part of *S*'s phenomenal world. This applies equally to rulers or other instruments that *E* might use to measure distance. In sum, to carry out his science, *E* does not have an observer-free view of what is going on, anymore than *S* does. *E* and *S* simply view what is going on from different third- and first-person perspectives. This has extensive consequences (worked out in Velmans 2000), but I have space to comment on only one of these here. According to Lehar, the three-dimensional phenomenal world in my own analysis is "undetectable externally by scientific means," does not "exist in any true physical sense," and is therefore "a spiritual entity to be believed in (for those who are so inclined), rather than anything knowable by, or demonstrable to, science" (target article, sect. 2.3, para. 8). Nothing could be further from the truth. Data in science consist entirely of observed *phenomena* that occur in a spatially extended phenomenal world, and the measurements that we make within that phenomenal world are the only ones we have on which to ground our science!

Where is this phenomenal world? Viewed from *E*'s perspective, it is outside his head, and the distance of the phenomenal objects within it can be measured, using standardised instruments that operate on phenomenal space (the distance of this phenomenal page from your eye, for example, can be measured with a ruler). Viewed from *E*'s perspective, the phenomenal world also appears to be represented (in a neural form) in *S*'s brain. Viewed from *S*'s perspective, things look the same: The phenomenal world appears to be outside her head, and, if she looks, a neural representation of that world appears to be encoded in *E*'s brain. Given that the evidence remains the same, irrespective of the perspective from which it is viewed, one can safely conclude (with James) that although a neural encoding of the world is within the brain, the phenomenal world is outside the brain. As this is how the natural world is formed, there must be a natural explanation (see above). I have shown (Velmans 2000) how this analysis can be developed into a broad "reflexive monism" that is consistent with science and with common sense.

Now consider Lehar's alternative: It is widely accepted that experiences cannot be seen in brains viewed from the outside, but Lehar insists that they can. Indeed, he insists that *E* knows more about *S*'s experience than *S* does, and *S* knows more about *E*'s experience than *E* does, as the phenomenal world that *S* experiences outside her brain, is nothing more than the neural representation *E* can see inside her brain, and vice versa. This has the consequence that the *real* physical skull (as opposed to the phenomenal skull) exists *beyond* the phenomenal world. As Lehar notes, the former and the latter are logically equivalent.

Think about it. Stick your hands on your head. Is that the real physical skull that you feel or is that just a phenomenal skull inside your brain? If the phenomenal world "reflexively" models the physical world quite well at short distances (as I suggest), it is the real skull, and its physical location and extension are more or less where they seem to be. If we live in an inside-out world, as Lehar suggests, the skull that we feel outside our brain is actually inside our brain, and the real skull is outside the farthest reaches of the phenomenal world, beyond the dome of the sky. If so, we suffer from a mass delusion. Our real skulls are bigger than the experienced universe. Lehar admits that this possibility is "incredible." I think it is absurd.

NOTES

1. Details are given in an unabridged version of this commentary (Velmans 2003).

2. The position of the image relative to the plate, for example, changes slightly as the observer moves around the plate. Nevertheless, the image is sufficiently clear for the observer to (roughly) measure its width and how far it projects in front of the plate (e.g., with a ruler).

Percepts are selected from nonconceptual sensory fields

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Abstract: Steven Lehar allows too much to his direct realist opponent in using the word "subjective" of the sensory field per se. The latter retains its nonconceptual, nonmental nature even when explored by perceptual judgement. He also needs to stress the evolutionary value of perceptual differences between person and person, a move that enables one to undermine the direct realist's superstitious certainty about the singular object.

With regard to the title of Steven Lehar's article, it is vital that the term "subjective" not be used of the structurally isomorphic sensory field. To acquiesce in its use is to yield ground to the direct realist opponent. It can be credibly argued that the ground of all sensory experience is thoroughly nonconceptual, beyond that of Gareth Evans's use of the term, in that recognisable entities and properties are *not* given in the initial stage of the process, not even that of a subject (Evans still took "nonconceptual" to include the perception of separable objects-as-unrecognised; Evans 1982, p. 228). The isomorphic field, because of its very isomorphism, is as brute as the input at the sensory organ, therefore as *non*mental as material (Wright 1996), whatever its nature may be as an emergence from complexity. How could it not be if it is, however indirectly, covariant with the input? As John Foster has put it, sensing is something that just "happens to us" rather than "something that we do" (Foster 2000, p. 123). Subjectivity does not enter into the equation until the establishment of perceptual judgement and memory has taken place upon that nonconceptual evidence at the behest of the motivational module. Therefore, it is going too far to attribute "protoconsciousness" at this level (sect. 6.5), for this correction regards sensing as always existing apart from judgement, merely evidence upon which a mind may or may not work (Wright 1996, pp. 24–28).

Lehar (sect. 2.4) justifiably uses the analogy with the television screen employed by Roy Wood Sellars, Barry Maund, and Virgil C. Aldrich (Sellars 1916, p. 237; Maund 1975, pp. 47–48; Aldrich 1979, p. 37), in that the distinction made between the screen-state (of the phosphor cells) and what is judged to be shown upon it is structurally similar to that between the sensory evidence within the brain and the percepts chosen from it. If he accepts the cogency of this comparison, then he ought to acknowledge that the radically nonconceptual nature of the sensory evidence is implied by this analogy. However much information-theoretic evidence there may be on screen/neural raster, it registers only covariations with light-wave frequencies and intensities at the camera/retina, not any information about recognisable entities and properties (if the TV set was upside down and one had just entered the room where it was, one would be unable to use one's memories to judge that, say, Ian McKellen as Gandalf was at that moment "visible," the screen thus revealing its permanently nonconceptual state). So Lehar should accept the criticism made above.

Those anti-qualia philosophers and psychologists who inveigh against the "picture-in-the-head" proposal (e.g., O'Regan & Noë 2002), have always opposed the television analogy. Lehar does not sufficiently defend himself against this attack (sect. 2.3). As I have pointed out (Wright 1990, pp. 8–11), there cannot literally be pictures in the head, for, if colours are neural events, actual pictures are *not coloured,* and the "picture" in the head is. Nor is an eye required for sensing neural colour, for eyes are equipped to take in *uncoloured* light-waves, and there are no light-waves in the head. Visual sensing is a direct experience for which eyes would be useless. Gilbert Ryle's attempt to maintain that one would have to have another sensation to sense a sensation remains as an argument, as Ayer described it, "very weak" (Ryle 1949/1966, p. 203; Ayer 1957, p. 107).

Once this radically nonconceptual nature of the fields is admit-

ted, its *evolutionary* value can be brought out, which is precisely what Roy Wood Sellars and Durant Drake – the very philosophers that Lehar calls to his aid – insisted upon (target article, sect. 2.3; Drake 1925; Sellars 1922). Sellars particularly stressed the feedback nature of the perceptual engagement, which allows for the continual updating of entity selection from the fields (altering spatiotemporal boundaries, qualitative criteria, etc.), a claim that renders stances such as Gibson's which take the object as given (amusingly termed "afforded"; Gibson 1977), not so much as "spiritual," the term favoured by Lehar (sect. 2.3), but as literally *superstitious.*

What weakens the direct realist case is its unthinking reliance on the pre-existing *singularity* of "external things." If the feedback argument of Sellars *père* is correct (Sellars 1970, p. 125), then the perfectly *singular* "object" or "entity" is but a feature of the mode of perceiving and not ontological in its nature. The behaving *as if* it is singular, the trusting *assumption* that it is, is a necessary feature of the intersubjective cooperation, for we could not even roughly coordinate our differing percepts unless we did project a strictly imaginary perfectly common focus of them; but it is fatal to take the convergence as without residue, for that would cancel the possibility of feedback and hence of mutual correction.

Lehar adverts to the uncertainty of the object (sect. 6.1). The only basic ontology required under the theory above is of the material continuum: When human social perceiving is in operation, with its incessant *intersubjective* correction in action, then a very modest ontological further claim can be made, namely, that a community of correctors exists, and hence of selves and their sensory fields, but *not as fixed entities,* only as current tentative selections from sensory and motivational experience. The direct realist, by contrast, is committed to an indefinite number of separable singular entities (objects and persons), a superstition that is disconcertingly all too common in recent books on the philosophy of perception (from Millar 1991 to Thau 2002; there are very few exceptions, e.g., Maund 1995). The act of faith in singularity which is necessary to bring our differing percepts into some kind of working overlap, is taken by the direct realist as actual, which represents an insidious and dangerous move to the conviction that his own percept is the standard for all.

Author's Response

Alternative paradigmatic hypotheses cannot be fairly evaluated from within one's own paradigmatic assumptions

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Abstract: To avoid endless and futile debate, critics of an alternative paradigmatic hypothesis cannot simply state their own paradigmatic assumptions as if they were plain fact while dismissing those of the opposition as self-evidently absurd, because it is exactly those initial assumptions that are brought into question by the paradigmatic proposal. Perceived incredibility is no valid ground for rejection of a paradigm whose alternatives are at least equally incredible, and arguably more so.

The energetic responses of the open peer commentaries indicate that the target article has touched a raw nerve; this is perhaps a harbinger of an interesting direction of investigation. The epistemological issue at the core of the debate is a paradigmatic question that challenges some of the foundational assumptions of psychology and neuroscience, which have remained so long unchallenged that they are generally held to be established fact. As is frequently the case in paradigm debates, the opposing camps often cite the selfsame evidence to support their opposite conclusions, because they are arguing from different foundational assumptions. To avoid endless debate, it is therefore essential for commentators to recognize the paradigmatic issue at the core of the debate, and not just state their own paradigmatic assumptions as if they were established fact – while dismissing those of the opposition as self-evidently absurd – because it is exactly those initial assumptions that are brought into question by the target article. If alternative paradigms are to be fairly evaluated, it is necessary to temporarily and provisionally suspend one's own paradigmatic assumptions, and accept the assumptions of the alternative paradigm as if they could actually be true. Only then can the competing paradigms be fairly compared, not on the basis of the perceived incredibility of their initial assumptions, but on the overall coherence and self-consistency of the world view they implicate in total.

R1. Rigor paradigmatis

Unfortunately, many of the commentators failed to grasp the paradigmatic nature of the proposal and restated their own paradigmatic assumptions as if they were plain fact, thus committing the error of *petitio principii,* assuming from the outset that which is to be proven.

Booth complains that it is "foolish" to look for consciousness among the brain cells. I contend that it is foolish to look for it anywhere else but in the brain! As in most paradigmatic debates, one man's "foolish" is another man's "obvious." But Booth says not a word about the epistemological difficulties, which were discussed at length in the target article, of the view that he defends. If the experience of a red surface, for example, is located anywhere else but in the brain, then it is a spatial structure that exists, but it does not exist in any space known to science. This makes Booth's hypothesis a religious or spiritual theory, because the experienced surface is in principle beyond detection by scientific means, and therefore it is a theory that is impossible to disprove. It's no good trying to dismiss the structure of consciousness in a trick of grammar, as Booth proposes, by claiming that the spatial structure of experience is a "seeming" rather than something real. That objection was addressed in the target article with the observation that visual consciousness has an *information content,* and information cannot exist independent of an actual physical mechanism or substrate in which it is registered. Booth seems to think that simply stating his own paradigmatic hypothesis as if it were plain fact ("We are not looking at a world inside our minds; we are . . . seeing the colour of the patch out there.") is an adequate response to the hypothesis that what we are seeing really is in our brain.

Dresp complains that I fail to make clear the link between the Gestalt Bubble model and general theories of consciousness.

> What the model has to do with consciousness . . . remains totally unclear. Neither the fact that we are able to consciously experience and describe three-dimensional shapes as entities and wholes, nor the fact that we can find laws or codes describing how these emerge perceptually, implies or proves that con-

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