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First-Person Experiments

Abstract: *The question asked in this paper is: How can we investigate our phenomenal experience in ways that are accurate, in principle repeatable, and produce experiences that help clarify what we understand about the processes of sensing, perceiving, moving, and being in the world? This sounds like an impossible task, given that introspection has so often in scientific circles been considered to be unreliable, and that first-person accounts are often coloured by mistaken ideas about what and how we are experiencing. The first-person experiments I suggest are different from experiments done in the psychology laboratory in that there is no narrowing down of the experiments to looking at a singular aspect of a question, and that they are to be carried out in most instances in a natural or specially structured environment without strict task controls or statistical experimental design. There is no intent to replace formal second- and third-person investigation, but to use a phenomenological approach to conjoin with hard research, and to suggest ways of awareness training that can enhance the skills of researchers.*

I take as a model an informal phenomenological approach for experimentation. I also suggest that it is possible through directing and broadening the attention process to turn consciousness towards what is non-conscious or unattended to in order to develop an improved sensory awareness and an ability to be open to experiencing without prejudging and without expectations. The idea is to go back to experience without first creating a theoretical stance from which to interpret what happens. I conclude with some other examples of this approach.

Introduction

Since the revival of interest in consciousness as a cross disciplinary topic of study, there has been a debate as to the value of the use of first- and second-person experience as a tool for the elucidation of consciousness. It is an old debate now revived as scholars and scientists have opened the possibility of serious study of what has been labeled consciousness. The polarities of this debate are exemplified first by the late Francisco Varela's notion of 'neurophenomeno-

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Journal of Consciousness Studies, **12**, No. 2, 2005, pp. ??-??

logy' (Varela, 1996) where he proposed to take lived first-hand experience as a proper field of investigation accompanied by a rigorous method and pragmatics. The opposing view, championed by philosopher Daniel Dennett, is that the only access a scientist has to phenomenal experience is a subject's verbal account which can only be taken as a kind of fiction based on the subject's beliefs about his or her 'heterophenomenological' world (Dennett, 1991; 2003). The conflicting contentions are these: Varela's and others' contention that phenomenal experience is irreducible to anything else and that we need a way to bring first-person experience into the fold of an expanded style of scientific investigation, and Dennett's and many others' contention that first-person experience, while undeniable as experience has no scientific value in itself and only third-person scientific exploration will ultimately yield access to the mystery of conscious experience. First-person experience can be studied using second-person methods which are then subject to critical analysis.

The two polarities appear to be irreconcilable. Yet there are curious overlaps. Both Dennett and Varela are unwilling to take verbal reports of naïve subjects at face value. Neurophenomenology promotes the search for a rigorous method of first-person exploration. Heterophenomenology denies any possible validity to this approach. Nevertheless, both approaches can come to similar conclusions in the end, as for example, the deconstruction of the 'Cartesian theater': Dennett accomplishes this on an analytical basis and Varela finds through both an experiential methodology and a recourse to the fact that no centre of integration is found in the nervous system to account for the binding problem.

What is at the heart of this debate, I believe, is that we have here two contrasting dominant styles of philosophical inquiry, the analytical and phenomenological. Each style requires putting into practice a method of inquiry, a kind of learning by doing. This is particularly true for phenomenology. One cannot properly understand its terminology or methods without doing the process. Knowing about and knowing how are separate domains. Analytical philosophy, of which Dennett is a master, also requires a rigorous training in its processes of inquiry. Its processes though are primarily verbal and logical using scientifically established data as its source.

Varela (1996) expressed the intention of developing a research programme that 'seeks *articulations by mutual constraints* between the field of phenomena revealed by experience and the correlative field of phenomena established by the cognitive sciences'. There was to his mind no bridging the gap with a theoretical fix. Up to his death in 2001, he was actively pursuing such a programme involving his laboratory research in neuroscience. The debate itself continued with the publication of *The View from Within* edited by Varela and Shear (1999). A debate, I believe, cannot resolve the issues. Most arguments are made from fixed positions, and there is little willingness to explore openly. Dennett, for example, satirizes phenomenology in his joke about the anthropologists who visit a tribe that believe in a god of the forest called Feenoman (Dennett, 1991, p. 82). The anthropologists, who are called Feenomanologists take the believers at their word in their belief of Feenoman and his properties. The difficulty of Dennett's

satire is that a phenomenological exploration is not equivalent to introspection, which while often taken to have been proven an invalid approach especially in psychology, can also be valid when used with rigour (see Vermersch, 1999; 2003; Schwitzgebel, 2004).

Recently two issues of the *Journal of Consciousness Studies*, edited by Anthony Jack and Andreas Roepstorff (2003; 2004) entitled *Trusting the Subject* have devoted many more pages to the controversy swirling around first-person experience. I wish therefore to contrast the intent of my contribution to the argument with the many interesting papers in these two collections, which are more involved with questions for the researchers about research methodologies. Most of the major issues are discussed at the intellectual level in great detail and depth of documentation from the research and philosophical literature. The challenge of this paper is somewhat different. I ask the reader and researchers, how can you develop your awareness and ability at self-observation so that you can begin to trust yourself? It is a question touched upon by Marcel (2003) particularly and also by Lutz and Thompson (2003). It is best stated by Heinz von Foerster's plea, 'I would like to see people learning to stand on their own two feet and to trust their own personal perspectives' (von Foerster and Poerksen, 2002, p. 35).

This is not to say that the process is easy and that we can rely on what we already know how to do or what we already think about our own experience. I would also warn the reader that the processes described in this paper are just a small sampling of possibilities and that immersion in a learning process is essential for the development of what I choose to call 'awareness'. The issues are very sticky and I would like to begin by pointing to how naïve subjects can be easily led astray by improperly arranged experiments.

Creating an Informal Investigation

I take my example from the Editorial Introduction to the second part of 'Trusting the Subject', Roepstorff and Jack (2004). The authors discuss (p. v) the 'gimmick' (their description) of a common demonstration of what is called 'inattention blindness' which is often done at cognitive science conferences to startle the members of the audience. The audience is asked to watch a video clip, which depicts six people, three in black and three in white who pass two basket balls between themselves. The presenter instructs the audience to 'count the number of passes made by the players in white'. After seeing the video clip, the audience is asked for a response and then asked if anyone had noticed a strange event during the watching of the clip. The clip is then shown again. The members of the audience are then surprised to see a person dressed in a gorilla costume walk into the scene, bang his chest and slowly walk out. The question then asked is, 'What does this say of reports? Should we trust those in the audience who claim they did not see the gorilla the first time around?'

What we have here is a very good opening to a first-person experiment, but only if we stay open to our experience and to that of others. Naïve persons are not ready to do either. The experiment is very limited by the constraints imposed by

the person guiding the audience. The experience is also predetermined as to the outcome in that the presenter wishes to illustrate an already established phenomenon, which has been labeled 'inattention blindness'.

An opening to a new possibility for understanding comes about when, as the authors describe, a person who had not understood the instructions as a result of not being a native English speaker, did not carry out the counting task. She not only saw the gorilla the first time around, but wondered what the fuss was about. She, of course failed at the counting task. Another perspective makes a difference.

The authors move on to their own conclusion. They begin by pointing out the obvious. 'But the case of our colleague (the woman who saw the gorilla) clearly demonstrates that not only the performance of the task but also the content of the experience may co-vary dramatically with adherence to the script (instructions).' They then go on to attribute this to 'the inter-subjectivity involved in most cognitive experiments.' They further write 'It suggests that the behaviourist's ideal of a simple stimulus-response relation, visible from a third-person perspective, is usually embedded in a second-person interaction which involves exchange of frames of reference and of attentional focus.'

While what is stated here is indeed relevant, a more complete understanding is obscured by the recourse to inter-subjectivity as an explanation. If it is the case that a form of inter-subjectivity is involved, the question is, how? The authors put the discussion under the heading 'The Mind-Dependence of Experience'. This could be misleading in itself. The word 'mind' here contains a hidden metaphysical position, which the authors may not intend, that all experience exists in an entity that is labeled 'the mind', which is isolated within each person.

Let me suggest continuing from the first- and third-person points of view to see if we can untangle the problem. In a proper investigation of phenomenal experience one has to ask continuing questions and to observe clearly. My first question is, what is the nature of an instruction?

Most of us are clear on this point: one is asked to carry out an action. It means, of course that some other person has asked us to carry out an action in accordance with his or her designation of the action. How does one do this? One has to access a process that is already organized and understood not in our minds as a separate entity but as we understand ourselves in our ability to act. If the action is not understood, one simply cannot carry it out. The person giving the instruction knows this and expects the action will be carried out accordingly. In this case the action is counting specific passes of a basketball as seen on the screen and limited to only the players in white.

The next question is how do I count? Here the answer could be obscure because we normally do not attend to something that is well organized and needs no attention. If we do a phenomenal investigation, however, most people will come to a similar conclusion. In order to count I must fix my attention, in the way I know how, by limiting the movement of my eyes to the area of space where in this case the basketballs will appear. I then mark each shift of attention (following the basketball with my eyes), and sub-vocalizing a number. I then keep track

of the number of shifts in memory. If I bring awareness to my process, I may discover that each shift of attention involves a movement of my eyes. I may then notice that as I am busy with the counting activity, my eyes are not available to carry out a secondary unnamed task, that is looking out for a gorilla.

It might be useful here to carry out a further phenomenal investigation of counting something in my memory or imagination and attending in order to notice if there is a relation to movements of my eyes. Then I should notice that what I count are shifts of attention. I suggest the reader try this by counting something familiar such as the number of panes of glass in one's living room windows as it is remembered and noticing then that the eyes move as one imagines shifting to each pane.

It should be possible to observe the same phenomenon we have described so far from the third-person point of view. In informally watching persons in the audience, one could observe how each person limits the eye movements, and therefore the focal centre of the eye, as they count the passes. When the video clip is shown again third-person observers should notice a difference in the movement quality of the eyes of the observers as the eyes are free to range over the entire screen.

Once this is clear in one's personal observation and in the third-person observation the so called 'inattention blindness' in this demonstration is an obvious phenomenon of one's ability to focus on an activity which closes the attention to other things such as gorillas. It is not just a phenomenon in the mind, but a potentially self-observed and externally observed action. Although we all know this, as when we are so involved in a task we are blind and deaf to our surroundings, we forget what we know of ourselves in the context of the 'inattention blindness' experiment. Thus we are surprised when we miss the gorilla. We also learn something about consciousness. Not everything that registers on the retina, even though it be detected in the visual cortex, appears in our conscious experience. It depends on our state of attention, which is directly related to how we are using our eyes in the muscular sense, or to how other people may distract us. It may from a neurological point of view depend on which neural processes are activated when actually having a conscious visual experience, in contrast to merely picking up an image in the visual cortex. Wolf Singer (1998; 2002) and his colleagues have begun to establish such correlations.

Knowing this opens another possibility. We learn or train ourselves to other ways of using the attention function. For example, we might explore how we can keep an open field of attention while at the same time staying with another task. By training our ability to act in this way we could develop an ability such as that famously possessed by Samurai swordsmen. Their life depended upon such skill.

The experimenters presenting this experience to an audience stand outside, seemingly as separate independent objective observers. What they do not attend to clouds their own understanding of what they are observing. The interpretation of the event also clouds the issues and impresses the audience with an unwarranted doubt about their own ability to self observe. What becomes obvious when carrying out a complete set of phenomenal observations remains elusive.

The report of not seeing the gorilla is clearly a correct statement of what was most people's phenomenal experience. But it is also limited to the immediate moment.

There is an interwoven tangle of problems here in investigating human science and human life including our own. I quote Wittgenstein (1968, PI 109 p. 47), 'Philosophy is a battle against the bewitchment of our intelligence by means of language.' In a now famous quote Heinz von Foerster said (as quoted in Poerksen, 2004, p. 3), 'Objectivity is a subject's delusion that observing can be done without him.' This opens up a critical discussion of all observation whether first- or second-person. As Humberto Maturana Romesin (2002) recently stated 'The question can no longer be "*what is the essence of what I observe?*" but rather, "*how do I do what I do as an observer in observing?*"' We have no god-like stance from which to observe and understand, even in establishing a third-person scientific methodology, which in fact depends on human conceptualization and language. Of course we can put our conceptualizations to the test of a third-person experiment. Nevertheless, as in the case of quantum mechanics, there may be multiple interpretations of the third-person data that cannot be distinguished. For first-person accounts can we even find a language that accurately expresses our experience? And for all accounts can we avoid biasing our investigations by how we speak and conceive about what we are doing? These are questions for experimenters and subjects alike.

This view would seem to provide a kind of pessimism about the prospects of a valid human science altogether. In the situation of the limitations inherent in our position, however, we can develop ways of improving our ability to be observers. My point is that it is essential that experimenters and observers in general explore being subjects, and take responsibility for being part of the investigation. The stance I take here is inspired by the understandings of Maxine Sheets-Johnstone (1990; 1994; 1999), which is simply that we are 'animate beings' in common with many other life forms and that mindedness is not something separate from our living situation in which the essence is that we are self moving creatures. Our nervous system is an important organ of our organic life but has no life properties in itself. We forget this at the peril of continuing to distort our descriptions of experience and our explorations.

Challenging Daniel Dennett

Daniel Dennett might agree to the analysis I have made above if it were clear that the accounts of the first-person experiences, held no metaphysical weight. I believe that is what he intends by calling such accounts 'fictions'. He is not averse to using a first-person experiment to illustrate his own points. He finds that people often have beliefs and make claims about their sensory and perceptual abilities that go beyond what is the actuality of their ability and what they experience. To illustrate this to the reader (Dennett, 1991, p. 54), he asks the reader to hold a playing card at the periphery of the field of vision and begin to move it toward the centre while holding the eyes fixed to the centre. He asks the

reader at what point can he or she identify the colour, the suit or number, or if it's a court card when it is identified as such and when the card can be identified as a jack, queen or king. One discovers then that only in the centre can all features of the card be identified, which he says often contradicts a person's expectations. This is first-person experience put to the test by means of introspection and as Velmans (2000b) points out about certain realms of subjective experience, it can be shown to be public, intersubjective, and repeatable. It is also the beginning of a phenomenological exploration. Ihde (1977, p. 59) uses exactly an exploration of peripheral vision to create a phenomenological experiment that takes the experimenter beyond the simple question of detection. He moves from the appearance of items within the visual field to exploring the general structures of the field of experience itself, and from there to a description of the act of seeing. For example, when one picks up movement in the peripheral field, one turns one's head and eyes to see what is there. Phenomena are not just a question of an isolated sensation and the accompanying perception. The way the field of vision is structured and how it is used has biological significance. Experimental phenomenology, as Ihde calls it, enriches the experience, and fills in the areas of experiencing that are not normally noticed and brings this material into a descriptive form. Ihde uses this experiment and other-personal experiments with vision and multi-stable perception to bring the reader to the practice of phenomenology and to make Husserl's very abstract descriptions concrete.

Dennett (2002) continues to say that claims about conscious experience need to be tested by good third-person science. In principle I agree. But Dennett goes on to attack the notion that first-person experience can say anything of value to the scientific study of consciousness without expert intervention. He says,

Once they [sc. those making claims] relinquish their ill-considered grip on the myth of first-person authority and recognize that their limited incorrigibility depends on the liberal application of a principle of charity by third-person observers who know more than they do about what is going on in their own heads, they can become invaluable, irreplaceable informants in the investigation of human consciousness (Dennett, 2002, p. 16).

I wish to suggest another direction. It is probably valid to say that most people's beliefs about themselves and their descriptions of their experience cannot be taken at face value. In truth many educated-persons including philosophers and scientists are not trained to make observations of their own experience in an accurate and succinct way as I have pointed out in my introduction to this paper. Ihde's (1977) *Experimental Phenomenology* is a very good model for the approach I wish to take. In *On Becoming Aware: A pragmatics of experiencing*, Depraz, Varela and Vermersch (2003) have created a detailed discussion of the problem including descriptions of the basic cycle of investigation, apprenticeship, training, practice, the point of view of the researcher, the philosophical challenge, and wisdom traditions and the way of reduction. Although concrete proposals are made, no actual processes are given for the reader to explore. In the rest of this paper I wish to challenge the reader to investigate the possibilities through their own experience of the experiments described. What I wish to show

most of all is that by structuring the exploration and suggesting processes for training oneself, most people can become better observers of their phenomenal experience.

I begin with a further exploration of peripheral vision as I wish to explore a claim that Dennett (2002) makes about colour vision at the periphery. I did the experiments to see if I could corroborate Dennett's claim that there is no colour experience in the periphery of the visual field. But I also wished to explore the phenomenal experience in a more complete way to account for the whole of the experience itself. I suggest the readers try similar experiments themselves.

Experiments with Peripheral Vision

My first experiment was to repeat Dennett's (1991, p. 54) experiment with the card. I used coloured disks instead of playing cards.

I hold the coloured disk in natural light at the periphery to the right just at the point where I can detect something is there. Moving the disk toward the centre I stop where I first can detect the colour. I then turn and note the position on the wall, which corresponds to the position of the disk. I measure the angle of the position with respect to the horizontal line to the outside of my eye. It measures between 25 and 30 degrees within the accuracy of what I can measure. If I move the disk up and down rapidly, I can detect the presence of the disk more easily. But I can also detect the colour at a smaller angle, about 15 degrees. I also use a card as Dennett suggests and then find that indeed the card can be identified only in the central position around 90 degrees. I will test this again later.

My second experiment was to create a closer investigation of the phenomenal experience. I took a walk outside in daylight.

I leave the house and take a walk down the block. As I walk I observe the optical flow of images around myself and notice that I am aware of the colour of things as I turn my head to look at them. I do not particularly notice the periphery. When I see a bush with flowers I notice the colours and as I pass the bush I am aware that the bush is green and the flowers yellow. But do I actually see them in the periphery as I pass? It is not easy to say. Since I have already focused my eyes on the bush, I know the colours to expect. The bush disappears as I pass, but there is no hard line between seeing and not seeing. The periphery, rather than separating what is in my vision from what is not (like a frame), has no sharp edge to it. The periphery is not separate from what is in my focal vision and therefore is not different in its basic continuity from what is in my focal vision. It is the same world, which I take to be continuing in the void behind me. All I need to do is to turn and there it is in my focal vision. My perception as a totality includes the focal vision, the periphery and what is in the void behind myself, because although the void is not experienced as black, and is not experienced directly at all, I can always turn and see that what is there is perceptually present. The perception of what is behind me is not there in the moment, but the perception that 'I am in the world' is present. The experience is thus in a context.

Now I change the experiment. This time as I pass a wall and a garden I keep my head from turning. I keep my eyes forward and attend to what I see in the periphery. There is something there that looks as if it were flowers. The colour is light, but I cannot identify or name it. When I turn and bring the flowers into my focal vision I

see large flower petals and see that the colour is a tannish yellow. My colour sensing at the periphery is so weak that I cannot detect actual colours or identify them. At the periphery what is there is between seeing and the void.

Now it is interesting. In so far as the question is the detection of colour (the only question in Dennett's argument) the results are clear cut for a non-moving object, but more ambiguous for a moving object. If the question is the phenomenal experience (the question that Dennett wants to eliminate), the researcher's claim that 'their peripheral field lacks colour altogether' is partially true if referring to detection. It is untrue with regard to the phenomenal experience, which is not limited to a singular moment of time. There is an important distinction here. The experiential field is not sharply bounded, it is continuous throughout, and the total of the perceptions, including the perception of self, places a self in the world. Thus the perception of the external space and its contents is perceived as coloured even if the colour detection is limited or non-existent. Dennett wants to claim that there are no consequences from making the statement about the phenomenal experience of colour as long as there are no consequences as regards detection of colour. My claim will be as follows at this point: First that the question of detection is the result of differences in sensitivity of the sensory surface (retina) of the eye and not about the way visual perception arises in the nervous system out of the engagement of the organism (person) in the world. Therefore the question of detection is incomplete regarding consciousness other than to say that the immediate moment of conscious experience is information poor. Second that the nature of the phenomenal experience is the most revealing of the activity of the nervous system in leading to perception and conscious experience. It is weak with regard to the act of detection, which is dependent on the sensory aspect only. Dennett is thus not talking any longer about the phenomenal experience in general, but only about the experience of the act of detection of colour.

What is revealed then about the structure of the experience? Is it important in some way that the visual field has no boundary at the periphery, or that the peripheral field is not distinguished in any sharp way from the focal vision? One way of addressing the issue is to ask, what would it be like if it were otherwise? How would you function in the world? Dennett's stance excludes many interesting questions like this. In answering these questions one begins to realize that the phenomenal experience has consequences. Indeed from a biological point of view the structure of this experience is essential once you understand its relation to how an animate creature needs to be able to perceive stability in its environment in order to move and navigate.

Although perception is often confused with sensing, or identified with only the content (objects) in the visual field, it is a far broader phenomenon. Walking down a sidewalk as a conscious experience is multi-layered as to perceptions. For one thing one perceives one's body space and autonomy as a unified self-presence in the midst of a world space that is outside the skin. The world space is stable. There may be other objects or beings moving within it, but it is experienced as stable and not moving. The body space also has a kind of stability

in that it is perceived as self, an origin of intention, movement, and agency. There are thus background perceptions that are not usually mentioned, but the removal of any one of them would produce a profound disturbance of the conscious state. What is more to the point, removal of a background perception would result in disturbances of functions. Continuity and coherence therefore are essential to acting and functioning. Again one can ask, what would it be like if the world space were not stabilized? (It happens in the nervous system.)

As a simple example, the vestibular sense contributes to a perception of stability and balance. It is part of the process of stabilization of the visual world. If you spin around and stop, the world seemingly turns around yourself. You have a hard time walking, feel nauseous, and lose the ability to balance. There is no sensory reason alone for the stability of the visual world. If you move your eyes, the images move rapidly across the retina. If you do this with an old fashioned video camera with a frame, you get images, which jump across the screen and the background jumps also. With turning the eyes or turning the head there is a smooth passage through a stable world. You experience a shift of attention and focus within a background. Once this is clear as experience, you can begin to wonder how a nervous system produces the effect. In fact consideration of this question has led to a technology to help stabilize the image on the video camera screen of newer video cameras.

It is more difficult to imagine what it would be like without this stability in your normal life. Although this is not a first-person experiment that can be done in your ordinary surrounding, the report of the experiment to follow is exemplary of how, in a changed environment, phenomenal experience can be dramatically shifted.

The Effect of Changing the Environment on Perception and Function

This 'experiment' is cited in an essay by Daniel Birnbaum (2001). The description is by the American artist James Turrell of his installation show in Amsterdam that he titled *City of Arhirit*. The installation involved four rooms illuminated with Ganzfelds (total illumination), with different colours in each room. The light appeared to hover inside the wedge shaped rooms, which were entered through baffled windows that reflected from different coloured surfaces outside. Turrell wrote:

In the Stedelijk installation, people got down on their hands and knees and crawled through it because they experienced intense dis-equilibrium. You went through one space and then it seemed to dim because you can't hold color without fold. So as you left the first room that was pale green your eyes developed a pink afterimage. The next room you entered was red, and you came to it with this pink, and it was just startling. So I used a progression of space to mix the afterimage color with the color you were about to see, also knowing that that the color, after you were in it awhile, would begin to dim. People felt someone was turning the lights up and down on them the whole time, when actually it was just them walking through a succession of four spaces that were lit in this manner. We finally had to cut a path in the floor, but even then people had trouble standing (Birnbaum, 2001, p. 226).

Birnbaum comments, ‘So what’s so interesting about this description? Primarily the relation between blinded eye and falling body. When the eye can’t focus and loses track, the bodily experience and self-experience becomes chaotic. This is what phenomenologists, from Husserl to Merleau-Ponty, have studied under the title, “kinesthetic experience”’ (p. 226).

In this experiment untutored introspection is more involved because the subjects, persons visiting the exhibit, are not expecting what happens, nor are they asked to examine the experience. Nevertheless the experience itself forces the examination. As with many important works of art, the viewer or participant is challenged in a way that opens the possibility of shifting perception and a breaking of perceptual habit.

Separating Phenomenal Experience from the Conceptual Overlay

Merleau-Ponty suggests (1963, p. 185), ‘verbalized perception should be distinguished from lived perception.’ The experiment I refer to in the story that follows shows that there are functional consequences to this distinction. It is a distinction that most thinkers muddle because the act of verbalizing takes one out of the experiencing unless one is trained to notice this phenomenon.

My own teacher, whose method of investigation I now teach to others, Moshe Feldenkrais, wrote in his book, *The Illusive Obvious* (1981), a story about a visit he made to the innovative musician and awareness explorer Heinrich Jacoby. Feldenkrais had finished his first book, *Body and Mature Behavior* (1949), and a medical doctor in Britain where he was living at the time called him and asked him whether he had studied with Jacoby. Feldenkrais said he had not heard of this man. The doctor pointed out that there were great similarities in what he had learned from Jacoby and what Feldenkrais had written. To make the story short, Feldenkrais arranged to spend three weeks with Jacoby in Zurich during his holidays.

On the first visit Jacoby handed Feldenkrais some drawing paper, a piece of charcoal and some bread to serve as an eraser. He then asked Feldenkrais to draw the lamp on the piano in front of him. Feldenkrais protested saying that he didn’t know how to draw, and had only done technical drawing for his engineering degree that he had received before reading physics at the Sorbonne. Jacoby encouraged him more and Feldenkrais began to draw a vertical cylinder with a truncated cone at the upper part and an ellipse at the bottom for the stand.

Jacoby looked at the drawing and said that this was the thought of the lamp, but it was not the lamp. Feldenkrais writes (1981, p. 11), ‘I realized then that I had drawn the abstract notion of the “word” lamp.’ Feldenkrais then protested again that only a painter or trained artist could do what Jacoby expected of him and that he was neither of these.

Jacoby insisted that he continue. “Tell me what do you see?” “A lamp,” I said. “Do you see any of the outlines you have drawn?” I had to admit that I could not identify in my drawing a single line of the real lamp, except that the proportions were more or less those of the lamp in front of me. “Do you see lines?” I had to

admit that none of the lines in my drawing were actually to be seen. “If you do not see lines, then what do you see when looking at this lamp? What do your eyes see in general? They see light; then why do you not draw the lighter and darker patches of what you see?”

Feldenkrais did as was suggested. Upon looking at his own drawing he saw it not as one that he would do, ‘but one which I thought only a painter could do’. Jacoby used this technique in helping his students improve their sensory and perceptual awareness. A number of drawings by his naïve students are reproduced in Jacoby (1991), and they indeed appear as if made by a trained-person. Here again I would invite the reader to try the experiment in attending to what one actually sees instead of the idea of the object chosen for the drawing.

Merleau-Ponty goes on to say,

If we return to objects as they appear to us when we live in them without speech and without reflection and if we try to describe their mode of existence faithfully, they do not evoke any realistic metaphor. If I adhere to what immediate consciousness tells me, the desk when I see it in front of me and on which I am writing, the room in which I am and whose walls enclose me beyond the sensible field, the garden, the street, the city, and finally the whole of my spatial horizon do not appear to me to be causes of the perceptions which I have of them, causes which would impress on their mark on me and produce an image of themselves by a transitive action. It seems to me rather that my perception is like a beam of light which reveals the objects there where they are and manifests their presence, latent until then (1963, p. 185).

If the emphasis is made on verbal reports, we impose a cultural bias on our observations and confuse map and territory. The territory is phenomenal experience. The map is what we think (verbally) that our experience is. When one is addicted to map making and conceptualizing, a switch is made and the idea takes precedence over the experiencing. Dennett is aware of this, of course, which leads him to his heterophenomenology.

Nicholas Humphrey, who is not opposed to the use of phenomenal experience in cognitive science and speaks of the ‘thick moment’ of consciousness produced by the sensations and their quality, exemplifies the problem. He makes distinctions within his own analytical tradition such as between sensation and perception. The distinction makes for difficulties in describing phenomenal experience, as the many commentaries to his lead paper, ‘How to solve the mind–body problem’ (2000) attest. For purposes of arguing for his philosophical positions, materialism and functionalism, and attempting a solution to one of the major problems stirred up by this philosophical stance, Humphrey insists on the following conceptualization: ‘the entire content of consciousness is made up of bodily sensations, with nothing being contributed by perceptions or thoughts as such.’

John Searle once challenged him, as Humphrey (2000, p.103) relates in his response to the commentaries, exactly on this point using a simple first-person experiment with a drawn figure that produces a multi-stable perception, the Necker cube. Most people are able to reverse the illusion of depth when

observing the drawing. Humphrey's attempt to get around Searle's challenge entirely misses the point, and he speculates ad hoc about such hypotheticals such as 'action plans' and 'agentic qualia' ending up with Gibson's idea of 'affordances for action'. Gibson (1966) by the way has a perfectly clear explanation of the Necker cube phenomenon only taking into account the ambiguity of the sensory information given to the eye by the ambient light pattern.¹ The question, however, is what is the phenomenal experience (since is that not what is conscious?) and here Humphrey has to admit 'on the evidence of introspective observation the answer must be: Yes.' In other words he experiences the pattern reversal just as everyone else who is capable of the same perceptions. This to me is the territory of phenomenal experience.

In response to another commentator in an argument about the sensation of a coke can, he says, 'Van Gulick, for example, protests that when he looks at a red coke can on the table, it seems to him that he experiences the phenomenal colour 'as a feature of the can out there on the table' not as something happening to himself' (Humphrey, 2000, p.102). Later he says, 'I agree, it usually *seems* like that to me as well.' Frankly I don't know what the *seems* means other than one wants to separate what one knows from what one experiences. Either the experience is what it is or not. If the 'seems' is what is consciously experienced, then it has weight in regard to this point. It is that seemingness that relates to what the nervous system is doing. Of course one can check in other ways to find out whether the perception matches a closer, more objective observation of the perceived object. This is how we decide a particular perception may be designated as an illusion. The funny thing is the perceptual illusion does not disappear even after objective observation shows it to be inaccurate to the measured object. Many perceptions are strongly habitual.²

Humphrey then suggests an experiment, and that is to take the can to the eye so that the image fills the field of vision and becomes a fuzzy red. Of course the specific image of the can changes. What doesn't change is that there is a perception

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- [1] It should be important to note that although there is no difference in the retinal image, the majority of the persons viewing the image see either one or the other perception. It is nearly impossible to see both perceptions at the same time. This phenomenon is discussed by Bridgeman (2002) in relation to another ambiguous figure illustrated, the devil's pitchfork, where one sees either three forks in the figure or two. You cannot perceive the figure as a whole. Bridgeman describes that, 'A self consistent structure maps into a different self consistent structure on the other.' Bridgeman uses a metaphor dating at least back to Helmholtz that 'we use different information to make different judgments about the same scene.' If the retinal image is the same when looking at the figure, it would be better to say that the information from the outside is the same, and give up the metaphors of the nervous system making judgments and using information processing in the sense of forming representations. What then is happening in the nervous system? One could conclude at least this, that the nervous system produces only one conscious consistent perception in a time frame and must act as a whole in each moment. The same is true for the fact that we cannot act and not act at the same moment, which is not an instant in time but what William James called, the specious present. Edelman's idea of dynamic cell assemblies that are selected to produce a moment of conscious experience fits the phenomenal experience here. (See Edelman and Tononi, 2000, and Varela 2000.)
- [2] I direct the reader to an illustration in Ramachandran and Blakeslee (1998, fig. 12.2, p. 239) in which on first viewing one sees a disarray of black patches on a white background. With persistent viewing and searching for an image, a perception forms and one sees a picture. Once one forms the perception, one sees the same perception each time one looks at the illustration, even after a long period of time.

of something out there, the can. I have tried it myself and still see the fuzzy red projected in the space outside. One extracts the can as an invariant in the environment and that is the result of the act of looking at the can. That the sensory surface is in the eye is a piece of conceptual knowledge. It is related experientially to the act of taking the object closer to the eye in order to see better. One is simply not conscious in one's core experience that the sensation is *in* the eye, unless one knows that that is where the sensation is picked up. Humphrey's idea that sensations are 'the entire content of consciousness' will not hold up in the face of exploring phenomenal experience. Thus the move to downgrading the experience to what it 'seems' like as if the 'seems' has no impact or importance. I conclude then that it is better to explore the experience first and describe the phenomena as freely of prior conceptualizations as possible. I believe that the following conceptualization can then be clearer.

Training First-person Observers

Daniel Dennett in a comment (reported in Brockman, 1995, p. 220) said, 'Francisco Varela is a very smart man who, out of a certain generosity of spirit, thinks he gets his ideas from Buddhism.' Varela commented (Brockman, p. 192), 'Dan is against the idea of experience bearing on science.' And, 'For reasons I still don't understand, he has a panic of bringing experience and the subjective element into the field of explaining consciousness.'

It is well known that Varela practised Buddhist meditation. 'Generosity of spirit' as a description of Varela's intent seems to be off the mark. Practice as opposed to learning about something goes again to the distinction between knowing how and knowing what, or the distinction between territory and map. Meditation can be a paradigm for a training programme for developing skills in investigating phenomena by stripping away prior conceptualization. Classic meditation practices require considerable time and learning to become effective. Stephen Wolinsky (1993; 1996) has developed beginner's processes to assist the learning of self-exploration. I present here two simple first-person experiments as illustrations.

The two experiments I suggest here are from workshops given by Stephen Wolinsky. They are simple but require a suspension of habitual ways of experiencing. The first explores changing one's attitude toward what one experiences. The second requires dropping one's conceptualizations and even one's perception, in facing an object.

Take a walk outside wherever you are. Choose something to observe and contemplate. Take in succession three distinct attitudes toward what you look at. These are, to see what you look at as:

1. Something that is beautiful to you.
2. Something that is emotionally and aesthetically neutral to you.
3. Something that is ugly and unpleasant to you.

Observe the changes to your experiences in relation to what you see. Repeat a few times looking at things you normally find ugly or neutral or beautiful.

Now repeat the walk and find an object to look at. Imagine that you have come from a distant planet and have never seen the object before. Drop from your experience any knowledge of what the object is. What do you see? Repeat with a number of normally familiar objects until the act of suspension becomes easier.

These simple experiments can be described in terms of what Depraz, Varela and Vermersch (2000; 2003) have proposed as a model for phenomenological investigations. They propose a three step circular process, and call it the 'gesture (act) of awareness' using the Greek word, 'epoche' (phenomenological reduction), as did Husserl, for the ensemble of three organically linked phases. The three phases are:

- Suspension of habitual thought and judgment.
- Conversion or redirection of attention from 'the exterior' to 'the interior'.
- A letting-go or receptivity towards the experience.

Such a process, I contend, if given the weight it deserves, can begin a corrective to the difficulties of trying to grapple with consciousness only with the tools of third-person approaches.

The problem still is this: How do we train researchers and theorists in the discipline of making accurate first-person observations? As a model I would like to propose that the somatic practices mentioned in Ginsburg (1999) are a good beginning. Many of these include investigation of sensory awareness as a basis. The emphasis is on non-verbal learning.

I would like now to take the Feldenkrais Method as paradigm of the approach I am suggesting. The method has a number of advantages. First the explorations used in the method are non-verbal, directly experiential in so far as this is possible, and deal with sensory modalities not usually attended to in most people's daily life. Second the consequences of practice of the method lead to observable changes in a person's postural stance, coordination, and use of self in action, and also changes in the person's internal feeling states and proprioception. The observable changes can be documented on videotape, photographs, or possibly movement analysis equipment. Changes in feeling states and proprioception need of necessity to be reported verbally, but are available to the person's self-observation. This produces an element of imprecision because in our languages we have only a poor vocabulary to report such effects. Nevertheless people, when asked, do make statements about feeling light, free, easy, without tension, more moveable, etc. which are always statements in contrast to a previous assessment before an experience.

The essentials of an Awareness Through Movement process or lesson are these (Feldenkrais, 1972):

- Different movements are explored in sequence (often in a group setting) under the direction of a trained teacher.

- Sensory abilities are enhanced by reducing effort in carrying out any movement, going slow to increase attentiveness, and verbally directing the attention of participants to sense particular sources of sensation.
- Before and after comparisons are an essential feature as is comparing feelings and sensations on one side of the body with the other side after completing a process where attention is limited to one side.
- Particular movements are explored to find the range of easiness and comfort. New movements are added which open the attention of the participant to elements of the movement not normally attended to or experienced in order to open the possibility of widening the attention in moving one's self, involve other parts of one's self in the movement, and thus bring an altered perception of the self in moving to the action.
- The ability to differentiate and discriminate kinesthetically is encouraged through the above processes.
- The last step involves integrating the changes into action in daily life, and attending to secondary effects which may involve the evoking of emotional states, and feelings, shifts in the sense of self, changes in breathing, etc.

While this process resembles a kind of phenomenological reduction with regard to the experience of moving and being in the world, it adds another element which is that consciousness is turned back to the experience itself in order to effect a shift in that experience. This is the element of awareness, which in this case is a 'listening', or attending to the self while acting and moving. Space does not allow for a complete description of such a process. I therefore suggest to readers they consult particularly Feldenkrais (1990), which provides a number of examples that can be followed by the reader.

Foreground and Background

As a last example of the approach I am suggesting, here is an experiment in shifting attention so that background comes into foreground. A simple example of this procedure is looking at the classic figure-ground reversal drawings where one sees either the outline of two faces (figure), or in making the ground foreground one sees a shape like a vase. In this experiment, also taken from a workshop with Stephen Wolinsky (1996), we explore in a broader context.

Sit and allow yourself to come to ease. Look at an object near you and notice that the object is foreground and whatever else is available is background. This may include the visual scene of the rest of the room, noises that may be at the periphery of your awareness, body sensations, feelings etc. Now make sound the foreground. Notice which sounds you perceive. Shift again and feel the pressure of yourself on the chair. Shift again and notice what catches your attention as a body sensation. Take a few moments for each step.

Once you can shift to different foregrounds notice that whatever is in foreground is a perception. Even if you feel a tickle or pain, it has a location in your body space and therefore is organized into a perception. Now repeat the steps and each time doing the following. Notice again what is in foreground. Then shift and make what

is foreground into background and what is background into foreground. It may take a little practice, but go slow and do not try to force the issue. After a few times it can become easy.

Now do the following: Look at something in the room and notice that it is foreground. Then shift so the foreground becomes background. Notice that you experience yourself as a centre from which you look at the world. Now turn your attention around and notice who if anyone is doing all that. Is there any centre at all?

The very last part of this experiment is indicative of how creating a structure for a first-person experiment becomes a means of revelation. Stephen Wolinsky's directives create a quicker path into the processes that are possible in doing meditation. If you carry out the process in the spirit of suspending habitual thought and judgment, and at the end a letting-go into the experience, the results can be surprising. Most people will notice on turning the attention around in this way that no one is there. There is no Cartesian theatre. In this, Dennett's analytical insight is accurate. Another way of putting it is that the observer and observed arrive in consciousness at the same frame, or that actor and act arise together in the intention and execution of an act. The self as phenomenon or more precisely the sense of self has no metaphysical weight as a thing.

The Uses of First-person Experience

The call to first-person experience has a long history in the activity we call doing philosophy. Descartes, for example, suggests that the reader of his *Meditations* follow his path of doubt to reach the same certainty of the *cogito* that he himself did. Descartes' student, Spinoza, comes out of his own investigation to a different point (Damasio, 2003). Husserl (1977) in his *Cartesian Meditations* comes to still another point although closer to Spinoza. Damasio finds a kindred spirit in Spinoza and finds parallels between Spinoza's ideas and his own neurobiological investigations into the foundations of human life with emphasis on discovering the neurological basis of feelings and emotions. As with many scientists — and I can also cite in addition to Damasio, Darwin, Helmholtz, James, Sherrington, Bernstein, Penfield, Sperry, Pribram, Sacks, Edelman, Berthoz, Ramachandran and Cole among many others — first-person experience provides a ground for scientific second and third-person investigation in the laboratory and field.

In *On Becoming Aware* (Depraz et al., op. cit.)(see also Petitot et al., 1999) all the issues on the use of and possible conclusions from the study of first-person phenomenal experience and the use of the phenomenological stance are discussed extensively and in detail. The intent is not to take a phenomenological stance as sacrosanct but to find, through an interdisciplinary methodology of fertile interaction, how the concepts formed in each approach can be constrained and potentiated through mutual circulation of questions and concepts. I refer the reader to Thompson, Noë, and Pessoa (1999), Varela (2001), Noë, (2002) for detailed examples.

I would like to point out that most disagreements with regards to conceptual formulations in psychology, neuroscience, cognitive science, consciousness studies, and related fields, cannot be resolved by recourse to scientific experiment alone. An overview of the last hundred years of psychology, for example, shows that the shifts in conceptual positions are not the result of new experiments, but out of perceptual shifts and new insights on the part of key figures in the field. The experimental data remains, and is reinterpreted by the new ideology or position adopted by the majority of workers in the field. New experiments are designed, new observations are made and the history continues. There may be growth overall. Certainly the cognitive revolution in psychology took the field into whole new areas of exploration. It also resulted in another kind of narrowing of focus on the part of researchers.

The questions raised by the two sides in the debate over first-person experience are both methodological and ideological. But these two issues intertwine. Behaviourism, for example, dominated the methodology in psychology for fifty years. As Vermersch (2003; see also Schwitzgebel, 2004) points out, the arguments made against the previous movements in psychology do not stand up in examining the actual work and experiments that were done. The arguments for behaviourism were also ideological, and involved projections of future success that were not in the end warranted. There are, I believe, higher stakes in the choices to be made. I suggest now that recourse to phenomenology as an embodied practice is essential in making our conceptualizations concrete and viable. I cite the following papers and monographs as exemplary of how this approach can clarify and lead to insight.

Nicholai Bernstein (1996), the great Russian physiologist and psychologist, reformer of neuroscience, and researcher into biomechanics, who is only recently receiving the credit he is due, wrote at the end of the Second World War a popular synopsis of his ideas and research into human movement and dexterity. Bernstein is very clear that dexterity in performance of an action is a complex activity involving a high level of intelligence. He defines it as the ability to find a motor solution for any external situation *correctly, quickly, rationally and resourcefully*. By rationally, he means 'expediently and economically'. Such a view depended on his understanding the experience of moving and learning as well as what he discovered in the laboratory. Thinking in his view was not limited to what could be said but by what was demonstrated in action.

Cognitive psychologist Guy Claxton (2001), in a long essay on learning, broadens the context of his discussion far beyond schooling experience from both an informal experiential perspective and with many references to the research literature in education and cognitive psychology. As an example of his approach, he cites his own experience (p. 62) in learning and thinking in acting and moving (walking on stones on a beach) as an example of learning by immersion. He then substantiates his insights through citations of recent cognitive research literature that connect with his experience — personally he becomes more dexterous in his action of walking.

Maxine Sheets-Johnstone beautifully describes dance improvisation in the final chapter of her book, *The Primacy of Movement*, exactly as a paradigm of an embodied practice. She calls it thinking in movement. She writes, ‘A common kinetic thematic suffuses improvisational dance, human developmental life, and the lives of animate forms. In each case, a non-separation of thinking and doing is evident; so also is a non-separation of sensing and moving. In each case qualities and presences are absorbed by a mindful body...’ And, ‘a dynamically changing spatio-temporal world emerges’ (Sheets-Johnstone, 1999, p. 516).

From this stance she points to a conditioned bias against the consideration of ourselves as animate, alive beings, and shows how this leads to intellectual confusion, faulty thinking and the tendency to argue ad hoc, using intellectual fantasies in place of empirically and experientially substantiated observations. Particularly, she critiques such ideas as machines that are conscious, or brains that can live in a vat (see chapter 10, ‘Why a mind is not a brain and a brain is not a body’).

Gallagher (2001) from a phenomenological position critiques the notion that children develop a theory of mind in order to know other minds. Here he writes, ‘If, in contrast, we think of communicative interaction as being accomplished in the very action of communication, in the speech, gesture and interaction itself, then the idea that the understanding of another-person involves an attempt to theorize about an unseen belief, or to mind read, is problematic’ (p. 93). Gallese *et al.* (2004) note that ‘One of the most striking features of the experience of others is its intuitive nature’. These authors go on to provide ‘a neurophysiological account the experiential dimension of both action and emotion understanding’.

Finally recent papers by Thomas Metzinger and Vittorio Gallese, (Gallese and Metzinger, 2003, Metzinger and Gallese, 2003), based on the neurological investigations of what are called mirror neurons carried out by Rizzolatti, Gallese, and their colleagues (see the previous papers for references to the relevant research literature) show corroboration of many of the insights of phenomenology. Especially it is now more clear that a perception of an intentional object, intention to act, the sense of self agency, movement direction and coordination are specifically integrated in the nervous system, both in terms of action itself and the corresponding recognition of another animate being carrying out the same action.

A Summing Up

The few examples of what I call first-person experiments are a suggestion of possibilities. But with the above examples I would contend that the interplay of first- and third-person accounts are moving neurophysiology and the cognitive sciences to a fruitful interplay along the lines of Varela’s vision. He himself developed a way to explore the neurological correlates of present time consciousness (Varela, 2000) with beginning data that show succinct time frames for conscious recognition and related action. From a biological point of view the structure of normal conscious experience relates to the need of an organism for

perceptual stability and internal coherence for active functioning for survival in the world. As illustrated by James Turrell's Ganzfeld environments described above, shifts to previously un-experienced environments can change conscious experience and immediately affect stable functioning. The slowing or stopping of movement again changes the conscious states we normally have and allows for observing the constant shifts of thought, sensation, etc., or expands the ability to observe characteristics of basic experiencing as in the examples from Stephen Wolinsky. The seemingness of phenomenal experience needs both elucidation and respect as a significant indication as to the workings of our biological system and nervous system. Without this grounding we end up theorizing in a vacuum and miss important possibilities for investigation. We imagine a functionalism, which is a disconnected abstract distillation of what is in fact the consequences of a living process. We have only a few clues as to how stability is generated and how it stems from an animate living system. We know even less as to how coherence comes about, and often do not recognize it as an important factor in all forms of organic functioning. I think we have only begun to find out what we want to know about our selves.

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Paper submitted January 2003, revised November 2004