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mologists who possess a kindred professional training? What was I to do, whenever I disagreed with Bergmann's intuitions, on the basis of which various tightly interlinked details of his argument proceeded? There was nothing much I *could* do, other than to continue reading.

So I did; which was, I should say, a valuable exercise. The book's chapters on proper functionalism and defeaters, in particular, are useful additions to the philosophical literature on these topics. Epistemologists will read this book with much professional interest. (And I am grateful to Michael Bergmann and Brent Madison for comments on respective earlier drafts of this review.)

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Fodor: Language, Mind, and Philosophy, by M. J. Cain. Oxford: Blackwell, 2002. Pp. 256. H/b £50.00, P/b £14.99.

Thanks, in large part, to Jerry Fodor, philosophy of mind is where it is today. Jerry Fodor has been instrumental in spearheading the cognitive revolution in both psychology and philosophy of mind. In the interest of vindicating realism about folk psychology within a physicalist framework, he has urged greater collaboration between the two disciplines—the empirical and the conceptual—and has been very forthright about how the vindication should proceed, all with rollicking humour to boot. In M. J. Cain's *Fodor: Language, Mind, and Philosophy*, all of this is lucidly presented, contextualized, and thoroughly explained. For anyone in need of a good book that helps to render systematic the various strands of Fodor's philosophical project, which has often faced the charge that it is 'all over the place', this is the book to turn to.

Organized into chapters that are eminently sensible, the book begins with a bird's eye view of Fodor's project, which is the vindication of folk psychology within a physicalist framework. In that chapter, called, appropriately enough, 'The Fodorian Project', Cain lays out how Fodor conceives of 'folk psychology', 'physicalism', and the value of demonstrating the legitimacy of folk psychology as a physically real phenomenon. For those who are new to Fodor, the chapter might have made it more explicit how this project has set the agenda for a bulk of contemporary philosophy of mind, and how even those who disagree with the prospects of the project, such as the eliminative materialists, à la Paul and Patricia Churchland, or Steven Stich, and the instrumentalists, like Daniel Dennett, are still indebted to Fodor for having made it possible to carve out the very negative positions they occupy.

In the following, second, chapter, 'The Philosophical and Scientific Background', we are treated to well composed 'lectures' on the basic mind-body

theories of the 20th century, beginning with Philosophical Behaviourism, moving to the Identity Theory, and ending with Functionalism, the most widely endorsed mind–body theory today. Along with Hilary Putnam, Jerry Fodor takes credit for introducing and developing functionalism, which Fodor presses into service as the foundation of his distinctive computational approach to the mind. It is an approach that treats the mind as a digital computer. The claim that the mind is a computer and that thinking is a form of computing, for Fodor, are not mere provocative metaphors or heuristic devices: it is intended as a literal description of what the mind is and how it works.

In the third chapter, 'The Computational Theory of Mind', Cain lays out the elements of Fodor's computational approach, and it is in this chapter that Cain displays an admirable talent for explaining technically difficult material in an accessible way. Fodor's computational approach has its roots in the theory of mind developed by the classical empiricists, notably Hume and Locke, where the basic mental representational units consist primarily of 'ideas', where the act of entertaining an idea (having a thought) basically consists of bearing a relation to that idea. Take, for instance, Mary's belief that plants need water to grow. On Fodor's view, this consists of a three-place relation consisting of the agent (Mary), an attitude (believing), and a mental representation that has specific propositional content (that plants need water to grow). The content of a mental representation is symbolic in the strict technical sense that it has both semantic and syntactic properties. When agents reason-follow trains of thought, execute inferences, act as a result of their beliefs and desires, and so on-they are literally performing computations over the syntactic properties of their mental representations. As the fundamental ingredients for thought consist of representations-symbols, for Fodor, 'ideas', for the classical empiricists-the view is called the representational theory of mind (RTM, hereafter). And as the symbols in a mental representation form a system with language-like features, Fodor's account is said to be committed to a 'language of thought' (LOT, hereafter).

Fodor's characterization of this language of thought is crucial for explaining how we reason. Undergoing a rational train of thought is basically a matter of manipulating a series of symbols in a rational way. Fodor appeals to the LOT hypothesis to give us a naturalistic nuts and bolts of how this happens. Languages consist of linguistic symbols whose specific manner of combination can yield sentences with specific meanings. It can achieve this, in part, by having representational units—symbols—that lead dual lives: a semantic part, which accounts for their meaning and reference, on the one hand, and a syntactic part, which accounts for their physical, causal, capacities, on the other. A physical mechanism, like our brains, then, can literally manipulate these symbols, thanks to their physically accessible features, and we can account for the semantic coherence of a series of symbols by identifying the ways in which their syntactic features are manipulated. Fodor has often stressed that there is a striking

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parallelism between the causal relations among mental states, on the one hand, and the semantic relations that hold among their propositional objects, on the other, a parallelism that is often optimistically described as one of mirroring, where the syntactic relations 'mirror' the semantic relations. Given the two-fold feature of symbols — their semantic component and their syntactic physicality—we can see how mental states gain their causal role from the symbols' syntactic features. In fact, if the causal properties of the syntactic features individuates the semantic components of the symbol, we can see how the syntax 'mirrors' the semantics. So the semantic property of a propositional attitude is preserved, as the symbols are the very stuff of mental representations.

At first blush, Fodor's particular construal of RTM and LOT has much to recommend it, given the governing constraints, which are to furnish a naturalistic account of mental representations that respects a full-blown realism about them. First, it demystifies how reasoning can be a causal process that also respects semantic connections between mental representations. Second, it opens a way to explain how mental states can have semantic properties at all: one can have the thought that p because there is a sentence in the LOT that means that p.

However, while immensely influential, both RTM and LOT have certainly faced a battery of criticisms, and in 'Challenges to the Computational Theory of Mind', Cain selectively addresses only a few: the interpretivist accounts of folk psychology championed by Donald Davidson and Daniel Dennett, Searle's objection to LOT in his famous 'Chinese Room' thought experiment, and the connectionist alternative to the LOT. To take on such objections, of course, would be an enormous undertaking, and with the exception of the connectionist alternative, Cain's defense of Fodor in light of these attacks is at best only deflective, as the 'defense' proceeds mainly by attacking certain weaknesses that attend to the opposing views. *Pace* Fodor, Cain argues that Fodor's systematicity objection against connectionism is unsuccessful, thereby rendering connectionism a far more promising alternative than Fodor would ever acknowledge.

We see more critical treatment of Fodor in chapter five, 'Explaining Mental Content', and chapter six, 'Individualism and Narrow Content', which address the pressing issue of how the symbols of LOT get *their* meaning. One can account for one's mental representation of a horse (the symbol in one's LOT that refers to horses) in one of two ways: either appeal to the relation between that mental representation and other, causally implicated, mental representations in one's mental economy, or to equine animals themselves in the world itself. The former strategy, called, conceptual role semantics, accounts for the meaning of a given mental representational unit in terms of its causal associations with the meanings of other mental representational units: a mental representation means 'horse' because it is causally associated with mental representations of being an animal, having a mane, being fast, and sometimes winning Kentucky derbies. The latter strategy, which appeals to causal covaria-

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tion relations between tokenings of the symbol and its referent, is the one endorsed by Fodor, in his particular brand of asymmetric dependency theory: a mental representation means horse because it is lawfully caused by horses and those tokenings of horse representations caused by non-horses depend upon the prior existence of the 'correct' lawful connection. Fodor's main reason for going with the causal covariation approach is that he thinks conceptual role semantics leads to a hopeless entanglement with holism. Fodor's own brand of causal covariation, as well as his gloss on holism, both face many problems, and it is here that Cain very systematically enumerates the notable objections and presents them with even-handed balance. Cain's discussion of Fodor's arguments for individualism, and his presentation of Fodor's change of heart to embrace externalism with equanimity, is equally thorough and judicious.

The final chapter in Cain's book concerns Fodor's modularity thesis, and it brings us back nicely to the issues raised more directly by the computational approach to the mind. Cain approaches the problems associated with the modularity thesis with the same clarity and even-handedness that marks his overall presentation of Fodor's works. This is not an easy task, as Fodor's views do not obviously appear to constitute what one may call a *systematic* philosophy. But under Cain's very careful and sympathetic rendition, Fodor's way of vindicating folk psychology in a physicalist framework gets the systematic treatment it deserves.

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The Possibility of Language: Internal Tensions in Wittgenstein's Tractatus, by María Cerezo. Stanford, CA: CSLI Publications, 2005. Pp. xiv + 321. H/b \$70.00, P/b \$30.00.

The main aim of this book is to render some of the central ideas of the *Tractatus* intelligible. It seeks to do so, not from the point of view of a powerful overarching exegetical hypothesis, but by paying close attention to the text and to the clues to its origin provided by pre-tractarian writings. The first chapter presents some of the methodological tenets of the book, and provides a useful map of the range of interpretations of the *Tractatus* on offer. The exegesis itself starts with an account of the theory of truth functions offered in chapter two, followed by a presentation of the picture theory in chapters three and four. This somewhat unusual ordering answers to Cerezo's intention to follow roughly the chronological order in which Wittgenstein's ideas developed, and does seem to correspond to the logical organisation of the system. Chapter five

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