

domination is (in part) a function of being subject to the arbitrary power of another agent, and to the extent that being subject to the arbitrary power of another agent is a function of that agent's ability to interfere in one's life in a way that fails to track one's interests as one perceives them, then the measurement of the intensity of the domination of a person by an agent will depend (in part) on his subjective assessment of how his interests are set back, no matter how unreasonable or unfair this subjective assessment may be. This suggests, I believe, that we need to appeal to evaluative considerations in judging the intensity of domination. If this is right, then Pettit's account of domination, as it stands, is incomplete. It lacks an identification and defence of the relevant evaluative considerations.

These problems aside, Pettit's work is a major advance on previous studies of republican political philosophy. In terms of analytical rigour and imaginative insight, it is easily the best book on the subject.

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*The Body in Mind: Understanding Cognitive Processes*, by Mark Rowlands. Cambridge: Cambridge University Press, 1999. Pp. x + 270. Hb £37.50.

In this intriguing book, Mark Rowlands develops a view of cognitive processes that he calls "environmentalism". Environmentalism can be summed up in two claims. The first is ontological: "Cognitive processes are not located exclusively inside the skin of cognizing organisms". The other is epistemological: "It is not possible to understand the nature of cognitive processes by focussing exclusively on what is occurring inside the skin of cognizing organisms" (p. 22).

Like a growing number of philosophers today, Rowland opposes the comprehensive, pre-theoretical background picture that he calls "the Cartesian picture". The central feature of the Cartesian picture, which Rowland thinks has misguided contemporary theorizing about the mind, is a pervasive internalism. Mental states and processes are located "inside the skin," and can be understood by focusing exclusively on what is inside the skin. Although Rowlands outlines an alternative, the purpose of the alternative is first to unseat the internalist mythology (in Wittgenstein's sense), and only second to present a replacement.

The book has two parts. The longer Part I ("Psychotectonics") develops and defends environmentalism as a prolegomena to undertaking the engineering project of building a mind. Part II ("Psychosemantics") concerns the project of accounting (in non-semantic and non-representational terms) "for

how representations represent: how physical states can have semantic properties" (p. 2).

Part I defends environmentalism by appeal to the thesis that cognitive processes are in part made up of manipulation of environmental structures. Manipulation is "understood broadly as any form of bodily interaction with the environment—manual or not, intrusive or otherwise—which makes use of the environment in order to accomplish a given task" (p. 23). Cognitive processes are constituted in part by external structures, in part by the behavior that manipulates the external structures to elicit information, and in part by internal processes instantiated in the brain. According to environmentalism, mental states are not just individuated by reference to the environment, but are literally located externally (p. 32).

Rowlands advances two kinds of arguments for this view. The first is a general argument from evolution. The general argument from evolution is based on a cost-benefit analysis of evolutionary development. It is evolutionarily more cost-effective to accomplish a certain task (for example, avoiding predators, transporting food) "through development of capacities to manipulate the environment rather than through the development of internal structures or mechanisms" (p. 79). A cognizing organism manipulates an external information-bearing structure in order to make use of the information that it carries. Rowlands gives many examples of organisms that employ "manipulate the environment" strategies for solving problems set by evolution. In short, strategies that involve manipulation of structures in the environment by organisms are less costly in evolutionary terms than are non-manipulative strategies that rely more heavily on internal information-processing (p. 91).

The second kind of argument in Part I appeals to environmental analyses of specific cognitive processes—perception, memory, mathematical and logical reasoning, and language. Consider perception, and compare the approach of David Marr with that of J.J. Gibson. On Marr's view, visual perception is understood in terms of a retinal image that contains relatively little information and that must be processed in some way to produce a visual perception. This makes visual perception a purely internal process. (Rowlands deliberately disregards those elements of Marr's view that "are, at least arguably, environmentalist in character" (p. 104)).

On Gibson's more environmentalist view, by contrast, the starting point is not a retinal image, but rather the optic array, an external information-bearing structure that is nomically dependent on environmental structure. The organism manipulates the optic array by moving its head in order to make information available. The more information that is available to an organism in the optic array, the less amount of internal processing the organism needs to perform to accomplish a visual perception task (p. 108). For example, information relevant to the perception of the size and distance of objects is available to the organism in the light around it. Whether or not additional internal information processing is needed for visual perception, Rowlands considers this

manipulation of the optic array to be a form of information processing—information processing that does not take place “inside the skin”.

Before turning to Part II, let me mention a problem with Rowlands's notion of a cognitive process. It is too broad. Rowlands defines “cognitive process” in terms of cognitive tasks, where “[w]hat is characteristic of cognitive tasks ... is that their solution seems to involve the acquisition and employment of information” (p. 102). A process *P* is a cognitive process “if and only if (i) *P* is essential to the accomplishing of a cognitive task *T*, and (ii) *P* involves operations of information-bearing structures, where the information carried by such structures is relevant to task *T*” (pp. 102–3). On this definition, it would seem that climbing the stairs in the dark is a cognitive process. As I walk up the stairs in the dark, I put out my foot to feel the next riser. This process is essential to my successfully climbing the stairs, and the next riser carries information about the location of the next step—information that is relevant to the task of climbing the stairs. Given the characterization of cognitive tasks and the definition of cognitive processes, it seems that any kind of problem-solving should count as a cognitive process. Rowlands has not sufficiently distinguished the cognitive from the noncognitive.

In Part II, Rowlands takes up the task of naturalizing intentionality. In a variant on Millikan's teleological theory, Rowlands construes representation like this. An internal mechanism *M*—say, a component of the visual system—has two proper functions. First, its proper function may be, say, to detect density gradients in the ambient light. Then, “detects that *d*”, where “*d*” is replaced by a density gradient, is a content attribution that applies to *M*, but not to the organism as a whole. Rowlands calls this the “algorithmic level of description” of *M*. In addition, *M* has another proper function, for example, to enable the organism to see a receding horizontal ground. This second proper function of *M* is describable from what Rowlands calls the “organismic level of description” of *M*. The organismic level of description of *M* justifies an attribution of content, not to *M* as before, but to the organism. For example, “detects that *g*”, where *g* represents the ground, is a content attribution that applies to the organism as a whole. Rowlands emphasizes that the different levels of description of *M* generate different content attributions to different objects (to *M* and to the organism) (p. 241).

Suppose that *M* is in a particular state *S*. Philosophers ask: What does state *S* of *M* represent? On Rowlands's view, this question has a peculiar answer. At the algorithmic level of description, *S* represents one thing—say, a density gradient. At the organismic level of description, *S* does not represent at all; rather *S* underwrites attribution to the organism of representing, say, a receding horizontal ground. *M*'s being in state *S* is *M*'s performing two proper functions, which underwrite two distinct content attributions. But the content attributions attach to distinct objects (to *M* and to the organism). Rowlands uses this distinction between algorithmic and organismic proper functions to solve problems of intensionality and indeterminacy.

I have a qualm about this view of representation. Rowlands here seems to be in the grip of internalism himself. He takes content attributions to organisms to be warranted by a certain description (“organismic”) of the proper function of an internal mechanism. This may be true in some cases (for example, an organism's seeing that the horizontal ground recedes), but need not be true generally (for example, Al Gore's intending to run for U.S. President). Content attributions to organisms need not be grounded in particular properties of internal mechanisms.

One last complaint: The prose is pedestrian and often repetitious. For example, see the discussions of Gibson's idea of affordances on pp. 208–9 and on pp. 237–8. And Rowland's constant reminders of what he is not trying to do become tiresome.

Despite these somewhat critical remarks, I think that Rowlands has written an important and provocative book. He has command of a vast literature in philosophy and cognitive science, and he draws on a wonderful variety of sources—not just Rumelhart, McClelland et al., and Bechtel and Abrahamson and J.J. Gibson, but also Wittgenstein, and Merleau-Ponty and Derrida. In its laudable aim of unseating the internalist picture, I think that the book is largely successful. Rowlands begins with Wittgenstein's famous line, “A picture held us captive”, and he has gone a long way toward demonstrating that the internalist picture is not the only way, or even the best theoretical way, to think about cognitive processes. I recommend this book to anyone tempted by internalism.

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*Justification Defenses and Just Convictions*, by Robert F. Schopp. Cambridge: Cambridge University Press, 1998. Pp. xii + 212. H/b £35.00.

Many criminal law theorists agree that the conditions of criminal liability are best analysed in terms of a tripartite structure of offence definitions, justifications and excuses: a defendant is criminally liable only if, first, her conduct satisfied the criminal law's definition of an offence (for instance, she intentionally killed another person); second, she had no legally recognised justification for that conduct (she was not, for instance, acting in self-defence); and third, she had no excuse for that conduct (she was not, for instance, suffering from exculpatory mental disorder). Even among those who agree on this general structure there is disagreement about many of its aspects: about the significance and implications of this tripartite division; about how we can distinguish its different elements; about the logical structure, and the content, of each of those elements. There are also more radical critics who question