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theorist to favour ecological representations whilst another does not. Is it that the ecological conception of representation emerges out of an approach to a distinctive *explanandum*, or is it that the ecological psychologist expects something very specific from the cognitive *explanans* in terms of integrating perception and action?

Bermúdez's account of self-consciousness also raises questions about how self-consciousness relates to consciousness and to the conscious status of mental states. Are the ecological representations which provide the basis for primitive self-consciousness *conscious* representations? Insofar as these representations enable a subject to be *aware* of herself, of her position and orientation and so on, it would seem that such representations should count as conscious representations. But, unless we assume that every instance of representation of an object constitutes an instance of awareness of, or consciousness of, that object, we seem to require a principled account of how representation of objects differs from awareness of objects. I raise these queries, not as objections, but as examples of some of the questions raised, for this reader, by Bermúdez's rich and fascinating account of nonconceptual self-consciousness. *The Paradox of Self-Consciousness* should provide rewarding and thought-provoking reading, not just for philosophers with a taste for paradoxes and their solutions, but for anyone who wants to learn how it is that they came to be a self-conscious subject.

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***Being There: Putting Brain, Body, and World Together Again***, by Andy Clark. Cambridge, MA: MIT Press, 1997. Pp. xix + 269. P/p \$15.00 .

The title of Andy Clark's book is, among other things, a reference to one of the central terms in Martin Heidegger's early work: "Dasein" (being there) is the word that Heidegger uses to refer to beings like ourselves. Clark is no Heidegger scholar, but the reference is deliberate; among the predecessors to his book he lists not only Heidegger himself, but also the American Heidegger scholar Hubert Dreyfus and the French Heideggerian phenomenologist Maurice Merleau-Ponty. This triumvirate has played an increasingly important role in recent years among the "alternative" cognitive science set, owing largely to the influence of Dreyfus's 1979 book *What Computers Can't Do* (Cambridge, MA: MIT Press, 1979), which enlisted Heideggerian and Merleau-Pontean arguments in the fight against classical symbolic processing approaches to artificial intelligence. Clark's book fits squarely in this "alternative" tradition, and it is an important contribution to the existing literature. It surveys a large array of results in cognitively scientifically oriented fields ranging from robotics to developmental psychology, and it argues convincingly that these results should encourage us to embrace a radical new research

paradigm in the cognitive sciences. The central claim is that mainstream cognitive scientists should, like their more revolutionary colleagues, learn to substitute for “the disembodied, atemporal intellectualist vision of mind ... the image of mind as a controller of embodied action” (p. 7). As a clear and brightly written account of this alternative movement in cognitive science, and perhaps even as a kind of mission statement for the new paradigm, Clark’s book is one of the finest I have read. It is limited, however, by the fact that the interesting and well-described empirical work that forms the center of his presentation does not always provide sufficient resources for addressing the equally important philosophical problems lurking at its edges.

Clark’s central strategy in the book is to describe, in clear and jargon-free language, the various scientific results he endorses and the challenges he understands them to pose for the classical computer model of the mind. Taken together, he argues, these results outline an “emergentist” alternative that depends upon the idea that “adaptive success [inheres] as much in the complex *interactions* among body, world, and brain as in the inner processes bounded by skin and skull” (p. 84). In particular, Clark identifies in the emergentist position at least three major departures from the classical approach. First is the rejection of “the image of [the mind as] a *central planner* that is privy to all the information available anywhere in the system” (p. 21); second is “the rejection of any blanket image of perception as the passive reception of information” (p. 50); and third is a correspondingly “extended” notion of the mind as intrinsically embedded in both the body and the environment. “Mind is”, in Clark’s evocative, if somewhat mysterious, phrase, “a leaky organ, forever escaping its ‘natural’ confines and mingling shamelessly with body and with world” (p. 53).

Because Clark’s central strategy is to defend these departures by reference to empirical research, his discussions straddle the territory between research proposal and philosophical claim. An instance of the former can be found in the way Clark uses the work of MIT roboticist Rodney Brooks to illustrate the idea that we need not think of the mind as a central planner. Brooks has had considerable success, Clark reports, in building small robots that are capable of moving about in changing, real-world environments in order to accomplish simple tasks. The key to his success is a design feature that Brooks calls “subsumption architecture”. In subsumption designs, there is no single part of the robot that is responsible for coordinating all of the subtasks necessary for the entire system to accomplish its goal—no central planner, in other words, that has access to all of the system information. In place of this, each robot is made up of several independent subsystems, each of which is capable of making the robot perform a certain relatively self-contained behavior (locomotion, object-avoidance, object-retrieval, etc.), and each of which will “subsume” the others (take over control from them) when particular conditions in the encountered environment obtain. By taking its commands directly from the environment, so to speak, a subsumption designed robot wastes no time con-

verting sensory information into symbolic code, or converting symbolic code back into motor commands; in this way, it avoids the “representational bottleneck” that is characteristic of the central planning strategy.

Clark reports that subsumption designed robots have had better success than their classical counterparts in achieving adaptive, real-time responses in a changing environment, and he suggests that the subsumption design is the key to their success. If this analysis is right, then it’s a good reason to advocate further study of Brooks’s approach to robot design. Therefore, as a rhetorically persuasive proposal for future empirical research, I would say that Clark’s presentation is a clear success. But it’s important to notice, as Clark does implicitly, that Brooks’s accomplishments in the empirical realm tell us nothing at all about the *philosophical* claim that the mind is a central planner. This is because it’s possible, of course, that the success is accidental—due, perhaps, to nothing more interesting than a lack of imagination on the part of the central planning strategists, or possibly to limitations in the speed of their hardware. For this reason, the real importance of Clark’s discussion turns out to be narrative rather than philosophical. The point is not that Brooks’s robots unequivocally invalidate the image of the mind as central planner (indeed, Clark himself ends up advocating a *via media*). Rather, the subsumption approach admirably illustrates a way of interconnecting perception and action that Clark thinks is not only useful in effective robot design, but is also in fact how human perception and action work. Thus, having shown how subsumption designed robots take motor instructions directly from the encountered environment, Clark springboards into the further, though still empirical, claim that human perception is also, in many cases at least, “geared to tracking possibilities for action” (p. 50).

In developing this latter claim, Clark offers exactly the kind of empirical data that provides important constraints on philosophical theory: he offers psychological data about human perception and action. Before we consider this data, however, let’s clarify the position that Clark describes. Clark believes that perception is not the passive reception of action-neutral information about the world; rather, perceiving just is, in many cases, discerning directly from the environment what action it requires the person to perform. Consider the example that Clark presents. A classical account of the relation between perception and action would envisage a two-stage process: first, use perceptual information to represent the way the world is (there is a chair in front of me, say), then infer from this information what action is required (I should sit down). By contrast, Clark endorses a view according to which perception and action are more intimately connected: what I see is that there is something that “affords” sitting. Or rather, I see something that draws out *this* action (perform the action of sitting down). The information that I receive perceptually, according to this view, just is information—motor information, so to speak—about what action to perform.

The idea that we perceive “affordances” in the environment—“possibilities”, as Clark explains, “for use, intervention, and action offered by the local environment to a specific type of embodied agent” (p. 50)—is not new. A version of this idea was first developed by Merleau-Ponty in the 1940s, and the term was made popular in the 1950s and 60s by the American psychologist James Gibson. Clark gives due credit to these perceptual theorists, but the evidence he offers in support of the view comes from more recent psychological research, which seeks to establish an intimate connection between perception and action by showing that perceptual adaptation is “specific to certain motor loops” (p. 38). For instance, Clark describes work by Thach et al. in which a dart thrower gradually adapts to prismatic glasses that shift the visual image to one side. We have all heard that subjects like this can eventually learn to perform as well with the glasses on as they did originally without them. What is surprising in this case, however, is that the adaptation is motor-loop-specific: “Asked to throw the darts underhand instead of overhand ... the subjects showed no comparable improvement” (p. 38). Clark concludes from this that the perceptual information the subject receives is not objective information about where the target is, but action-specific information about what to do in order to get the dart there. Clark would find further support for this view in recent work by the physiological psychologists Melvyn Goodale and David Milner, especially in their book *The Visual Brain in Action* (Oxford: Oxford University Press, 1995).

The philosophical *cum* psychological idea that perception, action, and environment are tightly interwoven in this way is seductive indeed, and it is one to which this reviewer is sympathetic. But Clark’s more general view of the mind as a “leaky organ”, a view according to which “the external environment becomes”, as he says, “a key extension to our mind” (p. 61), is both less clear and less clearly argued for. To begin with, although such a claim may resonate initially with externalists in the philosophy of mind, Clark’s view is so unrelated to traditional externalism that he offers almost no discussion at all of the central philosophical texts from Putnam, Burge, Davidson, and others that one might have hoped to find surrounding such a claim (Putnam is in fact mentioned in footnote 23 to chapter ten). What the view consists in precisely is difficult to ascertain, but it seems to depend upon the idea that changes to our environment can often be understood as changes in ourselves, since they can “fundamentally alter the information-processing tasks our brains confront” (p. 63). Surely there are cases in which we use the environment this way. An example like the one Clark gives is *à propos*: if I write a reminder to myself to take out the trash on Thursday, and I put that reminder someplace where I’m sure to see it on Thursday, then I no longer have to waste my own mental energy remembering the task between now and then. One might reasonably hold, as Clark does, that in such a case I have made the environment do for me what I otherwise would have done myself. But having admitted this much, must we go on to say that my mind is therefore

“extended” into the environment? What exactly does such a claim *mean*? And even if we take the radical step of endorsing this claim, one might still wonder whether it is completely typical of one’s actions to affect the environment in this way: what am I doing to the blue sky, for instance, when I lie on my back and stare at it? The thesis of the “extended mind”, though evocative, remains somewhat mysterious in the absence of any discussion of issues like these.

The unclarity of this view is even more unsettling when Clark extends it into the well-traveled domain of language. According to Clark, language itself is best understood “as a tool that alters the nature of computational tasks involved in various kinds of problem solving” (p. 193). The problem with this view of language is not just that it does little to justify Clark’s metaphor of the “extended mind”. For a philosopher of language (the kind of person most likely to skip directly to a chapter entitled “Language: the ultimate artifact”), the view would be simply unconvincing. In large part this is a marketing problem: because Clark is more interested in developing his view of language than in arguing for its fundamental assumptions, and because these fundamental assumptions are at odds with those standardly accepted in the philosophy of language community, any traditional philosopher of language will feel alienated from the start. This is not to say that Clark’s observations about language are inaccurate or false. Rather, it is to admit that because, as he emphasizes, his view is meant to be an alternative to any approach that highlights the communicative aspects of language, and because, as he might have added, it is little concerned with the problems of truth, meaning, and reference as well, the traditional philosopher of language will find little in Clark’s view that is recognizably related to what she considers a philosophical account of language. Rather, the discussion in this chapter focuses centrally on the question how “linguistic artifacts” might “complement the activity of the pattern-completing brain” (p. 200), and, although this question should be of great importance to those operating within the connectionist paradigm, it is not obviously important, or even very relevant, to more traditional philosophical problems concerning language.

Clark’s discussion of language represents one of the places where his book hints at philosophical issues that it does not have the resources to address. There are other examples of this shortcoming as well. Chapter eight, for instance, is devoted to the important philosophical problem of the nature of representation. It would be an unflattering, but not completely inaccurate, account of this chapter to say that it is centered around the unimpressive claim that anti-representationalists in the philosophy of mind could become representationalists if they only meant something different by “representation”. Weak claims like this one will be galling to philosophers of mind and others attuned to the traditional debates in the literature, but I do not take them to be the paradigmatic aspects of Clark’s work. Rather, what he has given us is an extremely readable and authoritative account of some of the most interesting research in cognitive science over the last decade. This research is relevant to

central issues in the philosophy of mind, and Clark's book, in both its strengths and weaknesses, makes it clear where the most important relevancies lie.

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***Philosophy and the Criminal Law: Principle and Critique***, edited by Antony Duff. Cambridge: Cambridge University Press, 1998. Pp. 261. H/b £35.00.

This book has contributions from two philosophers and three legal academics. Two of the three lawyers write from a point of view sympathetic to critical legal theory, which sees the legal system as a device for protecting social inequality and its General Part as fraught with inconsistency. Much more of the "lively and exciting" writing promised by the blurb is to be found in the contributions of the two philosophers, Husak and Duff, and in some of Norrie's chapter, than in the other two pieces, which are for the most part written at such an abstract level that they are difficult to follow; though John Gardner's piece, "On the General Part of the Criminal Law", is more circumspect and less tedious than Nicola Lacey's "Contingency, Coherence, Conceptualism", which embraces much of the critical theorist party line. I shall say no more about these two, but concentrate on the other three, which are in my view the more worthwhile chapters.

Alan Norrie ("Simulacra of Morality'?" ) illustrates the critical theorists' conception of law by appeal to the separation of motive from intention: you are guilty of theft whether your motive is need or greed, you are guilty of murder whether the motive is altruistic, as in euthanasia, or malicious, or totally absent. Motive is excluded from the attribution of liability because it is a threat to social control and would enable the poor to say their motive was need. In consequence law tends to ignore the moral context of actions: Moloney, who negligently shot the stepfather he loved, and the miners who dropped a concrete block on to a motorway to frighten a strike-breaker, were both found guilty of the same offence, manslaughter. Mistakes in rape law and on the part of someone defending a wrongly presumed innocent party are both treated as exculpatory, ignoring the difference between the motives of a sexual predator and an altruistic defender. Moreover, our law fails to take account of the overlapping moral communities to which it applies. Whereas most people agree that theft from individuals is wrong, for example, they are divided over whether it is all right to steal from supermarkets and other corporations.

Antony Duff takes up this challenge in a masterly essay, "Principle and Contradiction", which exposes some of the main confusions of the critical