

Introduction

The twenty-three papers in this volume, both individually and collectively, help to show why and in what ways materialism is on the wane. By saying that materialism is on the wane, we do not mean that materialism is in the process of being eclipsed—nor do we mean that materialism is likely to be eclipsed at any point in the foreseeable future. Indeed, there is good reason to think that materialism is a perennial fixture of philosophy (not to mention cognitive science). After all, materialism is a readily intelligible monistic worldview, appealing in its apparent simplicity, and a natural complement to the impressive ongoing successes in the natural sciences.

In spite of this, materialism is waning in a number of significant respects—one of which is the ever-growing number of major philosophers who reject materialism or at least have strong sympathies with anti-materialist views. It is of course commonly thought that over the course of the last sixty or so years materialism achieved hegemony in academic philosophy, and this is no doubt right by certain measures—for example, in absolute number of self-identified materialist philosophers of mind or in absolute number of books and journal articles defending materialism. It is therefore surprising that an examination of the major philosophers active in this period reveals that a majority, or something approaching a majority, either rejected materialism or had serious and specific doubts about its ultimate viability. The following is just a partial sampling of these philosophers, more or less in order of birth.

Bertrand Russell, Rudolf Carnap, Alonzo Church, Kurt Gödel, Nelson Goodman, Paul Grice, Stuart Hampshire, Roderick Chisholm, Benson Mates, Peter Strawson, Hilary Putnam, John Searle, Jerrold Katz, Alvin Plantinga, Charles Parsons, Jaegwon Kim, George Myro, Thomas Nagel, Robert Adams, Hugh Mellor, Saul Kripke, Eli Hirsch, Ernest Sosa, Stephen Schiffer, Bas van Fraassen, John McDowell, Peter Unger, Derek Parfit, Crispin Wright, Laurence Bonjour, Michael Jubien, Nancy Cartwright, Bob Hale, Kit Fine, Tyler Burge, Terence Horgan, Colin McGinn, Robert Brandom, Nathan Salmon, Joseph Levine, Timothy Williamson, Mark Johnston, Paul Boghossian, Stephen Yablo, Joseph Almog, Keith DeRose, Tim Crane, John Hawthorne, Richard Heck, David Chalmers.¹

¹ For all the people listed, we have documentation that they either rejected materialism or harbored serious and specific doubts about its ultimate viability. All the living philosophers listed (Putnam, Searle, Plantinga, Parsons, Kim, Nagel, and all those following) have given us explicit permission to include them on the list (under the description used in the sentence preceding this one). Limitations on space prevent us from giving a thorough presentation of citations; in the Bibliography, however, we cite relevant works by many of these philosophers. A comment about Russell and Carnap will be helpful here. Russell espoused, at different times, phenomenalism and robust neutral monism,

Materialism plainly has not achieved hegemony when it comes to philosophers of this high caliber.

Here, then, is one respect in which materialism has been on the wane. We will identify two further respects in a moment. But, first, it will be useful to say a few more words about what we mean by materialism.

MATERIALISM

Although the term ‘materialism’ has been used in diverse ways in philosophy, it traditionally has had a comparatively precise use within philosophy of mind. In this context, materialism is a certain view, or family of views, in the metaphysics of mind. Specifically, materialism is a certain view, or family of views, on the Mind-Body Problem, which concerns the ontological status of, and fundamental metaphysical relationship between, the mental and the physical—between, for instance, mental properties and physical properties, mental relations and physical relations, mental events and physical events, people and their bodies. (For simplicity, we will hereafter focus primarily on mental and physical properties (and relations); understanding their relationship arguably provides a key to resolving the entire problem.)

Historically, materialism was just the reductionist position that mental properties are identical to—and in that sense are nothing but—physical properties. (Idealism was the competing reductionist answer to the Mind-Body Problem, reducing physical properties to mental properties.) Throughout most of the history of philosophy, materialism took the form of what today we call the Identity Theory, according to which mental properties are identical to internal bodily properties, whether they be the properties associated with Democritean atoms, Hobbesian motions in the body or, in our period, electrochemical interactions at the neurological level. (Of course, nothing prevents such a theory from incorporating environmental factors in order to accommodate content externalism; for us, this kind of extended theory would still count as a materialist ontological reduction.) In the first half of the Twentieth Century another form of materialist reductionism emerged, namely, Behaviorism, according to which mental properties are identical to behavioral properties (dispositions of the body to behave in certain ways in certain circumstances). In the 1960s and ’70s a third form of reductionism gained prominence, namely, functionalism, according to which our standard mental properties and relations (being conscious, thinking,

each of which is antithetical to Reductive Materialism and also to the thesis that physical properties are metaphysically prior to—and hence are a supervenience base for—mental properties. See, e.g., Russell (1956). The young Carnap (of the *Aufbau*) was a phenomenalist. The mature Carnap (of ‘Empiricism, Semantics, and Ontology’) endorsed a form of anti-realism incompatible with the sort of materialism prominent over the course of the last sixty or so years. Like the young Carnap, Nelson Goodman and Benson Mates were also phenomenologists, not materialists.

etc.) are identical to (and hence reducible to) second-order properties: specifically, mental properties are held to be definable in terms of the characteristic interactions of their first-order ‘realizer’ properties with one another and the external environment—where in the actual world, and perhaps all possible worlds, these first-order realizer properties are physical properties (presumably, the sort of physical properties invoked by the Identity Theory).ⁱⁱ On a strong version of this view (hereafter called ‘Functionalism’), the realizers of mental properties are *necessarily* first-order physical properties, from which it follows that mental properties are necessarily second-order physical properties and therefore belong to the general ontological category of *physical* property.ⁱⁱⁱ Like the Identity Theory and Behaviorism, Functionalism qualifies as a form of Reductive Materialism.

There is a weaker version of functionalism according to which, even though mental properties are reducible to second-order properties and even though their realizer properties in the actual world are physical, it is not *necessary* that the realizer properties be physical. If this view were correct, however, mental properties would not belong to the ontological category of physical property. To see why, consider a world in which the realizer properties are not physical (a possibility implied by this version of functionalism). Plainly, the inhabitants of such a world would be mistaken if they were to assert that mental properties belong to the ontological category of physical property. Therefore, since properties cannot change ontological category, it follows that it would, in the actual world, likewise be a mistake for *us* to assert that mental properties belong to the ontological category of physical property; on the contrary, mental properties would need to belong to an entirely different ontological category. Given this, this weak version of functionalism does not count as a form of Reductive Materialism, unlike

ii David Lewis construes his functionalism as a form of first-order Identity Theory. This construal is dependent on his implausible view that our paradigmatic mental expressions are non-rigid designators of mental properties and relations. This view of these expressions fails for all of our core mental verbs and verb phrases: ‘thinks’, ‘believes’, ‘perceives’, ‘experiences’, ‘senses’, ‘feels’, ‘is aware of’, ‘is conscious of’, etc. By applying the operation of relation-abstraction to these expressions, we get the following relation-abstracts: ‘the relation of thinking’, ‘the relation of believing’, etc. Such expressions are rigid designators, as Lewis himself acknowledges, and they denote core mental relations (the relation of thinking, the relation of believing, etc.). Analogously for verb phrases such as ‘thinks that human beings exist’: the associated property abstract ‘the property of thinking that human beings exist’ rigidly denotes the property of thinking that human beings exist. Expressions like ‘pain’, by contrast, do not even denote properties. On two core uses of the expression ‘pain’ (*the* core uses, we believe), ‘pain’ functions as a count noun which applies to pains, and it also functions as an associated mass noun for more or less pain (more or less in intensity or extent) or for some pain (some amount of pain). The mental property associated with the count-noun use is the sortal property of being a pain, and the mental property associated with the mass-noun use is the property of being some pain. The associated property-abstracts ‘being a pain’ and ‘being some pain’ are rigid designators of these properties. On Lewis’s functionalism, therefore, all of the above mental properties and relations (the property of being a pain, the property of thinking that human beings exist, the relation of thinking, etc.) are rigidly designated second-order properties and relations. That is, Lewis’s functionalism is just another instance of functionalism, as it was characterized in the text.

iii Putnam (1970) proposed this reductive version of functionalism but has since renounced it.

the strong version described in the previous paragraph. There is another weak version of functionalism that is like this one except that it simply remains neutral on the question of whether it is necessary or contingent that the first-order realizers of mental properties be physical properties. This version does not *on its own* count as a form of Reductive Materialism (but only in conjunction with the independent thesis that it is necessary that the first-order realizers of mental properties be physical).^{iv} We will call these two weaker versions of functionalism Minimal Second-order Functionalism, or Minimal Functionalism for short.

Beyond the three forms of Reductive Materialism, there is an altogether different form of materialism, namely, Eliminative Materialism, according to which there simply are no mental properties—or, at least, no instantiated mental properties. It turns out, however, that there are extremely few full-blown Eliminative Materialists. Most philosophers who identify themselves as eliminative materialists do so simply because they reject some central *subcategory* of mental property. For example, Paul and Patricia Churchland reject propositional-attitude properties, but they nevertheless accept that there are experiential properties (regarding which they adopt a certain form of reductionism).^v Moreover, although they deny that there is a propositional attitude of knowing, they hold that there is knowledge. Another radical view is that there is no consciousness whatsoever (and so, in particular, no conscious experiential properties); but among the few philosophers of mind who have held this view, most have accepted that there are at least nonconscious propositional-attitude properties.^{vi} The fact is that it is difficult to think of any major philosopher today who is thoroughgoing eliminativist, who holds that there are absolutely no (instantiated) mental properties—no knowing, no experiencing, no consciousness.

Besides Reductive Materialism and Eliminative Materialism, there has been one further rallying point for materialists, namely, Supervenience. In the setting of the Mind-Body Problem, this is the thesis that, whether or not mental properties are identical to physical properties, they in any case supervene on them (if only as a brute fact). Approximately, and in slogan form, mental properties supervene on physical properties if and only if it is necessary that any two objects that are alike in their physical properties are also alike in their mental properties (i.e., it is necessary that any two objects that differ in their mental properties also differ in their physical properties). Since the Mind-Body problem concerns the metaphysics of mind, the relevant modality here is metaphysical necessity, not mere nomological necessity; when we speak of supervenience, we will *always* mean metaphysical supervenience. Naturally, there are other notions

^{iv} A great many (perhaps most) functionalists adopt one or the other of these two weaker versions—for example, David Lewis, Frank Jackson, Sydney Shoemaker, Robert Cummins, and many others. (More recently, Shoemaker (2001) abandoned this version of functionalism in favor of a thoroughgoing nonreductive functionalism in the sense of Chapter 6 below.)

^v See, e.g., Churchland (1979).

^{vi} See, for example, Rey (1982).

of metaphysical supervenience besides the one just articulated in slogan form, some stronger and others weaker; and associated with each of these notions is a corresponding supervenience principle (more below).

We will say (relative to a chosen notion of metaphysical supervenience) that mental properties *logically supervene* on physical properties if they not only supervene on them but do so as a logical consequence of relevant definitions (including perhaps a posteriori scientific definitions).^{vii} Logical Supervenience is the thesis that mental properties logically supervene on physical properties (relative to some chosen notion of supervenience). The appeal of Logical Supervenience is that (if correct) it guarantees that there is an *explanation* of why the underlying supervenience principle holds: it holds because it is a logical consequence of certain relevant definitions. For example, if Reductive Materialism is correct, mental properties will have reductive definitions that yield, as a logical consequence, a supervenience principle for each supervenience notion, regardless of strength. In this way, Reductive Materialism (if correct) provides explanations of why these supervenience principles hold. This, of course, is no surprise. But suppose that Reductive Materialism fails. This does not rule out the possibility of other instances of Logical Supervenience. For instance, Minimal Functionalism (discussed two paragraphs above) provides second-order definitions of mental properties that yield, as logical consequences, certain weak supervenience principles, for example, principles relativized to the actual world (more below); therefore, even though Minimal Functionalism is not a form of Reductive Materialism, it would (if correct) guarantee that there is an explanation of why these weak supervenience principles hold. And there are still further forms of logical supervenience.^{viii} Suppose, however, that Minimal Functionalism is incorrect; and suppose, more generally, that all forms of Logical Supervenience fail. It would nevertheless be at least coherent to maintain Brute Metaphysical Supervenience (Brute Supervenience, for short): the thesis that not only do mental properties supervene on physical properties but they do so as a brute synthetic necessity (or as a consequence of brute synthetic necessities which are as much in need of explanation as this supervenience itself).^{ix} Of course, Brute Supervenience comes at a price: supervenience would then be an

^{vii} Thus, we do not use the term 'logically supervene' as a synonym of 'metaphysically supervene', as some people do.

^{viii} For example, there might be supervenience principles that are logical consequences of (a) thoroughgoing nonreductive definitions of mental properties (in the sense of Chapter 6) plus (b) definitions of various meta-theoretic notions such as nomological necessity, causation, explanation, the notion of a realizer property, and even the notion of a property itself. (Shoemaker (2001) constructs an instance of this form of Logical Supervenience built around a novel definition of the notion of a realizer property.) But, in fact, almost all advocates of Logical Supervenience base their case on the kind of definitions provided either by Reductive Materialism or by Minimal Functionalism.

^{ix} If there is some promising intermediate position between Logical and Brute Metaphysical Supervenience, we are not aware of it.

unexplainable mystery (this will be relevant to the issue of complexity in the next section).

As already indicated, for Reductive Materialists, Supervenience is just a trivial corollary of their view. Likewise, for Eliminative Materialists: Supervenience is a trivial corollary since it is vacuously true on their view. But for Nonreductive Materialists—that is, materialists who deny both Eliminative and Reductive Materialism (in most cases, these materialists are advocates of the sort of Logical Supervenience associated with Minimal Functionalism or they are advocates of Brute Supervenience)—Supervenience has some promise of filling a crucial gap in their materialism. For suppose some supervenience principle (or a cluster of supervenience principles) provides a sufficient condition for materialism. In this case, our Nonreductive Materialists would be in a position to give a characterization of materialism that does not require the truth of Eliminative Materialism or Reductive Materialism and so does not trivially exclude from the start their own form of materialism. The envisaged characterization may be put as follows: materialism is the doctrine that one of Eliminative Materialism, Reductive Materialism, or Supervenience Materialism holds. For this strategy to succeed, the requisite supervenience principle or principles must meet two requirements: (1) they must be strong enough to provide a sufficient condition for materialism, and (2) they must be weak enough to avoid easy refutation. In service of goal (1), some materialists have gone beyond ‘inworld’ supervenience (i.e., the sort of principle articulated in slogan form two paragraphs above) and have proposed instead a stronger ‘interworld’ supervenience principle.^x Others have gone beyond this and have proposed an outright entailment principle.^{xi} The problem with both proposals is that they seem to threaten goal (2). That is, they appear open to possible counterexamples: for example, the metaphysical possibility of a disembodied being—a possibility that is accepted by many self-identified materialists (e.g., David Lewis, Frank Jackson, Jerry Fodor, and many others). To lessen the threat of such counterexamples, the most common strategy has been to propose certain weaker supervenience principles, namely, principles that are relativized to the actual-world. For example, Jackson has proposed the following principle: if a world is a minimal physical duplicate of the actual world, it is a duplicate of the actual world simpliciter and so, in particular, is a duplicate in all mental respects. (A minimal physical duplicate is a world that (a) duplicates all the actual physical facts and (b) contains nothing else beyond what it *must* contain in order to satisfy (a).) But, then, the worry is that these

^x That is, for all possible worlds w and w' , and any possible individuals x and x' , if x in w and x' in w' are alike in their physical properties, they are alike in their mental properties.

^{xi} For example, Kim once proposed the following strong entailment principle (but calling it ‘strong supervenience’): for all mental properties M , necessarily, whatever has M has some physical property P such that, necessarily, whatever has P has M (i.e., P is such that P entails M). This principle implies that mental properties M can be defined as infinite disjunctions of such properties P . It does not imply, however, that mental relations can be defined this way (see note 25, Ch. 6).

principles might now run into trouble with goal (1): that is, they might be too weak to provide a sufficient condition for materialism and hence fail to provide the desired characterization of materialism.

There are good reasons to think that this strategy for characterizing materialism by resorting to the indicated actual-world relative supervenience principles does not succeed; in particular, there are reasons to think that such principles do not provide a sufficient condition for materialism. Here is one style of counterexample. The envisaged principles do not on their own rule out (i.e., they are consistent with) the existence of possible worlds (remote from ours) in which there are disembodied beings. For the same reason, these principles do not on their own rule out *your existing* in one of those remote worlds in a wholly disembodied state. Thus, these principles do not on their own rule out there being a difference between the modal properties possessed in the actual world by you and those possessed in the actual world by your body (after all, your body cannot exist in a wholly ‘disembodied’ state in any world); and this is all that is needed to establish a thesis of substance dualism. Since substance dualism is paradigmatically anti-materialist, none of these supervenience principles on its own provides a sufficient condition for materialism.^{xii} This is just one style of counterexample; there are several others.

These considerations indicate that the suggested Supervenience approach faces an in principle problem. Our Nonreductive Materialists are committed to the falsity of Reductive Materialism; so, for them, there must be possible counterexamples to the biconditionals associated with the reductive definitions proposed by Reductive Materialists.^{xiii} In the case of the Identity Theory, for example, there must be either a possible failure of the necessity condition (e.g., a disembodied being, in the extreme case) or a possible failure of the sufficiency condition (e.g., a zombie, in the extreme case); there are far less extreme possibilities that suffice for the same purpose. But once such possibilities are admitted, they may then serve as counterexamples to the strong supervenience principles described above, thus forcing our Nonreductive Materialists to adopt the proposed ‘local’ actual-world relative supervenience principles. In that context, however, the same possibilities may then be used (as they were in the preceding paragraph) to construct new, ‘distant-world’ counterexamples to the claim that the ‘local’ supervenience principles provide sufficient conditions for materialism.

^{xii} Perhaps the conjunction of one of these weak supervenience principles and some additional kind of metaphysical principle would rule out such counterexamples, but then the additional principle would itself need to be incorporated into the envisaged sufficient condition. Supervenience alone does not do the job.

^{xiii} For analogous reasons, an advocate of Brute Supervenience must deny the truth of Minimal Functionalism and, hence, is committed to the existence of possible counterexamples to that doctrine; these additional counterexamples will in turn lead to additional trouble for the supervenience principles that the advocate of Brute Supervenience may choose to invoke.

The situation is even worse for advocates of Brute Supervenience. Consider an analogy between this thesis and a broadly Moorean brute supervenience thesis about aesthetic properties. According to the latter thesis, aesthetic properties (being beautiful, elegant, etc.) do not reduce to physical properties (they are neither first-order nor second-order physical properties) and, more generally, they do not logically supervene on physical properties; instead, they brutally supervene on them. No one in Moore's day, however, would have said such a view is a form of materialism about aesthetic properties.^{xiv} Quite the contrary, this brute supervenience thesis was universally considered an instance of anti-naturalism. But, according to virtually everyone—both in Moore's day and today—materialism is just a special case of naturalism. In view of this, it difficult to see what could justify counting the above wholly analogous Brute Supervenience thesis about mental properties as a form of materialism.

Taken together, these considerations cast doubt on the above strategy for building Supervenience into the account of what materialism is, thus lending support for the view that there is only one coherent notion of materialism, according to which materialism is the doctrine that either Eliminative Materialism or Reductive Materialism holds. We find this view quite compelling even if we are not ready to endorse it here. A number of contributors to this volume, however, do endorse this view. That said, most of the contributors to the volume are willing, at least for sake of argument, to count various supervenience theses as forms of materialism. The majority of these contributors believe, however, that there are convincing arguments against such supervenience theses; for this reason, they are simply much less concerned about whether such theses really should be counted as forms of materialism.

Thus, 'materialism' is used in two main ways in this volume, one stronger and one weaker. According to the stronger use, materialism is the doctrine that either Eliminative Materialism or Reductive Materialism holds. According to the weaker use, materialism is the doctrine that one of Eliminative Materialism, Reductive Materialism, or Supervenience Materialism holds.^{xv} (The best policy for readers is to refer to the individual papers to understand how the author is using the term.)

One final terminological point. Among the philosophers of mind who reject Reductive Materialism, Eliminative Materialism, and Supervenience Materialism, many believe that the instantiation of mental properties is nevertheless determined by the instantiation of physical properties, where the hypothesized determination

^{xiv} Terence Horgan gives a quite similar argument in this collection against counting Brute Supervenience as a form of materialism.

^{xv} A certain number of people on the list given at the outset were included because they reject strong materialism (i.e., Eliminative and Reductive Materialism); they include van Fraassen, McDowell, Salmon, Williamson, Yablo, Almog, and Heck, among others. Some of these philosophers accept some form of metaphysical supervenience and, hence, accept weak materialism; others are agnostic on this question.

relation is a *contingent* relation—for example, a contingent causal or contingent nomological relation (in which case either the physical events would cause the mental events, or it would be nomologically necessary that, if the physical facts are such as they are, the mental facts would be as well). These views, however, are not positions in the metaphysics of mind; they are instead contingent scientific theories and as such are not versions of materialism, at least not on the primary use(s) of ‘materialism’ in traditional philosophy of mind. (Dualists from René Descartes to the present have held just such contingent-determination views of sensory experience, for example.) In any case, this is how we are using the term when we speak of the waning of materialism.

THE WANING OF MATERIALISM

Over the last fifty or so years, materialism has been challenged by a daunting list of arguments (some inspired by classical arguments from the history of philosophy and others, wholly new) beginning with the Chisholm-Geach-Putnam attack on Behaviorism and fortified by Kripke’s attack on the Identity Theory, followed by a host of others: the multiple realizability argument, the disembodiment argument, the certainty argument, the zombie (or nonconscious automaton) argument, the absent qualia argument, the knowledge argument, the inverted spectrum argument, the argument from the special sciences, the explanatory gap argument, the anti-individualism argument, the self-consciousness argument, the mental causation argument, and many, many more. Taken together, these arguments and sophisticated variations on them constitute a significant *prima facie* threat to the success of materialism.

How does the list of problems facing anti-materialism stack up against the list of problems facing materialism? As far as we can see, there are only three main worries confronting anti-materialism.^{xvi}

(1) *Complexity*. The first worry is that it lacks the ontological simplicity of Eliminative Materialism and Reductive Materialism (this of course is not so in the case of Nonreductive Materialism); for, other things being equal, a theory with

^{xvi} In general, we use ‘anti-materialism’ to refer to the disjunction of a certain cluster of views incompatible with materialism: namely, dualism (property dualism or substance dualism); robust neutral monism (neither physical properties nor mental properties have metaphysical priority over the other); anti-reductionist versions of hylomorphism; anti-reductionist accounts of normativity; ‘liberal naturalism’ (as opposed to reductive naturalism); idealism (e.g., phenomenism); epistemic stalemate (the materialism/anti-materialism debate ultimately ends in a draw); enigma (the Mind-Body Problem has no solution); various anti-realisms (including those that deny the legitimacy, or even the intelligibility, of the Mind-Body Problem). In the next few paragraphs, however, we will focus on property dualism, as if it is the view most representative of the views in this cluster, and we will use ‘anti-materialism’ as if it refers just to property dualism. The thought is that, if property dualism fares well with regard to the problems facing it, the disjunction of views in the cluster will fare well with regard to the problems facing it.

a simpler ontology is to be preferred to a theory with a less simple ontology. So are other things equal? Two preliminary points. First, at present a large number of problems confront materialism; until it is known whether materialism is, or is not, able to solve these problems, no one will be able to give a determinate answer to our question. Second, suppose materialists in the end have no way to deal with their various problems besides appealing to some mystery tenet or tenets. Such principles, however, would as a matter of overall theoretical simplicity cancel out any gain provided materialism's greater ontological simplicity; so until the nature of materialism's solutions to its problems is known, no one will be able to give a determinate answer to our question of whether 'other things are equal.' It seems, therefore, that the best anyone can do today is to make a (provisional) case-by-case examination of the other problems facing the two positions. Are the two remaining problems facing anti-materialism as bad as (or worse than) the long list of problems facing materialism?

(2) *Psychophysical regularities*. It is sometimes thought that, if anti-materialism (property dualism, for example) were true, then the mental would be so different in nature from the physical that it would be impossible for them to be related to one another nomologically (lawfully), causally, or explanatorily; yet without positing some such relations anti-materialism would be unable to account for obvious psychophysical correlations. Here are two responses. First, physics (which is the scientific backdrop of materialism) admits lawful relationships among physical entities that are extraordinarily diverse in nature and, in turn, admits relations of causal influence and law-grounded explanation among these entities. Physics allows, moreover, that some of these lawful relationships are brute facts having no further explanation. If such relations are tolerated in physics, why not psychophysics?^{xvii} Second, the alleged problem has little force in a neo-Humean intellectual context (which is the context within which physics has been operating successfully since the Seventeenth Century), wherein it is allowed that, for any regularity among contingent entities, it is metaphysically possible that the regularity be a *lawful* regularity. (Analogously, for causal and explanatory relations.) This principle, however, would allow anti-materialists to posit lawful psychophysical regularities, thus solving the problem.^{xviii}

^{xvii} The following, for example, might be among the psychophysical laws: all beings with mental properties have bodies (where it is understood that a being has a body only if there is a regular correlation between the being's mental properties and the body's physical properties).

^{xviii} Suppose Reductive Materialism and Logical Supervenience are unable to surmount the problems confronting them. Then Brute Supervenience would be the only haven for materialists (assuming that this is a form of materialism). But absent a compelling argument or intuition, it is an affront to simplicity of theory to posit brute supervenience relations rather than brute nomological relations. The reason is that brute supervenience relations impose restrictions on modal space far exceeding what is needed for the explanatory tasks at hand; brute nomological relations do the job just fine while imposing far weaker restrictions on modal space. Absent compelling argument or intuition, brute supervenience relations are always extravagances lacking epistemic warrant.

(3) *Mental Causation*. Anti-materialism is alleged to be unable to accommodate the possibility of mental causation without violating the causal closure of the physical. But this is not at all clear when causal closure is formulated in its most plausible form, as follows: for every physical event e that has a cause, there is a physical event c such that it is nomologically (or causally) necessary that if c occurs, e occurs. Suppose that physics requires, and provides justification for, this weak causal closure principle. But obviously this weak principle does not imply the following stronger closure principle: for every physical event e that has a cause, there is a physical event c such that c is a sufficient cause of e .^{xix} Failure to appreciate the distinction between weak causal closure and strong closure principles has led many philosophers to the conclusion that mental causation is untenable in an anti-materialist setting, whereas in fact there are very promising accounts of mental causation compatible with anti-materialism. For example, there is an account that is built around nonreductive functional definitions of mental properties which is compatible with both materialism and anti-materialism.^{xx} There are also promising probabilistic accounts compatible with anti-materialism.^{xxi}

There is also the so-called pairing problem, which arises in the context of substance dualism. The pairing problem may be put as a question: how, if substance dualism were correct, could there to be a determinate fact about which mental substances are paired with which bodies (i.e., which mental substances have which bodies).^{xxii} Two points are in order. First, even if the pairing problem were a problem for substance dualism, it is simply not a problem for *property dualism* and so, therefore, is not a problem for anti-materialism generally. Second, the first account of mental causation mentioned in the previous paragraph is compatible with the denial of substance dualism, but it is also compatible with substance dualism and, in that setting, is able to provide a solution to the pairing problem. According to this solution, the network of causes identified by this account is sufficient to settle the question whether a given being has a body and if so which body it is. If this is correct, the pairing problem would turn out to be just a special case of the problem of mental causation rather than a further type of problem for anti-materialism.

How does mental causation look on the materialist side? If the Identity Theory were correct, accounting for mental causation would at least initially seem fairly straightforward. Things are not so clear, however, in the case of Behaviorism, Functionalism, and Brute Supervenience. It is possible that the accounts of mental

^{xix} Nor does it imply the following still stronger closure principle (which is an immediate consequence of the conjunction of Kim's closure and exclusion principles; Kim (2005)): for every physical event e that has a cause, there is a physical event c that is the unique sufficient cause of e (except in genuine cases of overdetermination).

^{xx} See Bealer (2007).

^{xxi} One such account is Usher's (2006).

^{xxii} See Kim (2001).

causation that seem to work well in the context of these forms of materialism are just those accounts that appear to be open to anti-materialists. If so, the problem of mental causation is at least a wash in the materialist/anti-materialist debate, if not a point in favor of the anti-materialist side.

Let us tally the results. Anti-materialism's greater ontological complexity would be a problem if other things were equal—that is, if the challenges facing anti-materialism were as serious as those facing materialism. But it is far from clear that other things are equal: arguably the problem posed by psychological regularities has little or no force, and the problem posed by mental causation is at worst a wash. This is how things stand on anti-materialism's side of the scorecard. But, as indicated above, on materialism's side we find an unusually long list of challenging problems. (Why is there this disparity? Presumably the short answer is that the very features that make anti-materialism ontologically more complex than materialism enable it to deal with the various phenomena that materialism finds difficult to accommodate.) The upshot is that, as things stand today, materialism is at least on the defensive. In this respect, materialism is on the wane.

This seems to be reflected in the attitudes of a many contemporary philosophers of mind. A growing number—among them prominent philosophers who once had strong materialist sympathies—have come to the conclusion that at least some of the arguments against materialism cannot be overcome.^{xxiii} True, certain materialists believe that they already know how to answer all of the arguments against their position. But many materialists would acknowledge that the extant responses are at best inconclusive. Others admit that they do not yet know how to dispel all of the aforementioned worries, though they nevertheless remain convinced of the truth of materialism, taking it as an article of faith that at some point in the future they, or someone else, will find ways to do so. But such a conviction clearly does not rise to the standard of epistemic justification needed for theoretical knowledge. Still other philosophers, who initially had strong materialist sympathies (for example, Thomas Nagel (1986) and Colin McGinn (1999)), have seriously entertained the possibility that it might well be beyond the intellectual capacity of human beings to discover, and understand, answers to all of the arguments against materialism. Although it might be natural for a materialist who takes this possibility seriously to remain convinced of the truth of materialism, this conviction will have lost its epistemic standing; it certainly falls far short of theoretical knowledge. In any case, a great many materialists familiar with the arguments against materialism admit that these arguments constitute a genuine threat and that they need to be taken very seriously. In fact, a number of very prominent materialists acknowledge that the materialism/anti-materialism debate could well be a draw or at least that anti-materialism is a sensible position that they can see rational people believing. Here is William Lycan:

xxiii For example, Kim (2005)

Being a philosopher, of course I would like to think that my [materialist] stance is rational, held not just instinctively and scientifically and in the mainstream but because the arguments do indeed favor materialism over dualism. But I do not think that, though I used to. My position may be rational, broadly speaking, but not because the arguments favor it: Though the arguments for dualism do (indeed) fail, so do the arguments for materialism. And the standard objections to dualism are not very convincing; if one really manages to be a dualist in the first place, one should not be much impressed by them. My purpose [in this essay] is to hold my own feet to the fire and admit that I do not proportion my belief to the evidence.^{xxiv}

And Jerry Fodor:

I think it's strictly true that we can't, as things stand now, so much as imagine the solution of the hard problem [of explaining consciousness]... I would prefer that the hard problem should turn out to be unsolvable if the alternative is that we're all too dumb to solve it.^{xxv}

These cracks in the ranks of materialists constitute another respect in which materialism is on the wane.

Given the fixity and asymmetry in the lists of respective problems, it is natural to predict that, among the major mature philosophers in the future, a significant portion (perhaps sometimes a majority) will reject materialism. Even among those who start out as materialists in their youth, a significant number are likely to end up doubting materialism's ultimate viability or suspecting that the materialism/anti-materialism debate is moot, and in either case recognizing that some versions of anti-materialism have rational credentials at least as good as materialism's. Thus, even though it is likely that in the future the ranks of materialists will continue to see new recruits, especially among newcomers to philosophy, the character of the problems facing materialism will continue to inspire very serious doubt. If this is the case, materialism will in one respect continue to wax; in another, it will continue to wane.

THE PAPERS

I. Consciousness

The first paper, 'Against Materialism' by Laurence BonJour, serves as an overview of the entire volume. BonJour argues that the positive case for materialism is quite weak. He argues, using a new version of Frank Jackson's 'knowledge argument,' that the most popular materialist explanation for consciousness, namely, functionalism, fails to provide an adequate account of the qualitative content of consciousness ('qualia'), and that materialist accounts of the intentionality of the

xxiv Lycan (2009), p. 551.

xxv Fodor (2007).

mental have also failed for similar reasons. BonJour concludes that some form of property dualism offers the best hope for an adequate philosophy of mind.

Adam Pautz argues, in 'Consciousness: A Simple Theory of Approach,' for *primitivism* about sensory consciousness: the thesis that the relation of sensory consciousness cannot be reduced to or constituted by physical or functional features. He does not rely on the usual a priori arguments, such as the knowledge argument, but instead upon certain philosophical claims about the structure of consciousness, together with empirically discovered facts about its physical basis in the brain. Pautz presupposes a broadly relationalist account of sensory consciousness, a category that includes sense-datum, disjunctivist and intentionalist accounts. Pautz refers to empirical evidence that our phenomenology is badly correlated with external properties that we might bear some causal relation (such as the 'optimal cause' relation) but strongly correlated with internal features of our neural processes. These facts give us good reason to believe in the possibility of 'coincidental variation': cases in which the individuals involved have different sensory experiences despite bearing the same causal relations to the same external properties. Pautz argues that the only possible explanation of such coincidental variation is primitivism. Finally, although Pautz admits that primitivism is consistent with the metaphysically necessary supervenience of the mental on the physical, he argues that the truth of primitivism would leave us without any good reason for positing such a brute metaphysical necessity.

Charles Siewert, in 'Saving Appearances: A Dilemma for Physicalists,' takes as his target 'ambitious physicalism': an approach that aims to provide an explanatory reduction of consciousness to a physical and functional base. Siewert uses a range of cases involving the phenomenon of 'blindsight' to argue for the reality of phenomenal appearances of such a kind that cannot be accounted for by the standard physicalist theories, whether eliminativist, functionalist, or representationalist. Siewert argues that the physicalist faces a dilemma: either denying the reality of phenomenal appearances by trying to identify those appearances with something manifest and describable in non-phenomenal terms, or facing an unavoidable arbitrariness in deciding which hidden features should be assigned metaphysically necessary and constitutive status with respect to conscious phenomena. Siewert argues that the cost of abandoning ambitious, reductive physicalism is not high, since we can still study the systematic relations between phenomenal appearances and physical conditions. The persistent failure to find an ultimate explanation of the real 'nature' of consciousness does not threaten the explanatory completeness of science.

In 'The Property Dualism Argument,' Stephen L. White argues that materialism cannot provide an explanation of the possibilities of a posteriori identities between phenomenal qualities and physical or functional properties that satisfies what he calls 'Frege's constraint.' Frege's constraint requires that we explain the possibility of a rational person's ascribing contradictory properties to a thing in terms of distinct 'modes of presentation,' in such a way that these modes

can provide a rational justification of the person's beliefs, attitudes, and actions at a personal level. White argues that satisfying Frege's constraint requires our recognition of both representational and nonrepresentational modes of presentation. The latter must be properties that are instantiated in *the world as a person represents it to himself*. These properties must be so finely individuated that they are incapable of having any empirically discoverable real essence (they must be 'thin' properties), and the connection between such properties and the predicates that express them must be a priori, or else we would be unable to account for the rational justification of the person's beliefs in terms of how the world appears to him or her. To deny these constraints is to embrace what White calls 'local eliminativism' about mental contents, a position that he argues is no more defensible than the elimination of the mental tout court. Avoiding local eliminativism through accepting these Fregean constraints prevents the materialist from making good on the claim that we could discover an a posteriori identity between any mental property (such as pain) and any physical or functional property, without thereby positing *another*, higher-order mentalistic property, one needed to explain the possibility of rationally denying the identity. An infinite regress can, therefore, be avoided only if, at some level, a mentalistic property is instantiated that could not be identified a posteriori with any other property. White defends his argument against recent challenges by Richard Boyd and Brian Loar and distinguishes it from Jackson's knowledge argument and Levine's explanatory gap.

In 'Kripke's Argument against Materialism,' Eli Hirsch elucidates Saul Kripke's argument against the possibility of a posteriori identities between phenomenal and physical properties. As is well known, Kripke provided powerful arguments for thinking that all identity claims involving terms that pick out their referents essentially are necessarily true, if true at all. However, if claims of the identity of the properties of pain and of the firing of C-fibers are necessarily true, and if our use of 'pain' to refer to pain depends only on features of our epistemic situation, then necessarily anyone in our epistemic situation who believes this identity believes something that cannot be false. How, then, could the identity fail to be a priori? Moreover, how could we explain our resilient modal intuition that either one could occur in the absence of the other? Hirsch fills a lacuna in Kripke's argument: responding to the objection that, unlike 'pain', 'the firing of C-fibers' does not pick out its referent essentially. Hirsch argues that, unless we embrace an extreme version of structuralism about physical properties, we must acknowledge the possibility of constructing terms that pick out any relevant physical property essentially. In addition, Hirsch re-formulates the Kripkean argument in terms of supervenience (rather than identity), enabling him to replace the singular term 'C-fiber firing' with quantification over all physical properties.

In 'The Self-Consciousness Argument: Functionalism and the Corruption of Content,' George Bealer targets functionalism as the most cogent form of contemporary materialism. In particular, he takes aim at Reductive Functionalism

and Minimal Functionalism: theories that attempt to specify the essences of mental, in a non-circular fashion, by means of properties functional definitions (i.e., by means of the Ramsification of causal theories of the mind). Bealer points out that functionalism must account for thoughts (such as introspective thoughts) that have psychological attitudes embedded within them. For example, John may attribute to himself the property of being in pain. When Ramsified, the resulting proposition asserts that John is in the R_1 relation to the proposition that he has the R_2 property (where R_1 and R_2 are the first-order physical properties that 'realize' thinking and being in pain). However, no one self-attributes by introspection the physical property R_2 (i.e., having firing C-fibers or whatever physical property R_2 is). Bealer effectively sets aside worries that the intensionality of the context of thought renders the argument invalid. He also draws attention to the devastating consequences of the other strategies for avoiding the dilemma, including language-of-thought functionalism. When the language-of-thought theorists attempt to define the content-of-relation, they face a dilemma concerning the content of psychological predicates in the language. The language-of-thought theorist must either accept a definitional circularity incompatible with materialism, or resort again to Ramsified definitions that misdescribe the contents of self-conscious thoughts. In addition, such language-of-thought functionalism readily leads to epiphenomenalism. Finally, attempts to avoid the definitional circularity by means of something like a Tarskian hierarchy of distinct psychological attitudes founder on the type-free nature of introspection. Bealer concludes that the only viable functionalism is a non-reductive one that accepts mental properties as ontologically primary, on a par with physical properties.

II. The Unity and Identity of Persons

David Barnett, in 'On the Significance of Some Intuitions about the Mind,' defends the thesis that the simplicity (non-compositeness) of the mind is the best explanation for the fact that it is impossible for a pair of persons to constitute a single subject of experience. Barnett uses thought experiments to rule out the alternative explanations: an insufficient number of immediate parts, the wrong nature or structure, or some combination of these.

In 'Persons and the Unity of Consciousness,' William Hasker argues that the materialist cannot account for undeniable datum of conscious unity. Moreover, he shows that this datum is not defeated by careful consideration of such empirically based problem cases as commissurotomy or multiple personality syndrome. Hasker concludes that a form of emergent dualism is most consistent with both the datum of unity and the empirical facts about the problem cases.

In 'An Argument from Transtemporal Identity for Subject–Body Dualism,' Martine Nida-Rümelin argues that a subject of experience cannot be either identified with or constituted by the human body, on grounds that only the thesis of Subject–body dualism can explain the substantive difference between

contrasting hypotheses about personal identity in duplication thought experiments. She argues that this substantive difference exists only when it is the transtemporal identity of self-conscious beings (in contrast to artifacts or associations) that is at stake. Nida-Rümelin contends that any form of materialism, including functionalism and four-dimensionalism, will be committed to what she calls 'the illusion theory' about personal identity: the theory that there is, despite appearances, no real fact of the matter about which ensuing individual, if any, continues the existence of the original person in the duplication cases, a theory fundamentally at variance with our self-conception as conscious beings.

III. Intentionality, Causation, Knowledge

In 'Burge's Dualism,' Bernard Kobes shows that Tyler Burge's anti-individualism about mental content leads to a form of 'dualism,' broadly conceived. Kobes argues that Burge's methodological stance, which relies on our actual explanatory practices and which rejects the presumption of physicalism, is defensible. Burge's anti-individualism, his claim that mental contents are individuated in terms of features of the individual's physical, social, and historical environment, undermines any type identity between mental representations and neurophysiological or localized functional states. Given the failure of localized supervenience, Kobes argues that the Burge thought-experiments provide strong grounds for rejecting even token identity claims about mental and physical events. Burge dismisses Kimian worries about mental causation, on the grounds that our scientific and commonsense knowledge of the efficacy of the mental is more secure than any metaphysical argument to the contrary. According to Kobes, Burge effectively challenges weaker versions of materialism, such as the claim that mental events are constituted by physical events, on the grounds that our concepts of composition lack any clear application to events and similar entities. Kobes closes by defending Burge's position against a number of objections and challenges.

In 'Modest Dualism,' Tyler Burge begins by stating and defending his argument against the token identity of physical (neural) and mental events, based upon the dependency of mental content on distal causes. Burge then turns to the weaker formulation of materialism given by Kobes: the thesis that mental events are composed or constituted by physical events. Burge argues that such a thesis of the material composition of the mental finds little support from common sense or empirical psychology, especially where propositional thought and consciousness are concerned. In contrast to Kobes, Burge does not think that the compositional model can be rejected simply on the grounds that psychological kinds cannot be demarcated on the basis of physical patterns alone, since the same thing is true of biological kinds, for which a material composition model seems secure. Burge agrees, however, with Kobes in thinking that the issue diachronic causation is critical: in particular, can the mental and neural kinds be 'correlated in a manner familiar from sciences that make use of causal aspects of material components

to illumine causal aspects of higher-level composed kinds? Burge insists that psycho-physics provides us with no such causation-illuminating correlations. In the case of propositional thought, with its essential connections to the norms of reason, the prospects of the discovery of such explanatory connections are especially bleak.

Neal Judisch, in 'Descartes' Revenge Part II: The Supervenience Argument Strikes Back,' argues that Jaegwon Kim's argument, which purports to show that nonreductive materialism cannot account for mental causation (on the hypothesis of the causal 'closure' or sufficiency of the physical), can in fact be turned against Kim's own position (reductive functionalism). Kim's argument entails that a theory of mind preserves the possibility of mental causation only if, on that theory, mental properties (i) multiply realizable, (ii) have instances that are efficacious in virtue of being instances of those mental properties, and yet (iii) are physically reducible. Judisch argues that these three constraints are mutually inconsistent. Thus, Kim's argument actually supports the *incompatibility* of mental causation with the assumption of the causal sufficiency of the physical realm.

Timothy O'Connor and John Ross Churchill, relying on a causal-powers metaphysics of properties, defend Kim's argument for the incompatibility of mental causation and non-reductive materialism in 'Nonreductive Materialism or Emergent Dualism? The Argument from Mental Causation.' After critically reviewing proposals by Shoemaker and Gillett, they develop and defend their own version of emergent dualism.

In 'Epistemological Objections to Materialism,' Robert Koons argues that materialism is vulnerable to two kinds of epistemological objections: transcendental arguments, that show that materialism is incompatible with the very possibility of knowledge, and defeater arguments, that show that belief in materialism provides an effective defeater to claims to knowledge. Koons constructs objections of these two kinds in three areas of epistemology: our knowledge of the laws of nature (and of scientific essences), our knowledge of the ontology of material objects, and mathematical and logical knowledge. Koons concludes that these epistemological weaknesses place the materialist in a dialectically weak position in respect of ontological identity claims, since the materialist cannot know the causal powers or persistence conditions of material objects. Finally, Koons argues that the materialist can provide no non-circular account of epistemic normativity. Anti-realist accounts of normativity are unavailable because normativity is already implicated in all intentionality. Moreover, Koons argues that materialists face a fatal dilemma in attempting to carry out an etiological reduction of teleological norms, since neither Humean nor anti-Humean accounts of causation yield defensible results.

IV. Alternatives to Materialism

The distinction between this section and the preceding three is not hard and fast: the chapters in the final section do contain arguments (some involving appeals to phenomenal consciousness, personal identity, and mental causation) in support of their favored alternatives. However, none of them is purely negative or critical: each puts forward and defends a specific alternative.

Terry Horgan, surveying the current state of the philosophy of mind in ‘Materialism, Minimal Emergentism, and the Hard Problem of Consciousness,’ argues that the position of minimal emergentism is one that must be taken seriously. Horgan defines materialism as a position ruling out both metaphysical and nomological ‘danglers’: the instantiation of properties and relations over and above those involved in the instantiation of fundamental, physical properties, and relations. The minimal emergentist accepts the nomological closure of the physical realm and posits no fundamental, non-physical properties. Minimal emergentism comes in two forms: nomological and Moorean, depending on whether the necessity involved in the supervenience of the mental on the physical is physical or metaphysical necessity. Horgan argues that there are two enduring problems for materialism: the irreducibility of phenomenal qualia, and the explanatory gap between the mental and the physical. The existence of the explanatory gap between functional and qualitative properties provides grounds for a good abductive argument for the existence of zombies and phenomenal inverts, contrary to materialism. In addition, Horgan argues that the ‘new wave materialism’ of Hill, Loar, and McLaughlin, which provides a novel account of directly referential ‘phenomenal concepts,’ offers no solution to these problems, since it cannot account coherently for the uniquely self-presenting character of phenomenal qualia. Horgan also argues the problem of phenomenal qualia is much broader than is often acknowledged, affecting the viability of materialists’ accounts of intentionality and agency no less than their accounts of sensation. Finally, Horgan suggests that the fact of mental causation provides no argument for materialism, even given the nomological closure of the physical realm, since minimal emergentists can legitimately make use of the very same, suitably weakened notion of ‘causal efficacy’ that the materialist must use in allowing for the efficacy of mental properties (given the fact of multiple realizability).

In ‘Dualistic Materialism,’ Joseph Almog defends a position that is both dualistic (recognizing the distinctness and the difference in nature between mental and physical events) and materialistic (in the sense of positing a natural or essential *connection* between the two types of phenomena). Almog insists that our common sense (or ‘marketplace’) view embraces both a duality and a necessary connection intuition, unlike either substance dualism or philosophical

materialism. On Almog's view, there can be (contra Hume) necessary connections between distinct existences, whenever the distinct existences have *correlative* or *coordinated* natures. Almog provides examples from mathematics of correlated natures linking distinct numbers or sets to one another, or sets to non-sets (such as singleton sets and their members). The correlated natures of biological species and their individual members provide another example. Almog argues that, since there is only one cosmos, the nature of each type and token must be correlated with that of the generative process responsible for its coming into being, providing just the sort of necessary connection between mental and physical phenomena required by common sense.

Michael Jubien, in 'Dualizing Materialism,' offers a novel, ontological argument against token-token identity claims involving mental and physical states and events. Jubien defends a Kimian object-property-time conception of the identity conditions of events and states. Jubien proposes that intentional properties, such as the property of *thinking about the moon*, are complex properties—properties that contain other properties (the relation of *thinking about* and the property of *being the moon*) as literal parts. Jubien concludes by arguing that there is no reason not to expect to find psychophysical causal laws.

In 'Varieties of Naturalism,' Mario De Caro focuses his attention on what he calls 'scientific naturalism,' the thesis that science and science alone should dictate the terms of our ontology (including what particulars, properties, events, and processes there are). De Caro defends an alternative, 'liberal' naturalism, that insists (with John McDowell) that there is a 'space of reasons' that cannot be understood exhaustively in scientific terms. In contrast to De Caro, Angus J. L. Menegé advocates the rejection of any kind of naturalism, even at the level of scientific methodology, in 'Against Methodological Materialism.' Menegé concedes that science must deal with proximate, and not metaphysically ultimate, causes. Consequently, appeals to supernatural agency (such as divine fiat) would be inappropriate. However, recognizing this limitation does not exclude the positing of irreducibly teleological causes *within* nature, as in Aristotle's biology. Menegé appeals to the question of the possible functional role of 'junk DNA' as an example of the methodological fruitfulness of a teleological stance within science.

Uwe Meixner offers a version of Cartesian dualism that draws on the resources of a Husserlian account of intentionality. For example, Meixner argues that I can locate myself at the point in space from which I am looking at the world (my 'center of perspective'), and Meixner relies on empirical phenomenology to show that this location that does not correspond to my body or any part of it. Finally, Meixner argues that the self's endurance through time calls for explanation in terms of patterns of psychophysical causation or interaction.

Brian Leftow adumbrates a Thomistic theory of mind/body relation in 'Soul, Mind, and Brain.' He defends the Thomistic theory from the familiar charge of inconsistency, showing how it is possible to assert simultaneously that the human

being is a single, unitary substance, that the soul is the ‘form’ of the human body, and yet that the soul can exist without the body, by virtue of being an immaterial particular. As Leftow explains, Aquinas’s view of the embodied souls avoids being *dualistic* by denying that the human body is a separable substance in its own right. What combines with the soul to produce a substantial human thing is not one thing but a plurality. Moreover, Leftow explains that Aquinas’s claim that human thought has no bodily ‘organ’ does not entail the natural independence of our cognitive functions from the physical condition of the brain. It does, however, imply that mental content cannot be *fully and determinately* encoded in the brain’s physical condition.

In ‘Substance Dualism: A Non-Cartesian Approach,’ E. J. Lowe defends a dualism, not of minds and bodies, but of persons (or subjects of experience) and merely physical objects. Unlike Descartes, Lowe supposes that persons have both mental and physical properties. Lowe takes the central argument for substance dualism to be the difference in identity or persistence conditions between persons and their bodies. Neither the body as a whole, nor any part of it, is a plausible candidate for an entity with the persistence conditions of a person. Lowe concludes his essay with considerations that undermine the case for the causal closure of the physical.

RECURRING THEMES

1. The Primitiveness of Consciousness

Several recurring themes run through more than one chapter. One such theme is the existence of an irreducible and ‘primitive’ consciousness relation. BonJour, Pautz, Siewert, Hirsch, White, Horgan, and Jubien all provide reasons, based on the self-presenting character of phenomenal qualities within consciousness. BonJour, Horgan, and Jubien all argue that this argument can be extended to cover all intentionality. In his critique of functionalism, Bealer defends an analogous thesis concerning self-conscious intentional states—being conscious of one’s own conscious intentional states.

2. The Ontology of the Human Person/Body

In the second recurring theme, several authors charge materialism with having inadequate resources for an adequate ontology of the human being or the human body. Ontology must account both for the synchronic composition of a single whole by the numerous parts of the human body, and the diachronic unity of the body over time. Barnett and Hasker focus on the synchronic problem, with both providing a priori arguments for the ontological unity of the person, while Hasker defends this conclusion against empirical challenge. Nida-Rümelin,

Leftow, and Lowe all argue that the diachronic identity conditions for conscious persons are incompatible with materialism, and Koons argues that materialism undermines the necessary conditions for human knowledge of the ontology of material things, putting materialists in a dialectically weak position from which to argue for mind/body identity.

3. Psychophysical Causation

The possibility of psychophysical causation is a theme that runs through much of the volume, unsurprisingly, since accounting for mind/body interaction has been a perennial problem for every kind of dualism. The views expressed by contributors fall into a spectrum of positions, depending on how far each is willing to depart from the principles of the causal closure and nomological completeness of the physical. At one end, Terence Horgan defends a position of metaphysically necessary supervenience of the mental on the physical, and he argues that such a position can accommodate mental causation in a somewhat attenuated form, but a form no more qualified than that which physicalists must settle for. E. J. Lowe's position would seem to be similar, except that he requires only nomological connections between physical and psychological properties. Lowe offers a counterfactual account of causation and argues that, at least in an indeterministic universe, psychological properties could figure in fact-causal (if not event-causal) relations to physical facts.

Tyler Burge's view is also similar to Horgan's, in that Burge is favorably disposed to the global supervenience of the mental on the physical, and he is confident that mental causation is compatible with 'gapless' chains of physical causation. He and Bernard Kobes see no serious threat of overdetermination looming, since purely physical and psychophysical causal explanations occur at different 'levels,' with mental and physical events being individuated in radically different ways.

At the other extreme, several contributors express doubts about the secure status of the supposed principles of causal closure and nomological completeness (even in their weakest forms). Laurence Bonjour, for example, argues that the inductive argument from the apparent nomological completeness of physics for observations made on inanimate and unconscious things provides little support for the extrapolation of this principle to conscious things. William Hasker, Timothy O'Connor and John Ross Churchill, Michael Jubien, and Uwe Meixner explicitly endorse the search for novel causal laws of consciousness as an emergent phenomenon, and Angus Menuge argues that the actual practice of biology (as opposed to the official, materialist gloss on that practice) relies on the positing of non-physical teleological causes. These emergentists find the attenuated sort of mental causation endorsed by Horgan subject to the charge of type epiphenomenalism that has been lodged against Davidson's anomalous token-identity theory.

The broadly Aristotelian conception of causation in evidence in the causal powers metaphysics of O'Connor and Churchill and in the Thomistic metaphysics of Brian Leftow points to another sort of solution. This solution would also be available to those who place the ontological simplicity of the person at the center of their anti-materialist strategy (such as Hasker, Barnett or Lowe). When physical particles come to compose a person (or other organism), many (if not all) of the ordinary physical powers of those particles are absorbed by the whole. The particles no longer exercise in every case their own, autonomous causal powers: instead, the action and interaction of the particles in some cases is a result of the organism exercising its causal powers (with the particles serving only as instruments or occasions of causation). The interactions within the living body are, therefore, no longer really *governed* in all cases by the ordinary laws of physics, although they might in fact continue to *conform to* those laws. Mental properties of the whole person contribute their own, distinctive causal powers, even if the resulting behavior of the incorporated particles is empirically indistinguishable from the behavior of autonomous particles (in inanimate matter). The Aristotelian could thus embrace a principle of the 'quasi-completeness' of physical law, in the sense that each collection of particles behaves *as if* it were governed exclusively by ordinary physical laws, even though the causal powers that are in fact exercised are holistic, non-physical powers of the whole person.