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PHENOMENOLOGY, NEUROSCIENCE AND IMPAIRMENT

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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 move 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 the 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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