made manifest in what certain living creatures do; rather to adopt the kind of causalist understanding of the mind (that is today widely accepted) is to think of mental states as productive. They do the behind the scenes toil that brings about and reliably generates experience and thought. Thematically, it is easy to see how acceptance of this sort of functionalist characterization of the mental, as a collection of causally efficacious ‘inner states’, is linked with other standard notions that are axiomatic for analytic philosophers of mind. For example, it fits neatly with the idea that mental states are not directly perceptible but at best inferred. Typically, this last thought is combined with yet another, the claim that putative mental states are, in fact, theoretical entities of the kind that are either familiarly described by commonsense psychology or which our best scientific psychology seeks to identify.

Of course, there is – as yet – no exact agreement about what our best scientific psychology is or ought to be. Yet, exactitude aside, in certain circles there is broad agreement about the list of features that any credible product of scientific psychology

must have. Thus “the cognitivist research programme is unified primarily by the core assumptions about the complexity and representational nature of mind, and by very little shared substantive doctrine” (Flanagan 1991, p. 179). Although there have been many variations on the basic theme (indeed some going to remarkable extremes), the bottom line commitment of analytic philosophy of mind, shared by cognitive scientists, is that – in some way or another – the mind is responsible for the production of intelligent activity by means of manipulating representations computationally. For many thinkers, this much cognitivism (at least) is a non-negotiable starting point for an adequate understanding and study of the mental. As such this sort of approach to the mind stands in stark and hostile contrast to scientific behaviourism, its forerunner in psychology, and certain philosophical attempts to cast the mind as essentially expressive, embodied and embedded within its environment in constitutive ways.¹

Gallagher and Zahavi’s *The Phenomenal Mind* is meant to be the 21st century reply to this entrenched and dominant line of thinking about the mental. Indeed when I was asked to give my opinion of the pre-publication manuscript, the senior editor at Routledge cast it in just this light; it was meant to be compared directly to *The Mechanical Mind* (the similarity in titles is no accident) and the framework promoted therein. For times have changed, debates about the mind, its nature and how to study it have moved on in interesting ways from where we were over a decade ago. Hence *The Phenomenal Mind* (PM) is not only supposed to be a rich and philosophically exciting introduction into what phenomenology is and why it matters, it is also a manifesto designed to show why current thinking about the philosophy of mind cannot afford to neglect the offerings of the phenomenological tradition. It succeeds brilliantly in this. The book’s greatest virtue is not just that it gives a sense of what is distinctive about phenomenological approaches but also maps out their place in the big picture. The individual chapters (all well written) enter into discussions that are gripping and which unfold in ways that draw in the reader, providing insight into both the character of and the need for the various phenomenological contributions. Collectively, they reveal that only by taking phenomenology seriously will important problems become properly visible and new ways of approaching old problems emerge.

¹ Not every kind of functionalism is straightforwardly incompatible with embodied-embedded approaches, at least not in every respect. For a recent attempt to combine the latter with an extended functionalism see Clark (2008).

There can be no doubt that this sort of work is timely and much-needed. But readers may have reason to wonder whether the expressed ‘overarching’ claim of this book, as stated, truly indicates the revolutionary nature of the work. It is “that these phenomenological-based theoretical accounts and descriptions can complement and inform ongoing work in the cognitive sciences. In fact, we do think they can do so in a far more productive manner than the standard metaphysical discussions of, say, the mind-body problem that we find in mainstream philosophy of mind” (Gallagher and Zahavi 2008, p. 10, emphasis added). The authors are not shy of critiquing analytic philosophers. For example, the introduction reveals that the latter are unclear even about the details of the recent history of the science of mind and often their own motives for rejecting certain positions and endorsing others.

But really the problems with what we might call the Mechano-Representationalist Approach (or MRA) run much deeper still. Indeed, they run so deep that it is difficult to see how the insights conveyed in PM could merely ‘complement and inform’ the existing work in the cognitive sciences in the absence of a fundamental philosophical reform of the latter. After all, the so-called cognitive sciences tend to aid and abet the core assumptions of the MRA that are plainly and directly antithetical to the ‘Phenomenal Approach’ to the mind (or PA). If so, there is a tension in the overarching claim that warrants comment and clarification.

Let me be clear, PM admirably demonstrates the contemporary need for phenomenology to inform the empirical sciences of the mind, but it blatantly supposes that its proposals can peacefully co-exist with those of science because the two domains are autonomous and non-competitive (see, e.g. p. 7, where it is held that phenomenology comes at things from the first-person perspective and cognitive science from the third-person perspective). With this sort of division of labour in mind, chapter two on ‘Methodologies’ shows that the common myth that phenomenology is hostile to scientific approaches is just that, a myth. There is little doubt that since it is just this misconception that turns many away from phenomenology, the authors decided to tackle that issue up front.

The fact is that while phenomenology and pure neuroscience may co-operate well, it is less obvious that the same is true of phenomenology and cognitive science. This is because the latter’s explanations are pitched at the subpersonal level of

description (into which we have no first-personal insight or access) but they nevertheless focus on phenomena above the level of interest to neuroscientists, who are concerned with the ground floor mechanics and implementation of mental activity. The root trouble is that in pursuing its own agenda, cognitive science seeks to operate with a mixed economy: it aims to give us theories at the subpersonal level that explain everyday psychological phenomena while at the same time incorporating and revising constructs from that very domain. Thus it offers computational or functionalist theories of perception, memory and thought that invoke notions of ‘content’ and ‘experience’ in ways that put its enterprise directly at odds with certain, non-theoretically laden phenomenological insights. This being so, it certainly seems that PA and MRA are straightforwardly incompatible. And if we take the commitment to some form of ‘representational theory of mind’ as central to cognitive science, the discussions of many chapters of PM make this tension abundantly clear.

For example, in several places throughout the book its authors state that their position, concerning central topics, such as perception and intentionality, is opposed to “the representationalist account of the mind” (Gallagher and Zahavi, 2008, p. 94). Yet in other places they talk in ways that can make it appear that they are less than fully hostile to the sorts of information-processing approaches that think of perceptual data as a kind of input that is received and manipulated (e.g. they say ‘perception is not a simple reception of information’ which seems to imply that it at least partly involves the simple reception of information; ‘experiences present the world in a certain way’ and so on). There are several such instances for the attentive reader to find. It might be thought that this is unproblematic. After all, such talk is, of course, the norm in the cognitive sciences. But for those who reject the MRA to mental states, such language deserves – nay, requires – critical reconsideration. It is not clear why the authors did not consistently distance themselves more entirely from their competitor’s theory of the mind.

To take another example, the authors are quite happy to talk of mental states exhibiting intentionality or aboutness (Gallagher and Zahavi, 2008, p. 111) but they deny that the distinction of the inner and the outer, normally invoked when talking of our situatedness in the world, makes good sense. Now to talk of mental states does not entail that one has in mind ‘inner’ mental states, but I imagine many readers will have

overlooked that subtle but important difference. The interesting point, however, is that if one takes to heart the arguments against taking the inner-outer distinction seriously, then the very idea of an inner mental state is put into hazard. Let me be clear, the tension in question is not with the idea that there are mental states exhibiting distinguishing features, such as aboutness, but with the idea that we have any principled, metaphysically robust understanding of what it is for such a state to be ‘inner’. Again, accepting this demands a fundamental rethink of many standard claims made by cognitive scientists.

Other examples of this tension could be supplied, but the general point ought to be clear enough. The description of the book’s core claim appears to seriously underdescribe the true threat that PA, properly understood, offers to existing cognitive science. In this respect, I would have liked to see the authors go further in making clear just how revolutionary their ideas and proposals really are. This, in turn, may require a rethink of their stated ambitions.

There is one other matter I would like to see clarified. Another of the authors’ stated aims of the PA is that it seeks to be “non-dogmatic, shunning metaphysical and theoretical prejudices” (Gallagher and Zahavi, 2008, p. 10). The authors of PM don’t demur from theorising, but they do seek to avoid prejudice. But it is not clear that they have always and everywhere been sufficiently critical and managed to free themselves from certain favoured habits of thought. If this should prove true, it raises interesting methodological questions about the role of theorizing and what grounds it in the PA.

Gallagher and Zahavi make constitutive claims about what is putatively essentially required for the having of experiences. They maintain that all experience is necessarily self-conscious, where the form of self-consciousness in question is understood in a minimal, pre-reflexive sense. First-person givenness, manifesting a quality of felt mineness, reveals experiences to have an implicit self-consciousness that is essential and basic to any and all experience.

I have reservations about the existence of a minimal form of self-consciousness that is in some way integral to any and all experience, even if only pre-reflexively, tacitly or implicitly. This is because I have trouble understanding what justifies characterizing any pre-reflexive felt aspect that might be associated with such awareness as having a ‘quality of mineness’.

Some distinctions are in order. A condition on the possibility of knowing (or recognizing) that one has a point of view is that one is able to recognize and contrast it with other points of view (at least possibly). It would seem then, on the one hand, that one can only understand the having of first-personal and third-personal perspectives by first operating with concepts that are only made available in a second-personal, social space; a public, intersubjective space. On the other hand, it seems right to say that one can have experiences even if one does not know it. A creature can experience even if it lacks the concept of experience.

Noting this difference helps to explain how we can talk of experience as being, in one sense, shared and in another sense private. You and I can both have experience of a common object or situation. We might have qualitatively similar experiences of it (in certain circumstances) but we would not have exactly the same experience of it, quantitatively speaking. Token experiences ‘belong’ to the individuals in question even if we can only recognize them as so belonging (as being first-personal) from a second-person point of view.

So it seems that one cannot recognize or understand what it is to have a first-personal kind of experience unless one is able to operate with appropriate, intersubjectively grounded concepts (specifically, the concept of experience). This doesn’t preclude the having of non-conceptual feelings or experience per se (there are many sorts of experiences that one might have prior to mastering the concept of experience). But it raises questions about our justification for characterizing these in terms of feelings of ‘mineness’ or ‘first-personal givenness’. For what entitles us to employ these sorts of characterization in describing the felt character of such experiences to experiencers who lack the ability to make the relevant conceptual distinctions?

It might be thought that we have no choice but to accept that first-person self-consciousness is fundamental to all forms of consciousness; i.e. that first-person givenness is a constitutive aspect of consciousness, without which there could be no experience at all. Thus it might be argued that unless we presuppose a capacity for minimal self-awareness (and thus the existence of a minimal self), experience would be ‘given to us’ pre-reflexively in an anonymous and undifferentiated manner. But surely this does not follow if we cannot make clear sense of the idea of what it would be to

experience ‘felt mineness’ in the first place. If so, there would simply be no question of understanding their quality in terms of a felt difference of ‘mineness’ (or its opposite). The trouble with that idea and its alternate (anonymous feelings) is that they both seem to imply some capacity, if only nonconceptual, for recognizing a difference between one’s own experiences and those of others. How could one experience things in this way without having some appropriate contrast? And if this is not implied it becomes even harder to make sense of what ‘felt mineness’ might consist in.

It is for reasons of this kind that I am suspicious of characterizing experience in terms of first-personal givenness and in seeing this as a necessary ingredient of minimal self-consciousness. As Wittgenstein once said (paraphrasing), solipsism may truly describe our psychological situation but any attempt to state this truth would constitute nonsense. It might be thought that attempts to talk about a pre-reflexive quality of mineness that features in our experiences faces logically similar obstacles. But the concern I am raising is more fundamental, since I have yet to see why we should be persuaded of the truth of the description, full stop.

Note that since my point concerns what justifies (or not) a certain way of characterizing our experiences, it does not follow that experiences would be ownerless if we rejected such a characterization as unwarranted. Experiences may have owners (they may even have owners, necessarily) but whether the owners of experiences experience their experiences as being owned or themselves as being owners of them is a quite different question.²

Down the ages, great minds have recognized and explored the idea that sentient life incorporates a distinctive and elusive feature – a feature that cannot be wholly captured in terms of the qualitative character associated with what the individual senses are designed to track when performing their offices in enabling creatures to navigate the external world. From Aristotle onwards, rich attention has been paid to this alleged

² Some philosophers, such as Galen Strawson take the claim that selves must exist to be a truism. Following in the footsteps of Frege, he insists that we must answer ‘No’ to the question, “Can there be experience without someone to experience it?” (Strawson 1994, p. 129). Note that: “A subject of experience is not something grand. It is simply something that must exist wherever there is experience, even in the case of mice or spiders – simply because experience is necessarily experience-for” (Strawson 1994, p. 133). Strawson also bids us to recognize that as stated Frege’s thesis is compatible with the idea that there is a different subject of experience attending each experience. Note that Strawson is not committed to the existence of long-term selves as single entities existing over the course of whole human lives. This logical possibility also raises other interesting questions about the nature of minimal selves.

sense (or feeling) of living, of existing, of one's lived body (Heller-Roazen 2007). The feeling in question purportedly is that which attends all unimpaired sentient activity (and possibly even its absence) – it has been thought of as a kind of animal feeling, that can be disrupted or made evident by certain psychological and medical disorders. Amongst the many diverse attempts to formulate and understand the nature of this special kind of sentience, it has been variously equated with certain functions assigned to the Aristotelian common sense, a central or master faculty that presides over and unifies the perceptual activity, a kind of inner touch or sensitivity, and as a form of apperception (distinct from explicit consciousness). What unites the great bulk of these attempts has been the idea that the feeling or sensation in question is non-intellectual and pre-cognitive in character. Even so, no two thinkers managed to corral the notion or render it intelligible in precisely equivalent ways. Perhaps that's to be expected, given the quarry. Indeed, allowing a certain amount of latitude on this front is probably wise when trying to understand a sensation or feeling that only manifests pre-reflexively.

This suggests that talk of 'minimal self-consciousness' gestures at something that needs to be understood. What I am proposing is that the particular modes of expression that the authors of PM invoke to characterize this may be in need of review; certainly they want careful interrogation and explication. This request trades on the authors' (quite healthy) admission that we should be on our guard against potentially misleading metaphors and that there is always room for improvement in the language used to express phenomenological insights. To be sure, this is an on-going process and one that will divide thinkers, even those sympathetic to the PA.

Importantly, any adjustment on this score could impact on the discussion of selves in Chapter 10 (which provides an excellent, concise and sorely needed overview of the different ways of understanding selves and persons philosophically). In that Chapter, it is argued that we can identify and should acknowledge the existence of a core or minimal self. This kind of self is not one that is 'opposed to' (or which can be distinguished cleanly from) subjective experiential activity, rather it is integral to it. Thus "the (minimal or core) self possesses experiential reality, and is in fact identified with the first-personal appearance of the experiential phenomena" (Gallagher and Zahavi 2008, p. 204, emphasis original). Once again, the elusive quality of 'mineness' is asked to do some important work. It is this experiential feature that allegedly stays

constant throughout all experience. Experiences are ‘felt as’ or ‘experienced as’ mine, hence they “carry a subtle presence of self” (Gallagher and Zahavi 2008, p. 204). First-personal givenness, an essential part of every phenomenal experience, therefore also encourages taking seriously the existence of a minimal self.

Although the authors make abundantly clear that the self in question is not a Kantian ‘I’ or Cartesian ‘ego’ – and although they also make clear they are adopting a non-intellectualist understanding of experience – it is not evident to me, in light of the above concerns, that they can so easily help themselves to the idea that basic experiences have the quality of feeling to be ‘mine’ as such. And if so, is there any real need to posit the existence of selves that have first-person perspectives per se?

This whole discussion raises a more general question about method. For by what means might we decide the right way to jump on this sort of issue? In Chapter three, the authors make clear that they, at least sometimes, want to operate by means of eliminating the existing theoretical competition. At times, they appear content to operate a strategy of supplying theoretical conjectures and inferences to the best explanation, seeking to test these somehow and eliminate those that do not stand muster. In the end, the last theory standing would be the best explanation (see, for example, their exemplary treatment of higher order theories of experience for an illustration of how this might work). This sort of thing has been tried many times before in philosophy; indeed it is a trademark of the analytic approach. Although, I myself have used it on occasion, I am wary of the idea that it can be made to work in all cases (see Hutto 2006 ch. 6, Hutto 2007). Its use seems especially suspect when it comes to deciding how best to characterize experience and its logical requirements. So I am curious to know if, in fact, Gallagher and Zahavi are attracted to it when it comes to dealing with the case in hand or if they would prefer to adopt a more descriptively-focused approach of the sort normally associated with phenomenology. And, if they should choose the latter, I am curious to know how they would respond to some of the concerns raised above about their preferred characterization of minimal self-consciousness.

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PHENOMENOLOGY, NEUROSCIENCE AND IMPAIRMENT

Jonathan Cole

As a young medical student, I was frustrated by the rather mechanistic, though undoubtedly therapeutic, way in which I was taught. It seemed to want me to approach patients clinically, and though with respect also with a distance which reduced simple human contact. We were not expected to be interested in what it was like to be ill, but rather to elicit the correct signs and symptoms in order to diagnose. At the time I was also reading more widely, within literature and philosophy, searching – in part – for a more humane perspective. Much philosophy was beyond me – and still is – but then, as a young man I found myself sympathetic to the phenomenological approach. In medicine, by day, I learnt lists of diseases and their presentation, whilst by night I would read of other approaches respectful of the first person experience, which might help me reach what it was like to live, say, with a chronic neurological impairment.

Once qualified, I became submerged in acute hospital medicine, and it was only years later that I emerged again to my first loves; neuroscience and looking at illness from the patient's perspective. When I began to write about the experience of living without sensation, or with a visible difference, then I found that philosophers as Merleau-Ponty and the later Wittgenstein seemed to have thought about such subjects as self-esteem, inter-subjectivity and the nature of impairment in ways not present in neurological textbooks and in ways which illuminated the experiences patients were revealing to me.

Over the years, after meeting at cross disciplinary meetings, it has been a privilege to work with two contemporary phenomenologically informed philosophers, Shaun Gallagher and Dan Zahavi. Both have made important contributions to the fields of broad interest within neurological and other impairments: the nature of embodiment and the indivisibility of mind and body. Zahavi, possibly the more classical phenomenologist, has written on the purer philosophical aspects of this and been crucial in the genesis and the success of the Centre for Subjectivity Research in Copenhagen, a wonderful example of a modern, productive philosophical group. Under him, it has also opened itself to visiting philosophers and even people from other disciplines, including

psychiatry and medicine too. Gallagher has not only critiqued various neuro-scientific theories and become quoted widely within those fields, but has also co-written a number of important papers with cognitive neuroscientists, as well as being involved, for instance, in a series of wide ranging interviews with contemporary neuroscientists.

Both have been extraordinarily productive in their own fields, and both are wonderful exemplars of how philosophers can be relevant in contemporary cognitive neuroscience. By criticising – constructively – empirical researchers, whose day to day preoccupation with experiment and data occasionally blinds them to the limits of their theoretical stances, they have entered debates to the advantage to both empirical science and phenomenology.

Their new book therefore has been written by two philosophers at the top of the game and is keenly anticipated. They have chosen to view two areas of contemporary investigation, philosophy of mind and cognitive science, and to show how these two might profit from adding a phenomenological perspective.

Again and again, their phenomenological stance reminds us of a more broad physiological perspective, in terms of physiology being how things work as a whole. The reductionist approach in science has been, and is, enormously powerful but, especially in the context of studies on ourselves, needs to be placed in context. One thing Gallagher and Zahavi do in this book is to remind us of the importance of this and in this respect, as in many others, they are in no way competing with neuroscience but working with and enhancing it at its best.

The areas covered in each chapter are well chosen and each adds welcome wisdom and reflection to what can be rapidly advancing but slightly confusing fields. I especially enjoyed the considerations of action and agency, in which Gallagher has made important contributions, and the later chapters on social and interpersonal relations. They provide many examples of their clarity and depth of thought as the authors explore and sometimes confront the massive forces and complex methods of empiricism. Armed only with their wits, training and the phenomenological literature they take on, like two Davids, the force and large grants of the cognitive neuroscientific Goliath. Their aim is not to slay the big man but educate him and enter a constructive dialogue to the benefit of both. This is no mean feat; their book is not only a first rate

contemporary account of phenomenology but also a fascinating account of how this can inform areas beyond itself.

My purpose in this review, however, is not simply to praise. In reading the chapters from a clinical, and folk-first person, subjective perspective perhaps, I was also looking for areas where further work might be done, and it is in this light that I hope the remainder of my review will be seen.

In the first introductory chapter, the authors mention the dark days of behaviourism and the denial – almost – of the need to study individual's experience, which had echoes in my earlier medical training. They quote the contemporary philosopher Thomas Metzinger, who denies that progress in phenomenology has occurred of late, before giving more recent developments which have required a more phenomenological approach; renewed interests in consciousness and in more embodied and less Cartesian viewpoints of this, and the recent developments in functional imaging which require knowledge of the person's subjective experience at the time of scanning. I agree that such a dual approach, analysis of brain activity during certain subjective states, is a legitimate and important investigation, though one must be sure of the correlations between the two and, perhaps, the truthfulness of the report. This was considered by Wittgenstein in the 1940's:

Imagine that people could observe the functioning of the nervous system in others. In that case they would have a sure way of distinguishing genuine and simulated feeling: Or might they after all doubt in turn whether someone feels anything when these signs are present?

There is indeed the case where someone later reveals his inner most heart to me by a confession: that this is so cannot offer me any explanation of outer and inner, for I have to give credence to the confession.

For confession is of course something exterior. (Wittgenstein 1981)

Phenomenology, being concerned with experience and first person accounts of these, has always to be on guard against elaboration or falsification, or more likely, a person's understandable lack of eloquence. In addition, we now are becoming increasingly aware of how much implicit brain activity there is supporting and yet underneath the gaze of consciousness.

The second chapter on the methods of phenomenology is recommended as an excellent account of this often misquoted discipline. Coming from a medical background, I realise a complaint about jargon might be considered hypocritical, but occasionally there were sentences whose meaning I think I understood, though it was a close run thing:

Whereas the introspective psychologist considered consciousness as a mere sector of being, and tries to investigate this sector as the physicist tries to investigate the physical world, the phenomenologist realizes that consciousness ultimately calls for a transcendental clarification that goes beyond commonsense postulates and brings us face to face with the problem concerning the constitution of the world. (Gallagher and Zahavi 2008, p. 23)

This is a rather long and long winded sentence. It is also ended with a reference to Merleau-Ponty, since it paraphrases him, at least from my English translation. Slightly later we read:

the aim of the phenomenological reduction is to analyse the correlational interdependence between specific structures of subjectivity and specific modes of appearance or given-ness. (Gallagher and Zahavi 2008, p. 25)

Again the meaning does not, perhaps, burst out to those outside the field.

I would also have liked more explanation of some of the methods of phenomenology. The first of these, the epoché, is designed to suspend our natural realistic inclination.

The purpose of the epoché is not to doubt, neglect, abandon or exclude reality from consideration; rather the aim is to suspend or neutralise a certain dogmatic attitude towards reality, thereby allowing us to focus more narrowly and directly on reality just as it is given – how it makes its appearance to us in experience. (Gallagher and Zahavi 2008, p. 23)

As Wittgenstein, again, wrote, “Nothing is more difficult than facing concepts without prejudice” (Wittgenstein 1989). The next steps towards this method, including the reduction (see above), are explained, but later, for instance, we learn of pre-reflective self awareness and of other ways in which our own phenomenological experience might be altered. Many empirical studies on priming, whether for visual stimuli or within a social context, show how our view can be altered by prior experiences, some of which may be implicit. The reduction would therefore be unaware of these effects and so, sometimes, I was unsure how reliable it might sometimes prove to be. One can see that it must be possible to cast off a dogmatic attitude, though quite how is unclear, but we all must surely retain some idiosyncratic perspective which may be implicit.

We learn later that phenomenology aims to disclose structures that are intersubjectively accessible and its analyses are consequently open to corrections and control by any (phenomenologically tuned) subject. Are we sure that the epoché and reduction and the tuning of the phenomenologically sophisticated subject are really getting closer to things as they are given, rather than them being given in a particular way?

This appears to be something, later, we also learn from Heidegger:

We never really first perceive a throng of sensations, e.g. tones and noises, in the appearance of things... rather we hear a storm whistling in the chimney. (quoted from Gallagher and Zahavi 2008, p. 95)

Then, in chapter 6, we learn that intentionality has a first person aspect. I kept trying to disentangle the clarity of the epoché from the first person aspect of perception. While, of course, phenomenology concerns itself with the intersubjective aspects of perception, I then got stuck somewhere between this joint perception and the initial aim of purity of the epoché which is necessarily individual.

Interestingly, a naïve but different view of the world might be what some of those who live with autism describe, a world in which the elemental components of perceptual experience are themselves experienced and in being so, appear to block the elaboration of the more necessary complex presentations to awareness which our brains enable. One person with autism wrote of seeing all the blades of grass but not the lawn.

The chapter on the phenomenology of time is an excellent account of a topic sometimes neglected; in this case, returning to the insights of Husserl is interesting and informative for areas beyond phenomenology. Though neuroscience has found work in this area difficult, there is a literature on the ways in which the temporal flow of consciousness can be affected over a period of time of round 100 ms by action and its sensory effects, both from perceptual experiments by Haggard and by a large literature on the timing of simple movements in relation, say, to tones. One example of how our temporal flow of consciousness is unitary and maintained is when we make a saccadic eye movement to look at a moving clock. The first second of movement of the second hand appears longer than subsequent seconds. This is thought to be because during the saccade we suppress visual input and therefore have no content of consciousness. So when we alight on an object we add our temporal awareness for that short time during the saccade to that new object and, if that object itself is time (or movement representing time), it appears expanded by the duration of the eye saccade. Here phenomenology and neuroscience seem to overlap.

In the chapter on perception there is little analysis of the empirical work on how the brain builds up a visual view of the world, work for which Hubel and Wiesel part-shared a Nobel Prize. Much play is made of horizontal perceptual filling though, for instance, the way in which the retinal blind spot is perceptually absent, or how colour is relative, or how retinal mechanisms and rod/cone distribution in part explain colour sensitivity at various points of the visual field, are not mentioned. Though I realise the aim is phenomenological, an opportunity to combine empirical and psychophysical work with phenomenological accounts of visual perception is lost here, which is a pity since they frequently are mutually informative.

We also learn that, “It is not the case that I have my own private world...If I were over there where the other is, then I would experience what the other experiences...” (Gallagher and Zahavi 2008, p. 101).

In his famous story, ‘Pierre Menard, Author of the Quixote,’ Borges describes how a man copies the life of Cervantes exactly, though three centuries later, in an attempt to write Don Quixote again, independently (Borges 2000). His partial reproduction is not a success, even when the words are the same, because the words come with the experience and contextual usage of Menard’s time rather than

Cervantes.’ It is not clear to me that we can ever have exactly the same experience of the world in the manner described above. Consider sitting watching a game of football. I might sit in the same seat but have a very different view depending on which side I support. Surely, in most cases, our individual experiences do have an effect on our perception of the world.

In their conclusion to this chapter, the authors do make an important point, that our sense of reality of the world depends on our social existence. Whether in the rare accounts of feral children or in more psychodynamic approaches, recognising the effects of deprivation in childhood or frank abuse leading to later antisocial behaviour, there is ample evidence for this. This part closes the chapter, though social factors are considered later. In a way, it could have opened another avenue of thought.

Some chapters are more philosophical whilst others open out more naturally to empirical work and neuroscience; that is completely understandable. The chapter on intentionality is more philosophical. But there is one example of what I might call the ‘Schneider’ problem. The case of Schneider, a patient in the early 20th century, is quoted widely by phenomenologists, and yet I, for one, am not clear quite what psychiatric problem he had. Occasionally, philosophers quote examples from each other to make a point when some better more primary source might be available. In the chapter on intentionality, we learn from Sartre’s analysis of eyestrain that pain can inform you of the intentional experience of the world (p. 117). When eye strain begins, it is not perceived as such but as problems in concentration, irritation etc. Though not denying this example there are in the literature many examples of the effects of chronic pain on one’s openness to the world, though they are often considered in terms of interference with sleep, work and social life. As a clinician, I wished for more immersion in some of the scientific and medical literature. We learn that pain is given as a certain way the world is experienced, certainly, but when moderate or severe, this seems a rather insubstantial and partial view.

When reading of intentionality and consciousness, I kept wondering what consciousness is for? After all, most animals with reduced or minimal consciousness move as well as or better than we do in relation to their environment. What, then, does consciousness add? Deciding this may have important implications for our subsequent views on choice in action.

The chapter on the embodied mind begins with the infamous brain in a vat. At one level, this strictly cognitive view of the world is one which probably only philosophers could take. The phenomenological rebuttal of its simplicity and limitations seem important and correct. That the body, “shapes the way we perceive and think about the world” (p. 133), seems hugely important to me in relation to clinical medicine and especially to how one approaches chronic impairments in embodiment, whether arthritis, spinal cord injury or stroke. It is sometimes in pathology that the truth of this is revealed, as we see function through loss.

Later in this fascinating and important chapter, the authors suggest that the body is a facilitator, a source of act in the sense that ‘I can.’ Neglecting the slight dualism implicit in this, there is a line of thought within what might be called the disabled community that, say, for those with spinal cord injury, their problems with embodiment and physical limitations are socially induced. If our streets and buildings were only fitted with ramps etc., then they would still be able to do what they want. Their limits on action and agency, for them what determines freedom in a Merleau-Pontian sense, may be social rather than necessarily being confined to the body. In the book we read of pathology not infrequently, but less about people’s resourceful and creative ways of living with and beyond that pathology.

Further, though I might be critical of the brain in the vat, one cannot but be aware, through *The Diving Bell and the Butterfly* (Bauby 2002), of Locked-In Syndrome, (LIS) in which a person is without movement beyond eye blink and sensation, and yet remains conscious. Laureys et al. have evidence that people in chronic LIS rate their quality of life similar to people without any illness or disability (Laureys et al. 2005). Even with the most minimal agency and action, some sort of coming to terms can occur in a Goldsteinian sense. Our embodiment does indeed determine our ‘I can.’ But somehow, some people can find worthwhile lives without it.

Lastly in this section, a small point. We read on page 147 that, ‘the painful body can occasionally be experienced as alien.’ One of the lessons of the NASA robot referred to is quite how plastic our body image is and how quickly we adapt to changes in embodiment, so as we break a leg we do not feel alienated to this changed state. I am not sure what the context and reference for that alienation following pain is. It is true, however, that acute and temporary alienation can occur with local anaesthetic to a limb,

as well as illusions of size and shape, and that these can be related to blocking of small peripheral nerve sensory fibres. Again, an immersion in some of the neuroscience literature on this would have enriched the work.

The chapter on agency and action is one of the highlights of the book and one which reveals just how fruitful interactions between philosophy and neuroscience can be. The authors tease apart and illuminate empirical work in a brilliant way, carefully interpreting at times slightly reductionist experiments in their own terms but also always aware of the whole, or physiological or phenomenological inter-relations which normally take place. In their discussion of the possible ways in which the sense of agency may be affected, four parts which are not mutually exclusive, there is no suggestion of the interactions between these differing channels. One suspects that the brain might constantly be optimising intention, motor command and feedback in differing ways to optimise on line its sense of ownership and agency. Bayesian theories of such optimisation of information might be one way to look at this.

Another area in which phenomenological analysis has proved fruitful, to this reviewer at least, is theory of mind as discussed in chapter 9. This theory, with its two divisions into theory and simulation, has proved very productive of papers and is hugely influential in cognitive neuroscience and psychology. The authors' scepticism and critiques are carefully presented and important for the field. Here, though accepting that the tools of phenomenology are explicit, i.e. involving awareness, they also delve into implicit mechanisms in criticising simulation. Here, their arguments may not be absolutely secure.

In an experiment, Bosbach et al. asked actors to pick up two sets of identical boxes, a large set which required them to do so standing and a small set which could be picked up with the one hand (Bosbach et al. 2005). Several different weights were in the boxes though they looked the same. The actors picking up were told the weights in each box beforehand. Videos of these were shown to two deafferented subjects who, like control subjects, were asked to say what weight was being picked up on each occasion. Controls and deafferented subjects were similar in their judgement of weight. Then a different discrimination was asked for. In a few catch trials, the actors were told that erroneous weights were in the boxes before they picked them up. The second task was to decide what the actors' expectations were of these weights from the same videos they

had just seen. In this condition, the deafferented subjects did show a deficit compared with controls. Bosbach et al. suggested that the judgement of another's expectation depends on an implicit internal simulation of an action which was dependent of a motor representation or programme which was absent or not maintained in those without sensory feedback. Here, the task was the same and the videos were the same but the result differed according to the judgement required; the judgement required them to go beyond perception.

I am very sympathetic to embodied accounts of displays of emotion and have written of the ways in which those with disfigurement are constantly constrained by their visible difference in this regard. In their excellent consideration of social interaction and of intersubjectivity, the authors stress the role of embodied emotional communication:

When I see the other's action or gesture, I see the meaning of the action or gesture. I see the joy or I see the anger... I see it. I don't have to simulate it. (Gallagher and Zahavi 2008, p. 179)

Here they are echoing Wittgenstein who wrote:

"We see emotion."- as opposed to what? – we do not see facial contortions and make inferences from them (like a doctor framing a diagnosis) to joy, grief, boredom. We describe a face immediately as sad, radiant, bored even when we are unable to give any other description of the features. - Grief, one would like to say, is personified in the face. (Wittgenstein 1981, p. 225)

But I do have some reservations too in this regard. By concentrating on facial expressions and big emotional states, embodied expression is clear and unambiguous. By considering development and children, who tend to wear their hearts on their sleeves, once more embodied communication of emotional states is revealed. But, as we get older, we learn to conceal as well as to reveal for a number of reasons, in a Vygotskian internalisation way. There are potent social reasons not to show everything all the time; they may offend others or they may weaken our position, whether in politics or courtship. We may not necessarily know ourselves and occasionally others

take from us something we were not aware of. So much but not all may be revealed in action or gesture, or even words. Social interaction may start off relatively embodied and simple, but it can become an infinitely more subtle dance of revelation and concealment. This, of course, Gallagher and Zahavi are well aware of:

Bodily behaviour is neither necessary nor sufficient for a whole range of mental phenomena... which is why lying, deception and suppression is possible, but this is not to say that this is generally the case. (Gallagher and Zahavi 2008, p. 185)

Maybe we need a Machiavellian as well as a Panglossian or Leibnizian phenomenological analysis, not simply to explore the dark side but because our feelings, if exposed, can lead to our being wounded. Not just feelings of course; consider a child reading, lost in the words: she has no external sign of her thoughts and imagination.

The last part of the book gives an excellent review of ways of looking at the self and a good discussion of the way in which philosophers and cognitive neuroscientists have viewed and investigated it. The ending, making a plea for the essentialness of subjectivity for many different disciplines is not only a plea for others to be phenomenologically informed but contains a welcome, and to my mind, essential humane element which is as important for some forms of cognitive neuroscience as it is for medicine.

One of the worst of all criticisms of any book is that it is not the book that the critic wanted written, i.e. the work is criticised for not being something different. So here I am not really criticising this fine book but the project in general. I am very aware that I might be asking too much, but I would like some phenomenologists to get what might be called ‘dirty hands.’ When I first met Dan Zahavi, he gave a wonderful talk on what I took to be pure ‘hard core’ phenomenology, the analysis of the wise and highly trained man, alone, in his white room, analysing how experience was presented. When I met him at the airport, as we both made our way home, I remember asking him mischievously about the phenomenology of a parachute jump, challenging him, crudely, to leave the white room for the messy world outside. As an outsider, I am delighted that this ‘naturalisation’ has begun (for which I take no credit) and Zahavi was prime mover in the large project on this in Europe. But still I wonder if a book on phenomenology might find room for slightly more first hand accounts of experience. For while I accept

that phenomenology is about the analysis of perception and how experiences are given, to separate experiences and their given-ness and an analysis of them can be difficult and at times seems incomplete. Phenomenology is also about “how we are immersed in our everyday situations and projects, how we experience the world, relate to others and engage in the kinds of actions and practices that define our lives.” (Gallagher and Zahavi 2008, p. 26). It is possible that some of the ways people describe their situations reveal much with an immediacy and intensity.

When going to people, say with impairment, they also tend not to talk of consciousness, let alone of pre-reflective self-awareness; they talk of self esteem and of stigma, of confidence and often of the practical aspects of daily living made problematic by their condition. Sometimes I would have liked some folk-phenomenology, if that is not an oxymoron. Thus Robert Murphy in describing living with his late quadriplegia, which he said led him to an emotional detachment from his body:

a quadriplegic's body can no longer speak a 'silent language' ... the thinking activity can no longer be dissolved into motion, and the mind can no longer be lost in an internal dialogue with physical movement.

My thoughts and sense of being alive have been driven back into my brain... many say they are no longer attached to their bodies...

my former sense of embodiment remained taken for granted... my sense of re-embodiment is problematic negative and conscious... consuming consciousness of handicap even invades one's dreams. Even in sleep disability keeps its tyrannical hold...

The totality of the impact of serious physical impairment on conscious thought... gives disability a far stronger purchase on ones sense of who and what he is than do any social role... which can be manipulated. Each social role can be adjusted to the audience, each role played before a separate audience, allowing us to lead multiple lives. One cannot however shelve a disability or hide it... It is not a role: it is an identity... society will not let him forget it. (Murphy 1987)

One should say that Murphy was a professor of anthropology and so less naïve than many and also that many younger people with similar condition do not have such negative experiences. But the richness of his account gives a flavour of what is available, and is available from ordinary people's responses to unusual situations.

I also have a rather vague concern, which I am guilty of myself in my writing; that the examples given of pathologies (schizophrenia, autism, anorexia often) are given because they lend themselves to a phenomenological analysis, whilst other less fashionable problems such as learning difficulties, obesity, depression, old age, etc., are less focussed upon. In addition, pathologies are largely viewed as that: abnormalities, losses and deficits. In chronic impairment, part of the wonder is how some restitution of life is possible where, from the outside, this seems scarcely possible. This is seen not only in Locked-In Syndrome, but in spinal cord injury and other conditions, when a Goldsteinian process of recovery of selfhood occurs from what is left. This is surely an important aspect of phenomenological enquiry.

Though embodied expression is considered, curiously the experience of emotion itself is largely absent. Where is the analysis of love, anger, jealousy, guilt, beyond their expression on the body, when this is even possible? That such huge emotions like jealousy have no external sign is surely, of itself, revealing. Munch's paintings of sexual jealousy, of which he made several, all show a couple in the background and of a brooding man's face in front. Even then he was compelled to entitle them 'Jealousy.'

Here, again, I am focussing on an ideal and asking for a huge amount. But it is a measure of this stimulating and important book that it makes one want the careful and deep analyses contained within it to be carried over to other areas. As philosophers, Gallagher and Zahavi's view is slight top down, a view from the mountain. It is beautifully clear and I love mountains, but there are other places that people live; I would love them or their colleagues to take some walks there too.

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THE IMPORTANCE AND LIMITS OF PHENOMENOLOGICAL PHILOSOPHY OF MIND

Marc Slors

The importance of *The Phenomenological Mind* cannot easily be overstated. Philosophy of mind is a predominantly analytical affair and up till now there has been relatively little recognition by analytical philosophers of the relevance of phenomenology as a philosophical discipline. This lack of recognition is sometimes explained in terms of hostility or presumed incommensurability. In all likelihood, ignorance is a better explanation and one couldn't wish for a better remedy against that than this book. Phenomenology does have a lot to contribute to philosophy of mind, as Gallagher and Zahavi show. This book, being the first systematic overview of philosophy of mind from a phenomenological angle, may change what is generally perceived to be the standard range of problems and options in the philosophy of mind. The fact that it is a textbook—influencing future generations of philosophers—is strategically a very wise choice in this respect.

The book covers a large number of topics, most of which are familiar from analytical philosophy of mind and some of which are not. It starts with an excellent and very useful introduction into the phenomenological methodology, including a fairly detailed discussion of the various currently fashionable but, as it turns out, rather diverging forms of neurophenomenology. In general the book is written in a very clear and accessible style, despite the huge amount of information it contains. No specific advanced knowledge is required, although at times it is clear that the authors suppose their readers to be familiar with standard analytical philosophy of mind, e.g. when terms such as 'zombie' or 'view from nowhere' are used without further explanation. Most of the text either introduces a specific problem area or outlines the various phenomenological views on it. When appropriate, the tone is exegetical.

Sometimes there is a polemical undercurrent directed against analytical views. And sometimes there is plain rejection of such views when they are taken to be either too scientific or to involve a neo-Cartesian or neo-Lockean view of the mind as an inner realm. Even though I often concur with this criticism, this does not imply, I

believe, that we should give up the analytical approach to the philosophy of mind in favour of a purely phenomenological one. Analytical and phenomenological philosophy of mind can best be considered complementary approaches, not rivals. In the next section I will try to substantiate this claim. In the section following the next, I shall indicate where, given the relation between analytical and phenomenological mind sketched so far, I think the limits of phenomenology lie.

1. Phenomenological versus Analytical Philosophy of Mind

One of the main differences between phenomenological and analytical philosophy of mind is the fact that whereas phenomenology is first and foremost descriptive, current analytical philosophy tends to be explanatory and much more directed to ontological issues. This is partly, but not entirely, due to the commitment of many analytical philosophers to a scientific outlook on the world, often expressed by a pledge of allegiance to physicalism, that is sometimes taken to be overly scientific by phenomenologists. By contrast, there is no discussion of the relation between the mental and the physical to be found in *The Phenomenological Mind*, no exposition on (non)reductivism or supervenience and no debate on causal influence of the mental on the physical. This does not mean that the book expresses any hostility to science or to the idea that the mind must somehow be part of the natural world (although there may be some scepticism or indifference about how and whether this fact can actually be explained). Rather, the emphasis is on a very detailed account of the explanandum 'mind' and on the various problems and paradoxes that may arise in describing it. This is one of the reasons why it is important for analytical philosophers to read this book, as details of the explanandum 'mind' are often downplayed in analytical philosophy in order not to complicate explanations too much.

Compare, for instance, Chapter 3 on consciousness and self-consciousness with influential analytical books such as Chalmers' *The Conscious Mind* (1996) or Bermúdez' *The Paradox of Self-Consciousness* (1998). These analytical books do introduce their topics carefully and in some detail. Chalmers takes some time to distinguish phenomenal consciousness from access consciousness, or, in general, the functionalisable from the allegedly nonfunctionalisable aspects of consciousness.

Bermúdez uses a fair number of pages to distinguish self-consciousness as the capacity to think I-thoughts from non-conceptual, bodily self-consciousness. But they both introduce these details in order to unearth a theoretical, explanatory problem—the hard problem of consciousness and the paradox of self-consciousness, respectively—that the rest of the book is devoted to solving. Gallagher and Zahavi, by contrast, devote the entire chapter to detailed descriptions of reflective and non-reflective forms of self-consciousness, all sorts of variations that can be found in the literature in ways in which self-consciousness is described, the ‘mineness’ of self-consciousness and how that relates to the ‘what it is likeness’ of consciousness, different ways in which the distinction between first- and higher-order consciousness can be conceived of, etc. Instead of unearthing theoretical problems of how these various modes of consciousness can be explained, their focus is on how they can best be best described and charted. Instead of ending up with an explanatory problem, as Chalmers and Bermúdez do by the end of their first chapters, they end up with a list of further descriptive problems: whether consciousness should be conceived of in ecological or non-ecological terms, how to understand the temporality of our stream of consciousness, whether non-conceptual consciousness is structured, whether self-consciousness is necessarily embodied, what the influence of social interaction is, etc.

The same detailed, predominantly descriptive approach can be found in the other chapters. Gallagher and Zahavi’s discussions of the experience of time, of perception, the intentionality of consciousness, the embodiment of the mind, action and agency, knowledge of other minds, the self and the notion of a person, all introduce details in the descriptions of the phenomena under discussion that seem to get lost in analytical attempts at explaining them.

A related difference between the phenomenological approach to the philosophy of mind and the analytical one is the way in which the two approaches see their connection with science. Analytical philosophy of mind tends to see itself as the natural ally of the scientific outlook. What this boils down to, in effect, is that analytical theories aim at accounting for aspects of the mind such as consciousness, content, free will, or mental causation, such that these will fit into what is taken to be the ontological picture of the world as presented by science. This is a largely theoretical enterprise where very little reference is being made to actual scientific experiments. It may be

doubted, indeed, that scientists are that much concerned with ontology. It may even be doubted whether the ontological picture of the world with which philosophers are trying to reconcile the existence of minds (the world as it is described by microphysics, as it is often put) resembles e.g. the quantum mechanical ‘picture’. But it may also be doubted whether this is required, for there *is* a point to analysing concepts related to the mind in such a way that we can explain why they do not imply the existence of supernatural entities.

Whereas analytical philosophy is concerned with the ontological, theoretical aspect of science, phenomenological philosophy of mind connects well with all sorts of scientific, i.e. psychological and neuroscientific, experiments. Gallagher and Zahavi’s claim that their rejection of scientism in no way implies an anti-scientific stance is indeed substantiated by the fact that much of what is said in the book is illustrated or explained by means of reference to actual experimental science. Methodological issues concerning the relation between neuroscience and phenomenology are discussed in the large section on neurophenomenology in Chapter 2. And every now and then, issues are illuminated by making reference to actual scientific studies, be they about blindsight in relation to consciousness, dynamical systems theory in relation to awareness of time, embodiment and robots, or neuroscientific experimenting with our sense of agency. The background assumption seems to be that the mind somehow is a part of the natural world. But how that fact can be explained, whether it *has* to be explained or what form such an explanation should have are issues that are left untouched.

A third big difference between philosophy of mind as it is known from the analytical literature and phenomenological philosophy of mind as Gallagher and Zahavi put it in the spotlights is in the topics discussed. Whereas the former appears dominated by the notion of folk-psychology—what it is, whether we need it and how we can account for it—the latter does not mention it at all. On the other hand, Gallagher and Zahavi introduce issues such as time-consciousness that are rarely discussed in analytical philosophy.

The fact that beliefs, desires, reasons for action, motives, thoughts, deliberations etc., which occupy centre-stage in the analytical literature, are virtually absent in *The Phenomenological Mind* is, in my view, something of an omission. This omission can largely be explained by the fact that beliefs, desires and the rest of our folk-

psychological furniture of the mind do not play a dominant role in the traditional phenomenological literature. And it is the phenomenological *tradition* that forms the backbone of this book. Though reference is made to an impressive amount of authors, very many of which from the analytical tradition (speaking to the credit of this book) the discussion is usually dominated by the views of Husserl, Heidegger, Merleau-Ponty, Sartre and other phenomenologists.

Indeed, there may seem little to say about folk-psychology from a phenomenological perspective. For one thing, much of it is about standing states, not occurrent ones. But still, the phenomenology of thought and deliberation or the phenomenology of conversing with others seems to me to be incredibly important issues (in general people are embodied, living, acting beings in *The Phenomenological Mind*, but they hardly think or talk). Compare the study of the phenomenology of agency and intentional action to which Gallagher and Zahavi *do* devote attention. This study plays a crucially important role in current discussions about mental causation and conscious will (e.g. the debate that followed Wegner's *The Illusion of Conscious Will* (2002)). I can imagine that phenomenological studies of thinking and deliberating can also play a role in criticizing certain internalistic views of folk-psychology in favour of more externalistic ones.

2. The Malleability of Phenomenological Descriptions

In many respects, there is a division of labour between phenomenological and analytical philosophy of mind, as the above remarks are intended to show (and with respect to issues where there is no division of labour, I take it that many non-scientific anti-Cartesian analytic philosophers see phenomenology as an ally in their battles against reductionist or internalistic views of the mind). The fact that phenomenology is more descriptive and analytical philosophy more explanatory, though, may seem to imply that phenomenology defines the explanandum in such a way that it has the last word on whether a given explanation of some aspect of the mind succeeds. This, however, is not necessarily the case in my view. Let me try to explain why I believe phenomenological descriptions of experiences to be malleable under the influence of available explanations to a degree that is not acknowledged by Gallagher and Zahavi.

I will start with a problem concerning the givenness of experience. The *Phenomenological Mind* is about how we experience the world and ourselves in it as minded beings. It describes how this experience is given to us. Gallagher and Zahavi briefly mention Sellars' *myth of the given* (on p. 24) and claim that phenomenology does not succumb to it. But they take Sellars' point to be about the idea that experience is pure reception of the world. I do agree that if this is all there is to the idea of the myth of the given, no such myth is present in phenomenology as presented by the authors. They do not treat the mind as a mirror of nature and do not claim that the world is exactly as we experience it. Their focus is simply experience itself.

But there may be another reading of the myth of the given, a Rorty-style or perhaps Wittgensteinian reading that focuses on the intractable relation between language and experience. When experience is described in language, concepts and words are used. However, their correspondence to actual experience can only be substantiated by further use of language and concepts. Descriptions of experience—such as Gallagher and Zahavi and the phenomenological tradition they cite provide—are infused with concepts. And many of these cannot be traced directly to experience itself.

Take, for instance, Chapter 4 on the experience of time. Many of the problems and paradoxes we encounter in describing this are connected to the notion of a 'time slice'. Conscious experience is supposed to take place at one point in time only, yet we are aware of the relations between this time slice and what went on before as well as what is to follow. A large part of the chapter is devoted to answering the question how we should describe the given impact of the past and the future on our experiences *now*. The problem Gallagher and Zahavi aim to solve is squaring the fact that we *know* our conscious experiences to occur at one point in time with the fact that we do seem to experience time e.g. by being aware of change. This knowledge infuses the description of our experience of time without being itself the result of pure experience. For do we ever really *experience* a time-slice? I doubt whether even trained Zen monks are able to experience the pure *now*.

Thus, there is an element of conceptual reconstruction present in the phenomenological description of experience. This observation is not meant to be criticism. But its implication is, I think, that phenomenological descriptions of

experiences should not automatically be taken as measure against which to gauge the merits of certain explanations of our cognitive capacities: when a given theory of some cognitive ability does not entirely fit phenomenological descriptions of the ways in which we experience our exercising these capabilities, this need not automatically be a reason to discard the theory, for there may be room to manoeuvre in the description. Why not allow for the possibility of acquiring new insights into our own experiences when explanations focus our attention on hitherto overlooked aspects? Gallagher and Zahavi appear not to allow for this. In my opinion that is a mistake that may stand in the way of fruitful interaction between phenomenology, science and analytical philosophy. Let me illustrate this with an example.

In Chapter 9, Gallagher and Zahavi discuss our knowledge of other minds. They distance themselves from the tradition in analytical philosophy that describes our ability to acquire knowledge of other minds either in terms of our using a theory of mind or in terms of our simulating the other's motivations in our own mind. This tradition, they claim, is an heir of the argument from analogy according to which (roughly) we postulate minds 'behind' the behaviour of others as a consequence of induction from our perceiving our own behaviour to be caused by our own minds. The obvious Cartesian overtones in this argument make it hard to square with the phenomenological outlook. Whereas phenomenology teaches that we *directly* perceive joy, anger etc. in the facial expressions of others, for instance, theory theory and simulation theory appear to contend that we can at most *infer* such mental states from observed behaviour. In the case of simulation theory, there is an additional clash with phenomenology: the difference between first-person experience of emotions, say, and the second- or third-person experience thereof which is salient in experience is lost when ascribing emotions to others proceeds by evoking such states in ourselves.

Many philosophers and neuroscientists, however, consider there to be neurological evidence for the thesis that the ascription of primitive intentions or basic emotions proceeds by some form of implicit simulation. Gallagher and Zahavi discuss some of those who base this claim on the discovery of mirror neuron and mechanisms of motor resonance (Gallagher and Zahavi 2008, pp. 177-81). What these discoveries show is that when perceiving basic intentional actions, there are firing patterns in our premotor cortex that are similar to the patterns that would occur should we execute the

perceived actions ourselves. Following Gallese and Goldman (1998), many researchers take this as amounting to a form of implicit (i.e. sub-personal, automatic, non-conscious) simulation that grounds our understanding the goal or aim of the perceived action.

Gallagher and Zahavi, however, argue that rather than as simulation, we should view such motor resonance as part of an enactivist perception of intentions *in* the action of others. This is in line with the traditional phenomenological view on the ascription of intentions and the implied opposition to simulation theory. Strictly speaking, there is no need for this alternative reading of mirror neuron activity, since the claim of the philosophers and neuroscientists they cite is not that the neural mirroring process extends to the phenomenological level. However, others do take such mirroring to initiate a type of simulation that may be half conscious. Especially when it comes to perceived expressions of emotions, motor resonance is contended to lead to a re-enactment of these emotions by the resonator (Goldman and Sripada 2005, Iacoboni 2003, Carr 2003). So, there seem to be reasons for Gallagher and Zahavi to defend the phenomenological take.

But now the question arises whether phenomenology should determine the interpretation of neurological data, or whether neurological data should induce us to reconsider the descriptions we give of our experience. It does seem apt to say that we perceive joy in a smiling face. And I agree completely that it would be bizarre to say we infer there to be joy causing the perceived expression. But when we learn that in perceiving such an expression we tend to mimic that expression at some neurological level, and when we know that mimicking an expression may cause us to experience the connected emotion, albeit half-consciously at most (James 1890), I think this is reason to re-examine our experiences of perceiving joy in someone's smile. And when it turns out that people who are not able to experience emotions such as fear themselves due to lesions in the brain are not able to perceive these emotions in the facial expressions of others, as Goldman and Sripada (2005) show citing massive amounts of evidence, such re-examining becomes imperative, in my opinion.¹

¹ The paper by Goldman and Sripada is not mentioned by Gallagher and Zahavi and neither is Chapter 6 on low-level mindreading in Goldman's (2006), which contains more data pointing to an automatic form of simulation. I am very curious about a reading of these data that will fit the traditional phenomenological take.

And there *is* room for such re-examination. For we should keep the intractable relation between language and experience in mind and acknowledge that concepts such as ‘perceiving’ and ‘simulating’ are not *given* by experience but are our attempts to capture experience as accurately as possible. Since reading the literature on motor resonance and implicit or low-level (Goldman’s term) simulation, I am aware of the fact that my perceiving joy in the smile of another person *is* connected to my half-conscious re-enactment of that emotion. This procedure—that may well be described as ‘simulation’ despite Gallagher and Zahavi’s grammatical objections to the use of this word—is part of what it is to perceive joy in someone’s smile, I would say. This need not be an objection to Gallagher and Zahavi’s enactivist perception reading of motor resonance. It is merely drawing attention to the observation that it is actually *re-enacting* that takes place in such perception. If this burdens us with having to explain how re-enactment or simulation contributes to the perception of emotions without succumbing to ideas about inference or step-wise procedures (Jeannerod and Pacherie 2004) that are *not* found in experience, then we should simply try to provide such explanations. The fact that it provides us with more philosophical work to do is no reason to reject a change of description of our experience on the basis of scientific insights.

There is one loose end to this appeal for allowing scientific insights to let us reconsider what we think is the best description of our experiences: doesn’t allowing for a form of implicit or half-conscious simulation ignore the obvious phenomenological distinction between the first, second and third-person perspective? I think not. For one thing, the emotion that results from resonating will in all likelihood not be as strong or as salient in consciousness as the original emotion that gave rise to this resonance process. For another, the emotion fits into entirely different psychological contexts in the case of the smiling person and the resonator. The smiling person will probably have some reason to be happy, the resonator in all likelihood not. This will make for a different total experience in the resonator, an experience that can probably best be described as ‘partial empathy’.

This is one example of where I believe phenomenological descriptions of experiences are more malleable than Gallagher and Zahavi acknowledge. In general, it demonstrates, I believe, that there is room for the influx of data from science and ideas from analytical philosophy in phenomenological philosophy of mind. Just like

Gallagher and Zahavi have made it more than clear that there should be much more influx of insights from phenomenology in neuroscience and analytical philosophy of mind.

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INTENTIONALITY AND THE EXTERNALISM VERSUS INTERNALISM DEBATE

Alessandra Tanesini

In their excellent book *The Phenomenological Mind* Shaun Gallagher and Dan Zahavi demonstrate that analytic philosophy of mind and cognitive science have much to learn from work conducted in the phenomenological tradition. In particular, they show how discussions about embodied cognition, about the self, and about mind-reading could be greatly enhanced if the lessons of phenomenology were heeded to. However, their discussion of the structure of intentionality is, in my view, less successful in this regard.

In this brief commentary I wish to focus on this discussion and to highlight some difficulties for it. In particular, I shall argue that there are internal tensions in the general account of intentionality Gallagher and Zahavi present in the book. I also show that this account is not easily reconciled with their endorsement of an enactive account of perception. Finally, I raise some questions about their presentation of the issues in the debate between externalists and internalists about mental content.

Gallagher and Zahavi's discussion of intentionality begins with a brief presentation of Franz Brentano's account of the notion. This move is no surprise since it is precisely to Brentano that we owe the first modern significant discussion of this topic. Intentionality, he claimed, is the directness of mental states toward objects; it is their aboutness or of-ness. More precisely, Brentano wrote:

Every mental phenomenon includes something as object within itself, although they do not all do so in the same way. In presentation something is presented, in judgement something is affirmed or denied, in love loved, in hate hated, in desire desired and so on. (Brentano quoted in Gallagher and Zahavi 2008, p. 109)

Gallagher and Zahavi follow other critics in highlighting a difficulty in Brentano's position which is implicit in this quote. Brentano appears to believe that the intentional object of a mental state, which is the object toward which the state is directed, must be an object of a special kind that exists in the mind. Brentano, as it is well known, resorts to this move in order to explain how we can desire, believe or even

fear things that do not exist in the world. These states are common: many children believe in Santa Claus and fear monsters that are not really there.¹

Gallagher and Zahavi reject Brentano's move and turn instead to Husserl's account of intentionality which I take them to endorse.² Their discussion of Husserl, however, is almost entirely drawn from his *Logical Investigations*. The choice to ignore Husserl's more mature views as presented in the *Ideas* is most unusual. It is perhaps motivated by concerns with space or by the introductory nature of this volume. Be that as it may, the fundamental Husserlian notion of 'noema' which is crucial to his mature account of the structure of intentionality only appears in a lengthy footnote. Later in what follows, I shall introduce this notion to fill in what I take to be gaps in the presentation offered by Gallagher and Zahavi in this book.³

Contra Brentano, Gallagher and Zahavi assert that intentional objects are ordinary objects, and not objects of a special kind. They write:

The intentional object is not a special kind of object, but rather the answer to the question of what a certain intentional state is about. If the answer refers to some non-existing object, the intentional object doesn't exist. If the answer refers to some existent thing, then the intentional object is that real thing. So if I look at my fountain pen, then it is this real pen which is my intentional object, and not some mental picture, copy, or representation of the pen (Gallagher and Zahavi 2008, p. 114)

With these claims Gallagher and Zahavi clearly intend to distance themselves from any view that postulates the existence of sense data or of any other mental entity which would function as the intentional objects of mental states. As Gallagher and Zahavi acknowledge, they are indebted to Tim Crane for this way of phrasing the issue of the status of intentional objects (Crane 2001, p. 26). For this reason it is interesting to see where the two views differ.

For Crane the lesson of this point about the ontological status of intentional objects is that mental states are not always best understood in terms of relations between

¹ That these states are common is not as obvious as it might seem. Disjunctivists would dispute this description of what goes on in these cases. I discuss this issue below when I mention a disjunctivist account of perceptual hallucination.

² I draw this conclusion from the fact that they refer to it as the 'positive account'.

³ My presentation will be based on Zahavi (2004) which offers an extensive discussion of some topics discussed in this book and reaches similar conclusions.

thinkers and the intentional objects the mental states are about (Crane 2001, p. 23). Crane holds this view because he is committed to the claim that relations entail the existence of their relata (Crane 2001, pp. 23-24). Consequently, since it is possible to think about things that do not exist, having a thought about something at least sometimes is not a matter of being related to an intentional object. Instead, Crane claims mental states are relations between subjects and mental contents (Crane 2001, p. 32). These contents are the ways in which the intentional objects are presented to the subject (Crane 2001, p. 29). Thus, these modes of presentation can exist even though what they point toward fails to. These features of Crane's account of the structure of intentionality indicate that he subscribes to what Zahavi has called a triadic account (Crane 2004, p. 53).⁴ In his view, it is in virtue of the subject's relation to a mediating mental content that her intentional states are about their intentional objects.

In what follows I shall follow Zahavi in classifying theories of intentionality as either triadic or dyadic. However, it should be kept in mind that so-called triadic theories do not typically identify intentionality as a triadic relation at all. Instead, they take it to be a two-term relation between mental state and its content, which is typically thought of as the mode of presentation of the intentional object. This relation is supplemented in those instances in which the object exists by a further relation between the content and the intentional object. When I refer to triadic theories below, I mean theories which like Crane's have this structure.

Despite their reliance on Crane in the formulation of their view about the ontological status of intentional objects, Gallagher and Zahavi appear to disagree with Crane about whether mental states are to be thought of as relations to their intentional objects. Thus, they support the following thesis:

intentionality is not an ordinary relation to an extraordinary object, but a special kind of relation to an ordinary object; a special 'relation' that can hold, even if the object doesn't exist (Gallagher and Zahavi 2008, p.113).

Unlike Crane, Gallagher and Zahavi claim that intentionality is a special relation because it can hold even when one of the relata does not exist. I am unsure about how to interpret this claim. It is certainly intended to convey the thought that the intentionality

⁴ Crane's full account is more complex than this since it involves more than three components.

of a mental state is not contingent on the existence of its intentional object. This thought is, on the face of it, opposed to disjunctivism, a view which treats intentionality as an ordinary relation to ordinary objects in the world. The disjunctivist account of the structure of intentionality is therefore dyadic since it does not postulate the existence of an intermediary whose role it is to secure reference to the intentional object.

For disjunctivists, mental states, typically perceptual states, are said to have object-dependent contents because these states do not exist unless their intentional objects also exist. Hence, for example, disjunctivists hold that there is no common perceptual state between a person who sees a rose and one who hallucinates an identical rose. The person who hallucinates does not have a hallucinatory experience but has a hallucination of an experience. In other words, the person who suffers from an hallucination does not have a perceptual state with a false content about a rose; instead they falsely believe that they have an experience, when they do not.⁵

The disjunctivist position thus denies the existence of the phenomenon that prompted Brentano to postulate that intentional objects have a mental existence, and Crane to claim that intentionality is a relation to contents rather than objects. Gallagher and Zahavi's commitment in their discussion of the structure of intentionality to claims which are incompatible with disjunctivism is, as I show below, in tension with their views about perception which are tantamount to supporting a version of disjunctivism.

I have claimed that I am unsure about how to interpret the quote from Gallagher and Zahavi that I have presented above. This is because in my view it cannot be read literally as saying that intentionality is a relation that can hold between two things even though (at least) one of them does not exist. If we adopted this reading we would be forced to conclude that there literally are things which do not exist. In other words, we would be forced to resort to the idea that there are two kinds of things: those which are but do not exist and those which are and exist. This is exactly Brentano's move when he postulated that intentional objects that do not exist in reality have a special kind of mental existence. It is clearly a move which Gallagher and Zahavi would not endorse since they are at pains to assert that intentional objects are not objects of a special kind. However, they cannot escape this deeply unpalatable conclusion if they adopt a literal interpretation of their claim about the sort of relation intentionality is, since in order to

⁵ Incidentally, this shows why disjunctivism is more plausible when restricted to perceptual states.

characterise any relation we must specify what its relata are. But now we are immediately committed to the claim that there are things, which do not exist.

It is, thus, perhaps best, therefore, not to interpret the quotation literally. If so we must read it as making two claims. The first is that intentional objects are ordinary objects, and not objects of a special kind. The second is that intentional states can exist even though their intentional objects do not. But if this is what the claim means we are left with these two conclusions neither of which sits well with other claims made by Gallagher and Zahavi in this chapter. The first is that disjunctivism is false, since it entails that the existence of a mental state necessitates the existence of its intentional object. The second is that Crane is right to claim that not all mental states are relations to their intentional objects. Nevertheless, I resort to this interpretation of their views because their commitment to the claim that intentional objects are ordinary objects is stronger than their commitment to the claim that intentionality is a special kind of relation between things some of which might not exist, and the two commitments are in my view, incompatible.

This interpretation is also justified by the fact that similar adjustments need to be made to another claim Gallagher and Zahavi make about the nature of the relation between acts of consciousness (which they appear to identify with intentional acts or mental states) and objects of consciousness (which they take to be intentional objects). Gallagher and Zahavi claim that this relation is internal in the sense that “one can identify each item in the relation only by reference to the other item to which it is related” (Gallagher and Zahavi 2008, p. 113). Since this relation is said to hold between the mental state and the intentional object, I take it to be the intentionality relation.

This reading, however, immediately leads us into multiple problems. Firstly, intentional objects are ordinary objects and as such they transcend the existence of any ordinary mind. Even if one were to subscribe to Kantianism and think of ordinary objects as objects of possible experiences, it is certainly not true that it is not possible to identify the apple I had for breakfast independently of my visual perception of it. Ordinary objects are public at least precisely in the sense that they can be identified independently of any mental state directed toward it (although maybe they are not independent of all actual and possible mental states). Secondly, an internal relation is one that holds only if the relata exist. Internal relations, as Gallagher and Zahavi define

them, are not contingent, they are necessary. They make reference to one term necessary for the identification of the other. It follows that when two terms are internally related it is not possible for one to exist without the other. Yet, this is precisely what Gallagher and Zahavi have denied holds of intentional relations.

All of these difficulties could disappear if one were to invoke some sort of internalist notion of mental content. One could then with Crane hold both that the existence of a contentful mental state is not contingent on the existence of its intentional object and claim that a mental state is defined by a relation to its intentional content which is the way in which the intentional object is presented to the subject (Crane 2001, p. 29). It is of the relation between the mental state and its content that it would be correct to say that it is not possible to specify the one without making reference to the other.

To summarise the argument so far, Gallagher and Zahavi appear to subscribe to three incompatible theses:

- A. Intentional objects are ordinary objects
- B. Intentionality is a dyadic relation between mental states and their intentional objects.
- C. The existence of a mental state is not contingent on the existence of its intentional object.

The three theses are incompatible because to take intentionality to be a dyadic relation between mental state and intentional object requires both relata to be (if not to exist in reality) in order for the relation to hold. Two options are available to subscribers of the view. They can deny that intentional objects are ordinary objects, and thus deny A. Alternatively, they might insist that A is true and commit themselves to the view that mental states are object dependent and thus deny C. The first option was taken by Brentano; the second by contemporary disjunctivists such as John McDowell (1998) or Alva Noë (forthcoming). Since I have taken Gallagher and Zahavi to be strongly and clearly committed to both A and C, I have resorted to suggesting that they might with Crane, to whom they are clearly indebted in their discussion, deny B and take intentionality to be a relation between mental states and their contents which holds even when the intentional object does not exist.

I am confident, however, that Gallagher and Zahavi would reject this reconstruction of their view. I base this confidence on two facts: their endorsement of enactivism about perception in chapter 5 and my acquaintance with an earlier essay by Zahavi on Husserl's theory of intentionality and on the internalism/ externalism debate in analytic philosophy of mind (Zahavi 2004). However, before considering these two points a few words about the connections between the view about intentionality I have sketched above and both internalism and externalism about mental contents might be in order to avoid any possible confusions. The characterisation of intentionality as a dyadic or triadic relation is orthogonal to issue of internalism versus externalism. In a nutshell, for an internalist the individuation of mental contents is exclusively dependent on factors which are internal to the bearer of those states (i.e., the thinker).⁶ On the contrary, for an externalist the individuation of mental contents is not exclusively dependent on such factors. It should be apparent then that it is possible to be an internalist and think that intentionality is a dyadic relation. This is Brentano's position. It is also possible to think that intentionality is a triadic relation, and be an internalist about mental content. This is the view defended by Crane (2001, p. 117). Similarly, one can be an externalist and hold that intentionality is a dyadic relation. This is the view defended by Noë, and other disjunctivists. Alternatively, one can subscribe to externalism and take intentionality to be a triadic relation. This is the position of prominent representationalists like Fred Dretske (1995) or Michael Tye (1995).

Gallagher's and Zahavi's discussion would in my opinion have benefited from being clearer on these issues and especially on the similarities and differences between disjunctivism and other forms of externalism. If they had done so, they might have been less inclined to claim as they do that phenomenology puts into question the very distinction between internalism and externalism about content (Gallagher and Zahavi 2008, p. 124). They might also have clarified how their support for Noë's enactivist view of perception as active exploration of the environment can be reconciled with their views on intentionality (cf. Gallagher and Zahavi 2008, p. 99). Noë endorses

⁶ The notion of 'internal' that is at issue here is not without its ambiguities. It might mean a feature of the subject that the subject has independently of anything else, or it could mean a feature of the subject that she shares with all her doppelgangers. These two characterisations are not equivalent but it is beyond the scope of this short commentary to enter into the details here.

disjunctivism, and yet this is precisely the position that is contradicted by several claims made by Gallagher and Zahavi in their discussion of intentionality in this book.

In order to clarify my contentions, I shall return to Zahavi's earlier piece and to the reasons why I am confident Gallagher and Zahavi would reject the interpretation I have forced upon them above. In that article Zahavi is concerned with the account of intentionality Husserl develops in the *Ideas*. He presents two different kinds of interpretation of Husserl's position. The so-called 'West Coast' interpretation championed by Hubert Dreyfus attributes to Husserl an account of intentionality as a triadic relation that holds between mental state, a noema understood as a mode of presentation, and an intentional object (cf. Zahavi 2004, p. 48). According to this view, the existence of the mental state is not dependent on the existence of its intentional object. Opposed to this view stand various 'East Coast' interpretations that take intentionality to be a dyadic relation and identify the noema with (part of) the intentional object in the external world. The intentional object, however, is not conceived as devoid of significance. Instead, the ordinary object itself is conceived as imbued with meaning (cf. Zahavi 2004, pp. 48, 50).

It is this second interpretation that is endorsed by Zahavi in this article, and it is for this reason that I am convinced they would reject the reconstruction I proposed above which attributed to him and Gallagher a triadic interpretation of the intentionality relation. Another reason why they might resist the interpretation is that it stands opposed to the kind of disjunctivism entailed by Noë's enactive account of perception; a view to which Gallagher and Zahavi are sympathetic in chapter 5 of this book.

Given that the interpretation I offered above is to be rejected, what are we to make of the incompatible triad of claims Gallagher and Zahavi appear to accept? Although, they do not do so in this book, I would propose that they reject thesis C, and embrace disjunctivism. Zahavi already hints in that direction himself when he discusses what 'East Coast' Husserlians should say about hallucinations (Zahavi 2004, p. 54). Thus I conclude that the claim that intentionality is an extraordinary relation is best abandoned by Gallagher and Zahavi if they wish to keep most of their theory intact.

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PHENOMENOLOGY: CONTRIBUTION TO COGNITIVE SCIENCE

Andrew Brook

My comments will focus on the issue of what, according to Gallagher and Zahavi (2008, hereafter G&Z; all references will be to this book unless otherwise noted), the phenomenological approach can contribute to the cognitive sciences (including cognitive neuroscience), one of their major themes. Toward the end of the paper, I will say something about a second major theme of theirs, the relationship of phenomenology to philosophy of mind. Conventional wisdom within cognitive science has it is that phenomenology is hostile to the scientific study of human cognition. Hubert Dreyfus, a self-declared phenomenologist, writes works with titles such as *What computers can't do* (1972) and *What computers still can't do* (1992), both of which urge that the attempt to understand the mind as a computational information-processor, at any rate, is doomed to failure. Since the computational, information-processing model is the only remotely worked-out scientific model of cognition that we have, it is not too surprising that phenomenology and cognitive science have generally been viewed as being at loggerheads.

Our authors do not see things this way. G&Z have been arguing for over a decade now that phenomenology has something unique and important to contribute to the scientific study of cognition. Their campaign, of which *The Phenomenological Mind* (2008) and a journal that they edit, *Phenomenology and the Cognitive Sciences*, are perhaps the most important fruits, has been increasingly successful.

The Phenomenological Mind is mostly devoted to introducing the phenomenology of particular issues and, in some chapters, connecting what phenomenology can teach us about them to work going on in cognitive science or philosophy of mind. Consciousness, time, perception, intentionality, the embodiment of cognition, agency, knowledge of others, and self and personhood occupy a chapter each. (The cover says that situated and extended cognition are discussed, too, but I did not find such a discussion.) I want to abstract away from the particulars of these discussions and look at two over-arching issues. The first is: What, in the view of G&Z, is this way of doing philosophical analysis called phenomenology like? The second is: Can

phenomenology make an important contribution to the scientific study of cognition? If so, what? The second is the issue that really interests me. However, to discuss it, we have to know what phenomenology is in the view of G&Z. Anyway, their view of phenomenology is interesting in its own right.

Two final introductory remarks. First, though G&Z call their book an introduction, it is far more than an introduction. It is the most comprehensive work on what phenomenology has to say about cognition and consciousness and how it relates to the scientific study of cognition to date. Second, though the view of phenomenology that they advance fits Husserl (d. 1938) and his science-admiring follower Merleau-Ponty nicely, a question could be asked about how well it would fit phenomenology chez Heidegger. To say the least, Heidegger was not an admirer of attempts to study the mind scientifically. Centring the book on Husserl is perfectly appropriate – Husserl invented both the term ‘phenomenology’ and the approach. However, a question remains about how well G&Z’s picture would fit Heidegger – or Sartre.

1. What is Phenomenology?

The word ‘phenomenology’ is most often used nowadays as the name for an aspect of experience: The felt quality of experience, what it is like to have the experience. For example, a distinction between phenomenal consciousness, which it is like something to have, and other kinds of consciousness has been prominent. There is more to Phenomenology, the way of doing philosophy, than this. Phenomenology, capital P, certainly is interested in how things appear to us – but not because something being like something is a form of consciousness. More on what Phenomenology the movement really advocates in a moment. For now, I am just making the terminological point that Phenomenology is not just about experiences being like something to have. (Capitalizing ‘Phenomenology’ over and over would get tedious and I won’t do so. From now on, when I use the word, I mean the movement.)

At least in English-speaking cognitive circles, phenomenology (the movement) is often thought to consist in trying to capture images, feelings, ideas, and the like as they flit by the ‘eye of the mind’. If this were what it is, it would be largely doomed to uselessness for the very same reasons as the introspective methods of Wundt and James

in the 19th century were. (It is a nice irony that we are again relying on introspection. The new kid on the block, cognitive neuroscience, could not do without it.) G&Z mount a definitive case for the proposition that phenomenology seldom appeals to introspection. They point out that neither Husserl nor Merleau-Ponty even wrote about introspection. Indeed, these classic phenomenologists read just like other philosophers in the broadly Kantian tradition, offering analyses of mainline philosophical topics such as time and the self and arguing for them via a variety of more or less familiar moves.

Gallagher and Zahavi may muddy their case a bit by urging over and over that a ‘first-person perspective’ is central to phenomenology – at first blush, appealing to the first-person perspective looks suspiciously like appealing to introspection; we will return to this possible muddle in Section 5. Whatever, their point that phenomenology is not about introspection is decisive. Rather, phenomenology is about how things appear to us, what the things that we experience are like for us. Introspections come and go, but so long as we are awake and experiencing, things will be appearing to us. (Things including one’s own self – in which case there is a way of being aware of oneself that does not consist of introspection.)

‘OK’, I can hear someone say, ‘so phenomenology is about how things appear. What’s the big deal? Appearances are – appearances, merely how things seem to someone. Surely what we want to know is how things actually are.’ Here G&Z make a very nice move, one of many. Coming to know how something really is also consists of that thing appearing in a variety of ways – ultimately, one hopes, in a way that reflects how it is, or what we can know about how it is. If so, things appearing is the foundation of all experiential knowledge, and, far from being trivial, to study how things appear is to study a foundation of all science, indeed of all knowledge of the world of any kind and of at least most of our knowledge of ourselves.

A foundation of all science is not necessarily a *feature* of all science. In particular, it would seem that *theories* do not appear to us. What would it be for awareness of a theory from my perspective to be different from awareness of a theory from your perspective? At the very least, we are not talking about spatial perspective here but of some abstract analogue. Similarly, what is the proposition that masses attract like for you? Maybe *thinking about* a theory, *entertaining* the proposition that masses attract, is like something (even though this has been disputed by those who claim that

propositions and concepts do not have a felt quality when we are aware of them). However, we continue to know theories when we are not experiencing them. If so, appearing to us is not a feature of all knowledge. This issue will become important in Section 3 when we ask whether phenomenology has anything distinctive to contribute to theorizing in cognitive science, which is why I have gone into it in a bit of detail.

2. How we can study the way things appear to us – and why we should

How should we study the way things appear to us? The first step is to suspend our ‘natural attitude’, our inclination to take the way things appear to be, for the most part, an unproblematic source of knowledge and focus on – the way things appear. Husserl called this bracketing of the natural attitude *epoché*.

Then, instead of asking the natural question (what does this experience tell me about the world?), we can ask: What must cognitive systems be like for things to appear to us in the way they do? And we can ask: Under what conditions if any do appearances provide for objectivity, for knowledge of how things are? We can even ask: How is a science of the world as the world appears to us even possible? And so on.

One way to describe the project created by the first question would be to say that in it we are investigating the “interdependence between specific structures of subjectivity and specific modes of appearance.” (p. 25) Husserl gave this pursuit a special name, too. He called it *phenomenological reduction*. Phenomenological reduction is very much in the spirit of cognitive science. One of the main methods of cognitive science is to identify some interesting kind of representation or behaviour and then, by inference to the best explanation (IBE), to try to suss out what kind of cognitive mechanism it would take to produce such representation or behaviour. This was also one of Kant’s central projects.

So if we ask: Why should we be interested in how things appear to us?, one answer is that being so interested leads us to ask questions about the ‘conditions of possibility’ of things appearing as they do, questions of the kind just canvassed. (‘Conditions of possibility’ is a term that both Kant and Foucault used and G&Z are right, in my estimation, to treat phenomenology’s investigations of the possibility of appearance as a Kantian project.)

This parallel with Kant raises a question. What if anything about investigating the conditions of possibility of appearances is distinctively phenomenological? Not just Kant but many other nonphenomenologists have investigated such questions. Moreover, as Kant's work shows, to investigate the conditions of experience, we don't need to pay any special attention to how different things appear to us. Any old experience in which things appear to us in any old way will give us all the material we need to investigate the conditions of experience. (A familiar worry about Kant's way of carrying out his project also arises for phenomenology. How could one possibly investigate what is necessary for experience in general to occur, or for this, that or the other kind of experience to occur, nonempirically? Any assumption that one can find important truths about the necessary conditions of experience by sitting in one's armchair and paying close attention to how things appear would be deeply suspect. Fortunately, not just G&Z but also Merleau-Ponty agree – and immerse themselves in what the 'science of the mind' is teaching us.)

A similar problem of distinctiveness may also arise for the final two special techniques of phenomenology that G&Z identify. The first is *eidetic variation*. Eidetic variation consists in running thought-experiments in which we imagine various properties of things appearing to us to change or disappear to find the ones that "resist change" (p. 27). The ones that we cannot change or remove imaginatively have a claim to be particularly closely related to the kind of object that is before us. Trouble is, this kind of search for 'essences' is as old as Plato and has had a distinctive name in non-phenomenological circles for a long time: *conceptual analysis*. Virtually all kinds of philosophy do it. And not just philosophy. It being a very good idea for researchers to agree on what they are investigating before setting out to investigate, all science has to do some rough and ready conceptual analysis, too.

There are also a number of standard concerns about and alternatives to cranking conceptual analysis up into a search for essences. There are Wittgensteinian concerns about whether all instances of any interesting kind of thing will have any properties in common, it being enough if there is a crisscrossing and overlapping collection of properties, some significant portion of which is had by each instance. There is the Putnamian/Fodorian suggestion that it is reference, extension, that anchor/s the meaning of a term, not any properties of the thing thus named. There are concerns from

conceptual role semantics about what is actually going on when we find it difficult to imagine away a property of something. Does that reveal something deep about the nature of the kind of thing or is it just showing us what interests us about things of that kind? And there are Kripkean worries about whether thought experiments can even tell us what our words mean. They may be a first pass at uncovering what we use a word to talk about, maybe even an inescapable first pass if researchers are to know that they are all using a given word to talk about roughly the same kind of thing, but for a final and definitive pass, maybe we have to wait until science tells us what makes a kind of thing the kind of thing it is.

Similarly and even more obviously for the final tool of phenomenology, *intersubjective corroboration*. G&Z do not claim that intersubjective corroboration is distinctive to phenomenology, so I won't say anything more about it.

If phenomenological reduction, eidetic variation, and intersubjective corroboration are not distinctive to phenomenology, what does it offer that is distinctive? The short answer is, the care that phenomenologists take to describe how things appear *precisely*. (For a longer answer, see the next Section.) When Husserl said, "Back to the things themselves" (*Cartesian Meditations* (1929), quoted on p. 6), what he meant (according to G&Z's plausible reading) is that we should stop worrying about this, that and the other issue connected to how things appear to us and focus on the appearances themselves, on how things are appearing, what they appear to be like.

3. Where in cognitive science could phenomenology make a distinctive contribution?

To expose what is distinctive about phenomenology, let us tie this issue to the one that, I said, is of greatest interest to me: Can phenomenology make an important contribution to cognitive science? If so, what would it be like?

One way to approach the latter issue would be to say that the proof of pudding is in the eating: G&Z claim that in the eight areas that are the concern of the last eight chapters of the book (I listed them earlier), phenomenology not only can but does say things that would make a distinctive difference to cognitive science (if only cognitive scientists would listen). We could simply assess these claims. I want to start by taking a

different track, however. I want to start by identifying *where* in cognitive science phenomenology could make a distinctive contribution.

The trilevel hypothesis (so-called) is one standard way to divide up different kinds of explanatory activity in cognitive science. (I say ‘so-called’ because it is not an hypothesis and almost nobody thinks that there are only three levels. But those peculiarities need not concern us here.) According to the trilevel hypothesis, to explain any cognitive phenomenon adequately, doing arithmetic for example, one must work at three levels. First, one must describe what is being done accurately and precisely. (‘A number is identified. Then a second number is identified. Then they are combined according to a rule. A third number results which is the number of interest.’) This is called the knowledge, task or sometimes computational level. It is about what task is being performed. Next, one has to figure out the procedure, or at least a procedure, which, when run properly, would do this task (in this case the procedure would be one of the algorithms for doing arithmetic.) This is called, not surprisingly, the procedural level. One major question about it is whether there is something about cognitive procedures that will always require a distinctive cognitive vocabulary or whether this second level, even if procedural, will eventually become part of neuroscience. Finally, one has to figure out how this procedure, or a procedure, could be done (implemented, realized) by some part of a brain like ours. This is called the implementation level. And the claim is that no account of a cognitive phenomenon is complete without an account of each of the three kinds.

Where could phenomenology help with this? Well, it provides no special insight into how brains do cognition, so not at the third level. But neither does it facilitate inferences to the kind of procedure, mechanism, or what have you, the running of which does the cognitive task, so not at the second level. If so, the only place phenomenology could help is at the first level. It could help us describe more precisely the cognitive task or computation or piece of knowledge that we want to explain.

The idea here is that, to identify the procedures that produce something and how they are implemented by the brain, we must first have a robust grip on what we are trying to explain, everyone agreeing on key examples. Where this condition is not satisfied – contemporary consciousness studies and contemporary studies of attention are but two of dozens if not hundreds of topics where it is not –, researchers end up

talking past one another and explanatory chaos ensues. Paying close attention to how we experience the target phenomenon is a promising place to start. In cognitive science, the target phenomenon is a task performed, a bit of knowledge acquired, or the like, and paying attention to how we experience it is paying attention to what the target phenomenon appears to us to be like, what in the target as it appears to us has stirred up a desire in us to explain something about it, and so on. Say that the target is perception. As G&Z say, “if we have a well-developed description of ... the intentional, spatial, temporal and phenomenal” aspects of perceiving as we experience it in ourselves and others, then we will have “a more adequate model of perception for the scientist to work with than if the scientist simply starts with a commonsense approach” (pp. 9-10), i.e., with her untutored sense of what it is like to perceive.

If this drive to exact description is the contribution that phenomenology makes, is it distinctive? In principle, there is room for doubt about this. Such a drive should be a feature of all good philosophy. However, there is lots of evidence that it is not, so the drive to exact description of how things appear to us makes phenomenology distinctive at least in practice.

At this point, readers of G&Z’s book might object: ‘There has to be more to phenomenology than precise attention to how things appear. Aren’t you, for example, ignoring the new movement in phenomenology called neurophenomenology?’ (the authors discuss this development near the end of Chapter 2). Yes, it is true. So far I haven’t said a word about neurophenomenology. But neurophenomenology is not a counterexample – though it does help to pinpoint what is distinctive about phenomenology more precisely than we have done so far.

Neurophenomenology is about what changes in the brain (as revealed by monitoring brainwaves using EEG or imaging the brain using fMRI or temporarily disabling regions of the brain using TMS [transcranial magnetic stimulation] or using some other technique) go with a significant change of some kind in how things appear. For example, a group of apparently random dots resolves into a three-dimension image, or areas in a bistable image switch from looking like faces to looking like a vase. We can study what changes in the brain go with such changes in appearance.

This is all interesting and important. But notice what is distinctively phenomenological in this research: The changes in appearance, the changes in what

one's experience is like, and only the changes in appearance. The rest is straight neuroscience. If so, far from neurophenomenology being an objection to my analysis of where phenomenology fits in cognitive science and what is distinctive about it there, neurophenomenology actually supports my analysis. Phenomenology can help cognitive science by helping to secure precise, accurate descriptions of the phenomena that we are seeking to explain.

That said, the example of neurophenomenology does reveal something new about the contribution that phenomenology can make to cognitive science. Classical cognitive science mainly studied tasks and the performing of tasks, that is to say, behaviour, and made inferences about the procedures and mechanisms producing the behaviour. With neurophenomenology, the 'tasks' being studied are cognitive, not behavioural – how things appear to a subject, not how the subject is behaving (p. 27) (including even the appearing of subjects' behaviour to a researcher). General cognitive neuroscience had already made this turn 'inward' – subjects' reports of what cognitive tasks they are doing, what they are experiencing, etc., is typically what gets correlated with changes in brain, not subjects' behaviour. (As I said earlier, in the light of the contempt for introspection that was such a prominent feature of early cognitive science, this turn is ironic; although also unavoidable.) Now, researchers could pay attention to how behaviour appears to them, the behaviour for example involved in doing a task, and perhaps benefit from doing so. When what we seek to explain is a cognitive process, however, not behaviour – perceiving, for example, not doing a sum on a piece of paper –, we have no choice. Initially, the only access that we have to the target process (as contrasted with behaviour that ensues) is via how it appears to people in whom the process is going on. A difference, perhaps the difference, between neurophenomenology and cognitive neuroscience in general is that people trained in the former pay much closer attention to *precisely* how things appear to subjects than people trained in the latter do.

Having said that the study of how things appear to us is what is distinctive about phenomenology and something about where that studies fits into cognitive science, let us close this section with a quick look at another issue: How much can we build into a study of appearances? The causes of things appearing are excluded because they seldom appear – looking out of the window and being struck by the amount of snow on the

ground, I am given no information about how my brain has formed that perception. What about the reasons for things appearing as they do. How things appear is shaped not just by sensory input but also by desire, belief, memory, affect – by the reasons one has for being interested in the appearing object, in this case snow, in the way that one is and reacting to it as one does. (I am invoking Dilthey's distinction between *verstehen* (understanding) processes of 'explaining' by finding the meanings of thought, feeling and action, and *erklären* (explaining) or *kausal erklären* (causally explaining).) Phenomenologists have often been interested not just in how things appear but also in what thus appearing means to someone. G&Z introduce the consideration in their introduction but seem to make little use of it after that.

4. How much could phenomenology contribute?

Having delineated the place in cognitive science where phenomenology can make a contribution and what its contribution is like, let us now ask: How big a contribution could it make? We cannot discuss all the topics to which it could make a bigger contribution than it is currently making, according to G&Z, so we will limit ourselves to two. The first is time and how temporal phenomena appear to us. The phenomenology of time has played a central role in phenomenology from the beginning, even appearing in the title of Heidegger's *Sein und Zeit* (1927), the best-known work of phenomenology to date. The second is a topic much less widely discussed in phenomenology, our consciousness of other minds. Merleau-Ponty famously discussed this issue and said some important things about it (for example in *Phenomenology of Perception* (1945); a key passage is quoted on p. 184), some of which resonate with Wittgenstein's views, and Gallagher has written on it but few other phenomenologists seem to have paid much attention to it. Time first.

The way time is experienced is full of puzzles and it is very hard to find a way to describe temporal experience that is not obviously problematic. This makes it a happy hunting ground for the phenomenological approach. Indeed, it is hard to see how we could make any significant progress with the cognitive or neuroscience of the experience of time without first doing a lot of work on the exact phenomenology of time

consciousness. I cannot begin to do justice to the rich array of these puzzles offered by G&Z (in Chapter 4) and others but here are three examples.

If the experience of an event, a person crossing a street, say, involves retaining experiences of early stages of the walk and integrating them with experiences of the later stages, why do we not experience the person as filling the entire crosswalk (p. 77)? (Since we don't, time experience is not simply retention, not in working memory or anywhere else.) Similarly (a nice puzzle discussed by Sean Kelly, 2005), if hearing a melody is retaining the earlier notes as they were experienced and combining them with later ones, why do we not hear a chord rather than a melody? (Since do we hear a melody, not a chord, the idea of the specious present cannot be the right way to go.) (G&Z do not present this puzzle but it can be described quickly, which is why I choose it. This is not true of many of the ones that they do present.) A third. In the well-known phi phenomenon, if a green circle of light is flashed briefly on a screen and it is followed by a red one at an appropriate time and distance, everyone experiences the first circle as moving to the second location and changing colour as it goes. Yet *that cannot* be the order of the actual experiences of the dots. (So time experience cannot simply be a tracking of 'objective' time.) And so on.

Even these simple puzzles are enough to show that there is lots of room for work on how time appears to us. It being so extraordinarily difficult to say anything noncircular about time, we also need to ask how well phenomenology has done with this task. Here the picture is mixed. Husserl's trichotomy of retention/primal impression/protection is at least terminologically promising, distinguishing the target phenomena from both memory and the element of direct perception in current experience. Concerning the structure of temporal experience itself (a separate problem because the experience of F need not be F – a perception of red need not be red), G&Z offer us another trichotomy and urge that temporal experience is neither an object *in* time, nor a consciousness *of* time. It is a *form* of temporality. Again, promising – but it is not clear how to fill out either trichotomy in sufficient detail for it to become a solid tool for linking time consciousness as we experience it to what cognitive neuroscience is telling us about how the brain 'does' time.

Now consciousness of other minds. Could paying proper attention to how other minds appear to us contribute to our understanding of what is going on here? The

answer is interestingly mixed. On the one hand, how we actually experience other minds is radically different from how the traditional problem of other minds presents the situation. The traditional setup simply assumes that what we can directly perceive in others, behaviour, facial expression, and the like, never provides direct consciousness of others' mental life. The only knowledge of others' mental life that we have is inferential – the dominant story is that we infer from behaviour, facial expression, and the like to the mental states and events that would *best explain* what we have observed. It has long been understood that this setup faces serious problems. E.g., if the mode of access to others' mental life and my own are radically different from one another, what could possibly lead us to think that they are states of the same kind? (Writers as otherwise different from one another as Merleau-Ponty, Wittgenstein, and P. F. Strawson have all mounted variants of this objection.) Problem notwithstanding, most cognitive scientists and their philosophical fellow-travellers swallow it whole.

Yet even a modest amount of attention to the actual experience of others would show that our experience of others is nothing like what the traditional setup supposes. When we see a young child screaming, we don't ask, 'Now, what mental states would best explain these screams?'. We take the activities, presentation of self, body language of others as at minimum reliable expressions of what they are feeling, thinking and wanting. And it is good to be reminded of this. There are circumstances that give rise to doubt but most do not. If there is no 'problem of our knowledge of other minds' in much of our everyday intersubjective life, maybe there is something seriously wrong with the traditional setup.

So far, so good. But so far is as far as phenomenology can take us. And it is not quite far enough. Why not? If we often treat actions and the rest as reliably expressing others' mental life, we do not always do so. Indeed, we never do so for all aspects of even a single other's mental life. For we know that others keep things to themselves. Children develop a sense of privacy at about age six. From that age on, no person ever again expresses all that they think or feel about certain beings, significant others in particular. And there is a dissociation running the other way, too. We can play-act being in love, fake pain, express intentions that we don't have.

In the face of this double dissociation, it would appear that there is a real problem explaining how it is possible for us so often to treat others' mental lives as

unproblematically observable in the way that bodily motion and facial configuration are. It would also suggest that mental life is something *different* from anything that can be readily observed. How much can the work of phenomenology proper, close description of how things appear, help us with these issues? So far as I can see at the moment, not very much. (Which is not to say that phenomenologists such as Merleau-Ponty and Gallagher haven't made interesting proposals here. The point is, they are not making them as phenomenologists, not if G&Z are right about what characterizes phenomenology.)

5. Is perspective always first-personal? Consciousness and consciousness of self

I return at last to the issue that I left dangling earlier, whether G&Z's talk about the first-person point of view muddies the water of their own, plausible nonintrospectionist reading of what phenomenology is on about. Here is the kind of thing they say: "To the extent that phenomenology stays with experience, it is said to take a first-person approach." (p. 7). Far from first-person perspective exclusively being about the type of access that each of us has to his or her own experiences, there is a first-person perspective even with respect to our experience of the world around us: "intersubjectively accessible objects ... are intersubjectively accessible precisely insofar as they can be accessed from each first-person perspective." (p. 40) Even in an apparently hard case, science, a scientist's experience of a world, of data and effects, is "infected ... by a first-person perspective". And so on. There are dozens of similar passages.

Here is how I react to these passages. G&Z may well be right about perception and thought being perspectival but the claim that perspective must always have a first-person element is almost certainly wrong. By 'a first-person element', I mean an element that would have to be expressed using a first-person pronoun ('I, me, my, mine') or equivalent. Let us grant that all experiencing is from a perspective and contains a point of view. However, and this is the key point, things can appear to a person and she can pay attention to the things, to what they appear to be like, and so on without her even knowing to whom they are appearing, let alone paying any attention to the latter. When I pay attention to how time appears, to take a favourite topic of

phenomenologists, I am paying attention to time and how it appears. I need not even know that the appearance is mine, that it is time as appearing *to me* to which I am paying attention. If so, not only does phenomenology not appeal to introspection, phenomenology need not be about the first-person, about the appearance of *oneself or one's properties* to oneself, at all. And it only muddies the water to say or imply otherwise.

Notice that the previous paragraph is a nice illustration of some of the things said in the second-last section on what phenomenology is. Phenomenology is about describing things *exactly* as they appear, setting aside preconceptions and ascribing to an event of something appearing no more than actually appears. In the case just considered, I am not sure that G&Z have done that. If I am right, while appearing *often* has a first-person element, it *need not* have one, the temptations of the contrary idea notwithstanding, and we can think of cases in which it does not have one.

The issue before us connects to a very old issue in consciousness studies, whether one can be conscious of the world and/or one's own body without being conscious of oneself and one's psychological states, without, for example, being conscious of being conscious. G&Z do take a stand on the latter issue and they take it on behalf of "all the major figures in phenomenology": "an implicit, non-objectifying, pre-reflective awareness of our own experience as we live it through," (p. 15) "a minimal form of self-consciousness ... is a constant structural feature of conscious experience" (p. 46).

This claim strikes me as *extremely* dubious. For one thing, no non-human animal has any such consciousness of themselves, so far as we know, yet most are surely conscious. Different theorists bite one end or the other of the bullet that has to be bitten if one denies one or the other part of this claim. Biting either end of that bullet has always seemed to me a desperate measure, something that only a person in the thrall of an unsustainable conviction (assumption?) about consciousness would try. Moreover, their claim about the link between consciousness and self-consciousness is not intrinsic to phenomenology: One can be a good phenomenologist and yet deny that any form of consciousness of self must or even always does accompany consciousness of the world, one's own body, and the like. But even if we grant it – grant that self-consciousness of some kind always accompanies conscious experience –, would this entail that

(perspectival) appearing, or even (perspectival) attention to how something appears, always accesses the objects appearing from a *first-person perspective*? I see no reason to think so. When accessing oneself maybe; but why when accessing an appearing object?

Moreover, the pre-reflective consciousness said to be the constant first-personal feature of conscious perspective could not give the phenomenologist what she needs to do the phenomenology of self-consciousness. How things appear has to be clear and our awareness of how they appear has to be precise if we are to be able to do what phenomenologists want to do: make inferences about the conditions of possibility of things thus appearing, about what kind of causal theory would explain what is appearing, and the like. The kind of implicit, non-objectifying, pre-reflective awareness that I have of myself in, for example, the peripheral consciousness of self that may accompany paying focal attention to something is too indistinct to allow any secure inferences to other things. Or so it seems to me.

6. Consciousness: Phenomenology and analytic philosophy

Phenomenology has devoted a lot of attention to consciousness over the roughly 100 years of its existence and this is reflected in G&Z's book. Half the chapters are about consciousness: kinds of consciousness of self (introspection vs. pre-reflective consciousness of self, for example), consciousness of time, consciousness of others, whether the self is a form of consciousness, consciousness of our identity over time, and so on. Consciousness even enters centrally into chapters where something else is the overt topic, methodology and intentionality for example.

G&Z say many interesting things about these topics to do with consciousness, a great many more than I can even touch on here. Shoemaker's (1970) much-discussed claim that we are immune to error through misidentification with respect to the first person is an example. They point out that such immunity exists in a narrower range of cases than is often thought and they use pathological conscious states such as the experience of thought insertion to make their case. I would add here that *how* we know is very important; in particular, immunity exists only when we are aware of the person in question from the point of view of being that person – by virtue of having that

person's experience, not observing them, and so on. However, it would take more space than I have to argue for this claim and explore its implications.

Instead, I will take up a different point. For many topics in consciousness, it seems to me that the most interesting encounter is not between phenomenology and empirical cognitive science or neuroscience. The most interesting encounter is between phenomenology and classical analytic philosophy of the person. By 'classical', I mean the work of P. F. Strawson, Sydney Shoemaker, Derek Parfit, and the like. Issues central to that work include conditions of persisting as a single person, the relationship of personhood to the body, the relationship of personhood and moral responsibility, and so on. When phenomenologists discuss consciousness and selfhood, what they say often resonates with that work in a host of ways that invite further investigation. It would take an entire paper to explore these resonances, so I will have to leave this suggestion at that.

Gallagher's and Zahavi's book is long overdue. No one could read it and fail to come away convinced that cognitive scientists and cognitive neuroscientists need to be much more precise and discriminating in how they describe the targets of their research than they have been so far, and that that is true *a fortiori* when the target is consciousness or its contents.

Two final notes. (1) G&Z cite works by the year of the edition they are using, rather than by the year in which the work originally was published. Thus it is a good idea when they cite or quote past authors to check the dates of original appearance. Often it is earlier than one would expect, which can be interesting. Husserl published *Logical Investigations*, for example, in as early as 1900-1. Merleau-Ponty published *Phenomenology of Perception* as soon as the war ended in 1945 – a full twenty years before the 'cognitive revolution' began. Reading Merleau-Ponty, it is surprising to see how much empirical work that we would now call cognitive science already existed in the 1930s and early 1940s. (2) I discuss many of the issues of this paper in Brook (1994) and subsequent publications.

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PHENOMENOLOGY AS ANOTHER TOOLBOX FOR NEUROSCIENTISTS?

Lars Schwabe and Olaf Blanke

“[I]t has become next to impossible for a single mind fully to command more than a small specialized portion of it. I can see no other escape from this dilemma [...] than that some of us should venture to embark on a synthesis of facts and theories, albeit with second-hand and incomplete knowledge of some of them – and at the risk of making fools of ourselves.”

Erwin Schrödinger in “What is life?” (1944)

1. Introduction

In the preface to his book “What is life?”, Erwin Schrödinger calls for scientific and scholarly “trespassing” despite exposing oneself to criticism with respect to possibly incomplete approaches to the question at hand, in his case of how physics and chemistry may account for the complexity of life (Schrödinger, 1944). His book has become an inspiration for many researchers from a variety of academic backgrounds, including biologist Francis Crick. Understanding self-consciousness and how it relates to the brain is certainly a project of similar complexity and in need of trespassing, due to the multidisciplinary in cognitive science.

The book “The phenomenological mind” by philosophers Shaun Gallagher and Dan Zahavi (2008) is an introduction into the phenomenological philosophy of mind, which is an important and timely topic and believed to have the potential of making significant contributions to the interdisciplinary study of the conscious mind and consciousness. Phenomenology, according to the layman’s understanding, refers to how perception and cognition “feel from the inside” with introspection being the primary method. This focus on subjectivity and the first-person perspective seems at odds with the third-person perspective adopted by the natural sciences. As a consequence, many researchers may not consider such phenomenological approaches and favor apparently well-defined approaches such as quantifying behavior or brain activations during perceptual and cognitive tasks.

Philosophical phenomenology, however, refers to a philosophical tradition originating in the works of Husserl, Heidegger, Merleau-Ponty, Sartre, and others. Gallagher and Zahavi argue that within this tradition, methodological and conceptual tools have been developed and successfully applied. Hence, there is a gap between the layman's understanding of phenomenology and the rich tradition of philosophical phenomenology. With their book, Gallagher and Zahavi aim at closing this gap by informing the reader about the developed methodological toolboxes of philosophical phenomenology. The authors also discuss recent and possible future applications to current topics in cognitive neuroscience such as, for example, in chapters on self, consciousness, embodiment, and motor awareness.

Here we ask, in which ways Gallagher and Zahavi's presentation of the phenomenological approach is of value to current cognitive neuroscience. In particular, we adopt the neuroscientific perspectives of cognitive neuroscience and computational neuroscience and ask: Could the phenomenological approach be of practical or epistemological value for the work done in any of these fields? We focus our discussion on the topics of the embodied mind, the neuroscientific investigation of the self, and the proposed methodologies.

2. Cognitive neurology and neuroscience

2.1 Körper and Leib

How the body "appears in experience" and how the body "structures our experience" is a prominent topic in philosophical phenomenology, and is starting to receive some interest in the cognitive neurosciences. Gallagher and Zahavi indicate that perceptual and cognitive processes are strongly influenced by bodily constraints such as posture and action capabilities as well as its relation to gravity: "Phenomenology [...] seeks to understand to what extent our experience of the world, [...] self [...] and other objects and people are formed by and influenced by our embodiment (p.136)." Gallagher and Zahavi introduce Edmund Husserl's notion of two different kinds of body representations, describing his "Körper" as "objective" body and his "Leib" as "subjective" body. These are defined as "two different ways that we can understand and experience the body" stating that "Leib" captures "the body understood as an embodied

first-person perspective” (p.137) characterized essentially by automatic and pre-reflective processes, whereas “Körper” focuses on the body as perceived “from an observer’s point of view” characterized by cognitive and reflective processes. Maurice Merleau-Ponty is discussed as having developed these notions further by his detailed analyses of the special role of the “Leib” (or *corps vécu*) during perception and action. The chapter on embodiment is a very readable introduction into several unresolved issues for students, researchers, and philosophers alike interested in body- and self-representations and its relevance for consciousness. The chapter leads to important questions such as: What is it like to have an embodied first-person perspective? How is such an embodied first-person perspective achieved that Gallagher and Zahavi describe as non-centered, non-perspectival, and as “a view from nowhere”? What might its mechanisms be? The authors seem to favour proprioceptive brain mechanisms.

2.2 A proprioceptive view from nowhere?

What is the basis of the embodied first-person perspective characterizing the Leib? Gallagher and Zahavi speculate about a spatial reference frame of the body that is tightly linked to sensori-motor body representations, especially proprioception. They argue that this reference frame is non-ego-centered and non-perspectival (to have no origin or centered perspective) and that it is grounded in position sense or proprioception. They write that aspects related to “Körper” have been studied more commonly and are characterized by ego-centric body representations in an egocentric reference frame. These latter views from somewhere are characterized by experience from a perspectival origin and are assumed to arise at a later stage with a perceiver as the experiential zero-point.

Does proprioception encode a non-perspectival reference frame? José Bermúdez (1998) seems to agree with Gallagher and Zahavi arguing for a fundamental difference between spatial reference frames based on proprioception as compared to those based on exteroceptive perception such as vision and audition (p.143). But what do the authors exactly refer to when mentioning proprioception or position sense? What are the sense organs, the preferred cues, and the neural pathways involved? Does proprioception really lack perspectivalness? We would argue that non-perspectivalness in position sense may apply for upper limb proprioception, but non-perspectivalness is probably

less strongly present for lower limb proprioception due to its role in directing and orienting the body via the legs' role in body support. This is even more the case for neck proprioception that orients and directs head and eyes and should in our opinion not be considered *aperspectival*.¹ Accordingly, proprioception should not be considered as a unitary system, but as a single sensory system with multiple body part-specific sub-systems. We would argue that lower limb and especially neck proprioception are computing a *perspectival proprioceptive body representation*, whereas arm proprioception has a different function. This would lead us to postulate that embodiment of the first-person perspective as based on proprioceptive input is likely to differ for these different body parts (head-trunk, arms, legs). We speculate that especially these *perspectival proprioceptive cues* may turn out to be crucial mechanisms for the embodied first-person perspective of the Leib.

2.3 Multisensory and sensorimotor origins of the embodied perspective

Are proprioceptive frames of reference (as proposed by Gallagher and Zahavi or as proposed by us in the preceding paragraph) the only origin of what Merleau-Ponty describes as “phenomenally experienced spatiality” (p.143) or the embodied first-person perspective? We do not think so. We think that several other non-proprioceptive sensory systems also contribute crucially to the embodied first-person perspective. Next to contributions from the motor system that shares several aspects with proprioception, neurophysiological research has revealed that it is also important to distinguish the contributions from tactile cues from the plantar sole (Roll et al., 2002) or from vestibular translational and rotational cues (Day and Fitzpatrick, 2005). Signals within both systems are processed automatically and pre-reflectively, are continuously present and mostly in the background of human experience, just as proprioception. “I am [generally] not conscious of my body [defined by proprioceptive, foot sole tactile, and vestibular cues] as an intentional object. [...] I am it” (p.143). Tactile and vestibular cues in addition to proprioceptive and motor cues are likely to contribute fundamentally

¹ These differential roles of proprioception on experience and behavior can also be demonstrated experimentally. Muscle vibratory stimulation of spindle afferents at the neck, but not at the upper limbs, may lead to illusory own head and trunk movements, tilts of the visual world, or shifts of spatial reference frames (Lackner and Levine, 1979).

to the embodied first-person perspective and need to be integrated in a more fine-grained manner into philosophical and neurobiological models.

2.4 One or several experiential zero-points?

Gallagher and Zahavi describe the embodied mind as possessing one experiential origin or one zero-point constituting a single spatial reference “point in relation to which every object is oriented”. Is human experience always characterized by a single first-person perspective? Recent data on so-called autoscopic experiences suggest that human experience may also be characterized by the absence of a single zero-point or embodied perspective, but by at least two simultaneous or rapidly alternating embodied perspectives. This suggests that the ego-centric reference frame, or the view from somewhere, the perspectival origin of human experience may not be as unitary as normally experienced. Recent neurological data suggest that this might be due to the different multisensory mechanisms involved in body representation. Thus, neurological patients with heautoscopy may claim to experience to perceive from two spatially distinct first-person perspectives ((Blanke et al., 2004); patient 2). Sometimes these patients report to “be split in two parts or selves” or to feel as if “I were two persons” (Pearson and Dewhurst, 1954) or as a “split personality” (Lunn, 1970; for further discussion see (Blanke and Mohr, 2005)). Other patients may describe a auditory first-person perspective that is spatially distinct from a simultaneous first-person visual perspective. As Gallagher and Zahavi endorse the heuristical importance of clinical case studies, what do these observations tell us about the mechanisms of (the) embodied first-person perspective(s)? How can these experiences be accounted for and integrated into phenomenological philosophy? Similarly, the experiential origin or the indexical “here” is not only characterized by the experience of a perspective that is directed towards the world, but also by an experienced location of the self. Self-location refers to experiencing the self to be localized in one’s body and at a certain position in extrapersonal space. Interestingly, the experienced location of the perspective that is directed towards the world can be dissociated spatially from experienced self-location. In a recent neurological study, for example, the authors reported that - after electrical brain stimulation - the patient’s self-location was systematically experienced at a

location that was spatially distinct from his visual first-person perspective (De Ridder et al., 2007).

Collectively, these data suggest that human experience (in these clinical cases at least) may be characterized by multiple simultaneous first-person perspectives and self-locations that are grounded in multisensory and sensorimotor brain mechanisms. These findings have recently been employed in experiments in healthy subjects using virtual reality (Ehrsson, 2007; Lenggenhager et al., 2007) suggesting that a similarly complex experience can be uncovered experimentally. The dialog between neuroscience and phenomenological approaches on “how the body shapes the mind” should certainly be a two-way route. More philosophically informed neuroscientific work is needed to describe and account for the mechanisms leading to the embodied first-person perspective and especially the question how so-called *aperspectival* mechanisms lead to our global and centered perspective of the subject. We have proposed here that proprioceptive, vestibular, tactile, and motor perspectival cues related to head and trunk representation are crucial. Phenomenological analyses of multiple simultaneous first-person perspectives may be one interesting avenue to pursue as they reflect limits of body and self representation. For example, training and performing phenomenologically informed interviews and studies in neurological patients with *heautoscopy* could be rewarding. However, trained phenomenologists could also use virtual reality techniques in order to evoke similar experiences, which could then be analyzed using phenomenological methods.

3. Computational neuroscience

3.1 Current practice

We believe that the field of computational neuroscience is well suited to mediate between philosophical and empirical approaches. Therefore, we ask in which ways ideas from the phenomenological tradition and ideas proposed by Ghallager and Zahavi could be integrated and put to work. Unfortunately, the field of computational neuroscience is still a rather young discipline with almost as many different conceptual and methodological approaches as there are computational neuroscience labs. It mainly lacks a broadly accepted basis comparable to, for example, Newton’s laws of motion or

the Navier-Stokes equations, upon which subsequent work can build. In part, the lack of such a basis is due to the complexity of the systems investigated. At least for the near future, however, one may have to live with a multitude of different approaches, and one may have to select the proper level of description to match the problem at hand without a rigorous derivation from underlying constituent dynamics. This is a methodological issue, which may or may not be overcome in the future.

A more conceptual issue is to link neuronal activations and human experience. How do computational neuroscientists approach human experience? Do they have, according to phenomenological philosophy, a proper notion of human experience, or are they just interested in neural mechanisms? Here, it is instructive to have a look at the current practice in the field. Based on a taxonomy suggested in a widely used textbook (Abbott and Dayan, 2000), one can distinguish three kinds of models used in the field: descriptive models, mechanistic models, and computational models. *Descriptive models* are black-box models, which account for the input-output transformation performed by a particular neuronal system. For example, the time-averaged rate of action potentials emitted by retinal ganglion cells as a function of the spatial light pattern used for their stimulation can be well described by the weighted difference of two Gaussian functions. Such a descriptive model, however, always involves an assumption regarding the format of the neuronal code, and it abstracts from the underlying mechanisms. *Mechanistic models* are intended to account for the underlying mechanisms. Finally, *computational models* are supposed to make explicit the functional role of particular neuronal systems, often by applying concepts developed in other fields like pattern recognition, information theory, control, decision or game theory.

The field of computational neuroscience should be expected to contribute explicit formal links between different levels of description. It certainly can link neuronal activations to motor responses, and this is not only a valuable, but also an important task often underestimated. It is, however, obvious to almost every researcher in the field, that a simple identification of an experience from a first-person perspective with activations in, say, sensory areas of the brain is not a satisfying explanation of how human experience is linked to neuronal activations. These shortcomings of such an identification of experience and the first-person perspective with neuronal activations remain even if we think of them as being spatio-temporal patterns of electrical activity

distributed over brain-wide networks having or not having the property of being oscillatory, containing synchronous firing patterns of action potentials, involving subthreshold neuronal activity, etc. To the best of our knowledge, beyond such rather non-satisfying identifications, no other ideas have been postulated so far. In which ways can the phenomenological approach contribute to clarify the link between first-person experience and neuronal activation? Would a phenomenologist favor one out of the three kinds of modeling approaches? Does a phenomenological approach suggest a particular way of thinking about their mutual relation?

3.2 Recent findings

The investigation of conscious experience and embodiment are at most very minor topics in the field, but some topics could be of relevance. Here, we consider Bayesian processing of sensory information and models of sensory-motor processing.

Bayesian processing

Bayesian processing is a computational paradigm often used as an analogy to the processing of sensory information in the brain. It is rooted in logic (Cox, 1961) and statistics (Jaynes, 2003), and it is appealing because it formalizes two important aspects of biological information processing. First, information is always considered as being inherently uncertain. Second, the Bayesian approach shows how to optimally combine new sensory information with previously acquired information, the so-called prior beliefs, in order to arrive at the so-called posterior beliefs. Hence, this approach is well suited to account for the information processing in sensory areas as well as sensory-motor processing. Since it is a computational approach, it does not make strong predictions about measureable neuronal activations.

How can such a framework be applied to the embodied first-person perspective? Recently, we proposed that the vestibular component of so-called out-of-body experiences, which involves the illusion of flying and an elevated first-person perspective despite the fact that the physical body is stationary, is compatible with a Bayesian approach to vestibular information processing (Schwabe and Blanke, 2008). In particular, we proposed that a Bayesian integration of the sensory vestibular signals received in the supine position and a false prior belief leads to the illusory experience of the elevated first-person perspective and self-location that are reported during out-of-

body experiences in the sense that the posterior belief corresponds to these illusory vestibular sensations of elevation. In other words, this particular work and probably many previous studies have (implicitly) identified the posterior belief within the Bayesian framework with first-person experience. Such identification is not a naïve identification of first-person experiences with neuronal activations, because the Bayesian posterior belief is a mathematical object. Here, phenomenological reflections on this identification would be of great value.

Sensory-motor processing and the sense of agency

Gallagher and Zahavi propose that sensory-motor processing is of relevance for understanding conscious experience and embodiment, because it deals explicitly with controlling movements based on sensory and motor information. Using paradigms developed within control theory, computational models of sensory-motor processing have been developed and tested experimentally. One of the key findings is that in some carefully designed behavioral experiments human subjects behave as if they make use of so-called forward models (Wolpert et al., 1995), i. e. statistical models predicting the sensory inputs caused by the motor outputs and the subsequent limb and body movements. For example, according to these models, once the command to move an arm is sent out, the forward models are already predicting the future sensory inputs to be received if the arm actually moved. The corresponding neuronal processes are believed to occur almost automatically in the sense of not demanding cognitive efforts (i.e. “pre-reflectively”) and are probably relevant for the embodied first-person perspective.

When discussing agency, Gallagher and Zahavi point out further aspects and discuss them in the context of brain-imaging experiments. Another important mechanism may be the identification of a vanishing prediction error with the sense of agency. Gallagher and Zahavi ask (p. 163): “should we think of the pre-reflective sense of agency as belonging to the realm of motor control and body movements, or as belonging to the realm of intentional action”? While the reviewed studies in chapter 8 (according to Gallagher and Zahavi) associate the sense of agency either with bodily movements (Tsakiris-Haggard), their goals (Farrer-Frith) or higher-level reflective thoughts (Graham-Stephens), the authors argue that the sense of agency depends on the integration of all three aspects.

The authors' account of the sense of agency may or may not be superior to the other three more focused proposals. However, the discussion seemed too short to us and was difficult to follow. We believe, however, that all reviewed studies and agency accounts lack more precise formulations in terms of mathematical models. Given that the – due to its tight link to bodily movement – rather low-level Tsakiris-Haggard explanation has also been proposed only informally, a first step would ideally be the mathematization of these proposals (see also (Schwabe and Blanke, 2007)). We believe that a more complete explanation of the sense of agency should be given in terms of more quantitative models of sensory-motor processing. They may, however, involve at least multiple time-scales in order to account for long-term goals (Kilner et al., 2007) and recurrent loops to account for predictions and prediction errors. In particular, such models could incorporate intentional feedback in order to sidestep Ghallager and Zahavi's objection that "the sense of agency is not reducible to awareness of bodily movement or sensory feedback of bodily movement" (p. 165).

3.3 Added value of the phenomenological approach

Neuro- and front-loading phenomenology

In this section we ask as to whether and how other concepts from philosophical phenomenology as introduced by Gallagher and Zahavi have a practical or epistemological value for computational neuroscience and could be integrated. In particular, we consider some aspects of the methodologies reviewed in their Chapter 2 as well as the different notions of embodiment considered in Chapter 7. Throughout their book, the authors emphasize that philosophical phenomenology starts with experience. Experiences are analyzed from the first-person perspective using the phenomenological method. The authors' review of Husserl's method of epoché and the phenomenological reduction is brief, but it very well serves the purpose of convincing experimentalists and theoreticians, who are not experts in the exegesis of phenomenological texts or not even aware of the original writings of Husserl and other phenomenologists, that an analysis of experience involves much more than just introspection.

The authors move on to suggesting several ways of how phenomenology could contribute to the neurosciences. In particular, they suggest that first-person reports about

their experience during perceptual tasks shall be correlated on a trial-by-trial basis to the neuronal activations measured with neuroimaging methods (“neurophenomenology”). However, even if the subjects are very well trained in the phenomenological method, the authors did not indicate in enough detail, in which manner such an approach is distinct from current approaches investigating the neurobiology of self-consciousness (Laureys, 2005). Under the term “front-loading phenomenology” they also consider experimental tests of hypotheses obtained using phenomenological analysis. For example, phenomenological analysis reveals that the sense of ownership and the sense of agency can be dissociated as the same body movement can be experienced as being caused externally (for example when being moved passively) or caused by oneself. Again, however, it is not clear in which manner such an approach is truly distinct from scientific methodology seeking to identify the neuronal correlates of experience, self, or first-person perspective. In both cases, experimenters correlate subjects’ reports with measured brain activity. Would the authors argue that the phenomenologically trained subject activates distinct or different brain regions when performing experimental paradigms involving the sense of ownership and agency as compared to naïve subjects? Does she report items not available to the untrained? How does front-loading phenomenological method differ from current approaches on agency and ownership currently employed in the cognitive neurosciences? For example, how would Gallagher and Zahavi classify the rubber hand illusion experiments (Botvinick and Cohen, 1998)? In our opinion, both introduced approaches of the naturalization of phenomenology do not yet demonstrate unique features of the phenomenological approach, which would make it attractive for experimentalists to consider them.

Husserl, Helmholtz, and the first person perspective

What about Gallagher and Zahavi’s proposal about neurophenomenology and the first-person perspective of the “Leib”? In Chapter 2, they suggest that a mathematization of phenomenological first-person descriptions together with a mathematization of experimental third-person descriptions could lead to a formal theory of how first- and third-person descriptions are related. How can such an approach be linked to computational neuroscience?

We have emphasized that computational neuroscience is still a rather young field. However, the taxonomy of descriptive, mechanistic and computational models can be used in order to organize the variety of different approaches. How does the suggested integration of experimental science and phenomenology via mathematization relate to this taxonomy? Gallagher and Zahavi identify dynamical systems theory as the main mathematical approach currently applied by theoreticians. They correctly criticize it as being too narrow in the sense of neglecting the subjective dimension of perception and point to a need for a different kind of mathematization to account for the first-person perspective. It would be important to know the authors' position regarding the way these mathematizations should be linked to each other. For example, are they thinking of isomorphisms, in the sense of an „implementation“ of perceptual mechanisms and laws, which could be revealed by phenomenological analyses, to be executed on a neuronal wetware described from a third-person perspective like the three levels of description – problem-, algorithm- and implementation-oriented – introduced by David Marr (1982) in the context of vision?

The Bayesian approach makes heavy use of probabilistic descriptions, and interpreted in a certain way, it can be viewed as a modern form of an automatic, unconscious, and pre-reflective perceptual inference about the state of the world as proposed by Hermann von Helmholtz. What would Edmund Husserl think of such a probabilistic mathematical description? Which notion of possibility would be adequate for Bayesian perceptual inference? An important question remains: how much insight into experience and the embodied first-person perspective can be gained in the cognitive sciences by relying on phenomenological analysis of *unconscious* processes, given that phenomenological analysis starts with *conscious* experience? What are the limits of phenomenological analysis of *unconscious* and normally *attenuated* and *transparent* processes?

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REPLY: A PHENOMENOLOGY WITH LEGS AND BRAINS

Dan Zahavi and Shaun Gallagher

We first want to express our thanks to the commentators for their close and critical readings of *The Phenomenological Mind*. We would like to treat their comments and challenging questions as a productive opportunity to clarify and to make our positions more precise. Before we address the specific points raised by our colleagues, we do want to say that the intersection between phenomenology and the cognitive sciences is a rich one, and growing richer as collaboration and research continues. Our book was meant to be an introduction to this area rather than a complete map of ongoing research. For that reason we were not able to cover every interesting issue, many of which are raised in the set of commentaries.

1. Phenomenology as a method

Regarding the scope of our book, one of the issues raised by Andrew Brook is to what extent the phenomenological approach we endorse and adopt is overly biased towards a Husserlian and Merleau-Pontyan understanding of phenomenology or whether it really captures something that is common to the phenomenological tradition. We certainly don't want to deny that phenomenology has in many ways developed as a heterogeneous movement with many branches. Indeed, it would be an exaggeration to claim that phenomenology is a philosophical system with a clearly delineated body of doctrines. At the same time, however, one should not overlook the overarching concerns and common themes that have united and continue to unite its proponents. It is no coincidence that there are people working on the link between phenomenology and cognitive science who have favored a more Heideggerian approach (Dreyfus 1992, Haugeland 1998, and Wheeler 2005). Although Heidegger might have viewed the relation between phenomenological and empirical science differently than say Merleau-Ponty, he is also known for his decade long interaction with psychiatrists as exemplified in his Zollikon seminars. In our book, we have also made use of Sartre, Gurwitsch, and Scheler, and we could certainly have cited Schutz, Levinas, and others.

Brook, Cole, Schwabe and Blanke, all in different ways, question the specificity of the phenomenological methodology. Brook argues that the traits we mention recur in other disciplines and traditions as well, thus lacking any phenomenological specificity. Moreover, some of them are faced with well-known problems which we do not address or solve. As an example, he mentions the question of whether arm-chair conceptual analysis can unearth deep a priori truths about the objects of investigation or whether they merely disclose distinctive features characterizing our mode of apprehension. There are three responses that can be made here. First, some phenomenological analyses do in fact unearth basic a priori truths. For example the phenomenological analysis of object perception reveals that visual perception has a “horizon structure,” that is, although objects are presented one side or profile at a time, they are perceived in a holistic way as having more than one side. This insight has various implications. It suggests, for instance, that perception is only possible for a subject who is capable of self-movement – that the relation between perception and movement is not simply contingent (see, for example, Overgaard and Grünbaum 2007). Second, ultimately phenomenology would question – indeed this is part of its transcendental program – the possibility of making a clear-cut distinction between how things are and how they are apprehended by us. Finally, one can also point out that the phenomenological approach that we promote in our book is anything but “arm-chair,” since what we are concerned to show is that phenomenology can get up and walk into the lab, and can even work the scanning machine. We’ve tried to show that phenomenology has both legs and brains.

Schwabe and Blanke, however, question whether neurophenomenology and frontloaded phenomenology really differ from existing scientific methodologies employed by cognitive scientists when they try to identify the neural correlates of experience. After all, isn’t the point in each case to correlate subject’s reports with measurements of brain activity? But if the phenomenological paradigms don’t possess unique features why should they then be attractive to experimentalists? We don’t fully understand this objection however. After all, on our view, one of the reasons phenomenology – be it in its neuro-phenomenological or frontloaded version – can make a contribution to the investigation of the involved cognitive mechanisms is that it offers conceptual tools and descriptive distinctions (say between reflective and pre-reflective consciousness, between *Leib* and *Körper*, or between primal impression,

retention and protention) that allow for a better grasp of the topic under investigation. As long as these conceptual tools and descriptive distinctions differ productively from those employed by people working in types of cognitive science not informed by phenomenology, there is something to be gained by making the phenomenological move.

Jonathan Cole wonders whether the purpose of the *epoché* and reduction is to allow us to gain a pure nontheoretical view of things, or whether it rather allows us to approach our object of investigation in a new and different theoretical light. Not surprisingly, he finds the latter option more plausible. Strictly speaking, however, the purpose of the phenomenological reduction is not to allow us to focus on the given (freed from theoretical prejudices), but rather to focus on givenness as such. Its role is to allow for transcendental philosophical clarification of the relation between appearance and reality. For the same reason, it should be clear that it is misleading to see the contribution of the phenomenological reduction as amounting to a meticulous description of the phenomena that can then serve as the basis for a subsequent explanatory account that employs inferences to best explanation regarding the underlying causal mechanisms. This is a misunderstanding of the properly philosophical nature of the phenomenological reduction.

Given his own work, it is not surprising that Brook addresses the similarities between phenomenological analyses and Kantian transcendental philosophy. In fact, as we see it, he accentuates the similarities too much thereby overlooking some rather crucial methodological differences. The relation between Husserl and Kant is a difficult topic, and there is no way we can do justice to the complexities of the issues at stake in this short reply, but let us merely point out that Husserl's emphasis on intuition makes him far less inclined than Kant (on Brook's reading) to appeal to and employ inferences to best explanation. Indeed, for Husserl transcendental conditions of possibility must be experientially accessible – otherwise the very idea of a phenomenological transcendental philosophy would have to be abandoned. This is also why Brook's attempt to equate the phenomenological reduction with some kind of inference to best explanation is problematic. For further discussion see the classical article by Fink (1933), and the more recent books by Kern (1964) and Lohmar (1998).

For Brook the truly distinctive contribution that phenomenology can offer to cognitive science is to provide a meticulous description of the explanandum. Phenomenology is not in the business of offering accounts of the actual neural underpinnings of cognition. Nor does it allow us a better grasp of the procedural level, i.e. of the actual computations involved in cognition. Rather, what it does offer is a better and more careful way of describing the cognitive task we wish to explain. While this is certainly the case, we think that it does more than that. Not only does it address issues that are crucial for an understanding of the true complexity of consciousness and which are nevertheless frequently absent from the current debate, but it can also offer a theoretical and conceptual framework that might be more valuable than some of the models currently in vogue in cognitive science. To put it differently, phenomenology is also able to challenge standard interpretations of the empirical data and to offer alternative interpretations that can be further tested out empirically. We want to emphasize the interaction between phenomenology and, for example, the cognitive neurosciences; and the interaction can often add up to more than anything that phenomenology or cognitive neuroscience can do on its own. A good example of this can be seen in the interactionist approach to social cognition. But we will come back to this issue in a later section.

It is useful to consider Hutto's and Brook's comments side by side since they touch on many of the same issues, but occasionally take quite opposite stances. Whereas Brook considers the contribution of phenomenology to lie in a careful description of the explanandum, Hutto wonders whether this proposal might be too modest. Whereas Brook thinks that phenomenology can inform ongoing work in cognitive science, Hutto wonders whether a peaceful co-existence is really possible and sees phenomenology as radically challenging the dominant computational information processing approach. To put Hutto's worry differently: Doesn't mainstream cognitive science employ (metaphysical and epistemic) concepts and notions that are incompatible with central ideas in phenomenology? Doesn't phenomenology, for instance, offer a forceful critique of a view of cognition that sees it as a disembodied manipulation of representations of a mind-independent reality? If so, shouldn't we have done more to make the clash between phenomenology and (mainstream) cognitive science visible? As an illustration, consider the question of naturalism. It is certainly true that phenomenology doesn't just

let the concept of nature remain unexamined, quite on the contrary, since phenomenology explicitly resists the attempt by metaphysical realists to monopolize the concept of nature. For phenomenology, the real challenge is to rethink the very concept of nature and recognize that there might be other kinds of naturalism than the one that takes it for granted that nature is exhausted by what natural science – as it is currently conceived – is capable of revealing to us. However, this is admittedly an aspect that we didn't explore sufficiently in our book. (Cf. however Thompson 2007).

Here, rather than merely asking what phenomenology is, one also has to ask what cognitive science is. If we think of cognitive science as a discipline where computational models reign, or as where what Hutto calls the 'Mechano-Representationalist Approach' reigns then, as the work of Dreyfus has shown, phenomenology can play the part of a strong critic, and it will continue to do so as long as representationalist and computationalist theories hang on. But cognitive science has been changing, and, we think, maturing, as its focus moves more toward embodied cognition and dynamical models (see Gallagher and Varela 2003). On this newer view, phenomenology contributes to cognitive science as a partner or participating discipline. We think that in this environment *the* clash between phenomenology and the cognitive sciences is *passé*. At the same time, our view has never been that all parts of phenomenology are reducible to the agenda espoused by cognitive science, quite to the contrary in fact, since we in other writings have argued explicitly for the irreducible philosophical nature of some parts of phenomenology. But for obvious reasons, our main focus in *The Phenomenological Mind* has been on aspects where we see a possibility for a fruitful exchange.

Interestingly enough, just like Brook, Hutto also refers to the issue of inference to best explanation, but rather than seeing this as an integral and natural part of phenomenological methodology, he stresses the contrast between such an approach and a purely descriptive one, and asks whether the use of the former is really compatible with a rigorous phenomenological approach.

Perhaps the best answer is to say that in our book we have been keen to advocate an open-ended pluralistic methodology rather than a very orthodox and rigorous phenomenological methodology. Strictly speaking, inference to best explanation and indirect arguments that proceed by way of eliminating competing positions is not

phenomenological in nature. But we have adopted the view that the more arguments we could garner in support of our view the better.

In his comments, Marc Slors points out that there is no reason to see analytical philosophy of mind as a competitor to a phenomenological approach, rather in his view they supplement each other. We agree. Although there are strains of analytical philosophy of mind that are indeed opposed to phenomenology, one shouldn't make the mistake of conceiving of analytical philosophy of mind as if it were a monolithic entity, and there are undoubtedly discussions in analytical philosophy of mind that in many ways can challenge, support, and enrich the phenomenological discussions.

Slors also, like many of the other commentators, touches on the issue of the division of labor between phenomenology and more explanatory accounts. Let us assume that one of the contributions of phenomenology is to offer a meticulous description of the explanandum. Would this entail that phenomenology has the last word regarding the explanandum? Slors argues that this is not necessarily the case, since phenomenological descriptions are revisable under the influence of available explanations. There is, in short, a dialectical relation between the descriptions we offer and the (theoretical) concepts we use, and the latter can influence the former. In other words – and again, this is a familiar hermeneutical point – one might question the purity of the phenomenological descriptions. Do they not inevitable contain an element of conceptual reconstruction? If there is a conflict between a phenomenological description and a theoretical assumption, we shouldn't necessarily in each and every case reject the theory. We might also in some cases have to reconsider the description; indeed, new theories might offer and encourage us to attempt new forms of description. So the relation between description and theory is dialectical. It goes both ways. It is not merely a question of descriptions constraining available theories. We would agree with all of this, and we don't see it in any way as conflicting with the view we have been advocating.

2. Self-consciousness and the first-person perspective

Hutto and Brook both share a worry about whether we have managed to live up to our methodological credo of shunning metaphysical and theoretical prejudices: have we

indeed managed to liberate ourselves from certain favored habits of thought? Even if we have aimed to set aside theoretical preconceptions that make us mis-describe the phenomena, have we not in some cases remained stuck on theoretical preconceptions of our own that fail to do justice to the phenomena? Before commenting on this issue, however, it might be worthwhile to briefly allude to a notion introduced by Fink, the notion of operative concepts. Basically the idea is as follows. It is impossible to simultaneously subject all concepts to a critical scrutiny. Whenever we critical reflect on some notions, other notions will remain in use. But this doesn't invalidate the ideal of critical scrutiny, rather it remains what it is, an ideal. To put it differently, we see no incompatibility between phenomenology and a basic insight of hermeneutics that stresses the finitude and fallibility of human cognition. Indeed, as Merleau-Ponty famously wrote in the preface to *Phenomenology of Perception*, phenomenology is a perpetual critical (self-)reflection. It should not take anything for granted, least of all itself. But as Merleau-Ponty points out in closing, the fact that phenomenology remains unfinished, the fact that it is always under way, is not a defect or flaw that should be mended, but rather one of its essential features (Merleau-Ponty 1945, xvi).

But back to the criticism. The example that Hutto and Brook both bring up concerns our focus on the first-person perspective, and our claim that a minimal form of self-consciousness is integral to all experiences. As Brook writes, he finds this view quite implausible. Why? Because as far as we know, no non-human animals have such consciousness of themselves, yet surely many of them must be regarded as being conscious.

When speaking of a first-person perspective, we should however remain clear about the distinction between having or embodying such a perspective and being able to articulate it linguistically. Whereas the latter presupposes mastery of the first-person pronoun and entails the actual adoption of a position or perspective on oneself, the former is simply a question of the first-personal, subjective manifestation of one's own experiential life. It provides for an experiential grounding of the latter. To emphasize the importance of the first-person perspective is simply to insist that there is a distinctive way experiential episodes present themselves to the subject whose episodes they are. They are characterized by this givenness from the start, that is, long before the

subject acquires the conceptual and linguistic skills to classify the experiences as his or her own. This is the case for conscious non-human animals as well.

Brook suggests that things can appear to a person and that the person can pay attention to what they appear to be like without that person knowing to whom they are appearing. A similar worry is raised by Hutto who claims that a condition for knowing that one has a point of view is that one is able to contrast it with other points of views. Thus, both would claim that it is misleading to suggest that experiences are characterized by mineness or first-personal givenness from the very start, since one can operate with first- and third-person perspectives only when one has concepts available that are provided by second-personal social space.

When we refer to the mineness of experience, we are not referring to a specific and ever abiding content of experience, like yellow, or being salty or spongy. We are not referring to a specific *what*, but to the unique givenness or *how* of experience. We are referring to the first-personal presence of experience, to the fact that experiences feel like something for somebody. We are referring to the fact that experiences I am living through are given differently (but not necessarily better) to me than to anybody else. It could consequently be claimed that anybody who denies the for-me-ness or mineness of experiences simply fails to recognize an essential constitutive aspect of experience. It is consequently crucial not to misconceive of the ubiquitous pre-reflective self-awareness as if it were something distinct from phenomenal consciousness as such, something that could and should be found on top of and in addition to the ordinary phenomenal consciousness of sweet oranges or hot coffee. To put the point differently, on our view, every experience is characterized by what has recently been called *perspectival ownership* (Albahari 2006). For a subject to own something in a perspectival sense is for the experience in question to present itself in a distinctive manner to the subject whose experience it is. This implicit sense of ownership is sometimes accompanied by a sense of agency for my intentional movements, which is equally pre-reflective. These pre-reflective aspects of experience contribute to what we (and others) call the minimal self. We admit, however, that an analysis of the minimal self is something of an abstraction as long as it takes place in isolation from the temporal dimension. This is why we in Chapter 4 explicitly discuss the kind of temporality that characterizes both perception and action.

It might be objected that this is a very deflationist conception of what self-consciousness amounts to. To some extent we would agree, but not only do we think this use is warranted, it is also a use that has a long philosophical ancestry. The same basic approach was already defended by the major figures in phenomenology. All of them, and not just Husserl and Merleau-Ponty, considered a minimal form of self-consciousness to be an integral part of conscious experience. They all called attention to the constitutive link between experiential phenomena and first-personal givenness. This, of course, is why Sartre declared that self-consciousness constitutes the mode of being of intentional consciousness.

The kind of pre-reflective self-consciousness that we are discussing is non-objectifying, non-observational, and non-conceptual. Broke objects that even if something like non-objectifying self-consciousness were possible, it would be too weak and vague to allow for any further cognitive purchase. This strikes us as a misplaced worry. As Chalmers has recently remarked, having an experience is automatically to stand in an intimate epistemic relation to the experience; a relation more primitive than knowledge that might be called “acquaintance” (Chalmers 1996, 197). We would concur and so would the classical phenomenologists. In their view, pre-reflective self-consciousness doesn’t constitute first-person knowledge. Sartre is quite clear about this – which is why he carefully distinguishes *conscience de soi* from *connaissance de soi*. In order to obtain knowledge about one’s experiences something more than pre-reflective self-consciousness is needed. This is precisely why we find in the central works of the phenomenologists extensive and sophisticated analyses of the contribution of *reflection*. Qua thematic self-experience, reflection does not simply reproduce the lived experiences unaltered, rather the experiences reflected upon are transformed in the process, to various degrees and manners depending upon the type of reflection at work. This transformation is precisely what makes reflection cognitively valuable. But from the fact that pre-reflective self-consciousness isn’t sufficient for first-person knowledge, one can obviously not conclude that it is therefore also unnecessary if such knowledge is to obtain.

3. Social cognition

Brook claims that the issue of other minds is an issue little discussed in phenomenology. He points out that it is something Merleau-Ponty discussed in *Phenomenology of Perception* but that few other phenomenologists have paid much attention to it. This is, however, a rather puzzling claim. If there is one topic that literally all phenomenologists have discussed in great detail, it is precisely the question of social cognition. Apart from Merleau-Ponty's contribution, one could not only mention Sartre's analysis of the gaze, Heidegger's discussion of *Mitsein*, and Levinas' analysis of our epistemic vs. ethical encounter with the other, but also Husserl's ongoing wrestling with the phenomenology of intersubjectivity – his posthumously published manuscripts on this topic amounts to more than 1500 pages – as well as more specific works such as Edith Stein's *Zum Problem der Einfühlung*, Aron Gurwitsch's *Die mitmenschlichen Begegnungen in der Milieuwelt* and Max Scheler's classic *Wesen und Formen der Sympathie*. For further discussions of phenomenological theories of intersubjectivity, see Zahavi 1996, 2001, 2002.

Brook is of course right in insisting that there is more to the other than what meets the eye, and that any convincing account and solution of the problem of other minds must go beyond the immediately given, and include such features as deception, privacy etc. Brook then asks how much phenomenology, understood as a close description of how things appear, can help with these issues; “not much” is his reply. But as the list of books just mentioned suggests, he might be underestimating the resourcefulness of phenomenology.

In *The Phenomenological Mind*, we offer a critique of simulation theory, including the concept of implicit simulation as construed by those who associate simulation with the mirror neuron system. Slors suggests that there might be data supporting a low-level form of simulation that we haven't considered and which might actually put some pressure on our seemingly unequivocal rejection of simulation theory. Cole also suggests that this critique may be off base, and he cites specific experiments by Bosbach and others that show that a deficit in proprioceptive sensory feedback leads to a deficit in mindreading, or specifically in judging the expectations of actors who are lifting different weights. The experiments were run with GL and IW, subjects who lack proprioception and tactile sensation beneath the chin line and neck line, respectively.

According to Bosbach et al. (2005), “peripheral sensation from one’s own body may contribute to inferences about certain mental states of other people derived from observing their actions” (p. 1295). Putting it just this way, of course, suggests a two stage process. Perception first, and then simulation-guided inferences in regard to the “hidden state,” i.e., the expectation of the actor (p. 1296). It also suggests, as is appropriate in the particular experimental context used, that the subject is simply observing the action and then being asked to judge something, specifically whether the observed actor was given the correct information about the weight of the object lifted. Both GL and IW were shown to be worse than normal controls in judging the expectations of the actors lifting the weights.

First, we note that both GL and IW are different from controls not only in the lack of peripheral feedback, but also in the fact that precisely for this reason they do things differently in regard to motor control for their own actions. Without proprioception, GL and IW have to consciously attend to how they are moving their bodies. IW, in contrast to GL, is not in a wheelchair, and when he lifts a particular weight, for example, he has to consider how his balance might be thrown off, something for which he needs to compensate. It’s not clear to what extent this attentive practice confounds, in a positive or negative way, his ability to explicitly judge the expectations of others for such a task. IW was shown to be, in fact, normal with regard to judging expectation for the lifting of larger items, although, as the experimenters noted, he is not capable of lifting such items himself. Indeed, as they suggest, there may be more perceptual cues that he can use than in the lifting of small items. The question is whether this experiment shows that such explicit judging is based upon an implicit simulation rather than perceptual processes alone. In our book (also see Gallagher 2007a&b) we argue that, ordinarily, perception itself is sufficient to pick up on what others expect in specific contexts. ‘Ordinarily’ means specifically in those situations that involve second-person interactions within pragmatic or social contexts – that is, in our normal everyday intersubjective situations. Such situations differ from those situations where we are asked to make an explicit judgment based on attentive observations of others. In those cases it may be possible that we do resort to explicit forms of theory or simulation. If that is what the subjects in this experiment did, and it is not clear from the study precisely what strategy they did use to make these judgments,

then the fact that GL and IW are different from controls may simply reflect differences in their explicit simulations due to differences in how they themselves go about lifting objects. The experimenters provided very specific measures to demonstrate precisely how different IW was from normal in regard to the duration of the lifting phase of the movement divided by the sum of the duration of the reaching phase and the grasping phase (L/RG). Wrong expectations are normally marked by larger L/RG, but in IW there is an inverse relation between L/RG and weight expectation.

Second, they videotaped IW himself lifting small items, and then asked him and controls to view the videos and make judgments about IW's expectations in regard to weight. They showed that IW was "no more accurate when he judged his own weight expectations; visual familiarity with his own movement patterns did not improve his ability to infer expectation" (p. 1297), and controls were at chance. The reason was attributed to the difference in L/RG in IW. Now it is not clear whether the experimenters are suggesting that observers somehow calculate L/RG within some kind of simulation, or, as we think more likely, that L/RG gets expressed in the movement in such a way that it can be picked up in the perception of that movement as a noticeable difference.

Finally, in regard to this experiment, on our view, one must also consider the idea, noted not only by Husserl, but by contemporary science as well, that perception is always intermodal; that vision, for example, is never purely vision. Husserl and Merleau-Ponty, as well as recent theorists of enactive perception, have emphasized the role of kinaesthesia in visual perception; the visual perception of objects, and the visual perception of other people involves more than the visual modality since such perceptions also elicit a resonance effect in our motor systems. Indeed, this is confirmed by the research on mirror neurons. We take such resonance processes to be part of the perceptual process, and not an extra stage to be labeled "implicit simulation." Accordingly, if, as in GL and IW, certain aspects of proprioception and kinaesthesia are missing from the perceptual formula, then it seems possible to say that their perception of the actions of others are sufficiently different that they are not able to see certain action-related expectations. In this case, the experimental results would be due to a difference in perception rather than to a failure of simulation.

We haven't space to go into a more extended discussion of simulation theory in this reply, but Zahavi (2008) explicitly discusses some of the material relating to the understanding of facial expressions that Slors mentions, and a more detailed critique can be found in Gallagher (2007a&b), where one can find a discussion of the strategy of reducing implicit simulation to a simple matching process, as found in Goldman (2006) and Goldman and Sripada (2005).

Cole also questions our focus on expressive behavior. Like Brook he emphasizes our ability to hide and fake our emotions. But we continue to think that this objection is based on a misinterpretation of our position. Our view has never been that the mind of the other is characterized by absolute transparency and visibility. Our view has been that some aspects of the minded life of others are visible in their situated expressive behavior, and that any doubts or uncertainties we might have regarding the precise content of others' mental states take place on the background of a more fundamental certainty regarding the presence of mindedness.

4. Pathologies

Cole's call for a Machiavellian phenomenology, or what we might call a suspicious phenomenology, is certainly a program that could be pursued. We can only agree with Cole's comment that it would have been good to include discussions of more empirical and psychophysical research, and that cases like spinal cord injury, stroke, or locked-in syndrome provide ample material for careful phenomenological descriptions. As for the Schneider problem, we note that we did not refer to Schneider in the book, and at least in part because of our uncertainty about the extent of Schneider's brain damage. We do mention Cole's own important work on IW whose peripheral nerve damage is much better defined, thanks to Cole himself. The discussion of such clinical cases is not new, and it is something that has been pursued by classical phenomenologists as well.

Apropos locked-in syndrome, Cole is of course right in saying that the syndrome makes it clear that people can manage to lead worthwhile lives even in the absence of movement. Does this invalidate the claim regarding the importance of an embodied interactive exploration of the environment? Hardly, since we should never forget that

none of the cases deal with congenital cases of locked-in syndrome; rather the people in question have all in the past enjoyed an active life.

According to Schwabe and Blanke, we favor proprioceptive brain mechanisms in our attempt to explain how something like a first-person perspective can emerge. In their view, however, this explanation is too restricted, and they insist on the multisensory and sensorimotor origins of an embodied perspective. Schwabe and Blanke are quite right to point to the importance of tactile and vestibular cues, as well as vision, but rather than seeing us as being engaged in offering an explanation of the first-person perspective, i.e., as offering an account of the causal mechanisms responsible for a first-person perspective, it really would be more accurate to say that our focus was on describing the first-person perspective, and that we found proprioception to be a useful exemplification. Thus, since we at no point claimed our account to be exhaustive, we see Schwabe and Blanke's reference as a welcome addition, rather than as contradicting our own approach. Likewise, in regard to their point about the perspectival nature of proprioception, especially in regard to the neck and lower limbs, we agree that proprioception helps us to orient ourselves to the world egocentrically, and in that regard is functionally integrated with the other senses. Our point about the non-perspectival nature of proprioception is rather about the body's self-relation. To put it simply, whether we are standing upright, or "standing" on our head, our feet are always at the ends of our legs; our head is always on the other end of our body. The body itself is mapped out experientially in this non-perspectival proprioceptive way, and precisely for that reason, that is, precisely because perception is anchored in a non-perspectival frame of embodied self-reference, perception opens onto a perspectival (egocentric) order. Perception organizes spatial distributions around an egocentric frame of reference that is implicitly indexed to the perceiving body, and things appear near or far, to the left or to the right, and so forth, only in relation to the body. If one accepts the premise that sense perception of the world is egocentrically organized by an implicit reference to our bodily position, then implicit reference itself, or the *origo* of the egocentric reference frame, cannot be based on an egocentric perspective without the threat of infinite regress (see Gallagher 2003).

Whether heautoscopy offers clinical evidence for the claim that the perspectival origin of human experience is less unitary than normally conceived is an intriguing

question. Its eventual clarification demands not only a careful description of the phenomenon in question (whether we are dealing with several simultaneous or rather several rapidly changing zero-points is for instance not insignificant), but also more general reflections on what conclusions we should draw from pathological or extraordinary cases. Are these cases mere anomalies? Are they the exceptions that prove the rule? Should they, rather, force us to abandon our habitual classification of behavior and experience with the realization that the normality that has been our point of departure has no priority, but is merely one variation among many? Does pathology reveal some hidden fundamental feature of normal experience or does it, rather, reflect or manifest an abnormal mode or a compensatory attempt to deal with dysfunction (cf. Marcel 2003, 56)? Whatever the precise answer to these questions turns out to be, it does seem problematic to simply draw unqualified conclusions about normal cases on the basis of pathology.

Although the report by Ehrsson (2007) does provide a fascinating challenge, since it suggests that it is possible to shift the first-person perspective, there is no multiplication of first-person perspective, and the phenomenological distinction between *Körper* and *Leib* seems directly relevant for the interpretation of this experiment. That is, the first-person perspective follows the lived body. In Lenggenhager et al. (2007), it is clear that there is in fact no shift or dissociation or multiplication in the visuo-spatial perspectival origin (and this is stated by the experimenters). Even if the proprioceptive location of my passive tactile experience shifts to the perceived (virtual) body which appears in front of me (just as it does in the rubber hand illusion), my visual perspective stays with the perceiving body. It would be interesting to explore the phenomenology of active movement within Blanke's experimental paradigm, modeled on the experiment by Tsakiris and Haggard (2005) where, using a virtual hand that could be actively moved vs. passively moved, they showed that the active body is experienced in a more coherent and unified way than the passive body.

Schwabe and Blanke ask what phenomenology has to say about unconscious processes. When it comes to the cognitive unconscious understood as the various sub-personal processes, phenomenology has rather little to say, but part of the contribution that phenomenology has made is to call attention to the fact that consciousness comes in

many degrees ranging from fully attentive to very peripheral forms and that some of the latter have some affinity with more traditional understandings of the unconscious. (For some preliminary reflections on how Husserl would approach the question of the unconscious, see the appendix “Self-consciousness and the unconscious” in Zahavi 1999).

5. Intentionality

Rather than commenting on various aspect of our book, Tanesini’s comments focus in detail on what she takes to be an internal tension or contradiction in chapter 6, which she considers to be less successful and convincing than the others. Given this focus, her discussion also calls for more extensive comments. Let us admit right away that our presentation of Husserl’s theory of intentionality was rather brief and that far more could have been said about his later fully developed theory. We also concede that much more could have been said about how phenomenological accounts relate to disjunctivist accounts of perceptions, illusions and hallucinations. However, our main ambition in the chapter was to show that

- (a) phenomenological accounts of intentionality are accounts that specifically seek to examine intentionality from the first-person perspective (rather than by appeal to various non-intentional mechanisms), and that
- (b) the phenomenological accounts of the mind-world relations are not easily captured and categorized as being either internalist or externalist in nature.

Given these aims, it didn’t seem absolutely pertinent to engage in an extensive discussion of how to account for our ability to be directed at non-existing objects, although this topic is of course standard fare in any more exhaustive account of intentionality. In any case, in the following we cannot accomplish what Tanesini would have liked the chapter to contain, it would lead too far, but let us at least try to raise some doubts about whether our account is ultimately as contradictory as she claims it is.

The basic problem concerns the conjunction of the following claims.

1. First of all, we write that intentional objects are ordinary objects. Rather than saying ordinary objects, it might have been better to say intended objects. The point we wanted to make was not that ordinary spatio-temporal objects are the only kind of

objects we can intend, rather the point we wanted to make was simply that the intentional object is identical with the intended object and not something different from the latter (which is what Twardowski claimed). By making that claim we obviously wanted to distance ourselves from various mediator theories – those that take our intentional relation to spatio-temporal objects such as stones and lamps to be mediated by a relation to some other entities called intentional objects – as well as from theories which argued that when we intend objects that do not really exist, such as the elixir of life or the perpetual motion machine, we are nevertheless standing in a relation to some object which possesses some kind of existence – otherwise we couldn't be directed at them.

2. We also maintain that intentionality is a dyadic relation between an intentional state and an intentional object. On the phenomenological account, intentionality doesn't require an intermediary entity.

3. Finally, we argue that the existence of a mental state is not contingent on the existence of its intentional object.

The problem with the conjunction of these different claims is that it is hard to see how intentionality can involve a relation to an object if that object does not exist.

When we say that intentionality is not an ordinary (causal) relation, but a special kind of relation – and perhaps it would also have been better to avoid the term 'relation' altogether, rather than merely having put it in inverted commas – that can persist even when the objects do not exist, we obviously want to insist that even intentions that are directed at non-existing objects remain intentions, remain characterized by a directedness. Even if the referent of an intentional state doesn't exist, the intentional state has a reference. Not in the sense that some other object with a mysterious form of existence steps in instead, but merely in the sense that the intentional state keeps referring, keeps being about something; it retains – to use a different terminology – certain conditions of satisfaction that could be fulfilled if the object had existed, but which in the present state of affairs remain unfulfilled. This view is indeed incompatible with the disjunctivist view that intentionality is an ordinary relation to ordinary objects in the world, and which consequently holds that the existence of an intentional state necessitates the existence of its intentional object. Of course one could then say, so be it. The problem, however, is that we say other things that seem to suggest a penchant for

some form of disjunctivism. This is so, not only in our chapter on perception, but also when we, expounding on Husserl's position, write that acts of consciousness and objects of consciousness are essentially interdependent and that the relation between them is an internal rather than an external one. How can we say that and at the same time insist that the existence of a mental state is not contingent on the existence of its intentional object?

Two points of clarification are called for.

1. First, the claim regarding the interdependency of acts and objects wasn't meant to imply that their existences are interrelated, so that one can exist only if the other exists, and vice versa. Rather the point was merely a) that it is impossible to understand intentional states if we ignore what they are about. We cannot understand what it means to hallucinate a pink elephant if we don't know anything about pink elephants, and we cannot specify the difference between perceiving a sunflower and a red apple, if we don't know anything about sunflowers and red apples. Furthermore, b) we cannot philosophically comprehend what it means for something to be a perceived object, a remembered event, a judged state of affairs, if we ignore the intentional states that reveal these objects to us. Although such ignorance is very much part of daily life, the task of phenomenology was from the beginning to break with the naivety of daily life and call attention to and investigate the correlation between *cogito* and *cogitatum*, between act and object. As Husserl puts it at one point, to effect the reduction is to liberate the world from a hidden abstraction, and to reveal it in its concretion as a constituted network of meaning (Husserl 2002, 225).

2. Secondly, although what we have said about the interdependency of acts and objects holds generally, this doesn't exclude that there might be particular types of intentional states that in fact cannot exist unless their objects exist, as well as vice versa. Perceptions might be a case in point. Perceptions do entail the existence of their objects. If you perceive a red tomato and it turns out that the tomato doesn't really exist, then you didn't really perceive it. To put it differently, for an object to be perceptually given is for the object to be given in its bodily presence, or, as Husserl says, in *propria persona*.

6. Conclusion

The goal we set ourselves in writing *The Phenomenological Mind* was to provide an accessible and up-to-date overview of how phenomenology might contribute to the ongoing scientific exploration of consciousness. Though our book is intended as an introduction, and although it obviously doesn't provide an exhaustive account, the comments we have received seem to confirm that we succeeded in meeting this goal. Phenomenological interventions in cognitive science and philosophy of mind are ongoing, and they can be made more precise and incisive by the kinds of clarifications that our commentators have asked for.

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