William D. Casebeer, *Natural Ethical Facts: Evolution, Connectionism, and Moral Cognition*. Cambridge, MA: The MIT Press (2003), x + 214pp., $35.00 (cloth).

The ambitious aim of this book is to show how a pragmatic, neo-Aristotelian virtue theory that emerges from an appreciation of results in (1) evolutionary biology, (2) cognitive science, and (3) ethics can lead to both a revolutionary understanding of moral theory and to a radical reformation of social institutions. The idea is to forge a naturalistic, normative moral theory that is "empirically tractable."

There is a good deal of literature on the possible interconnections between evolutionary psychology and ethics. The problem is that there is no general agreement about what the implications, if any, would be. For starters, evolutionary psychology seems to promise, at best, an empirical account of the evolution of our moral sentiments. Most moral philosophers, on the other hand, think that the articulation and justification of norms and behaviors are the central concerns of ethics. It is not at all clear what the relevance of the empirical story for the moral story might be.

The apparent dichotomy between facts and values poses a formidable problem for all those who seek to defend a naturalistic interpretation of norms. On the surface, it appears that facts are facts and norms are norms and never the twain shall meet (or so the tradition goes). On the other hand, the naturalist is committed to somehow bridging the gap between them or trying to argue that, despite appearances, norms just are facts (albeit perhaps of a peculiar kind). The argument of this book is that moral theory is (at once) a piece with our scientific knowledge about the workings of the world and that norms are facts about the world and not so peculiar after all.

Casebeer proposes a modern neo-Aristotelian (virtue theory of) ethics that taps into Ruth Millikan's (1984) notion of "proper function" and Peter Godfrey-Smith's (1996) "modern-history" modification of the notion of proper functions. The view basically is this: Natural selection has shaped the evolution of functional capacities that enable organisms to successfully interact with their environments and enhance their fitness. As the ambient circumstances change, these capacities take on new functions in succeeding generations.

Following Dewey, Casebeer takes moral norms and theories to be func-

tional *instruments* or *tools* that we use to investigate eco-social environ-
ments. Tools, he notes, are by nature, contextually constrained. Thus, we
can explain how it is that, although all humans share a general evolu-
tionary history and cognitive architecture, they still manage to produce
a wide variety of social practices and particular moral norms.

Moral knowledge, Casebeer claims, is basically a set of 'knowing-hows'
that enable us to make our way around in our social environment (104ff).
This know-how can be best represented in terms of neural networks. The
activation patterns of these networks can be represented in terms of mul-
tidimensional state spaces. The idea is that we might empirically explore
such a space to discover whether, for example, as Casebeer suggests (105),
"a Principal Components Analysis (PCA) might reveal that a particular
axis correspond[s] to a particular normative moral theory." But, what if
it did? Suppose we succeeded in constructing such a multi-dimensional
map and discovered that a PCA revealed that one major axis that ex-
plained most of the variance in what people take to be morally correct
actions corresponded to, say, rule utilitarianism. How would that dis-
covery amount to a "proof" that rule utilitarianism is the *proper* moral
view? Would it, at best, only show that rule utilitarianism *explains* why
people make the moral judgments that they do?

Remarks to the effect that a PCA might resolve the debate between
moral particularists and moral universalists is symptomatic of the worries
that moral questions are being illicitly transformed into empirical ques-
tions that are significantly different from the originals. For example, Case-
beer writes "Perhaps the principal components and unifying concepts of
morality really are captured by the "big three [Aristotelian virtue theory,
Kantianism and Utilitarianism]" moral theories discussed in this book
. . . or perhaps not. Moral progress [sic!] will consist in the continued
exploration of this question, using the feedback of moral functional ex-
perience as our pragmatic guide (115)." Well, perhaps . . . *if* we construe
moral theories as attempts to *explain* why people have the moral views
they do and not as attempts to provide *justifications* for those views.

It is a well known axiom of moral theory that "ought" implies "can."
Casebeer points out that a cognitive psychology and evolutionary biology
are waiting on the sidelines to supply information that may well serve to
constrain and delimit the range of moral principles. Even so, this is not
an argument for the superiority of this particular combination of empirical
theories as potential constraints on moral theorizing. And even if it were,
it is not clear what the constraints might be and hence it is not clear what
the relevance of the empirical input really would be. By conceding that
modern times may modulate the proper functions that constitute human
virtues, we run the risk of diluting the significance of the evolutionary
and cognitive stories for determining what they are. To take an example

from the physical virtues, consider the ability of humans to fly. Unlike birds, insect and some ingenious mammals, human beings were not endowed by their creator with this natural ability. This has not prevented human beings from flying through the air with the greatest of ease by employing airplanes, balloons, helicopters, rockets and other sundry and assorted environmental contrivances. I daresay that a similar lack of constraint would be found with respect to the moral virtues as well.

These reservations vitiate to an extent Casebeer's criticism of Kantian moral theory as "transcendental." It is flawed, he claims, since the theory provides no guidelines for the use of the categorical imperative or for the Kantian test of universalizability (pp. 129ff.). It is certainly true that the transcendental strain in Kant is at odds with the kind of naturalism that Casebeer advocates, but I don't see how a naturalistic theory is likely to do much better with respect to complaints about level of application and lack of guidelines. Of course, we could empirically investigate how people do, in fact, make moral judgments and what guidelines, if any, they employ. A moral theorist, however, is likely to respond with a "so what?" What does information about how people in fact navigate through their social environments have to tell us about how they *ought* to so navigate?

In the last chapter, Casebeer addresses some potential criticisms that might be raised against his analysis. He concludes that, despite all the conceptual maneuvering, the naturalistic fallacy is still to be reckoned with. Reservations about the concept of "human nature" are brushed aside.

A final brief section outlines some areas for further research. First, he argues, there is a need to produce a neurobiologically sensitive model of moral cognition. Second, we need to pursue "moral anthropology," that is, to gather up the social facts that will need to be integrated with and serve of testing grounds for the models. Third, we need to pursue the neurobiology of moral cognition. Finally, we need to develop other naturalistic accounts and see how they interact with the functional account given here. These are all very interesting projects and definitely worth pursuing but whether they will result in a deeper understanding of the nature of moral normativity remains to be seen.

When all is said and done, I was not convinced that this proposed program shows how questions about morality can be resolved by appeals to evolutionary biology and cognitive science. I also have grave reservations about the argument. Nevertheless, Casebeer's analysis does raise a number of interesting questions about the mechanics of moral behavior that might fruitfully be addressed by undertaking the empirical and theoretical investigations that the author urges. It remains to be seen whether we come to see these results as having a central impact on our understanding of moral phenomena and the norms that underlie it.

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