Critical Notice/Étude critique

Spatial Perception, Embodiment, and Scientific Realism*

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David Morris's *The Sense of Space* is a subtle, careful, and ambitious examination of spatial experience: that is, of how we perceive the spatial environment around us—its various depths, our orientation within it, the voluminousness of the objects that fill it, and so on. The argument of the book has several strands, but its key thesis is as follows. "The tradition" has it, in one way or another, that our experience of space is generated by using sensory information to construct and constantly update an inner mental model of our environment and our body's position within it. By contrast, Morris argues that we perceive space by moving our bodies in the world, and that the content of spatial perception consists in the constraints and limits on movement imposed jointly by our bodies and the environment in which they are located.

For example, our experience of the spatial properties of a tennis racquet does not inhere in some inner mental geometrical model of the racquet,

* David Morris, *The Sense of Space* (Albany, NY: SUNY Press, 2004). Page references are to this work.

Dialogue **XLVI (2007), 553-68**
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https://doi.org/10.1017/S0012217300002055 Published online by Cambridge University Press

inferred from the visual and tactile sensory information that impinges on our bodily surfaces; rather, we experience the "wieldiness" of the racquet by hefting it in our hands (and encountering the limits of its heftability), its voluminousness by moving our bodies and eyes around it, its textures by encountering certain sorts of resistance to touch, and so on.

This book is a significant contribution to thought about the lived experience of space, a useful corrective to some (but not all) traditional assumptions, and an important addition to the literature on embodied cognition. Morris draws on an impressively wide range of sources, both scientific and philosophical, and is quite sensitive to important ongoing debates within cognitive science about—to put it crudely—the importance of inner representations in cognition. (In addition to the core literature on embodied cognition, I am thinking of such debates as those surrounding the role of rules and representations in mental systematicity, the externalization of mental content and its fractioning into narrow and broad components, questions about whether the aim of perception is to provide accurate representations, and so on.)

Rather than dwelling on points of agreement, in this critical notice I shall focus on areas where Morris and I diverge. My strategy will be to distinguish between what I do and do not agree with, and discuss both sources of puzzlement and reasons for disagreement. I will begin by giving a brief outline of the argument of the book.

Outline of the Book

The Sense of Space contains a lengthy and important introductory chapter, from which I pick up several of the themes I shall explore in my critical discussion, and then two main sections. In Part 1 of the book, "The Moving Sense of the Body," Morris argues that what he calls the *sens* of perception (*sens* from the French word for direction, sense, or meaning), and depth perception in particular, is expressed by "a moving schema that organizes itself within the body-world movement" (p. 29). It is this schema that "fits changing content to a . . . framework" (p. 34). Part 2, "The Spatial Sense of the Moving Body," explores in more detail the "topo-logic" of our sense of space, and its social and ethical implications.

Morris begins from Merleau-Ponty's notion of a "body schema" but argues, *pace* various developers of this idea, that this schema is not "an already constituted physiological or cognitive system of the body" but instead "comes from movement" (p. 33). Furthermore, Morris stresses the significance of the fact that much of this movement is *habitual*, and that these habits in turn are closely linked to particular *places* where the habits are developed (such as moving around one's own house, or driving on a familiar expressway). The key idea here is that the "body schema" is not a thing—not an entity—and certainly not a stored framework; rather, it is a set of ways of moving that arise from an interaction between the body

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and the world: "We should thus 'locate' the body schema within movement itself, not in the body itself, nor in its neurology, nor in the world, but in movement that crosses the two—movement that is habitual, that styles itself" (p. 39).

How does this schema of "habitual and anticipatory movement" constitute itself? That is, where does it come from? Morris sets out to explain this through a sketch of body development in infants. His idea is that body-world movement is subject to certain constraints, rooted in both physiology and environmental factors, and as the organism grows these constraints "fold" into new and more complex constraints. For example, put simply, walking can be seen as a form of bodily movement that grows, as the child grows, out of the kicking of an infant's legs against a surface that resists those kicks (see Thelen and Fisher 1982); while a particular gait can be seen as a way of walking that has emerged from a particular set of body-world constraints on movement (such as the texture of surfaces in the environment, body type, prevalent social norms, even the force of gravity on Earth as opposed to in space). In this way, "[p]erception is not based in a schema *added* to the body and world from the perspective of an already established framework. . . . The schema unfolds in real time, as a limit, a constraint, immanent within body-world movement" (p. 69).

The crucial question now is: how is movement perception? That is, we are faced with "the problem of how there is *sens* in this folding, how a movement that crosses the developing body and the world is the site of comprehension and experience" (p. 80). According to Morris (as far as I can make him out), a body-world movement articulates an *expression*—has *meaning*—because of the significance of particular movements at particular times and places; as something that is *learnt*, as a *habit*, a *gesture*, a skill, as a way of expressing, say, concern or interest. These things express "in and for the body a relationship to the world" (p. 93): "[*S*]*ens* is not a meaning abstracted from the world, it is meaning directed toward and fit with the world. . . . [S]peaking and thinking as elaborating *sens* are first of all in movement" (p. 82).

When his finger brushes a candle flame, Morris says, "[t]he shake-'ouch!' gesture expresses pain, or rather it *is* my way of having pain, of having the event not merely happen but express the *sens* of there-being-pain-in-me" (p. 86). This movement "condenses" the sensation of pain, and it comes to do so as something I have learnt in a social context "just as pointing and saying 'cat' is what you do when a cat walks by" (p. 86).

> To say that the gesture comes to mean pain is not to say that it comes to mean a pain that had previously been there. . . . Previously there had only been a shock of movement that overran me. . . . Shock is articulated into pain grounded in shock. But the pain is not something other than the shock, it is the shock articulated, become different. (p. 87)

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As Morris puts it, the body has its own special "topo-logic":

> The lived body, we could say, stands to lived space in an articulatory relation: the lived body "sums up" space in a form that is different from but not other than space, since the two cross one another. . . . [T]he "phenomenal geometry" of such a translating or articulating body is not that of classical topological descriptions of the body. (p. 101)

It seems to me that the key—and potentially revolutionary—idea here is that the structure of perceptual content is neither imagistic (an array of ideas) nor linguistic (a structured set of propositions), but topological: a collection of *possibilities for movements through lived space*. As Morris explains it,

> perception is not a matter of reconstructing a ready-made world from limited aspects, it is a matter of moving in the world in a limited way. . . . [P]erception was never a collection of givens in me, but a limitation in a circuit of body-world movement. (pp. 109-10)

Morris now moves on to the second section of his book, and begins a more detailed exploration of the topology of expression and our experience of depth. What he calls the "topology of envelopment" is determined by two things: the way that parts of things envelop one another, together with the way our body parts envelop each other as we move, and the "larger place in which movement happens" (p. 108). This topology, which specifies our movement with the world, as such expresses for Morris a *sens* of depth: "I perceive my house as solid not because I see all of it at once, but because it inexhaustibly hides and reveals itself in a peristaltic flow that couples with my movement around it" (ibid.).

This can be contrasted with the hallucination of a pink elephant, which does not hide and reveal itself as I move and so does not seem to occupy a *place* in my environment—"the inexhaustibility of the thing is coupled with its being in place" (p. 111). And, "the *sens* of depth is based not in divine grammars, geometry, cognitive structures, but in envelopes of movement generated in body-world movement constrained by a topologic of enveloping" (p. 127).

In the final stages of his book, Morris connects the topology of depth perception with *care*: "the sense of depth . . . involves a body moving in [a] larger place and thus implies care in movement" (pp. 157-58). He approaches this topic by examining our sense of up and down. He argues that our *sens* of up and down has an "emotional colouring" that arises not only from our physical orientation but has to do with our postural attitude towards our own bodies and the earth. He examines this by considering a case that "decouples orientation from the gravitational field"

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(p. 132)—the phenomenon of weightlessness. He links upwards orientation with an open posture and downwards with closed posture and claims that "[o]rientation thus has a concernful and emotional aspect" (p. 144). Also, "posturing as being unconcerned with one's residence on earth gives one a feeling of being up. . . . Posturing as being sunk in concern for one's residence on earth gives one a feeling of being down" (p. 145); and "the referent of orientation perception is not an absolute up or down, or an up or down specified by static neurological or cognitive structures, but postures of residing that are generated in body-world movement constrained by a topology of residing" (p. 148).

Finally, Morris investigates the "ethical dimension of lived space" (p. 158) by looking at infant development: "The *sens* of space does not merely contract the *sens* of a natural bodily topology, it contracts the sense of a social-ethical development and the issues of emotion and concern that figure in such development" (p. 172). I find the exact nature of the connection between space and ethics elusive, and will discuss this puzzlement a little later on.

I will divide my critical discussion of *The Sense of Space* into three parts. In the first, I will discuss the tension that Morris seems to find between scientific realism—or at least, that kind of scientific realism that permeates large tracts of "the tradition"—and the results of his investigation into lived space. I shall argue that his key themes are perfectly compatible with a view that sees both the world and the organism as pre-given, objective, "real" entities, and that holds that our perception of space is subject to scientific investigation and explanation. In the second section, I will ask whether the account Morris gives of spatial experience is adequate and, since I am broadly sympathetic to his approach, I will focus my worries on the possibility of extending his "topological" approach to perception more generally. In the third section, I will offer some brief comments on Morris's claim that our experience of space is fundamental in some metaphysically or epistemically very significant way, and in particular is fundamental to a proper understanding of ethics.

Scientific Realism

Morris apparently denies that "body and world are two already independent things that subsequently interact" (p. 5), and takes this denial to be a consequence of his account of space perception. There is in my view something right about this denial and something quite wrong, and the difference between the two is a key issue that is often finessed or blurred over in certain accounts of embodied cognition (such as, for example, Varela, Thompson, and Rosch's influential *The Embodied Mind* [1991]). It is right—or, at least, highly plausible—that our experience of the world is, in some important sense, not objective; it does not follow from this that there *is no* mind-independent reality. Denial of the epistemic given in per-

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ception, or of the claim that perception is representational, does not equate to denial of a pre-given reality in which the perceiver is embedded. To put the point yet another way, much of what Morris has to say seems to me plausible for *lived* space (or "phenomenal" space) but not plausible for space itself—for what I want to call the *real* space in which our bodies are in fact located and which science attempts to describe for us in its theories.

Agreements and Disagreements

There are a number of closely connected issues to get clear about here, and the quickest way to do so is to identify the ways in which I agree with Morris—or, more generally, the ways in which an embodiment thesis about spatial perception can be taken seriously without commitment to the denial of scientific realism.

(1) Is our experience of space "objective"—that is, does it (purport to) accurately represent or model the way space "actually is"? No. Incidentally, and for related reasons, neither is it "subjective"; that is, our experience of space is not purely a mental construct—a kind of "virtual reality"—that, although an unavoidable aspect of the structure of our experience, might completely fail to correspond to the ways things really are. One way to look at all this is to hold that the categories of "objective" and "subjective" do not apply to lived space at all, since spatial experience is not best understood as a representational framework that might correspond or fail to correspond to how things are arranged in our environment.

(2) Is our experience of lived space more fundamental than, or prior to, our understanding of real space? Yes. We do not *experience* "real space" at all. What we experience is first and foremost lived depth: as Morris puts it, the distance between oneself and other things, and the space in which "one experiences things as having volume" (pp. 1–2). This is to be distinguished from our experience of height and width, which are—according to Morris—experiences of "the distance between things that stand side to side" (as opposed, presumably, to the distance between us and things), and "the spread of already voluminous things." *Before* depth can be "objectified" and treated as interchangeable from height and width "we must have a more basic perceptual experience of voluminous things" (p. 2).

What I deny is:

(3) There is no "world specified prior to, and independent of, dynamics of perceptual life" (p. 9). If Morris is committed to such a claim—and it is not fully clear he is, though his frequent assever-

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ations against the notion of a "ready-made" world strongly suggest so—then here our paths diverge.

(4) The nature of human spatial perception cannot be understood scientifically, as the predictable outcome from certain empirically observed lawlike regularities combined with particular initial conditions. Again, if Morris holds such a tenet, we have a disagreement.

Let me discuss these points in a little more detail.

Lived Space and Real Space

One of the strongest sections of Morris's book is his attack on what he calls "inferentialist" theories of spatial perception. Inferentialist accounts hold that perceivers infer the spatial properties of their environment from sensory data impinging on the body's two-dimensional surfaces. Morris follows Churchland, Ramachandran, and Sejnowski (1994) in what they call their "critique of pure vision" and convincingly shows that arrays of sense-data are not enough by themselves to provide data about three-dimensional space; they can do so only in combination with a pre-given framework of *assumptions* about that space: "In the example of inferring the distance of a sheet of paper via binocular disparity, my perceptual process in effect assumes [or, rather, would have to assume if inferentialism were true] that there is one sheet of paper and that the sheet is actually rectangular, not trapezoidal" (p. 8). Assumptions such as these cannot be justified by the data of sense: "One and the same set of images must justify the inferences (a) that the sheet is so many units distant from me, and (b) that there is just one sheet of paper and that it is rectangular. But conclusion (a) depends on conclusion (b) as a premise, and vice versa" (ibid.). Hence, if depth is to be non-circularly inferred from retinal signals, our visual systems must depend upon assumptions—(b)—that are not themselves inferentially supported by that visual data.

Morris thus rejects the notion that vision is supported by sets of pre-given assumptions that allow the various cognitive systems to make their calculations, and he is right to do so. But he mixes together good and bad reasons for this rejection. The good reasons are *empirical*. As Morris points out, vision exhibits the kind of flexibility and resiliency that would be very surprising if it depended upon an extensive framework of "hard-wired" assumptions. The fundamental issue is that we now have a better story, blossoming from J. J. Gibson's (1966) seminal insight that key patterns—or *invariances*—in the flow of sensory data as the organism *moves in and interacts with* the environment are immensely fruitful sources of information about that environment.

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> I do not need to infer my position from distortions in the matrix of the plaza, because, given the constraints inherent in my moving, ocular body, information in the visual field will, for example, stream outward as I move forward . . . and the rate of this outward flow invariantly and directly specifies a rate of motion. . . . [B]odily movement amounts to an inference in the flesh. (p. 12)

Morris correctly identifies a key strength of enactivist accounts over inferentialist ones: instead of requiring a fragile array of inferential frameworks, "the intrinsic ordering of perception always reflects the interaction of body and environment, and changes to either will, as a matter of course, produce changes in self-organization" (p. 16).

However, to rule out a cognitive framework simply *because*, as Morris puts it, it would count as "a world specified prior to, and independent of, dynamics of perceptual life" (p. 9) is misleading. It is the prior mental *specification*—an internal model—of a pre-given world that we have empirical grounds for rejecting, *not* such a world itself. Such a model is in some sense *possible*, since the environment in which an organism finds itself is pre-given; but constructing a cognitive framework of this sort is *practically* difficult, and thus it is implausible that we have actually evolved to possess a world-model of the sort required by the inferentialist. When Morris accuses inferentialism of making "presumptions of the ready-made world" we must be careful how we take this.

"The object of perception . . . emerges within and reflects perceptual activity. In this way Gibson aims to overcome dualistic divisions between subject and object, body and environment" (p. 14). On at least one natural construal, the first of these two claims is right; the second importantly wrong. The way we *perceive* the layout of our environment arises from our embodiment; but the actual space in which our bodies are located—and the real difference between our bodies and the environment in which they are placed—does not. Indeed, it is not clear to me that we can even *make sense* of views like those of Gibson and Morris unless we preserve this distinction. Fundamentally, what embodiment theories of this type require is *a body* and *a world* that interact together and from whose mutual interaction experience arises—*from* this interaction, that is; the world *as we perceive it* is not (somehow) prior to the body-world interaction but is the *result* of this mutual engagement.

Lived Space and Empiricism

At one point Morris suggests that "traditional" accounts which "suggest that the world objectively remains the same whilst the subjective sense of depth changes" (p. 19)—the view I am here defending—are committed to the hypothesis of "two stages in labile depth experience. The first stage gives us an objective encounter with a fixed depth, the second stage assigns a subjective, changing value to the first stage. . . . [I]n the first stage the per-

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ceiver has some sort of access to a fixed, objective depth" (ibid.). If this were so, I would agree that scientific realist accounts of the type I am endorsing would be problematic, both phenomenologically and empirically. But I cannot see why one needs to be forced to accept this dubious claim. On the contrary, it is true, and a deep insight, that we do not "perceive naked properties of the environment" (p. 13): in Gibsonian terms, the invariances in the environment—the *affordances* it allows our bodily movement—depend not just on the way the environment is but also on the ways our bodies are: "[O]ur sense of space is not the result of synthesizing nonspatial data to yield a spatial result. . . . [W]e are not merely passive receptors of spatial information, we actively constitute the sense of space" (pp. 5-6).

This theme, which Morris finds in Kant and James, and is also emphasized in the multifaceted embodied cognition paradigm represented variously by Andy Clark, Francisco Varela, Esther Thelen, Rodney Brooks, and so on, is now reasonably familiar. But Morris fruitfully, and quite originally, extends this idea by insisting that not only do we not carry around a built-in framework of assumptions about space, but the organism's contribution to the experience of space is not determined by *any a priori* cognitive construct, neural structures, or genetic propensities—it is not a fixed and primitive *thing* at all, but a dynamic process of the "crossing" of body and world.

So when Morris "calls for a reversal of traditional approaches to depth and spatial perception" (p. 5), I can happily agree; the "primary datum" is not a pre-given space that must be recovered from the sensory signals received by a body within that space. It is *lived space*, which is not "read off" from passively received sensory signals, but arises from the organism's movement within space—from "the crossing of body and world" (p. 5). "The organism never deals in inches or meters or anything like objective measures; it deals, if we could speak for it, with strides, striking distances, safe removes" (p. 20).

But I am unwilling to move from this point to the position that the enactivist paradigm requires a radical shift in the aims and methods of science. I think the revised understanding towards which Morris and others point us has very important implications for the science of *human perception*, but not for, for example, physics or biology. It does not require us to "revise our concept of physics and reduction" (p. 15).

Thus, for example, I am sympathetic with Morris's suggestion that schemata for perception cannot be fixed in advance in such a way that some further schema is required in order to select which schema is applied in a particular context. Rather, the schema should organically arise from a context. (However, when Morris mentions that the alternative is "an endless regress on the very task that a schema is meant to accomplish" (p. 34), this seems to me to be overstating the case.) But Morris jumps from this

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to the claim that "[t]he minute an appeal is made to a ready-made world fixed in advance of these dynamics, the Hydra springs new heads, for it is necessary to explain why a specific ready-made world comes into play" and that, hence, in explaining perception, "there can be no terms in the account that are isolated from perceptual life" (p. 16). Indeed, Morris notes, "structures that emerge in the dynamic crossing of the body and the world are inherently situational and therefore might not be repeatable. . . . So the demand for intrinsic structures at every level, for dynamism all the way down, may be at odds with the scientific demand for objective structures that can be tested through experimental repetition" (ibid.).

I cannot see why these latter claims must be so. Even if one concedes that *lived* perception never "bottoms out in a ready-made world," it remains unclear why we cannot follow "the tradition" in adopting a *third-personal* perspective on the organism and its environment that seeks to explain *why* we perceive the world to be one way rather than another—i.e., why lived depth differs from circumstance to circumstance in ways that are not isomorphic with the changes in real space—by examining the relation between body and world. Doing so does not require that we reintroduce inner inferential modules or any such apparatus—just that we seek to understand the complex dance between body and world, the perceptual, enactive loops that tie them together. Nor do we need to explain, say, depth experience or emotional state as independent of each other, or as if one is *prior* to the other; one of the key insights of the embodiment paradigm is that these things may form just as much a continuous whole as the organism and its environment. A looming shadow is *experienced* as freighted with emotional significance—its meaning is not merely an interpretive overlay on the "raw" experience.

Morris stresses that, in his view, the body-world relation is dynamic and self-organizing, and suggests that this is in tension with explaining perception in terms of "basic and universal biophysical laws" or "overarching physics" (p. 14). I find his point here rather elusive. Certainly, dynamical systems theorists do not see themselves as denying that the systems they describe are subject to physical law. As Morris accurately notes, "[t]he difference is rather like the difference between a cosmos ordered by an external designer, and a cosmos that orders itself from within through its own development" (p. 15), but the latter approach need not deny that the system is governed by "laws fixed independently of that system" (ibid.), if by that we just mean laws of nature as we normally understand them in science; indeed, surely this is the view of most modern scientists.

We might look for one final sceptical or idealist lesson from Morris's enactivist turn. It might be that to concede that our lived experience is never objective is to commit ourselves to the old view that we have no *access* to the world as it really is. If science is based on careful empirical observation, and if all that observation reveals and can ever reveal is

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inherently infected with the contribution of our own minds (or bodies), then it might seem as if the assertions of science can provide no competition for our own lived experience. We would be left, as a matter of epistemic, if not metaphysical, necessity, with lived space alone, without any meaningful contrast with "real" space.

But this too fails to follow from Morris's position (as I think he might agree). In a fascinating discussion of visual illusion, he notes that "[t]his analysis of illusions shows that perception cannot escape the field of perception, leaping to an encounter with objects as they would be in and of themselves" (p. 22). This is quite right. But it does not follow that we are unable to tell the difference between "veridical" and "illusory" perception, or generate scientific accounts of how objects "really" are. As Morris himself points out, "in comparison to other things that stay put, or in comparison to the figure that appears when we dissect the cube geometrically, the Nekker cube is strange, and that is why we see it as an illusion. . . . [I]t is because it really flips in and out that we become scientific about it" (ibid.).

We can use perceptual experience to make, and then test, informed guesses—hypotheses—about the way the world is in itself; not as we experience it to be, but how it *must* be given that we experience it in certain ways. Space is not as we experience it (any more than time, colour, light, and heat are "really" as we experience them); but that does not prevent us from making informed, evidentially supported, speculations about its real nature.

Beyond Space

Morris's ambitious, radical and, on the face of it, quite implausible claim in *The Sense of Space* is that our experience of space *is* a kind of movement. This is not simply the mildly interesting claim that we best find out about space by moving around in it and interacting with it (rather than, say, merely passively looking at it). For Morris, movement is not a way of acquiring or generating something *else* that is the perception of space, such as a set of visual images or a mental model coding for three dimensions. His thesis is the much more interesting one that there *is* nothing else to spatial perception but a particular kind of body-world movement; this movement *is* the content of our spatial experience, it *expresses* it, and nothing else is present or required.

Now, although this view takes some getting used to, I have already confessed my sympathy for it. In particular, what I find plausible is the empirical proposal that we replace the hypothesis of inner cognitive maps of our bodies and their position in local space with the hypothesis that the body "is its own map" through the way it finds, and expects to find, its movements facilitated and constrained. "[W]e can conceive of the body as its own 'model' once we realize that the body 'represents' its own position not in Cartesian co-ordinates, but in the flesh" (p. 45).

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However, there is a big jump from this hypothesis to the following three claims, each of which Morris seems inclined to endorse. First, he claims that this sort of enactivist story is generalizable to other aspects of perception (such as visual detection of colour, shape, and movement; sensations of texture; smell; and so on). The worry here is not that these perceptual modalities cannot plausibly be thought of as arising from a complex interaction between body and world; the problem is that it is hard to think of these kinds of perception as a kind of *movement*. Second, he claims that other mindful behaviours, particularly speech, are best understood as *solely* species of movement (rather than as the effects of inner mental causes). Following Merleau-Ponty, Morris holds that (at least some) speaking is a form of gesturing, and that it has its *sens* in the same way that gesture does. This is to be contrasted with "traditional accounts that claim that the spoken word is the exterior form of an already determinate interior idea" (p. 83). Finally, Morris claims that, in general (and for depth perception particularly), there are no phenomenal "raw feels"—no *sensations*, just a topology of movement. Each of these forms the tip of a rather daunting philosophical iceberg, so I shall content myself here with drawing attention to these issues, and with a few quick remarks to suggest that one might think twice before conceding too quickly to the claims they make.

In the case of generalizing the thesis about depth sensation to sensation more generally, the parallel case of visual perception is not too promising. In recent years there has been a lot of interest in, and credence given to, so-called "active vision." It is now well confirmed that the results of looking depend heavily on *how* we look: on how we move our eyes and bodies around the scene—as Morris might put it, our *styles* of gazing. Indeed, it is now well known, albeit still counter-intuitive, that unless our eyes are constantly on the move—constantly undergoing saccades—we cannot see anything at all; once our eyes come to a standstill everything fades to a uniform shade of "brain grey" in our visual field. But none of this work on active vision is sufficient to establish, or even to make plausible, the claim that there is nothing to vision *but* these manners of moving. We need to move in certain ways in order to *gather* and appropriately *interpret* visual information—and, as with depth perception, what we see emerges from the joint contributions of our bodies and the world, and thus is "embodied," rather than being "read off" from reality—but it is not as if our eye movements are *all there is* to the content of visual perception.

In the case of speech as being a species of gesture, there seems on the face of it a vast gap between the exclamation "Ow!" being socially rigidified as the expression of pain and such complex assertions as "My postillion has been struck by lightning" or "The square root of 64 is 8." The first might plausibly be thought of as a sort of sound-producing movement that in itself expresses—rather than represents—an attitude towards

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the world; it seems to me implausible to think of the latter cases in that way. Morris does emphasize (p. 83) that his account of linguistic expression as movement applies to what Merleau-Ponty calls *primary* speech, expressing something "creatively," without having preformulated the thought in an already-defined vocabulary, as (arguably) children do when they are first learning language. As such, his claims perhaps do not apply directly to talk of servants or math. Further, perhaps mathematical propositions, for example, can be formulated only after some basic vocabulary has been established—and in terms of that primary vocabulary—and so are never instances of primary speech. But noisy gestures such as "ow!" or "cat!" still apparently fall short of constituting even a very basic language, such as one from which we could bootstrap the words needed to complain about the servants. At the least, there is more work to be done here—and more than Morris has time for in his book—if the primary-language-as-gesture thesis is to be further clarified and established.

Last, and perhaps most contentiously, it seems to me more plausible that the *content* of depth perception is captured by a topology of movement than that lived depth occurs *in the absence of* any kind of phenomenal sensation. Evidently, movement is not the same thing as—and is not even commensurate with—mental imagery; that is part of what is exciting about Morris's thesis. But when I enter a strange house, or a large public space, or an echoing natural cavern, my sensations of space—it seems to me—are in part phenomenological, or imagistic. I not only perceive the presence of various voluminous objects at various distances from me, in that my body is afforded certain possibilities for motion with respect to the world; I *also* undergo what one is tempted to call *occurrent mental images* "of" those objects. To agree with Morris that a "mental picture" of a nearby stalactite is a poor candidate for the perceptual content that the stalactite is voluminous and within arm's reach is not to deny that we *have* mental images of stalactites, *in addition to* moving in relation to them.

Foundational Space

The opening sentence of *The Sense of Space* reads: "The sense of space is the basis of all social experience and of all perceptual experience in general" (p. vii). In this final section I want briefly to critically consider whether our experience of space is quite as foundational as Morris makes it out to be. I will discuss whether spatial perception is foundational to experience in general and whether it is fundamental to ethics.

On the first issue, Morris comments that "depth is what gives bodies volume in the first place, it is what makes situations possible. . . . Without depth there would be no things and no people, nothing to study, and there would be nobody who could perceive or study things" (p. 1). He uses this as a reason to think that "depth is the most primordial dimension" and

https://doi.org/10.1017/S0012217300002055 Published online by Cambridge University Press

that, "given the primordiality of depth, accounts of depth perception inevitably couple with basic claims about the being of the perceiver and the perceived world" (p. 2).

Once again, I find it useful to separate what seems plausible from what one might balk at. It is unexceptionable to assert that there could be no voluminous objects and no human beings unless there really was (at least) a "third dimension" to define the space they occupy. It is also plausible to suggest that no experience (or at least no visual experience) could be recognizably *human* unless it incorporated a "lived depth." However, it is less obvious that depth *perception* (as opposed to real depth) is a necessary condition for *any* experience, or the existence of any experiencer, whatsoever; and, even insofar as depth perception is a necessary condition for experience more generally, it is not immediately clear that it is a *uniquely* necessary condition, or an especially fundamental one.

Thus, we might be able to conceive of a world of experience for a conscious, perhaps even a rational or language-using, being that lacked the dimension of lived depth and consisted entirely of, say, gradients of temperature or volume or chemical reactivity. And we might wonder whether the human experiential world with which *we* are familiar could exist at all in the absence, not only of lived depth, but (say) experienced motion, sensations of solidity, or (in the case of vision) shading boundaries. It is arguable that these basic conditions—if such they are—are bound up together, so that (for example) there could be no perceived motion without lived space to move through; but then, why assign depth priority over motion?

On to the second matter, and here I feel a bit more than usual like a dog in the manger. It is evidently important to Morris to draw a tight connection between the sense of space and our social and ethical responsibilities (and not just our *sense* of those responsibilities, but the duties themselves). As I understand it, he does so primarily by linking spatial perception with the Heideggerian notion of care, which Morris describes as "a pre-objective existential comportment that inherently enwraps our being in something greater than ourselves" (p. 127). Care, in turn, is (perhaps) said to be what grounds our relation to others, our sense of intersubjectivity, our relationship to death, our "opening to something that exceeds us" (p. 176). Morris writes not only that "the ethical is unthinkable absent our relation to one another as moving bodily beings in space" (p. 178)—that is, space perception is a necessary condition for ethics—but also "our ethical relation to others [is] driven by an imperative phenomenally manifest within our existence. . . . Care in our sense of depth opens a responsibility to others" (ibid.). That is, I believe Morris thinks our experience of depth is, in some sense, fundamental to and *sufficient* for ethics: "We should be able to read the ethical/social and the spatial off one another, at the level of individuals and cultures" (p. 179).

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I confess myself baffled by much of this, perhaps simply because I lack the appropriate background in the thinkers and debates Morris is alluding to and drawing on. I can get behind the notion that the ethical is tightly connected to our relationship with others and that (in some sense contingently, as argued above) the perceptual presence of others occurs in lived space. However, I cannot follow the line of reasoning (if one is intended) that moves from their appearing in my lived space to their being things toward which I therefore inescapably take an attitude of care.

I also have some worries about the whole project of what one might call "ethical phenomenology"—of trying to show that, and how, "the ethical should be rooted in its lived ground" (p. 28). Once again (one last time), I have an agreement combined with a worry. I endorse the view that our experience of the world *comes* already ethically (and socially, and emotionally, and so on) laden: the contribution of the self to what is experienced is as integral as the contribution of the world, and cannot be stripped off like some sort of overlay on "raw," "uninterpreted" sensory data. This is what Morris calls "the importance of the ethical to the phenomenology of perception" (p. 27). But I am not sure we should take this to show that the appropriate way to *find out* about the ethical—to discover how we ought to behave towards each other—is to examine our perceptual phenomenology. Perhaps, instead, we should seek to rise above our own individual experience of the world—while not, of course, ignoring it—and, as we are urged in liberalism, to find a more neutral, carefully reasonable, standpoint for ethical deliberation.

Morris's book is an invigorating, subtle, and suggestive account of spatial perception. I think that its key thesis—that the content of human spatial awareness is both embodied and articulated topologically rather than propositionally or imagistically—is both important and plausible . . . a rare combination in philosophy! It is only when Morris goes beyond the sphere of spatial perceptual content, to questions of realism or the ethical-social, for example, that I find substantial disagreements with him. But even here the issues raised by his book are rich and complex and fully worth chewing over.[1]

Note

1 A close ancestor of this article was delivered at an "author meets critic" event at Trent University in September 2006. My thanks to the audience on that occasion, to David Morris, and to an anonymous referee for this journal for their helpful and enlightening comments. This work was supported by a grant from SSHRC.

https://doi.org/10.1017/S0012217300002055 Published online by Cambridge University Press

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