ing—and even just of the freedom to decide and act otherwise—will run significantly deeper than a full-blown account of decision-making itself. Pink expresses the hope that his "idea of freedom ... can be made acceptable to Incompatibilists and Compatibilists alike" (p. 79). But even when the idea is taken for what it is explicitly said to be—an idea specifically of the freedom to act otherwise—it is not developed in sufficient detail to be regarded as a gift by either side. That said, Pink’s position on decision-making is a real contribution to the literature.

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Contemporary Philosophy of Mind provides an introduction to its subject by way of a general defense of the “computational/representational theory of thought”, “CRTT”, for short. CRTT is a psycho-functionalist (i.e. empirical) account of mental phenomena. It combines a functionalist account of the various attitude types and the distinctions between attitude type and content (a language of thought account), with a two-factor (functionalist/externalist) account of attitude content. CRTT is extended, in the final chapter, with the computation/representation theory of qualia, “CRTQ”, which is anti-reductionist about qualia concepts, but eliminativist about qualia.

Rey writes in an admirably brisk and clear expository style. Obvious care has been taken to be clear about methodology and to identify fundamental issues. The product is a highly readable book that covers a lot of ground, and will serve as a good, if contentious, introduction to one central strand in contemporary philosophy of mind. Though Rey sets out the foundations carefully, the discussion often presupposes a wide acquaintance with the background literature, making it unsuitable for beginners; it should, however, be suitable for graduate students and upper division undergraduates in philosophy.

The book can be divided into two parts: the groundwork, in chapters 1–5; and the presentation and defense of CRTT (and CRTQ), in chapters 6–11. Chapter one surveys the domain of the mental, lays out a taxonomy of basic positions, and discusses methodology. Chapter two discusses the historical challenge of both substance and property dualism. Rey identifies eight problems for reductionists. I believe three turn out to be central to the development of his position. The first Rey calls “Descartes’s problem”: how could a physical object display the complexity of behaviour and organization required of a rational being? The second is “Brentano’s problem”: how could a physical
object have representational states? The third is the problem of qualia: how could a physical object have qualitative states? Chapters three and four discuss the philosophical and empirical adequacy of eliminativism, that avenue of despair of the die-hard physicalist. Consideration of the empirical adequacy of eliminativism provides the opportunity for a useful discussion of radical psychological behaviourism and the Chomskian revolution in linguistics. Chapter five discusses some of the non-functionalist but non-eliminativist approaches. The groundwork plays an important part in the overall argument, particularly some methodological assumptions argued for in the chapters on eliminativism. Chapters six and seven give an overview of functionalist theories, commonalities in six and differences in seven. Chapters eight and nine present the two components of CRTT, the computational story, directed at Descartes's problem, and the two-factor theory, directed at Brentano's problem. Chapter ten addresses a variety of objections to CRTT, and chapter eleven presents CRTQ, which aims to solve the problem of qualia by denying that there are any.

More deserves attention in this book than I can discuss here. I concentrate on three interconnected questions about the adequacy of CRTT. The first is whether psycho-functionalism is an answer of the right sort to the traditional problem of the non-reducibility the mental to the non-mental. The second is what counts as among the phenomena which any successful account of the mental must accommodate. The third is whether any functionalist account could meet Rey's requirement that an adequate account of mental properties should show them to be causally efficacious.

Traditionally the dispute between reductionists and anti-reductionists has been about whether mental concepts are analyzable in terms of non-mental concepts. There is a prima facie puzzle about how an empirical theory about mental states and events, such as psycho-functionalism, could play a role in this debate, since what separates psycho-functionalism from analytic functionalism is that the latter is, while the former is not, an account of how to analyze mental concepts. On the face of it, one might think that psycho-functionalism could at best establish that certain functional states or organizations (with certain relational properties) were nomologically sufficient for certain mental states or complexes of mental states, which would not address the issue. Rey's solution to this, which he argues is warranted by our desire to treat mental kinds as explanatory, is to treat mental terms as natural kind terms. Natural kind terms are best thought of as introduced with the intention that they pick out a specific property, whose general type is specified in a background theory, which is actually responsible for some phenomenon we can independently, and partly ostensively, identify. Rey takes the relevant properties to be functional properties. Thus, psycho-functionalism becomes relevant to the traditional debate by the assumption that our grasp of what concepts (if any) are expressed by our psychological vocabulary waits upon empirical study. (I here assume that what property a term picks out is deter-
mined by the concept it expresses, in keeping with the traditional use of "concept".)

Whether terms like "belief", "desire", "pain", and "anger" are natural kind terms is of fundamental importance to determining the appropriate method for getting a clearer understanding of them. If they aren't, psycho-functionalism, and CRTT, are irrelevant to the traditional debate. If they are, the traditional debate, pursued as an a priori exercise, had no hope of successful resolution. I find the suggestion that ordinary mental terms are natural kind terms, introduced in the context of a theory about some independently identifiable domain, extremely implausible. It would require us to suppose that we don't know whether any of these words express concepts at all. And it would require us to suppose that we could understand how we could identify an independent domain without employing already the concepts putatively introduced to play an explanatory role. But it may be more profitable to try to understand why it can come to seem plausible, than to show directly that it is mistaken.

The answer in Rey's book, which I suspect applies more widely, I believe rests on at least two concerns. The first is a concern not to appear to beg the question against eliminativists by appealing to our knowledge that we have mental states (see Sc. 3.2.2). Eliminativists notoriously treat psychological terms as introduced to explain neutrally described behaviour. If one allows the eliminativist to set the terms of the debate, then of course it will seem natural to treat psychological terms as natural kind terms. But conceding that a kind of term is theoretical for fear of begging the question against a skeptic about the applicability of such terms cannot be a generally sound procedure, on pain of having to admit that every term is a theoretical term, and none appropriate for describing what our theories are supposed to explain. The second concern is that unless we tie our use of psychological terms to what is publicly accessible, we will be faced with an insoluble other minds problem. I confess I have never been impressed with the force of this worry. There is no problem about other minds that is not identical to the problem of induction generally. We clearly do not always require direct confirmation of generalizations by enumerative induction, particularly when we have a background theory which is well confirmed and which includes applicable overhypotheses. Mental phenomena are clearly causally determined (at least to a large extent) by the conditions of our bodies in our own case; this is enough to give us good reason to think that conspecifics, at least, are like us in their psychological make-up.

We find in Rey's defense of CRTQ a similar insouciance toward the objects of direct awareness. I admire the boldness of Rey's defense of functionalism against the qualia problem. Rather than argue implausibly that qualia concepts are functional concepts, Rey argues that they are empty. Rey notes that he has a hard time believing this (p. 310). So do I. Rey argues that our belief in qualitative states can be explained compatibly with denying that we have them. And he offers as a palliative the possibility of interpreting talk of head-
aches, itches, and the like, as a way of classifying states by their intentional contents. But one senses here "a failure of that feeling for reality which", as Russell famously said, "ought to be preserved even in the most abstract studies". If I do not know now, pinching myself, that I feel pain, I would be foolhardy to assert any of the other less certain things I have taken myself to know, including whatever reasons would indirectly support rejecting qualitative states. Though Rey identifies a position in logical space, I do not see how we could get there.

My final question is whether any functionalist theory could exhibit mental properties, in so far as they are functionally characterized, as causally efficacious. Rey takes showing that mental states are causally efficacious to be a criterion of an adequate account. He regards it as a virtue of functionalism that it apparently makes mental states causally efficacious by definition. But whether a functionalist account can meet the condition depends on what is required for a property to be causally efficacious with respect to another, and whether functional properties can fill that role with respect to the right properties. Neither of these questions has received the attention it deserves in the literature. It is natural to suppose that our aim in invoking mental states to explain behaviour is to cite properties causally relevant to it, properties subsumed by causal laws. On this assumption, however, functional properties cannot exhibit mental states as causally efficacious. The problem, in a nutshell, is that causal relevance is a contingent relation between properties, while the relation between functional properties and the input and output in terms of which they are defined is not. The feature which makes it looks as if functional states could not fail to be causally efficacious, ironically, shows that it is not possible. That a pill is a soporific is not why it causes sleep, for its being so conceptually requires that it does. Calling a pill a "soporific" tells us that it has a property which induces sleep, but not what it is. Likewise, since a functional state is a complex dispositional state, saying any object has it tells us it has properties causally sufficient for certain output given certain input. But it does not tell us what they are. Thus, we will not find in the functional part of the CRTT story encouragement to think that mental properties can be causally relevant to what we use them to explain, that is, the output in terms of which we seek to define them. Quite the contrary. CRTT creates the illusion that it yields a causally explanatory story about behaviour because it invokes states defined by causal relations. But this is the same illusion as supposing that ascribing a dormitive virtue to a sleeping draught tells us why it induces slumber. If correct, this point puts pressure on Rey's claim that psychological terms, if they are natural kinds and the kinds picked out are to be causally efficacious in the sense we have assumed above, pick out functional properties rather than underlying physical ones.

Functional states can still be properly invoked in a kind of computational or functional explanation, which does not aim to cite causally relevant properties, and which answers to different explanatory interests. It is open to the
functionalist to argue that it is that kind of explanation in which we are interested when we invoke mental states. This strikes me as implausible, but nothing I say here will settle the issue. It is clear that the issue deserves more attention than it has generally received, and that it is of central importance to any functionalist account of the mental. Further discussion can be found in Block, Ned 1990: "Can the Mind Change the World?", in Meaning and Method: Essays in Honor of Hilary Putnam, G. Boolos (ed.), New York: Cambridge University Press; Jackson, Frank and Philip Pettit 1988: "Functionalism and Broad Content". Mind, 97, pp. 381–400; Jackson, Frank and Philip Pettit 1990 “Program Explanation: A General Perspective”. Analysis, 50, 2, pp. 107–17; Dardis, Tony: 1993: “Sunburn: Independence Conditions on Causal Relevance”, Philosophy and Phenomenological Research, 53, pp. 577–98; Ludwig, Kirk 1994: “Causal Relevance and Thought Content”. Philosophical Quarterly, 44, pp. 334–53.

I enjoyed reading and thinking about this stimulating book. My reservations about the prospects for CRTT should not be thought to detract from its value. It provides an excellent introduction to contemporary debates in part because it argues vigorously, but with scrupulous care and fairness, for a view with which not everyone will agree.

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This book is a collection of twelve essays on the direction of time. All of the essays are written from the angle of Philosophy of Physics; the focus is on thermodynamics, cosmology and quantum mechanics. A philosopher who has studied time only from the metaphysical perspective will find herself confronted by a new body of issues. But, as the thread that runs throughout this book indicates, studying time without studying the physics misses issues that should not be neglected. Although this claim is not originated in the book, to a lay reader it is amply demonstrated.

The book’s essays are written by a diverse collection of mathematicians, physicists and philosophers. This fact gives it a piecemeal feel in that you never get the impression that you are engaging a specific project. Instead the read is a jagged path through the arguments of different experts. This has its advantages, but where it does have a detrimental side is in the lack of a point of view from which these perspectives are integrated. Because there is little continuity of intention, terminology and formalisation, when one paper makes a claim it is hard to decide what the other papers say on that topic. This point is most apparent in the use of the crucial notion of Time Reversal Invari-