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Quantitative Somatic Phenomenology

Toward an Epistemology of Subjective Experience

Abstract: *Quantitative somatic phenomenology, a technique based in part on little-articulated practices in the field of somatics, is offered as an embodied phenomenological method of defining, operationalizing and controlling for state of consciousness in terms of the size, shape, location and dynamic movement of specific qualitative phenomena relative to the body. This approach offers a possible beginning point for the needed task of controlling for state of consciousness as a variable in each and every method of inquiry, including standard science. It also may assist methods such as neurophenomenology by offering the prospect of a more accurate and pragmatic standardized praxis. Potential approaches to scientific validation are explored.*

Keywords: first-person methodology; neurophenomenology; phenomenal consciousness; state-specific science; gesture of phenomenological reduction; quantitative somatic phenomenology; somatic quanta; somatically located ego; intersubjective; felt sense observation; embodied science.

A practical, rigorous and effective first-person methodology would be an incalculable boon to psychology in general, and consciousness studies in particular. In order to seek this grail, however, it seems necessary to imagine that replicable inquiry might be pursued beyond the battlements of rational-empirical science. The latter discipline is dedicated to rooting out and exterminating all artifacts of first-person experience, and if we are to be bound to its confines for the study of

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human experience we might as well take the Spanish Inquisition as a methodology for examining mediaeval Iberian Jewry. On the other hand, if the effective study of the subject's experience leads beyond traditional science, it is necessary to be certain that the outcome is a genuine expansion of rigorous inquiry, and not merely self-deluded straying from the one true path.

One road toward the development of a rigorous scientific method for the study of subjective experience may arise from the extension and confluence of two areas of study: Francisco Varela's (1996) neurophenomenology (NP) and somatics (e.g., Johnson & Grand, 1998). Together as a somatic phenomenology these may open the way toward a quantitative method of inquiry within what rational-empirical science defines as subjectivity. Quantitative somatic phenomenology (QSP) may help to provide a more solid epistemology for a broad range of experiential research, including not just phenomenology and somatics, but also humanistic and transpersonal psychologies, art- and movement-based therapies, women's studies and eco-feminism, holistic health and alternative medicine, focusing (Gendlin, 1981), state-specific sciences (Tart, 1972; 2000), and emotional intelligence (Goleman, 1995; Salovey & Mayer, 1990), among others.

Phenomenological Reduction May Be Key to a New State-Specific Science

While there are sophisticated empirical methodologies for examining the structure of the physical world, current understandings of experience are often based on uncritical commonsense intuitions (Shear, 1996; Shear & Jevning, 1999). Indeed, empirical science requires methodologies precisely because human experience remains enigmatic and seemingly untrustworthy. Yet no matter how sophisticated they may be, empirical methods cannot be extricated from the experiences of the human researchers who apply them: ultimately there is no scientific observation without an observer. Empirical methods have proven to be poor tools for examining experience, and the resulting lack of understanding about this most intimate of human capacities thus remains as a potential threat to the integrity of scientific inquiry. No matter how sophisticated the methodologies of rational-empirical science become, they remain inherently vulnerable so long as the study and understanding of the human experience upon which they rest remains primitive.

How then to study human experience? Edmund Husserl (1981) acclaimed pure phenomenology as 'A new fundamental science'

(p. 9), 'the science of consciousness as it is in itself' (p. 12). He posited that conventional sciences and phenomenology represented 'two fundamentally different types of experience' which 'are nevertheless connected in a remarkable way: by a change in attitude, we can pass from the one to the other.' Husserl referred to the kind of experience used in objective science as the *natural attitude*. This stance focuses primarily on those things that appear to be objects in the world. Used this way, consciousness is a barely-noticed *in here* (subjective reality) that is directed at an *out there* (objective reality) deserving of the most careful attention and description. The focus is on the purported objects of consciousness, rather than on the conscious experience that gives rise to this perception of *out there* objects. Phenomenology, by contrast, accepts experience as an 'unresting flow of never recurring phenomena' (p. 15), setting aside (or bracketing) any assumption that these phenomena of experience refer to some actual objects in an *out there* world. Every experience, whether it be classified as waking, dreaming, imagining, or remembering, is taken just as it presents itself to the mind. The focus is on the flow of experience *qua* experience, not experience as an incidental medium that offers perceptions of what really matters: the objects and events that populate the world. The shift from the natural attitude to what Husserl imagined as the pure attitude of phenomenology was termed *phenomenological reduction*. This movement does not itself constitute his radically new science but it does provide a very different and possibly more fruitful standpoint from which to examine human experience. The phenomenological reduction is thus a platform from which Husserl suggests that one might conduct a science of consciousness. One could hope that the end fruits of such an inquiry might include a clarified epistemic foundation for rational-empirical science as well.

While much discourse concerning phenomenology remains largely theoretical and philosophical in nature, NP takes up the Husserlian mantle in a pragmatic way. NP proposes a phenomenological science to examine the structure of human experience, and then seeks to correlate its findings with those from other fields within cognitive neuroscience (Varela, 1996; Lutz & Thompson, 2003). This article will focus primarily on the former aspects of the NP agenda, namely the phenomenological study of consciousness, and only secondarily on the validity of the comparison of these data with results of other cognitive neuroscience research.

NP holds that reductionistic arguments about the nature of consciousness are pointless. Although theories can be offered for explaining consciousness in terms of something else (Chalmers, 1995;

1996; 1997), the entire operation of studying consciousness and offering reductive explanations for it, occurs within the frame of consciousness (Clarke, 1995; Harman, 1994; MacLennan, 1996; Searle, 1995). Such explanations have about as much credibility as an astronaut who attempts to explain away the spaceship in which she is traveling.

To digress briefly, there is in fact no reason to believe the functioning of systems that operate with consciousness could be wholly replicated by systems that operate without consciousness (Baars, 2003; Botterell, 2001; Cisek, 1999; Cotterill, 2001; Cottrell, 1999; DeLancey, 1996; Ginsburg, 1999; Hodgson, 1996; Núñez, 1999; Sheets-Johnstone, 1999; cf. Bilodeau, 1996). It makes as much sense to imagine an ecosystem populated by plants, animals, and humans that all move and interact as if they are alive, but in fact are not alive (cf. Churchland, 1996), or gold that looks, feels, and responds chemically in a manner indistinguishable from gold, yet is not gold. In such an exercise the meaningfulness of the word in question is negated *a priori*, and it becomes logically impossible to determine whether or not its referent (phenomenal consciousness, aliveness, real gold) actually exists. Hence, imagining zombies that 'engage in complex behaviours very similar to ours, including speech, but' in whom 'these behaviours are not accompanied by conscious experience of any sort' (Moody, 1994, p. 196) is about as fruitful as imagining that a deity is able to create a rock so heavy that he/she cannot lift it.

Crucially, NP recognizes that the Husserlian gesture of phenomenological reduction (GPhR) entails nothing less than a shift in state of consciousness by the researcher. At its core, phenomenology is not just philosophy, but praxis (Behnke, 2006; Depraz, 1999; Ginsburg, 2005; Varela *et al.*, 1991; Vermersch, 1999). Yet it is not enough to simply move from ordinary consciousness to phenomenological consciousness (PhC) — the state must be cultivated and stabilized so that the researcher can continue to access it in a reliable way throughout the research process (Varela, 1996). NP seeks to put into practice Husserl's vision of phenomenology as a veritable science, an alternate method to rational-empirical inquiry.

There is much parallel between this facet of NP and Charles Tart's (1972; 2000) proposal for the development of state-specific sciences, pursued by communities of inquiry working with findings discovered within a specific state of consciousness (cf. Wilber, 1997). Researchers would follow the essence of scientific method, appropriately adapted to the state in question, and findings would be replicable through the work of thoroughly trained observers. Theories would be developed and observable consequences predicted. Failure to find

predicted consequences would invalidate a theory. Reviewing NP suggests that it is potentially capable of fulfilling the criteria offered by Tart to function as a state-specific science. Thus, it might break ground not only as a new field, but also as a new *kind* of field.

In the shifted state of PhC, the world and its objects reveal themselves differently, unexpectedly: a characteristic of the state is that it moves both inner experience and outer objects into a common field of phenomena, where both can be noticed in a more unified perspective (cf. Depraz, 1999). As it were, the observing self steps back from the phenomena of subjective experience and includes these in its view of events (cf. Evans, 1970); at the same time, the observation of events and objects of the world collapse into the experience of patterns that appear within consciousness, experiences that are no longer objective in character: phenomenology becomes the systematic study of the textures and patterns that appear within the totality of conscious experience. Empirical science studies the objects that experience seems to reveal in the *out there* world, and takes these objects as quite distinct from the *in here* events of subjective emotion, feeling, etc. Phenomenology, by contrast, unifies both these categories of experience in the field of phenomena that occur within conscious experience.

While such a landscape may seem unfamiliar, regular features of experience can nonetheless be recognized and described (Lutz & Thompson, 2003; Pickering, 1999; Varela, 1996). By this means, NP offers itself as a method for cogently analysing the structure of experience in much the same way that standard science examines the natural world (Depraz, 1999; cf. Shear, 1996). Upon close examination no two objects or events are identical in every detail, yet this does not prevent the construction of scientific and linguistic categories that depend on the human capacity to notice similarities. NP suggests that this can be applied with similar benefit to the phenomena of experience itself, as noticed from the state of PhC.

Shortcomings of Neurophenomenology

Despite its important contributions, NP falls short in two key areas. First, its articulation of the GPhR remains conceptual and philosophical in nature rather than practical and precise. That is to say, the particular change in state of consciousness to PhC has not been operationalized in a clear and somehow measurable way. Second, NP fails to develop a framework within which to meaningfully apply both the findings of phenomenology and neuroscience. If these are to be compared within a common frame of reference, then either

phenomenological findings must be translated into terms that are empirically meaningful, empirical findings must be offered in phenomenologically relevant forms, or both must be explained from within some other standpoint. Without such a preliminary step, one might as well attempt a critical comparison of Tarot and tomography.

To return to the first of these issues, here is a summary description of the movement from the natural attitude into PhC (Depraz *et al*., 2003, pp. 42–3):

> We can therefore characterize the complete process of becoming aware, epoche, by four correlative movements:
>
> 1. The base: pre-given, passive, hyletic and kinesthetic intentional emergence in its immanent and incarnated corporeality, which impels intentionality toward its object and orients it to the perception of the world.
>
> 2. Reflective fold: conversion of reflection: becoming aware.
>
> 3. Letting-go fold: acceptance or letting-go on the basis of an originary affective hyletic dimension.
>
> 4. Discursive explication on the basis of the ante-predicative experiential situation.
>
> The two folding-movements (2 and 3) face each other, are tied to each other in the non-oppositional unity of recto and verso, and form the very dynamic of the process of *epoche.*

This is an effort to develop a critical formal description, but it is somewhat abstract and obscure to function as an operationalized definition that provides practical access to a standardized state of consciousness.

Comparison of the GPhR with the Buddhist practice of mindfulness (Varela *et al*., 1991), while more pragmatic, is of little help toward a definition that is adequately critical. Mindfulness practice has proven beneficial in many settings (Baer, 2003; Carson *et al*., 2004; Grossman *et al*., 2004; Shapiro *et al*., 2005; Solloway, 2000; Siegel, 2005). However, this fact does not raise it to the level of a process suitable for scientific inquiry. Mindfulness practices typically offers steps to follow in order to enter the state of mindfulness, and evocative descriptions of what it is like to be in such a state (e.g., Kabat-Zinn, 1990), but there is little that would allow for the sort of precision needed to support a rigorous research application of the PhC state. Here is an example (Depraz *et al*., 2003, p. 33):

> Once you've settled into the basic posture, you explicitly decide to 'merely' follow what is going on without engaging in it. Since you have to keep breathing, your breath becomes a guideline or a track for your attention. Although this doesn't mean all other sensations, thoughts,

> and emotions stop, you should consider them from afar, as an abstract observer would, like clouds in the background; the foreground is the breath as you follow it into the lungs and out the nostrils. This is in a nutshell just the sort of presence you're trying to cultivate: you're mindful of what's happening in the present. (As all kinds of experience appear within this attentive space, you explicitly avoid engaging in their contents, but rather pay attention to their arising, their emergence into full form, and then their subsiding into the background.)

Such instructions for mindfulness practice can indeed serve as a protocol for entering PhC. However, if this state is to serve as the basis for a whole new method of scientific inquiry, this is hardly enough (cf. Varela, 1997). Both the target state, and the process of shifting into that state, must be somehow measurable, so that a researcher is able to enter PhC in a consistent and predictable manner, and to monitor stable maintenance of that state. Otherwise it will remain difficult to evaluate whether the use of the GPhR by various phenomenological researchers will achieve the same or different transformations of mind, or even whether the same researcher remains in a constant state.

A more recent attempt to develop an operationalized definition of mindfulness, quite apart from the NP community, proposes a definition with two components (Bishop *et al*., 2005, p. 232):

> The first component involves the self-regulation of attention so that it is maintained on immediate experience, thereby allowing for increased recognition of mental events in the present moment. The second component involves adopting a particular orientation toward one's experiences in the present moment, an orientation that is characterized by curiosity, openness, and acceptance.

This description explicitly mentions the regulation of one's attention, yet in practical fact it simply refers to the repeated switching of attention away from thoughts or other events, and back to the breath. Again, this definition may be helpful for use by clinicians and practitioners, but is scarcely specific enough to serve as foundation for a method of inquiry.

This lack of ability to control for consistency in state of consciousness undermines the validity of NP as a research method by robbing it of epistemic stability. The contribution of this approach is to provide insight from a very specific non-standard state of consciousness. However, if that state cannot be reliably identified or controlled for, then the results of such a method can hardly be defended. Without an unambiguous protocol for the GPhR articulated in pragmatic terms, and a precise definition of PhC, it seems unlikely that the promise of NP can reach fruition.

The Promise of Somatics

One approach to remediate this practical lacuna in NP is through a novel application of somatics, the study of body-located experience. The field of somatics reaches back more than 100 years to the Gymnastik movement of Europe and the Eastern United States (Johnson, 1994). It developed through the work of pioneers such as F. M. Alexander, M. Feldenkreis, and I. Rolf, emphasizing body awareness, sensory education, and conscious kinaesthetic movement. In line with William James (1890), it approaches the mind 'from within' (Hanna, 2003). With this focus on the body as a consciously-inhabited, sensory-rich vehicle rather as an object in the world (Alexander, 1920; Johnson, 1998), the language of somatics seems uniquely equipped to offer the kind of protocol required for a precise shift of the embodied mind, as opposed to either a theoretical alteration of conceptual perspective, or an exercise directed toward some hard-to-explain outcome. At the same time, somatics works with felt bodily experience, thus likely avoiding the extreme of a training that is too rigorous or obscure to allow broad participation (cf. Petranker, 2003).

Yet for all its clinical anecdotes and narrative accounts of the complex tapestries of sensate experience, somatics is poorly supported by articulated theory and philosophy. For example, even though it examines in detail phenomena such as body-located experience in felt somatic space, it does little to explore the philosophical significance of such features. Somatics is on intimate terms with the tangible substance of experience, yet falls short on developing the epistemology and theoretical framework needed to support a firm science of the so-called subjective. The deficiencies of somatics are thus somewhat the converse of those of NP. As a step forward, this study proposes further development of incipient somatic concepts in order to fill the gap in NP.

Quantitative Somatic Phenomenology in the Felt Space of the Body

It is the nature of a mental state that it can appear in consciousness (Nagel, 1974), that every element in consciousness has its own distinctive feel (James, 1892), and that every sensation has bodily location (Humphrey, 2000). It follows logically that if sensations have bodily location, then they also have a potentially identifiable size and shape (Velmans, 1995). If a sensation occupies the entire body, it is identical with the body in size and shape; if it occupies less than the

whole body, then its dimensions can be determined through a process of discrimination between where it is and is not present. Theoretically, then, any mental state should be capable of description not only as 'something it is like' to be in that state (Nagel, 1974), but also, if properly attended to, 'what it is like' should be capable of description as a sensation or set of sensations that, as a phenomenological experience, have size, shape, and location, relative to the body (de Quincey, 1994; cf. Bolender, 2001; Perlis, 1997): quantitative somatic phenomenology (QSP) in the felt space of the body.[1]

This is not a radical idea; in fact, it is quite familiar. If I say, 'a chill went down my spine,' I am describing a kinesthetic experience in terms of a felt quality that has location and direction within the felt space of my body — an experience that the reader will likely find familiar. What is radical is the notion that this process might produce meaningful, pragmatic, reproducible data.

Of course, QSP is quantitative in a phenomenological sense, not a rational-empirical sense. That is to say, rational-empirical science seeks to describe and measure the objects and events of the *out there* world in terms such as physical dimension, structural shape, frequency and duration, and relative position. QSP proposes to describe a wider range of the phenomena of conscious experience in terms of similar parameters: physical dimension, structural shape, duration, position and direction of movement relative to the physical body, in addition to qualitative 'feel'. It is crucial to note that while phenomenology brackets the notion of objects as they would be defined by a rational-empirical approach, it actively identifies events and processes in much the same way that rational-empirical science does. If this were not so, proponents of NP could not suggest the possibility of identifying regular features from the phenomenological perspective (Varela, 1996). What phenomenology brackets, or sets aside, is the assumption that these regular features have some independent, objective character in an *out there* world.

When I was young I would watch clouds with a friend as they sailed overhead, pointing out the 'objects' I saw. 'Oh look, there is an elephant's head and its trunk,' or, 'I see a clown with a big round nose over there.' This identification of 'objects' was done with conscious awareness that the observer is projecting imagined structure onto perceptions of a large and complex cloud formation: the 'object' is a construct. From the stance of phenomenology, the 'objects' measured and

[1] There have been earlier efforts to quantify aspects of kinaesthetic sensation; see Ronco (1963).

studied in rational-empirical methodologies are constructs projected onto the fabric of sensory experiences every bit as much as are clowns and elephants in the clouds.

The stance of QSP is that, from the precisely defined and carefully regulated state-specific standpoint of phenomenology, not only the processes ascribed to the *out there* world by rational-empirical science, but also those assigned to the *in here* realm, can be described in terms of meaningful structure: size, shape, location and vector of movement relative to the body-as-experienced. It is in this way that QSP is 'quantitative', for there is an evaluation of dimensional structures within the phenomenological field of experience. This parallels and complements, but does not equate with, the quantitative rational-empirical study of independently-existing objects and their interactions in *out there* time and space.

Empirical Data, Phenomenological Data, and the Hippoplatymus Effect

This raises question of how and whether data gathered from a phenomenological standpoint can be related to the more pervasive empirical viewpoint of western culture. As noted above, NP suggests that the findings of phenomenological analysis should be compared with those of other approaches to cognitive neuroscience in such a way that the methods offer mutual constraints on each other: models must be required to satisfy phenomenological as well as empirical results. Yet this assertion does not suggest why or how it is that phenomenological findings should be comparable with empirical findings in this way. If I want to subtract $^{1}/_{4}$ from $^{1}/_{3}$, I must first translate both into the terms of a common denominator: $^{x}/_{12}$. It is only in this shared language that the two become comparable, and meaningful calculation possible: $^{4}/_{12} - {}^{3}/_{12} = {}^{1}/_{12}$.

An example of the perils of failing to find such a common denominator can be seen in the contemporary phenomenon of 'creation science,' which attempts to reconcile the narratives and poetry of mythic/mystical literature with findings from the rational-empirical methodologies of science. Whatever one's personal beliefs about the origins of life, comparison between such discrepant forms of inquiry is extremely suspect. One might as well prepare a translation of ancient Egyptian hieroglyphs based on a modern Chinese-English dictionary. A similar principle prevails in biology, where closely-related genetics are required if crossbreeding between species is to be fruitful. While it has proven possible to cross species such as lions and

tigers to yield new species (designated 'tigons' or 'ligers' depending on which parent came from which species), this is the exception rather than the rule. It is unlikely, for example, that there will be a 'hippoplatymus' cavorting in the streams of either Australia or Africa anytime soon: a hippopotamus and a platypus are simply too different from each other to be crossbred. What then is the basis for comparing empirical and phenomenological findings? Can such an effort achieve more than a hippoplatymus effect? What sort of common denominator might locate both of these forms of inquiry within a common frame of reference, so as to permit the construction of a model of how empirical and phenomenological methods may be related?

Rational-empirical science tends to assume that all valid knowledge must be denominated in the language and terms that it has developed. Phenomenology, however, cannot be satisfactorily defined within the language and terms of rational-empirical inquiry. Rational-empirical methodology works to eliminate any data that are considered subjective, except in cases where subjective experience is itself the object of inquiry. Even in the latter case it is only *reports* of subjective experience that are permissibly studied, and not experience itself. Within such constraints, phenomenology is denied full reality, and no fruitful comparison is possible. By contrast, rational-empirical science can be described as a valid form of inquiry from the standpoint of phenomenology: those phenomena of experience thought to be stimulated by objects and events outside of the mind of the subject are scrutinized by means of rigorous methodologies, while those phenomena deemed to arise solely from the mind of the subject are assigned the inferior status of subjective reality. The fact rational-empirical science can be described as a particular kind of phenomenology points toward phenomenology as the more suitable territory for locating a common denominator between the two approaches.

What transforms a phenomenological experience into a scientific observation, according to Velmans (2000), is two factors: (1) there is *public access* to the event, and (2) there is a degree of *commonality* in the way the event is experienced by different persons. However, both of these criteria are somewhat problematic as presented. Public access may not mean access by the general public, but only by individuals with specific training. I visited the Mt. Palomar observatory in southern California when I was four years old. All the way from our home in Glendale I could barely contain my excitement at the chance to put my eye to the viewing end of this huge telescope. My young disappointment at being denied access to a spectacular view was not assuaged until years later when I realized that even highly educated

astronomers must often wait years to use such sophisticated instruments. Despite this, the study of astronomy clearly falls within the domain of public access — even though in this case it is primarily professional astronomers who hold that access.

The requirement that there be a degree of commonality in the way an event is experienced by different individuals is valid, but also needs some qualification. As noted above, perception is not merely a passive process that records objects and events as they are, but an active process in which the continuous fabric of experience is broken down into sets of discrete objects and events through the active participation of the observer's mind. When approaching an unfamiliar object, one may first 'see' it as something quite different than how it appears on closer inspection. The mind has made sense of it by configuring it into something familiar as a sort of first approximation. The complex and creative nature of the process of object identification is underscored by the fact that robots driven by sophisticated artificial intelligence programs still have not mastered this task (Graf, 2006). Since object identification is the product of an active, creative and participatory engagement of the mind (Hartelius, 2006), there is necessarily a social and cultural component to this process. Therefore a degree of commonality in the way an object or event is perceived often requires dialogue and discussion over time — precisely the function of journals such as this. This fact serves to underscore the importance of Varela's (1996) emphasis on the need for a community of researchers to establish innovative disciplines such as neurophenomenology (NP).

QSP proposes to describe the standpoints of rational-empirical science and phenomenology in a manner that both places them within a common frame of reference and meets Velmans' criteria for scientific observation. However, it will attempt to do this beyond the traditional boundaries set by rational-empirical science. As a first step in this process, QSP will be employed to describe NP's 'gesture of awareness' (Depraz *et al*., 2000), or GPhR. It has been noted that enactment of the phenomenological reduction involves a change in mental state (Depraz, 1999; Varela, 1996). *If this transformation from 'normal' consciousness to the state used in phenomenological inquiry can be described and operationalized not only in terms of abstract concepts and qualia, but also in terms of somatic quanta within felt space, it would (1) help situate rational-empirical and phenomenological standpoints relative to each other, (2) demonstrate the usefulness of QSP in analysing mental events, and (3) offer approaches such as NP and somatics the prospect of a standardized epistemic frame, and*

hence a stable methodology, based on measurable criteria for a standardized praxis. This is not to suggest that quantitative analysis should replace qualitative inquiry; rather, a quantitative aspect to somatic research may simply help to contextualize, organize, and clarify the nature of phenomenological events. Since it occurs in felt space rather than visual space, such an analysis would differ somewhat from quantitative analysis as it is carried out in the physical sciences. It might nevertheless prove similarly fruitful.

The argument that mental events do not have intrinsic location because any such location is 'parasitic on a prior location of physical objects' (McGinn, 1995, p. 222) is unconvincing. The location of a physical object is derived from, and can only be described in terms of, its relationship to other physical objects. That object, in turn, remains part of the context against which other objects find their location. Location of physical objects is therefore never absolute, never more than a statement of relationship to other physical objects. There can be no substantive objection to a similar method for locating mental phenomena. Any further confusion about the location of experience can be minimized by a clear definition of what is meant by 'experience'. It is only possible to suggest uncertainty about the location of a pain in one's hand (is it in the hand, or in the brain?) if 'experience' can be construed either phenomenologically or neurologically. In strict phenomenological terms, the pain is unambiguously 'in one's hand'.

Locating phenomenological events relative to physical space does raise the issue of what difference and/or relationship there may be between felt space and visually-observed space: are the dimensions of the sensate experience of space 'real' in the same sense that the visually observed dimensions of a room are real, or are they simply coordinates on a virtual map in the brain? This issue will be left aside at present (but see Alexander, 1920; Clarke, 1995; Geller, 2002; Heron, 1996; James, 1890; Little, 2002; MacLennan, 1996; Smythies, 2003; van Manen, 1990; Wagner, 1996). From the perspective of phenomenology this question is less pressing, for the 'real' dimensions of a room are psychological abstracts, secondary concepts deduced from the primary phenomena of experience. From a more conventional perspective, it nevertheless remains important to ask whether phenomenological description of mental states is useful. The crucial matter will be whether or not perceived patterns in the phenomenological structure of mental phenomena show enough regularity, and correspond sufficiently with experience, to be of value.

The Gesture of Phenomenological Reduction as Described by Quantitative Somatic Phenomenology

In the terms of body-located quantitative phenomenology, the GPhR for a typical westerner consists of a movement of the attention, or self-sensation, from a location in the head to a location in the belly. This model has certain parallels. For example, transpersonal theorist Michael Washburn's (1995) model of post-conventional development offers a developmental frame for the head-located state of consciousness. Washburn identifies the self-aware ego of adolescence through middle adulthood as the 'mental ego'. This ego conceives of itself as 'a purely psychomental and therefore incorporeal subject' (p. 97), dissociated from the sensate life of the body: 'To be sure, the body of the mental-egoic period is not a completely insensate appendage; it continues to be a source of physical sensations' (p. 216). However, these sensations are muted and the ego experiences them as if from a distance: 'they are sensations *of the body* rather than of the mental ego itself' (p. 216), and the ego defends itself from undesirable feeling experiences. This mental ego stage contrasts with earlier and later stages in which the ego owns the body's sensate capacities in a more immediate, transparent and nonconceptual way (cf. Northoff, 2003; Poellner, 2003). The mental egoic stage represents an interim repression of these capacities.

The qualities of Washburn's mental egoic stage correspond with those of scientific observation: a repression of sensate capacities in favour of other mental activity, and sufficient distance from bodily awareness that the ego imagines itself as an incorporeal subject, a Cartesian ego. At a later stage of post-conventional development this repression can lift, and the ego's abilities to experience sensate life is awakened and transformed. This ushers in a stage of development much more suitable to the study of inner feeling experiences. Only when the ego is no longer dissociated from and defended against much of feeling experience does it become possible to entertain using felt data in a systematic way.

Washburn correlates each stage with a specific somatic location of the ego — suggesting the rather radical notion that it may be possible to map not only phenomenological experiences, but also psychological entities, relative to the body. In the present paper ego is understood in terms of a cluster of related concepts: the organizing center of consciousness, the seat of reflexive self-awareness and deliberative will (Washburn, 1995; cf. Deikman, 1996), the central agency of bodily movement (cf. Haggard & Johnson, 2003; Meijsing, 2000) and

intentional activity (Goodwin, 1999; Lethin, 2002), the continuity of attention upon which a sense of self is constructed (Arvidson, 2000). Somatically it is also the origin point of attention: where attention comes from (Washburn, 1995; Goodwin, 1992), and where experience occurs (Jason Wright, 2005, personal communication). It is more usual to speak of where attention is directed and to what it is paid, rather than where it comes from (cf. Evans, 1970). This origin point has the quality of a bodily-located sensation (Whitehouse, 1987), the sensation of awareness itself (Rosenberg, 1996), so constant and familiar as to go all but unnoticed. As a body sensation it also, necessarily, has size and shape, in addition to quality. The body location of this sensation is the location of attention: the somatically located ego.

During the mental egoic stage the ego is located in the head: behind the eyes and between the ears (Washburn, 1995). Similarly, Strawson (1999) suggests that 'ordinary experience imagines the I or self to be … "Two or three inches behind the eyes, and maybe up a bit"' (p. 102). The phenomenological experience of this mental self-sensation may be the basis for the concept of a homunculus, the experience that there is something like a small person in one's head who is the recipient of information from the senses (Strawson, 1997). As the repression of sensate life lifts and the ego gains access to the entire body, it becomes centred lower in the body, near the pelvic area (Washburn, 1995). These two modes of experience are more than stages of consciousness in a long developmental process: they are also somatically defined *states* of consciousness that can be correlated with a shift in the somatically-experienced location of ego.

These two states can be situated philosophically as well as somatically. The distinction between them parallels Husserl's (1913/1962) differentiation between *Körper*, or body as the purely physical object which standard science observers, and *Leib*, the 'lived body' of experience engaged by somatics (Welton, 1999). In the lived body experience appears to be more proximate, not because the sensory mechanisms are more transparent, but because sensate experience has been awakened. This creates an immediacy of experience, 'an immersion in an embodied sensibility' (Depraz, 1999).

Defining these two states relative to the body also sets the stage for a somatic GPhR, for both have been mapped onto the same somatic territory in a non-trivial way (cf. Bermúdez, 1997). Simply shifting the somatic location of ego between the head and the belly can effect movement between these two states of consciousness. Bonnie Bainbridge Cohen (1993) refers to a 'place of initiation' (p. 10), a somatic location from which movement is begun. This 'place' is, in fact, the

focal point of the mind, a point that can be directed to any location in the body. Acting instructor Michael Chekhov (1953/2002) likewise speaks of an imaginary centre 'from which flows the actual impulses for all your movements' (p. 7). Chekhov later describes the changes in state of consciousness that occur when this imaginary center is shifted from one location to another:

> … as soon as you try to shift the center to some other place within or outside your body, you will feel that your whole psychological and physical attitude will change…. If, to illustrate the point, you were to move the center from your chest to your head, you would become aware that the thought element has begun to play a characteristic part in your performance. From its place in your head the imaginary center will suddenly or gradually co-ordinate all your movements, influence the entire bodily attitude, motivate your behavior, action and speech, and tune your psychology in such a way that you will quite naturally experience the sensation that the thought element is germane and important to your performance (pp. 80–81).

In the language of QSP, the GPhR consists of moving the somatic ego, this 'imaginary centre', this focal point of the mind, from its customary location in the head to a location in the belly. With this, we 'quite literally, "drop into" our bodies' (Goodwin, 1992, p. 276), and the interior centre of gravity shifts from head to body (Petitmengin-Peugeot, 1999).

Once the attention has been moved to the belly, the state of consciousness changes and sensate experience begins to open. This is the domain of Gendlin's (1980; 1981; 1984; 1991; 1992; 1962/1997; 1999) felt sense. (Consistent with the previous description of the downward movement of attention in the body, Gendlin [1991] refers to momentary accessing of the felt sense as a process of 'dipping'.) The felt sense obtains information not only about inner life, but also regarding the environment (Gendlin, 1999). As such it is not merely an introspective sense gathering idiosyncratic data from private experience, but a sense that gathers a range of data on both sides of the purported subject-object divide. Given that the felt sense operates much more effectively from a non-standard state of consciousness, this suggests that the subject–object divide may be little more than an artifact of the state used by standard rational inquiry. If this is so, then the mind–body problem may be a state-specific problem that will be more tractable from the perspective of PhC.

It is thus possible to identify the somatically located ego both qualitatively and quantitatively: as a self-sensation that has size, shape and location relative to the body. It is also feasible to express two different

states of consciousness, as well as the transformations between them, in terms of the location and dynamic movement of this somatic feature. The way is then open to formulate the GPhR using the language of QSP.

Defining the GPhR in somatic terms accomplishes several things: (1) it offers a simple yet precise method for inducing and maintaining PhC, (2) it serves as an example of how QSP can describe a mental event in terms of phenomenologically observable quantitative properties, and (3) by means of (1) and (2), it provides the basis for a novel form of observation that may be able to gather valid data where standard science cannot. QSP not only describes qualitative features as phenomenological presences that have size, shape, and location relative to the body, it also postulates that the information so derived is more than introspective: it reflects events in felt space, events that may be somehow 'public' to others who share the same state of consciousness. QSP acknowledges a process that might be called *felt sense observation*, in which state-specific kinesthetic experiences are utilized not only as a source of data about the researcher's embodied mind, but also as a method for gathering data from the environment: data that are typically considered beyond the reach of standard scientific observation. For example, felt sense observation can be used to detect psychoemotional events occurring in another person, perhaps by means of the reflections which those events create within the mind of the researcher. While this topic is beyond the scope of the present study, it is noteworthy that similar phenomena have been noted in clinical settings and variously named as empathy (feeling with) (Deutsch & Madle, 1975), empathic response (Emiliani & Molinari, 1985), empathic resonance (Bernardez, 1994), empathic mirroring (Chodrow, 1999), deep empathy (Hart, 2000), sympathetic resonance (Anderson, 1998), embodied attunement, somatic resonance (Holifield, 1998), somatic attunement, and somatic tracking (Rand, 2002). If these perceptions can be clearly described in both quantitative and qualitative terms, and then replicated by other trained researchers, such an approach may enable the relatively precise description of events and processes that might remain intangible to more standard modes of inquiry.

There is admittedly some circularity here: a shift in conscious state is required in order to gain full access to the sensate perceptions by which such a shift becomes clearly perceptible. However, this seems no more circular than the fact that a scientific education, with its attendant induction into a particular way of using the mind, is required prior to participation in a scientific endeavour. In fact, this creation of

a relatively stable epistemic frame is perhaps the great stroke of genius in science. If we can adapt this same approach in the creation of other state-specific platforms, we may be able to generalize this particular scientific strategy.

State-Specific Bias in Scientific Observation

If state of consciousness shapes the nature of one's relationship with reality, selectively filtering the deep waters from which our concepts are drawn, then conscious state is a variable in every experience, and an inherent bias in every method — one that must be controlled for in any system of inquiry (cf. Baars, 2003). This has implications for standard science as well. Science is weighted against information gained through feeling. This is not the simple sense of touch, but the basic feeling quality inherent in consciousness (Varela & Depraz, 2005; Heron, 1992), the ability of the conscious body to feel itself and its surroundings (Gendlin, 1999; Zelevansky, 2004), the kinaesthetic-proprioceptive sense of body and location (Gallagher, 2004; 2005; Laszlo, 1966; Vermersch, 1999). For science, any information gained through such a sense is deemed subjective, inherently unreliable, and, like emotion, a hindrance to rational inquiry. Yet if the world of science is based primarily in a state of consciousness that is unsuited to feeling inquiry, then such a stance may tell us more about the nature of that state's particular relationship to reality than about reality itself.

The roots of this bias go deeper than science. Matthew Bronson (2003, personal communication), a linguist, related a conversation he and several colleagues had with a group of Native Americans. A woman from the Blackfoot Nation in Alberta, Amethyst First Rider, gave an example of one of the differences between her culture and European culture. She said, 'If I hear the term, "horseback riding," in English, I see a picture of myself on a horse. But if I hear the Blackfoot word for riding a horse, I feel the horse between my legs.'

The basic metaphors of science are not about feeling, but seeing — reflecting Western ocularcentrism (Ihde, 2002; Levin, 1993; 1989; 1988; Arendt, 1978). In science the most basic function is to 'observe' from a certain objective 'viewpoint'. Scientific data 'show', they 'illustrate', they are 'looked at' and 'reviewed' in the process of contributing to our 'worldview'. The scientific process does not reach its fulfilment until data from various physical and mechanical senses have been translated into the visual symbols of publication.

Science as we know it is a systematic method of inquiry based on the state of consciousness produced by a head-located ego. As a

consequence it is constrained by the limitations of this state, particularly with respect to feeling-based data. Together, mechanisms of repression, dissociation and defense both mute and distort sensate information to the point that no rigorous methodology can be applied to felt experience. Thus, while this state of consciousness serves natural science quite well, it is wholly unsuited for the careful study of data gathered through the feeling senses. If such a discipline were to be pursued, it would need to proceed from a quite different standpoint.

How might such a standpoint be described? The following section will offer a description of the movement from a more standard state of consciousness to phenomenological consciousness (PhC), that is, the gesture of phenomenological reduction (GPhR), in the language of quantitative somatic phenomenology (QSP).

A Gesture in Four Somatic Movements

This discussion has referred to somatic gesture with little focus on what this is. Yet it is precisely in the context of QSP that such a gesture becomes intelligible. A somatic gesture is not a gesture of physiological movement, but rather a kinesthetically experienced change within the felt space of the body (cf. Young, 2001). As soon as these changes are located within felt somatic space, it becomes practical to use quantitative terms to describe them. Expressions such as, 'my heart fell when I heard the news,' are kinesthetic experiences described quantitatively within the felt dimensions of the body, expressed in metaphorical language. Yet the metaphors communicate phenomenological information about not only quality, but also location and dynamics (a sensation located at the heart level suddenly 'drops', or moves downward relative to the body), using precisely the descriptive criteria of QSP.

While colourful somatic expressions are effective in interpersonal communication, QSP attempts to use this same sort of description in a more rigorous way: as a basis for describing the GPhR in a manner that will allow a more precise definition, achievement, monitoring, stabilization and replication of that specific state of consciousness. Should this exercise prove useful, it offers the possibility of using QSP to describe a whole range of psychoemotional processes. The following somatic description of the GPhR has been developed by the author over a period of years, and is based both on personal experience and work with teaching this gesture to numerous clients and colleagues.

Where somatic gestures are concerned, there is no substitute for person-to-person instruction. Nor can mastery be expected without experience and practice. However, the following description will perhaps convey the sense of how a somatic protocol can facilitate the gesture of phenomenological reduction (GPhR) and achieve PhC in a consistent and systematic way.

First movement: From narrative to sensation

Daily experience is often self-narrated in the mind: Oh, now I must do this, Oh, now I have forgotten that. Narrative, often accompanied by mental images, typically holds a central role in conscious experience. The first movement involves a shift to sensation as the central element in experience, with an attendant diminishment of self-talk.

Gently cup your hands a few inches in front of your face, closing your eyes. Slowly, very slowly, move your hands toward your face so that your face will end up cradled in your palms. As your hands approach the skin of your face, try to feel the warmth radiating from your hands before they touch your face. As you hold your face softly in your palms and fingers, notice the sensation in your cheeks. Then gently switch your focus, and notice how your face feels on the skin of your hands. See if you can notice the sensation in your hands and face at the same time. Relax, and slowly allow your hands to slip from your face to a normal position.

Second movement: From dispersion to focus

Attention can sit anywhere, but I most usually find it somewhere in the head; it can be either focused or dispersed to varying degrees. The second movement creates a sensation that draws the attention together in a focused way, dispelling any dispersion.

Take a finger of one hand and gently touch a spot in the centre of your forehead. As you remove your finger, see if you can feel, or imagine that you feel, the place on your forehead where your finger touched. Imagine this spot as a round, warm marble that feels comfortable against your forehead. Allow the marble to be at the centre of your experience. As you breathe, pretend that the air is coming in through your forehead instead of through your nose, and rushing over the marble. As the air passes over it, pretend that the marble starts to glow the way an ember glows when you blow on it.

Third movement: From anticipation to present-time

Attention is often displaced forward, as the narrative in the mind is anticipating what will happen next. The second movement has called the attention into focus in this getting-ahead-of-oneself posture. The third movement now brings the attention back into line with the spine, and in synchrony with present-moment experience. Note that this aligns the phenomenological experience of ego with the midbrain, an area considered by some to be a key neurological correlate of consciousness (Newman, 1997a,b; Petty, 1998; Worden, 1999).

Imagine the marble on your forehead is rolling back and slightly down, right into the center of your head. See if you can feel the marble in the middle of your head. To find the middle of your head, touch the tip of your tongue against the roof of your mouth. Slide the tip backwards until you feel the place where the roof of your mouth becomes soft. Imagine your tongue is a candle, and let the marble hover above it, deep inside your head, where the flame would be. Relax your tongue and let it move back to a comfortable position in your mouth, but hold an awareness of the marble-sized sensation in the center of your head. As you breathe, imagine that the marble glows in response to the movement of air.

Fourth movement: From visual space to felt space

The first three movements are preparatory for the primary movement of attention. The fourth movement shifts the attention from the head to the belly, from the visual space of physical science to the felt space of the body, and of QSP.

Imagine the marble in the centre of your head is becoming heavy. Feel the downward tug of its weight. Now release it, and allow it to float slowly down behind your face ... down the centre of your neck ... and into the centre of your chest. Feel it as it comes to rest about halfway between the front and back of your body. As the marble sinks, allow yourself to ride with it. If there is an awareness of the marble 'down there' in the chest, let go of that watching part and let yourself float down into your chest so that the marble is 'down here'. When you are ready, allow the marble to sink farther, floating softly down behind your stomach and belly button, and into your low belly. See if you can find a place in your low belly where the marble can rest comfortably, at a level of about three inches below your belly button. As you breathe, imagine the air is coming right in through the front of your

belly and flowing over the marble. Imagine that the marble glows brightly in response to each breath.

Quantitative Somatic Phenomenology: Toward a State-Specific Methodology for an Embodied Science of Human Experience

Scientific inquiry is based on sound principles to guide the careful, systematic gathering and analysis of information. QSP can be understood as a methodology designed to support the development of a novel state-specific science, for it adapts the structures of natural science to a method of inquiry based in an alternative state of consciousness (PhC). In this state, the experience of inner sensation is enhanced (Depraz, 1999), and is largely relieved of the sensation-dimming effects produced by the head-located ego posture. When the qualia and quanta of phenomena are studied from this systematically induced state the promise of neurophenomenology (NP) and similar approaches to inquiry may come within reach, and the door may open to an entirely new class of data for systematic analysis from within a consistent, somatically defined epistemic frame. As the somatic description above demonstrates, phenomenological analysis of the somatic topology of the GPhR experience can yield an operationalized protocol with considerably more precise and practical detail than either philosophical analyses or traditional instructions. Here, then, is a method of observation that may be much better suited to the phenomena of mind and consciousness (cf. Gallagher, 1997), one that may yield some of the missing links between standard concepts of mind and body.

In addition, a quantitative analysis of sensate phenomena in the felt space of the body suggests there is a somatic component to the epistemology of both standard science and phenomenology. By identifying the somatically located ego as a variable, describing the way in which it correlates with two differing epistemic frames, and articulating the somatic transformations of consciousness involved in moving from one to the other, it becomes possible to begin to understand and quantify (somatically) the way in which an epistemology of PhC will differ from an epistemology of natural science. This suggests a way forward toward a more solid epistemology, not only for somatics and phenomenology, but also for standard science: an epistemology based on the human body (cf. Gendlin, 1992).

If it is true that standard science pursues systematic inquiry from within a specific state of consciousness that limits its reach, then

anomalies that defy or evade the grasp of science do not force a choice between (a) denying the reality of these anomalous phenomena, or (b) questioning the fundamental validity of science. Rather, there is a potential choice (c): analysis from a differing state-specific platform that creates an equally valid, yet complementary, understanding of the self-same world. Far from introducing an amorphous and uncritical relativism, this approach demands disclosure of the impact of state of consciousness on any and every means of inquiry. Just as the replacement of Euclid's fourth postulate opened the way for Boolean and other non-Euclidean geometries, so recognizing state of consciousness as a variable may open complementary avenues of critical inquiry that can bring clarity in areas where standard science must remain moot due to the limits of its own state-specific capacities.

If QSP is to contribute to such an alternate approach it must build on the somatic GPhR and articulate a rigorous methodology. The analysis of data with felt sense observation must be subject to standards used in science such as reasonableness, coherence, replicability, and the convergence of data from differing methodologies. In addition, as an embodied science, it requires a stance that is not dispassionate and removed, but compassionate, fully present yet properly individuated (cf. Harman, 1994). Where standard science views as if it were not present (cf. Nagel, 1986), an embodied science both observes and analyzes from full and appropriate presence.

Embodied Science and Standard Science as Complementary Approaches

The notion of mind and matter as complementary has been articulated by others (e.g., Atmanspacher & Primas 1996), suggesting that psyche and cosmos can be understood as two sides of the same coin. However, this approach faces the challenge of explaining mental causality. If mental and physical are opposing sides of the same phenomena, then these two aspects exist in parallel and mind cannot have a causative impact on matter, nor matter on mind (Esfeld, 1999; Jonas, 1980). Yet if mind and matter are not two different aspects of reality, but two differing experiences of one reality (Griffin, 1998), then the common experience of inner and outer dimensions may represent a dualism that is epistemological rather than ontological (Lancaster, 2004). This epistemological dualism may in turn be influenced by somatic variables, appearing only in association with certain modes of embodied participation with the world.

The two states of consciousness articulated above illustrate how dualism may be a state-specific epistemology. The head-located somatic ego facilitates an experience of the world as objects that are distinct from mental experience, while the body-located posture yields a present-moment experience in which body and environment are not separate (Petitmengin-Peugeot, 1999). Rather than a landscape of solid objects navigated by an incorporeal mind, the lived world becomes a community of embodied presences (Heron, 1996), 'potentially valid intersubjective items of knowledge, quasi-objects of a mental sort' (Varela & Shear, 1999). Since the distinction between these two standpoints appears to rest on a somatic variable, there seems little reason to award absolute ontological status to either perspective. From within one frame, mind and matter can be experienced as pertaining to separate dimensions; from within another, mind and matter are better described as partial experiences of a deeper ongoing process that contains both (de Quincey, 1999). This does not rob either experiential frame of its epistemic value, but rather, and perhaps more radically, situates the enterprise of epistemology within the frame of the embodied mind. The ego's relationship with its containing reality may be overdetermined in such a way that it cannot be exhaustively apprehended from within any one state of consciousness. If each state represents a different mode of participation within reality (Hartelius, 2006), then it is only through participating in a variety of ways that we will come to know the whole more deeply (cf. Barnard, 1994; 2002; Wilber, 1997).

From this perspective, it may be that both sides in the 'qualia wars' (Sutherland, 1995, p. 312) validly describe mental experience from a particular, and therefore limited, state-specific perspective (cf. Midgley, 1996). As noted above, understandings of experience may be influenced by the unchallenged assumption that one's own experience can be generalized as typical for humans — a conclusion based on a sort of covert introspection. Furthermore, when such a potentially biasing perception remains unconscious — as it is likely to do — its impact may be even stronger than if it were acknowledged (Merikle & Daneman, 1998), possibly helping to explain the fact that there are few converts in the qualia debates. However, if state of consciousness proves to be a key variable, both these perspectives might be pursued as philosophically complementary rather than contradictory.

The Potential for Scientific Validation

An embodied phenomenological science may not need to draw validation from rational-empirical science, yet if such cross-validation is possible it is of course desirable. It has been possible to identify psychophysiological markers for certain emotional states, markers that appear to be stable over culture and developmental age (Levenson, 1992; Levenson *et al*., 1990; Levenson *et al*., 1991; Levenson *et al.*, 1992; Stemmler, 2004). It seems that fruitful research in this area might proceed as follows:

1. Use psychophysical, EEG, and other measurement tools to determine whether:
   (a) there is a recognizable 'signature' for PhC, as induced through the use of the somatically defined GPhR, in individual participants, and if so, whether
   (b) there is a stable signature for PhC induced in this way across different individuals.

2. If the first step is successful, then measure the amount of time for an individual with no prior experience or training in the GPhR to achieve stable maintenance of that state through use of the induction methods developed through SP.

3. These findings could then be compared with similar experiments carried out with participants who practice a specific form of meditation, such as vipassana, and/or with individuals engaged in a phenomenological praxis. From such a comparison, it might be possible to measure the precision and efficiency of the SP induction relative to other methods that also seek to cultivate and stabilize PhC or a similar state, and also evaluate the degree of outcome similarity between the various approaches.

4. A control group would simply be individuals who were given no instructions at all, but who were measured in the same ways, and at the same intervals, as participants who used one of the techniques under study.

If PhC correlates with a specific somatic variable, as this paper suggests, and no stable psychophysical signature of any kind can be found, then the line of reasoning underlying QSP would be falsified. If the QSP-defined induction proves equally effective, or more effective, than a meditation technique or phenomenological praxis, measured by indices such as speed of learning and degree of accuracy in

maintenance of a stable state over a span of time, then the efficacy of QSP in establishing a specified epistemic platform would be supported.

Conclusion

This article has argued that (1) state of consciousness is a variable that must be controlled for in any method of inquiry, and that (2) the process of formal scientific education functions as a *de facto*, but unacknowledged, induction into the specific state of consciousness applied in scientific inquiry. (3) This state of consciousness, which Husserl called the natural attitude, is more suitable for the examination of some phenomena than others. For example, standard science is well suited to the study of brains, but poorly adapted to the study of mind and consciousness. (4) In order to develop complementary, state-specific methods that compensate for the limitations of rational-empirical science, it is first necessary to have a way to define states of consciousness in operational terms that can be used to define and control for the relevant alternate states. (5) NP attempts to offer such a state-specific method, but falls short in precise definitions of PhC and the methods for its induction, as well as in the approach to comparing its findings with those of rational-empirical science. (6) *Applying techniques developed in the field of somatics to a quantitative analysis of mental phenomena in felt space, quantitative somatic distinctions and protocols can be generated that are both more specific and more pragmatic for experimental control of state of consciousness.* (7) With tools such as QSP and protocols for reliable induction into the state of consciousness required for its use, it becomes possible to propose an alternate state-specific approach to inquiry: QSP as methodology for an embodied science. (8) Such a methodology must go beyond the simple stabilization of a non-standard state of consciousness and, within that state, provide the tools to observe and describe phenomena associated with mind and consciousness in ways that are more useful and meaningful in terms of specific relationship to experience, behaviour, and thought, than is possible with standard scientific approaches. (9) The respective states of consciousness employed for QSP and standard science can then be seen as two complementary ways to experience a singular reality: mind and matter are the respective products of these differing ways to experience a unified but overdetermined reality, rather than complementary aspects of reality itself. This allows for co-presence of mind and matter in such a way that neither derives from the other, yet the experience of mental causation is not invalidated.

Future Directions

A method for describing, achieving and measuring a state-specific platform for an embodied state-specific phenomenological science is only the first step in a sizeable process. It is one thing to enter such a state of consciousness, and quite another to work rigorously within it in such a way that useful data emerges. For this reason, various specific methods of observation must be articulated and developed, including (1) methods that train the researcher to notice his or her experience and translate that noticing into effective descriptions, and (2) methods of observation involving the felt sense. As a final note, somatic phenomenology is not a project that can be undertaken alone. Interested readers are invited to actively engage, participate, and experiment with these proposals.

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