GENERAL INTRODUCTION

by Sean Crawford

to
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> "Imagine: inside, in the nerves, in the head - that is, these nerves are there in the brain... (damn them!) there are sort of little tails, the little tails of those nerves, and as soon as they begin quivering ... that is, you see, I look at something with my eyes and then they begin quivering, those little tails ... and when they quiver, then an image appears ... That's why I see and then think, because of those tails, not at all because I've got a soul, and that I am some sort of image and likeness. All that is nonsense! … It's magnificent, Alyosha, this science! A new man's arising - that I understand. ... And yet I am sorry to lose God!"
> "Well, that's a good thing, anyway," said Alyosha.
> "That I am sorry to lose God? It's chemistry, brother, chemistry! There's no help for it, your reverence, you must make way for chemistry. ..."
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> — Fyodor Dostoyevsky, *The Brothers Karamazov*, 1881

Philosophy of mind has always occupied a central place in Western philosophy and all the great philosophers, from Plato to Wittgenstein, made significant contributions to it. Indeed, Descartes, often described as "the father of modern philosophy," is perhaps best know for his doctrine of substance dualism and the famous arguments with which he defended it. The reason for this centrality is not far to seek: the main areas of philosophy crucially intersect with philosophy of mind in one way or another. Metaphysics must say something about the place of the mental in reality. Epistemology has to say something

* A table of contents listing the chapters referred to in this editorial introduction is attached at the end.

about the nature of the knowing subject and its relation to the known world, as well as about how minds can know other minds and how they can know themselves. Moral philosophy assumes the existence of moral agents with minds who deliberate and act for reasons. It is only really in the twentieth century, however, particularly in the latter half, that philosophy of mind becomes one of the most active areas of philosophical investigation, forming itself into a specialized sub-discipline replete with its own special problems and technical vocabulary.[1] The four volumes here collect together some of the most important works in twentieth-century philosophy of mind. Many of these works are ground-breaking classics that have influenced the way philosophy of mind has been pursued over the course of decades and with which any serious student of the subject must be familiar. Some are state-of-the-art contributions to currently debated issues. Others are critical surveys that reflect on recent work on some particular topic within philosophy of mind (all of the selections in the first volume on foundations fit into the first category and so too do the first few essays in each of the succeeding volumes).

The collection as a whole is geared toward the more purely philosophical end of the ever-widening spectrum of the philosophy of mind. Owing to considerations of space, and the sheer size that the philosophy of mind has grown to, many important topics have perforce been left out. Some of these are classic philosophical problems of long standing, as old as philosophy itself, and fall more squarely into general metaphysics, epistemology and moral philosophy, such as free will, weakness of will, personal identity, the nature of

[1] The centrality of the mind to philosophy is even indicated by the present and past titles of two of the most prestigious and longest-running generalist English-language philosophy journals still active today. The first is the British philosophy journal *Mind* (founded in 1876, it was originally subtitled *A Quarterly Review of Psychology and Philosophy*) and the second is the American philosophy journal originally called *The Journal of Philosophy, Psychology and Scientific Methods* (established in 1904; it is now simply called *The Journal of Philosophy*).

agency, intention and action, the problem of other minds, and other topics sometimes categorized as "moral psychology" and "philosophical psychology."

One particularly important topic falling under the general rubric of philosophical psychology that has been left out is the legacy of the later Wittgenstein. Wittgenstein's profound, but arguably inconclusive, investigations into psychological phenomena, such as intentionality, understanding, meaning, rule following and private language, have generated a huge literature of their own, a literature which is interwoven with both complex substantive issues in philosophy of language and controversial exegetical issues about the proper interpretation of Wittgenstein's discussions.[2] Moreover, whether lamentable or not, the simple fact is that the influence of Wittgenstein's thinking on the central problems of the philosophy of mind began to wane fairly quickly after the 1953 publication of *Philosophical Investigations* and the waning has continued apace. For better or for worse, most of the central debates in the philosophy of mind of the second half of the twentieth century up to the present day, especially those of the last four decades, have been pursued largely independently of Wittgenstein's contributions. This is so even in cases where Wittgenstein clearly anticipated major themes and positions in later philosophy of mind. There are certainly "externalist" (or "anti-individualist") elements in Wittgenstein's philosophy of mind and language, for example, coming out of his reflections on rule following, private language and the significance of the circumstances in which thinking and acting take place; and his use-based view of meaning is sometimes even regarded as a progenitor or at least inspiration of certain

[2] Nowhere is this more evident than in the contemporary debate over the nature of rule following and scepticism about meaning, which, after the publication of Saul Kripke's celebrated monograph *Wittgenstein on Rules and Private Language* (Blackwell, 1982) took on a life of its own in the philosophy of language. For a representative selection of contributions to this debate see Alexander Miller and Crispin Wright (eds.) *Rule Following and Meaning* (Acumen, 2002).

versions of functionalism. Yet in most central contemporary work in philosophy of mind, there is rarely more than a passing reference to Wittgenstein's own views on these matters.[3] The reasons for the continuing neglect of Wittgenstein in current philosophy of mind are complicated, but as Barry Stroud observes, Wittgenstein's lifelong opposition to scientism—perhaps the single most distinctive general feature of contemporary analytical philosophy of mind—is without a doubt part of the explanation.[4] I believe that another reason is the fact that Wittgenstein's concerns about the mind were often epistemological—from the concern with solipsism in the *Tractatus* to the problem of other minds and the theme of "the inner and outer" in the *Philosophical Investigations*—and there has been a notable shift away from traditional epistemological concerns in the philosophy of mind from the 1970s onwards, at least with respect to the once-central epistemological problem of other minds.[5] As well shall see below, the epistemological

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[3] Some notable exceptions are the late Gregory McCulloch, who explicitly connects externalism with Wittgenstein in his *The Mind and its World* (London: Routledge, 1995); Hilary Putnam, *Representation and Reality* (Cambridge Mass.: MIT Press, 1988); Daniel Dennett, *Consciousness Explained* (Boston: Little and Brown, 1991); Dennett's contribution to M. Bennett, D. Dennett, P. Hacker and J. Searle, *Neuroscience and Philosophy. Brain, Mind and Language* (Columbia University Press, 2007), p. 73-95; and Ned Block, 'Wittgenstein and Qualia', *Philosophical Perspectives* 21 (2007): 73-115.

[4] Barry Stroud, 'Wittgenstein's Philosophy of Mind', in G. Fløistad (ed.), *Contemporary Philosophy: A New Survey, vol. VI, The Philosophy of Mind,* (Hague, Netherlands 1983), pp. 319-341; reprinted in John Canfield (ed.), *The Philosophy of Wittgenstein: The Private Language Argument* (New York: Garland, 1986). For a lamenting diagnosis of the waning of Wittgenstein's influence on philosophy in general, see P. M. S. Hacker, *Wittgenstein's Place in Twentieth Century Philosophy* (Oxford: Blackwell, 1996).

[5] These two explanations for the contemporary neglect of Wittgenstein coincide in the case of the problem of other minds. For what supplanted the broadly Wittgensteinian "criterial approach" to the problem was precisely a "scientific approach" known as the "inference to the best explanation," found in, e.g., Charles Chihara and Jerry Fodor, 'Operationalism and Ordinary Language: A Critique of Wittgenstein', *American Philosophical Quarterly* 2 (1965) and the early writings of Hilary Putnam, such as 'Other Minds' and 'Logical Positivism and the Philosophy Mind', both in his *Mind, Language and Reality. Philosophical Papers*, vol.2 (Cambridge University Press, 1975); the latter originally appeared in P. Achinstein and S, Barker (eds.) *The Legacy of Logical Positivism* (Baltimore: John Hopkins Press, 1969). For an influential recent discussion of Wittgenstein, the notion of criteria and the problem of other minds, see John McDowell, 'Criteria, Defeasibility, and Knowledge', *Proceedings of the British Academy* 68 (1982). For one of the very few recent books on the problem of other minds, which discusses Wittgenstein's approach, see Anita Avramides, *Other Minds* (London: Routledge, 2001).

problems currently receiving most attention in the philosophy of mind are problems about self-knowledge generated by the debate over externalism about mental content.[6]

However, the bulk of the topics that are not covered here are for the most part very recent developments with a significant empirical aspect to them, in the sense that the arguments and debates surrounding them draw heavily on, and sometimes even begin with, current empirical research in cognate areas such as psychology, neuroscience, linguistics, evolutionary psychology and biology, and computer science. It is common practice now to group these kinds of partly empirical issues under the rubric of "the philosophy of psychology", where this means the philosophy of the *science* of psychology. Such topics, in no particular order, include the following: the nature of commonsense psychological explanation or "folk psychology" (e.g., "theory-theory" vs. "simulation theory") and its relation to cognitive development, emotions, imagination and creativity, rationality and reasoning, modularity, nativism, explanation in evolutionary psychology, mental processing (classical computationalism vs. connectionism), mental imagery, concepts, memory, sensory perception, vision (e.g., the interpretation of Marr's theory of vision), "extended" or "situated" cognition, psycholinguistics, artificial intelligence, "neurophilosophy" and the philosophy of neuroscience, the psychological behaviourisms of Watson and Skinner vs. the cognitivism of Chomsky, artificial intelligence, the nature of pain, the striking phenomena of blindsight and synaesthesia, psychopathology and mental illness (e.g., schizophrenia, and the disturbing Capgras and

[6] There are two comprehensive collections of essays on Wittgenstein: John V. Canfield (ed.) *The Philosophy of Wittgenstein*, 15 Vols. (New York: Garland, 1986) and Stuart Shanker (ed.) *Ludwig Wittgenstein: Critical Assessments*, 4 Vols. (London: Croom Helm, 1986). See also: Stuart Shanker & David Kilfoyle (eds.) *Ludwig Wittgenstein: Critical Assessments of Leading Philosophers, 2nd Series*, 4 Vols. (London: Routledge, 2002). Two collections of essays specifically devoted to Wittgenstein's philosophy of mind are Severin Schroeder (ed.), *Wittgenstein and Contemporary Philosophy of Mind* (Palgrave Macmillian, 2001) and J. Ellis & D. Guevara (eds.), *Wittgenstein and the Philosophy of Mind* Oxford (forthcoming).

Cotard delusions), and the philosophy of psychiatry and psychoanalysis. While it is not possible to draw a sharp line between what counts as philosophy of mind and what philosophy of psychology, what the reader will find in these volumes is work on the traditional philosophical problems about the mind, problems driven by core metaphysical and epistemological concerns rather than particular issues thrown up by the latest empirical science.[7]

Enough about what is not included here—what is included? This first volume contains foundational articles on the three most general fundamental issues in the philosophy of mind, each of which is taken up in detail in the three succeeding volumes: the the mind-body problem, intentionality and consciousness.[8] The mind-body problem practically speaks for itself: What is the relation between mental and physical phenomena? Are mental states, events, and processes nothing but physical states, events and processes? If so, how should "nothing but" be interpreted? Does it mean "identical with" or merely *determined* or *necessitated* by? But how exactly should these latter notions be understood? And what is it for something to be mental anyway? Mental phenomena seem to display two very general characteristics: *intentional* or *representational* features, on the one hand, and *qualitative* or *conscious* or *phenomenal* features, on the other. Intentionality is that feature of mental states and events whereby they are directed at

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[7] Two good anthologies on the philosophy of psychology are: Ned Block (ed.) *Readings in the Philosophy of Psychology*, 2 vols. (Cambridge, Mass.: Harvard University Press, 1981) and Alvin Goldman (ed.) *Readings in Philosophy and Cognitive Science* (Cambridge, Mass.: MIT Press, 1994). For state of the art surveys, see the essays in John Symons and Paco Calvo (eds.), *The Routledge Companion to the Philosophy of Psychology* (London: Routledge, 2009) and Jesse Prinz (ed.) *The Oxford Handbook of the Philosophy of Psychology* (Oxford, forthcoming). A good collection with an emphasis on language is Heimir Geirsson and Michael Losonsky (eds.) *Readings in Mind and Language* (Oxford: Blackwell, 1996). A comprehensive reference source on cognitive science is Robert A. Wilson and Frank C. Keil (eds.), *The MIT Encyclopaedia of Cognitive Science* (MIT Press, 1999). For state of the art essays on the emotions, see Peter Goldie (ed.) *The Oxford Handbook of the Philosophy of Emotion* (Oxford, 2010).

[8] See the table of contents at the end of this essay.

things, usually beyond themselves. My thought about the city of Vancouver is about, is directed at, Vancouver; it represents Vancouver to me. But how can an internal state of mine do this? The so-called *phenomenally conscious* or *qualitative* aspects of mentality include their *experiential character*; how it feels to touch and see and generally be aware of things—to experience and be consciously aware of the world—as well as to suffer and enjoy bodily sensations. Again, it seems puzzling how internal states of mine can have these features. Are they just material processes going on in me? This is the central problem of (phenomenal) consciousness, in its most general form. How could a merely material process give rise to, or even simply just *be*, a feeling of intense pain or the smell of coffee? The two things seem so radically different. There are, of course, many and various more specific problems about the mental-physical relation, intentionality and consciousness than these general questions merely gesture at. The essays collected in these volumes explore these fundamental problems and issues in detail.

The earliest published work in this first volume is from 1874 and the latest works come from the early 1970s, the very latest being Thomas Nagel's seminal 1974 paper on consciousness, 'What is it Like to be a Bat?'. The material in the three further volumes are devoted to these three general areas—the mind-body relation, intentionality, and consciousness—and consist of work beginning in the mid-to-late 1970s, when philosophy of mind began to expand rapidly; continuing through the 1980s, when it really exploded and issues about intentionality and representational "mental content" replaced issues about meaning and reference in philosophy of language as perhaps the most active research area in analytical philosophy; up to very recent work from the 1990s and the

first decade of the new millennium, where consciousness has begun to supplant intentionality as the central focus of most research in contemporary philosophy of mind.

Most of the essays in the first volume tackle the question of the mind's place in nature, in C. D. Broad's eponymous words, and the second volume is devoted entirely to the subject. While neither the first nor second volume contains an essay on every position on the mind-body problem that has been advanced by a philosopher (let alone all possible positions), it does, I believe, contain representative examples of the most influential positions on the mind-body problem and those that are still the subject of active and significant debate today.

Everyone is of course familiar with the two most well-known answers to this perennial question in Western philosophy. According to *substance dualism*, defended most famously by Descartes, minds are immaterial entities distinct from, but causally interacting with, those material entities that constitute the bodies of people and which also make up the rest of the natural world. According to materialism, defended perhaps most famously by Descartes's contemporary Hobbes, minds are simply certain material entities among others that make up the natural world, namely those material entities constituting our various brains and bodies. Both positions of course face serious problems, which have been discussed extensively in the literature on the mind-body problem.

The turn of the twentieth century saw the rise of two attractive alternatives to the two stark extremes of materialism and dualism: *emergentism* and *neutral monism*. Interestingly, both these alternatives largely disappeared from the scene at mid-century, only to return, transformed in various ways, at the end of the twentieth century. So three

selections have been included representing these re-invigorated alternatives, two on emergentism and one on neutral monism.

According to emergentism, championed by Samuel Alexander and C. D. Broad in chapters 3 and 4, the only things that exist are physical things—there are no such non-physical entities as *souls* or *entelechies*—and everything in nature is ultimately determined by underlying physical conditions and cannot exist without them. But although everything that exists is dependent upon basic underlying physical conditions, Alexander and Broad maintain that when these conditions take on enough structural or organizational complexity, novel and unpredictable higher-level properties emerge, properties which are not reducible to their underlying lower-level "basal" conditions. These emergent properties include, according to Alexander and Broad, chemical, biological (Alexander and Broad were vitalists) and, most importantly for our purposes, mental properties. The emergentists hold a "layered view of reality," according to which the world consists of a hierarchy of layers or levels stacked on top of each other and related in such a way that the entities of any given layer (except the bottom layer, if there is one) are structurally complex aggregates of the entities of the level directly below. When aggregates of entities form at any given level they may begin to exhibit properties neither possessed by their constituents nor explainable in terms of the properties of their constituents.[9]

Crucial to emergentism is its contrast with *mechanism.*[10] According to mechanism, the higher-level properties of an aggregate or whole can, in principle if not in practice, be

[9] This metaphysical picture of layers or levels of reality is discussed further by John Heil in chapter 38 of volume 2.

[10] The distinction goes back to John Stuart Mill's distinction between "chemical" and "mechanical" modes of causation and his corresponding distinction between "homeopathic" and "heteropathic" effects and laws

deduced from the lower-level properties which the constituents of the whole have in isolation, together with the relations holding between the constituents. In contrast, on the emergentist view, some higher-level properties (including the behaviour) of wholes cannot be deduced from knowledge of the properties their constituents have in isolation and the relations between them. These higher-level properties are not the mere sum or "resultant" of the lower-level properties; rather, they "emerge" as novel higher-level features when enough lower-level properties are brought together with sufficient structural complexity. The existence of such "emergents" cannot be deduced from lower-level conditions, even in principle, but only discovered inductively to obtain when certain lower-level conditions are in existence. This emergence is a brute, inexplicable fact, which we must accept with "natural piety," in the Wordsworthian words of Alexander—"Not even god could predict what these emergent qualities would be; he could only accept them like ourselves when the world he made had originated them."

In chapter 5, Hempel and Oppenheim argue, against what they call "the classical absolutist doctrine of emergence" found in Alexander and Broad, that emergence is really an epistemological phenomena displaying merely our ignorance at a certain stage of

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in *A System of Logic. Ratiocinative and Inductive,* 8th ed. (London: Longmans, Green, and Co., 1884), book 3, chapter 6, pp. 242ff. G. H. Lewes, in *Problems of Life and Mind. First Series: The Foundations of a Creed,* vol.2, problem 5, chapter 3 (Boston: James R. Osgood and Company, 1875), pp. 368ff., coined the more memorable terms 'emergent' and 'resultant' to mark the same distinction. Lewes uses the resonate term "emergent" (as a noun) to refer to the joint effect of two or more causes that is not, as a mere "resultant" is, simply the sum of the individual effects that the causes would produce respectively in isolation. For extensive discussion, see Brian McLaughlin's 'The Rise and Fall of British Emergentism' and other chapters in Ansgar Beckermann, Hans Flohr, and Jaegwon Kim (eds.) *Emergence or Reduction?Essays on the Prospects of Nonredictive Physicalism* (Berlin and New York: Walter de Gruyter, 1992). Lewes evidently had a knack for coining terms. According to Edward S. Reed, *From Soul to Mind. The Emergence of Psychology from Erasmus Darwin to William James* (New Haven and London: Yale University Press, 1997), Lewes also coined the terms 'neurosis' and 'psychosis' (though not with their present meanings).

inquiry.[11] As they say, "emergence of a characteristic is not an ontological trait inherent in some phenomena; rather it is indicative of the scope of our knowledge at a given time; thus it has no absolute, but a relative character; and what is emergent with respect to the theories available today may lose its emergent status tomorrow." Hempel and Oppenheim, of course, have the benefit of hindsight: quantum mechanics is now firmly established, offering explanations of chemical bonding, and molecular biology has leaped from triumph to triumph in its explorations of the basis of life, so that vitalism is completely dead. Nevertheless, as Jaegwon Kim points out in his article on emergence in the second volume (chapter 40), even with the benefit of hindsight, Hempel and Oppenheim's criticism of emergentism is, dialectically speaking, considerably weakened by its reliance on a particular view of reductive explanation stemming from their covering-law model of scientific explanation (defended in earlier sections of their article not reprinted here), a view that the emergentists plausibly reject.

Neutral monism is usually understood very roughly and generally as the view that the ultimate and intrinsic nature of reality is neither mental nor physical but is rather composed of some kind of "neutral stuff." Although versions of neutral monism were defended by William James[12] and the American New Realists in the early decades of the twentieth century (with direct links to works by the physicist-philosopher Ernst Mach), the selection here is drawn from a paper of Bertrand Russell's published later in the century. According to Russell's particular version of the doctrine, "the difference between mind and brain does not consist in the raw material of which they are composed,

[11] Hempel and Oppenheim (in chapter 5) incorrectly attribute the phrase "natural piety" to C. L. Morgan (as well as getting the latter's initials wrong). It is clear, however, that Morgan takes the phrase from Alexander.

[12] See William James, 'Does Consciousness Exist?', *Journal of Philosophy, Psychology, and Scientific Methods* 1(1904): 477-491.

but in the manner of grouping. A mind and piece of matter alike are to be considered as groups of events …the difference between mind and brain is not a difference of quality, but a difference of arrangement." To this, Russell adds the intriguing idea that "since we know nothing about the intrinsic quality of physical events except when these are mental events that we directly experience, we cannot say either that the physical world outside our heads is different from the mental world or that it is not." The idea that physics does not tell us about the intrinsic nature of physical entities, but only about their relational or structural properties, and that it is experience of them that reveals their intrinsic nature, is an idea that has re-surfaced recently in more than one writer. [13] The idea is developed by Galen Strawson in his chapter in volume 2.

The rest of the chapters on the mind-body problem present positions more familiar to the contemporary student of philosophy of mind.

The ones by Hempel and Gilbert Ryle (chapters 6 and 7) defend very different versions of what came to be known (rather misleadingly) as *logical behaviourism* (sometimes "analytical" or "philosophical" behaviourism), roughly the view that statements about minds and mental phenomena can be semantically analyzed or explicated by statements about behaviour or behavioural dispositions, and so mental phenomena are really nothing but behavioural phenomena. Hempel's logical behaviourism, which is crucially linked to logical positivism and its central verification principle, is *reductive*: the proposed translations or explications are supposed to contain

[13] See, e.g., Daniel Stoljar, 'Two Conceptions of the Physical', *Philosophy of Phenomenological Research* 62 (2001). An earlier work is Grover Maxwell, 'Rigid Designation and Mind-Brain Identity', in C. Savage (ed.) *Perception and Cognition: Minnesota Studies in the Philosophy of Science* 9 (1978). For an examination specifically of Russell's view, see Michael Lockwood, "What *Was* Russell's Neutral Monism?", *Midwest Studies in Philosophy* VI (1981): 143–158.

no mentalistic vocabulary.[14] However, interestingly, the vocabulary of the translations is not restricted to what we would normally classify as terms describing "behaviour" — at least "outward" behaviour publicly observable without special instruments — since it includes scientific terms referring to internal neurophysiological states of subjects. Ryle's behaviourism, which is in part a product of his ordinary language philosophy, is *non-reductive*: Ryle makes no attempt whatsoever to purge his analyses of mentalistic discourse of mental terminology. On the contrary, Ryle's analyses refer not to bodily motions and trajectories but to dispositions to engage in *actions*, such as intentionally skating near the edge of the pond.[15]

Despite their differences, both reductive and non-reductive behaviourism fall prey to a common and seemingly intractable problem, pointed out by Peter Geach and Roderick Chisholm, in their respective chapters (8 and 10): the success of the proposed behavioural analyses, whether reductive or non-reductive, illegitimately presuppose that the subjects in question have certain background beliefs and desires, and it is impossible to eliminate these presuppositions, and thus the proposed analyses are viciously circular.

Hilary Putnam's attack on behavourism in 'Brains and Behaviour' (chapter 9) is focussed on the behaviourist analysis of sensations, particularly pain. Putnam argues there is no logical or analytical or broadly semantic link of any kind between statements about pain and statements about behaviour. There is nothing logically impossible about the existence of "super-Spartans" who are not at all disposed to exhibit pain behaviour

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[14] Putnam discusses the role of verificationism in the logical positivist's philosophy of mind in 'Logical Positivism and the Philosophy Mind', *op. cit.*

[15] For detailed discussion of the nature of logical behaviourism and how it has been almost universally misunderstood, see Sean Crawford, 'The Myth of Logical Behaviourism and the Origins of the Identity Theory', in Michael Beaney (ed.) *The Oxford Handbook of the History of Analytic Philosophy* (Oxford, forthcoming).

despite being in pain. Armstrong, in chapter 16, argues specifically against that part of Ryle's non-reductive behaviourism that relies on a primitive notion of a behavioural disposition.

Behaviourism was succeeded by the first wave of materialism, associated with J. J. C. Smart and U. T. Place (chapters 14 and 15) and Herbert Feigl (in work not reprinted here; see his long essay 'The "Mental" and the "Physical"'[16]). Place and Smart, while largely sympathetic to behaviourism about intentional mental states, such as beliefs, desires, fears, etc., because they do seem to be dispositional in nature, were concerned that qualitative mental states, in particular sensations such as pain, were not dispositional in nature and so were unlikely to yield to behavioural analyses. They proposed that sensations and other conscious experiences with qualitative features were identical with brain states. The identity in question, however—crucially unlike the identity of mind and behaviour, according to logical behaviourism—is not *a priori* knowable on the basis of semantic meaning analyses or explications, but is discoverable empirically and knowable only *a posteriori.* The model of identification they had in mind was what Putnam called the "theoretical identifications" of science. Just as water is identical with H_2O, light with electromagnetism, and genes with DNA molecules, so too each type of sensation—pain, say, or an after image—is identical with a certain type of brain state. The position came to be called the *type-type identity theory* or *reductive materialism*.[17] Smart and Place viewed these kinds of theoretical identities as not only *a posteriori* but also contingent. Kripke, in chapter 23, argues that such theoretical identities, if true, must actually be

[16] This is reprinted as a book *The 'Mental' and the 'Physical'. The Essay and a Postscript* (Minnesota, 1967). I discuss Feigl's identity theory critically in 'The Myth of Logical Behaviourism and the Origins of the Identity Theory', *op. cit.*

[17] See further J.J.C. Smart, *Essays Metaphysical and Moral* (Blackwell, 1987) and U. T. Place, *Identifying the Mind. Selected Papers of U. T. Place*, eds. George Graham and Elizabeth R. Valentine (Oxford, 2004).

necessary (although still knowable only *a posteriori*.) That the identity of mental states—more accurately, qualitative mental states such as pain—with physical states must be necessary, if true, forms part of the basis of Kripke's argument against the identity theory.

As David Lewis points out in chapter 16, the central consideration advanced by the first wave of materialists, such as Smart and Place, in favour of psychophysical identity, as well as other theoretical identities, is that it simplifies the science. Lewis, and David Armstrong in chapter 17, each go beyond matters of parsimony, arguing more strongly that a scientific theory, together with an *a priori* conceptual analysis, can actually *logically imply* an identity. They present deductive causal arguments for type-identity theory based partly on *a priori* causal analyses of the meanings of mental terms (and thus their view is, in one sense, closer to logical behaviourism than that of the first-wave identity theorists, Smart and Place). Their form of the identity theory is sometimes called *the causal theory of mind*.[18] Importantly, however, for Armstrong and Lewis, as for Smart and Place, the identities in question, between causally-defined mental states and physical states, are discoverable only empirically.[19]

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[18] It is also, confusingly, called a form of *functionalism* known as analytical or commonsense or *a priori* functionalism—in contrast to the empirical or scientific functionalism of Putnam, about to be described. See Block's discussion (in chapter 26 of volume 2) of the differences between what he calls Functionalism (Armstrong, Lewis, *et. al.*) and what he calls Psychofunctionalism (Putnam, Fodor, *et. al*.). Jaegwon Kim, in *Philosophy of Mind* (Westview, 1996), calls the Armstrong-Lewis view "causal-theoretical functionalism" and the Putnam-Fodor view "machine functionalism." Machine functionalism is in fact only one kind of Psychofunctionalism. An excellent discussion of the varieties of functionalism, including a very useful chart, can be found in David Braddon-Mitchel and Frank Jackson, *Philosophy of Mind and Cognition*, 2nd ed. (Blackwell, 1996). It should also be noted that the Armstrong-Lewis causal type-identity theory is also sometimes called *central state materialism*, a term coined, I believe, by Brian Medlin in 'Ryle and the Mechanical Hypothesis', in C. F. Priestly, *The Identity Theory of Mind* (Queensland: University of Queensland Press, 1967). Medlin may, however, have derived the term from Feigl, who, in 'The "Mental" and the "Physical"', spoke of *central* states in contrast to *peripheral* states, e.g., the physical peripheral states of the behaviourist.

[19] Armstrong's view is presented in great detail in his book *A Materialist Theory of the Mind* (London: Routledge, 1968) and also in his later *The Nature of Mind* (The Harvester Press, 1981); see especially his

In chapter 18 Hilary Putnam raises a serious objection to the type identity theory: it is simply not plausible that a state of pain, for example, is identical with the same type of physical state in all possible organisms that feel pain, in the way that all samples of (pure) water are samples of H_2O. For one thing, the organisms we know of that appear to feel pain have very different nervous systems. For another, isn't it possible that a creature without a nervous system, such as an alien or even a computer or a robot, could feel pain? The same possibility seems even more likely to be true for non-qualitative intentional mental states, such as beliefs and thoughts. In short, pain, and other mental states and events, seem to be "multiply realizable": they can be instantiated or incarnated by many different kinds of physical material. What, then, makes a particular occurrence of an internal state of an individual a *mental* state? Putnam's answer is that the *role* that the state plays, or the location it has, in a network of causal or functional relations in the overall mental life of the individual, is what makes an internal state a mental one—and crucially that role can be filled or "realized" by many different types of physical stuff. This view is known as *functionalism*.

The inability of the type identity theory to allow for Martian and machine mentality is only one reason for the rise of functionalism, however; it also took much of its inspiration from various contemporaneous fields of study, especially the new computer science and cybernetics that arose during and immediately after the Second World War. Indeed, according to Putnam's *machine functionalism*, mental state types are to be identified with

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essay 'The Causal Theory of Mind'. For a recent statement of Lewis's position see his 'Reduction of Mind' in Samuel Guttenplan (ed.) *A Companion to the Philosophy of Mind* (Blackwell, 1994).

types of Turing machine table states.[20] Writing in *Scientific American* in 1981, Jerry Fodor captures the spirit of the general idea:

> In the past 15 years a philosophy of mind called functionalism that is neither dualist nor materialist has emerged from philosophical reflection on developments in artificial intelligence, computational theory, linguistics, cybernetics and psychology. All these fields, which are collectively known as the cognitive sciences, have in common a certain level of abstraction and a concern with systems that process information. Functionalism, which seeks to provide a philosophical account of this level of abstraction, recognizes the possibility that systems as diverse as human beings, calculating machines and disembodied spirits could all have mental states. In the functionalist view the psychology of a system depends not on the stuff it is made of (living cells, mental or spiritual energy) but on how the stuff is put together.

Since functionalism views things at a certain level of abstraction from the actual stuff they are made out of, it allows a wide range of things to have minds or mental states, such as machines and, as Fodor points out, even disembodied souls or spirits, so long as the stuff out of which these things is made is organized or structured in the right way. Consider that there are many kinds of things which are what they are, not in virtue of what they are made out of, but in virtue of what they *do*, what their function is. Take clocks. A clock is essentially something for keeping track of time; but it does not have to be made out of a particular kind of stuff in order to be able to do this. Sundials, grandfather clocks, analogue watches, liquid quartz digital watches, atomic clocks are all very different from one another, in that they are constructed out of diverse types of materials: metal, rock, wood, plastic, etc. Similarly, consider mousetraps and carburettors. The former are essentially mouse-catching devices; the latter devices for

[20] The idea is developed in several papers of Putnam's from the 1960s; see especially 'Minds and Machines', in Sidney Hook (ed.) *Dimensions of Mind* (New York: Collier, 1960); 'Robots: Machines or Artificially Created Life?', *The Journal of Philosophy* LXI (1964), and 'The Mental Life of Some Machines', in Hector-Neri Castaneda (ed.). *Intentionality, Minds and Perception* (Detriot: Wayne State University, 1967). All these are reprinted in Putnam's *Mind, Language and Reality* For the notion of a Turing machine, see Alan Turing, 'Computing Machinery and Intelligence', *Mind* LIX (236): 433–460.

mixing fuel and air. These artefacts are defined by their function, what they do – catching mice, mixing air and fuel, telling the time – not by what material they are made from.

Mental kinds too, according to the functionalist, are defined by their function. In other words, what makes a mental state a *mental* state is its function or role in an overall system. What is the function of a mental state? According to most functionalists, the most general function of a mental state is to a play a certain *causal role*. Standard functionalists claim that mental states in general have essentially three general causal roles: (1) they are caused by sensory input, (2) they cause behavioural output and (3) they are causes of and caused by other mental states. According to this view, mental state types are distinguished from one another (*beliefs* versus *desires* versus *fears*, etc.) by their particular causal profiles. This characterization of a mental state abstracts from the nature of the stuff that is needed to carry out the causal roles of any given mental state. Take the mental state of belief, for example; in particular, my belief, say, that my shoes are on fire. This belief is typically caused by various sensory stimulations – my looking down, smelling an odour or hearing people say 'Your shoes are on fire!' – and typically causes me to have the desire to put the fire out; this desire, in turn, normally causes certain behaviour on my part, involving, say, frantic feet stamping. Take a qualitative mental state, such as pain. Pain is normally caused by bodily damage and causes the belief that one is pain, the desire to rid oneself of the pain and behaviour believed to relive the pain, such as taking aspirin or morphine. These states of belief, desire and pain could, the functionalist thinks, be realized or implemented or embodied in any number of different ways: by neural synapses or silicon chips, just as a clock can be made out of rock or metal.

Functionalists are usually materialists in the sense that they think mental states are always, as a matter of contingent fact, embodied or realized in some kind of material medium. This is especially true of any functionalist who thinks that the function or role of a mental state is its *causal* role, as causation seems to be a material phenomenon. So functionalists often embrace the *token-token identity theory*: the view that each instance or token of a mental state or event is identical with an instance or token of a physical state, but not necessarily the same type of physical state in all cases. The token identity theory is a form of *non-reductive materialism* and very different versions of it defended by Jerry Fodor, who is a functionalist, and Donald Davidson, who is not, in chapters 20 and 22 respectively.[21] There are (at least) two important differences between Fodor's and Davidson's brand of non-reductive materialism. First, whereas Fodor is primarily interested in defending the integrity of the science of psychology and the special sciences in general, and their autonomy from the basic physical sciences, Davidson agues that there cannot be strict psychological or psycho-physical laws (the mental is "anomalous") that would be needed to support a serious science of psychology—and ingeniously argues for token identity on this basis. Second, unlike Fodor, Davidson explicitly argues that while there can be no identity between (intentional) mental types and physical types, this is consistent with there being a certain relation of dependency holding between them, according to which the former *supervenes* on the latter. The topic of supervenience is taken up in several essays in volume 2.

[21] Important further essays by Fodor can be found in his collection *RePresentations* (The Harvester Press, 1981) and by Davidson in his collection *Essays on Actions and Events*, 2nd ed. (Oxford, 2001). For a critical examination of Fodor's view of reduction, see Robert Causey, *Unity of Science* (Reidel, 1977). For critical reactions to Davidson's views of the mental and psychology see Ernst Lepore and Brian McLaughlin (eds.) *Actions and Events. Perspectives on the Philosophy of Donald Davidson* (Blackwell, 1988).

Kripke (chapter 23) and Nagel (chapter 25) both offer (very different) considerations against any kind of materialism or identity theory applied to qualitative or conscious mental states, states for which, in Nagel's well-known phrase, *it is like something* to be in. Nagel focuses on the subjectivity and first-personal nature of these mental states and argues that it is at odds with the third-personal objective stance of science. Kripke uses modal notions drawn from metaphysics and philosophy of language to argue against materialism. He argues that if mental states are identical with physical states then they must be *necessarily* identical (contrary to Smart and Place's view that the identity in question is *contingent*). But the identity does not seem to be necessary and so it is hard to see how qualitative mental states can be identical with physical states. Both Nagel's and Kripke's beguiling arguments are discussed in detail in the fourth volume.

Turning to the topic of intentionality, there are two early foundational works in volume 1. The first is Franz Brentano's hugely influential and oft-quoted passage from his 1874 *Psychology from an Empirical Standpoint* (chapter 1), in which he argues that "intentional inexistence," or what is now simply called "intentionality," is the distinguishing feature the mental, what sets it apart from non-mental things:

> Every mental phenomenon is characterised by what the Scholastics of the Middle Ages called the intentional (or mental) inexistence of an object, and what we might call, though not wholly unambiguously, reference to a content, direction towards an object (which is not to be understood here as meaning a thing) or immanent objectivity. Every mental phenomenon includes something as object within itself, although they do not all do so in the same way. In presentation, something is presented, in judgement something is affirmed or denied, in love loved, in hate hated, in desire desired and so on.
>
> This intentional inexistence is exclusively characteristic of mental phenomena. No physical phenomenon manifests anything similar. Consequently, we can define mental phenomena by saying that they are such as include an object intentionally within themselves.

Intentionality, as just remarked, is the property of being directed at, of, or about something; it is the mind's "direction upon its objects," its capacity to represent things. When I am afraid, there must be something that I am afraid *of*. When I love, I must love

someone. When I believe, I must believe *something*. Brentano claims that all and only mental phenomena exhibit this feature of intentionality. Physical phenomena, by which Brentano means *non-mental* phenomena—colours, smells, skies, landscapes, soccer balls, desks and chunks of granite—are neither about anything in this sense nor have states or processes in them that are about anything.[22] In the next chapter, Bertrand Russell draws his seminal distinction between the two different ways that thought makes contact with the external world: knowledge by acquaintance and knowledge by description.

The topic of intentionality is explored and further refined, in a logico-linguistic vein, in two classic articles written in the middle of the twentieth century by W. V. Quine (chapter 11) and Roderick Chisholm (chapter 10). Quine explores a technical problem that arises when trying to symbolize logically the difference between sentences that attribute certain *relational* states of mind to people and those that attribute more general or *notional* states of mind to them. Chisholm attempts to clarify the nature of intentionality by proposing three criteria for intentionality that are individually sufficient and jointly necessary, in the sense that in order to be intentional a phenomenon must satisfy at least one of the three. In step with the philosophical temper of the times, in order to investigate the nature of intentionality, particularly whether it is reducible to the non-intentional, Chisholm proposes linguistic criteria for sentences to be intentional. The eventual outcome of the extensive discussion of the matter in the 1960s was that none of

[22] For discussion of Brentano's views on intentionality, see Roderick Chisholm's discussion in chapter 10, his book *Perceiving. A Philosophical Study* (Ithaca, New York: Cornell University Press, 1957), ch. 11, his Introduction to his widely cited anthology *Realism and the Background of Phenomenology* (Glencoe, Illinois: Free Press, 1960; reprinted by Ridgeview Publishing Company, Atascadero), pp. 4-5, and his article ' Intentionality', in P. Edwards (ed.) *The Encyclopaedia of Philosophy* (New York: Macmillan, 1967); Linda McAlister, 'Chisholm and Brentano on Intentionality', *The Review of Metaphysics* 28 (1974): 328-38; Richard Aquila, *Intentionality. A Study of Mental Acts* (Pennsylvania State University Press, 1977), chapters 1 and 2; Dermot Moran, 'Brentano's Thesis', *Proceedings of the Aristotelian Society, Supplementary Volume* 70 (1996): 1-27; and Tim Crane, 'Brentano's Concept of Intentional Inexistence," in Mark Textor (ed.) *The Austrian Contribution to Analytic Philosophy* (London: Routledge, 2006).

Chisholm's criteria are either necessary or sufficient for intentionality.[23] Nevertheless, despite this, Chisholm's criteria have played, and continue to play, a central role in discussions of intentionality. They are best seen, not as unique features of intentional sentences, but rather as reflections of three essential features of many paradigm intentional mental states or events. The first feature in question is that there appear to be some intentional states that are directed on non-existent objects. The second is that some intentional states can fail or be unsuccessful in various ways: beliefs can be false, desires unsatisfied, intentions not carried out, hopes and wishes unfulfilled, perceptions incorrect, and so on. Thirdly, some intentional states (some philosophers would say all intentional states of finite creatures) involve having a perspective on an object, a way of thinking about the object. Each of these intentional properties is mirrored by the logico-linguistic properties of sentences that report them. It has become a condition of adequacy on any theory of intentionality that these three features be preserved or their non-preservation explained away. It is precisely this desideratum that has come to haunt the naturalistic theories of intentionality discussed in the third volume (see below).

Until fairly recently it was received opinion, indeed almost dogma, to assume, against Brentano, that not all mental phenomena have intentionality. The two most often cited examples of mental phenomena without intentionality were bodily sensations, such as pain and nausea, and moods, such as anxiety and depression. This is the view Richard Rorty takes in chapter 19: "To have a sensation, unlike having a thought, is not to be in a

[23] See the essays in Ausonio Marras (ed.) *Intentionality, Mind and Language* (Chicago: University of Illinois Press, 1972), especially the ones by James Corman and William G. Lycan. See also Cornman's *Metaphysics, Reference and Language* (New Haven and London: Yale University Press, 1966), chapter 2 and Daniel Dennett, *Content and Consciousness* (London: Routledge, 1969), ch. 2. For discussion of the relation between Chisholm's view of intentionality and the identity theory, see Jaegwon Kim, 'Materialism and the Criteria of the Mental', *Synthese* 22 (1971): 323-345.

state which has "aboutness" or which can somehow refer to the inexistent."[24] Rorty argues that although strictly speaking there is nothing all mental phenomena have in common, the closest we can get to a "mark of the mental" is a kind of presumption of incorrigibility, and he goes on to connect this with the issue of *eliminative materialism*, the view that there really are no mental states or events and that talk about such entities will eventually lose its place in our explanatory schemes, the way witches and demons and phlogiston and caloric did. Brentano, however, explicitly argues that sensations like pain are intentional, and recently many philosophers have come to join him in rejecting the idea that pain, for example, has no aboutness (more on this below).

In chapter 21 Daniel Dennett develops a theory of intentionality that emphasizes its role in the explanation and prediction of action, a view which bears some resemblance to Ryle's earlier non-reductive logical behaviourism.[25] In a selection from his classic paper 'Empiricism and the Philosophy of Mind', Wilfrid Sellars (chapter 12) presents what is perhaps the first explicit statement of the idea that mental states and events should be seen as akin to theoretical entities postulated to explain observable phenomena, such as verbal and non-verbal behaviour. The idea that the commonsense attributions of mental states to others form part of a "folk theory" sometimes called "folk psychology" is present in much of philosophy of mind in the second half of the twentieth century, especially in analytical functionalism and eliminative materialism. In his third foundational contribution to the first volume, Hilary Putnam (in chapter 24) argues, on the basis of his famous "Twin Earth" thought experiment, for what is sometimes called

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[24] See Richard Rorty, *Philosophy and the Mirror of Nature* (Princeton: Princeton University Press, 1979) for a much fuller, historically informed and qualified discussion.

[25] For further developments, see Dennett's *The Intentional Stance* (MIT Press, 1987) and his recent 'Intentional Systems Theory', in McLaughlin, Beckermann and Walter (eds.) *The Oxford Handbook of Philosophy of Mind* (Oxford, 2009).

"semantic externalism" about linguistic meaning: the claim that what we mean by some of our words—in particular natural-kind terms such as 'water' and 'gold'—is determined by relations to entities or factors in the surrounding environment beyond the individual, and that therefore, contrary to a long-standing philosophical tradition, "*meanings just ain't in the head!*", as he colourfully puts it.[26]

The second volume is devoted exclusively to various facets of the mind-body problem, and the more general issue of what kind of materialism about the mind, if any, is acceptable. It contains extensive critical discussion of two core ideas introduced in the first volume, both of which continue to occupy philosophers of mind today: functionalism and non-reductive materialism. In 'Troubles with Functionalism' (chapter 26) Ned Block argues that functionalism faces serious problems accounting for both qualitative and (non-qualitative) intentional mental phenomena.[27] William Lycan responds to some of these objections by advancing a teleological version of functionalism which he calls *homuncular functionalism*.[28] Jerry Fodor (in chapter 28) presents the case for thinking that mental processes, such as thinking, are computational-functional

[26] For a much fuller treatment see Putnam's longer essay 'The Meaning of 'Meaning'" in his *Mind, Language and Reality. Philosophical Papers*, vol.2 (Cambridge University Press, 1975) and for more recent developments see his *History, Truth and Reason* (Cambridge, 1981) and his *Representation and Reality* (MIT Press, 1988). For a collection of critical essays on externalism see Andrew Pessin and Sanford Goldberg (eds.) *The Twin Earth Chronicles. Twenty Years of Reflection on Hilary Putnam's 'The Meanign of "Meaning"'* (M. E. Sharpe, 1996).

[27] See also the essays on functionalism in Part 1 of in Block's recent collected essays *Consciousness, Function, and Representation* (MIT Press, 2007).

[28] For a much fuller defense of this kind of functionalism see Willliam G. Lycan, *Consciousness* (MIT Press, 1987).

processes.[29] John Searle (in chapter 29) attacks the idea that mental processes could be computational processes with his famous "Chinese room" thought experiment.[30]

In chapter 31 Jaegwon Kim argues that non-reductive materialism, with its joint assumptions of the non-reducibility of the mental to the physical and the dependence of the mental on the physical, is an unstable view in danger of collapsing into either eliminative materialism (defended by Paul Churchland in chapter 27 and earlier by Rorty in chapter 19 of volume 1) or the reductive materialism of the type-identity theory. The major problem facing non-reductive materialism, according to Kim, is that it seems to have epiphenomenalist consequences: it appears to rob mental states and events of genuine causal efficacy.[31] As we saw earlier, it is part of Davidson's non-reductive materialism ("anomalous monism") that mental types supervene on physical types. Terence Horgan (chapter 32) surveys various different concepts of supervenience, including the relation between supervenience and emergentism, and the work they are often put to, especially by philosophers of mind in an effort to clarify the precise content of the doctrine of non-reductive materialism and exactly how it differs from reductive materialism. He argues that in order for the relation of supervenience to be of aid to materialism worthy of the name, it must not be primitive or *sui generis* but susceptible to explanation. Like Kim, Horgan emphasizes the special problem that non-reductive materialists have with mental causation. In 'Thinking Causes' (chapter 33) Davidson

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[29] See further, Fodor's *The Language of Thought* (1975) and his most recent position in his *LOT2. The Language of Thought Revisited* (Oxford, 2008).

[30] See John Searle's *Minds, Brains and Programs* (Harvard, 1988) and *The Rediscovery of the Mind* (MIT Press, 1992) as well as John Preston and Mark Bishop (eds.) *Views into the Chinese Room. New Essays on Searle and Artificial Intelligence* (Oxford, 2002).

[31] This theme and others are explored in Kim's collected essays *Supervenience and Mind* (Cambridge, 1993) and his book *Mind in a Physical World* (MIT Press, 1998).

responds to the charge of epiphenomenalism levelled by Kim, Horgan and others against his anomalous monist brand of non-reductive materialism.

Chapters 34-36, by Chomsky, Smart, and Montero, respectively, discuss the question whether the mind-body problem is in fact ill conceived owing to the lack of a definition of one half of the crucial mental-physical divide, namely, 'physical'. If we don't even know what we mean by 'physical' or 'material'—what is a *physical* object, a *physical* property exactly?—then the mind-body problem seems incapable of being coherently formulated and the doctrine of physicalism accordingly either false or vacuous.[32] Chomsky argues that this is indeed the case and Smart responds directly be saying what he understands the exact content of the doctrine of materialism to be. The problem of the definition of 'physical' is what Montero calls the "the body problem." After canvassing various unsuccessful attempts to solve the body problem, she suggests that a better way forward might be to replace the question whether the mental is physical with the question whether the mental is ultimately non-mental. In chapter 37, 'The Rise of Physicalism', David Papineau argues for an understanding of 'physical' in precisely these terms: the concept of the physical, as it appears in the doctrine of physicalism, should be understood as 'non-mental'. Physicalists think that mental phenomena are not fundamental or basic features of reality but are rather ultimately determined by or made up of non-mental phenomena, which are basic and fundamental. He argues further that there are sound reasons to believe the crucial premise needed to ground the most compelling general argument for physicalism understood in this way, namely, the causal completeness (or

[32] This false or vacuous dilemma appears to have been first formulated by Hempel and so has come to be called Hempel's dilemma. See Carl G. Hempel, 'Reduction: Ontological and Linguistic Facets', in Sydney Morgenbesser, Patrick Suppes, and Morton White (eds.) *Philosophy, Science and Method: Essays in Honour of Ernst Nagel* (New York: St. Martin's Press, 1969) and 'Comments on Goodman's *Ways of Worldmaking*', *Synthese* 45 (1980).

"closure") of physics, a principle often invoked as a crucial premise in causal arguments for materialism.

In 'Levels of Reality' (chapter 38) John Heil challenges the background metaphysical picture of reality held by many philosophers of mind, especially non-reductive materialists (one can see this picture at work in Broad in chapter 4 of volume 1): the "layered view" of reality, according to which the world consist of various levels of entities, each level being composed of entities from the next level down. Heil argues that this picture is the source of some of the most difficult metaphysical problems in philosophy of mind, such as the problem of mental causation, and that the picture should be abandoned in favour of a "no levels" view that does not give rise to the problems in question.[33] Taking inspiration from Russell's neutral monism (chapter 13 of volume 1), particularly his idea that physics tells us nothing about the intrinsic properties of matter, only about its relational or structural features, Galen Strawson argues for the seemingly radical conclusion that a real *bono fide* materialism or physicalism (one that is not eliminativist) actually entails a form of *panpsychism*.[34] Jaegwon Kim critically examines the recent revival of emergentism. He clarifies how he thinks it should be understood and defends Alexander and Broad (chapters 3 and 4 in volume 1) against the early mid-century criticisms of Hempel and Oppenheim (chapter 5, volume 1). He then argues that emergentism faces two serious challenges which have not yet been met and which may not be possible to meet: coming up with a positive characterization of emergence and

[33] For much fuller treatment see John Heil, *From an Ontological Point of View* (Oxford, 2003).
[34] See also Galen Strawson, *Real Materialism and Other Essays* (Oxford, 2008). As I point out in 'The Myth of Logical Behaviourism and the Origins of the Identity Theory', Strawson's panpsychistic materialism is akin to Feigl's identity theory rather than to that of Smart and Place.

making sense of the kind of "downward causation" that Kim argues emergentism is committed to.[35]

The last three chapters of the volume (41-43) discuss various themes connected with substance dualism, certainly a minority position today. Stephen Yablo explores in detail the modal notions that ground Descartes's famous conceivability argument for the "Real Distinction" between mind and body and argues that it is not as easy to dismiss the argument as many seem to think. In a second contribution to the second volume, Barbara Montero discuses the commonly voiced objection to interactive dualism that it violates the law of the conservation of energy, and argues that this law of physics is actually irrelevant to the question whether physicalism is true. The final word is given to a contemporary proponent of substance dualism, W. D. Hart, who presents a conceivability argument for disembodiment and explores in detail the view that the causal interaction between immaterial minds and material bodies might involve the transfer of a conserved quantity of "psychic energy" into kinetic energy.[36]

The third volume, on intentionality, covers general questions about what it is for a mental state, event, process, or property to be *of* or *about* something or to have representational "mental content."[37] Many of the debates over the nature of intentionality

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[35] See also further essays on emergence and reduction in Jaeqwon Kim, *Essays in the Metaphysics of Mind* (Oxford, 2010).

[36] Other advocates of substance dualism include: John Foster, *The Immaterial Self: A Defense of the Cartesian Dualist Conception of the Mind* (London: Routledge, 1991), Richard Warner, 'In Defense of Dualism', in Richard Warner and Tadeusz Szubka (eds.) *The Mind-Body Problem* (Cambridge, MA: Blackwell, 1994), Richard Swinburne, *Evolution of the Soul*, 2d ed. (Oxford: Oxford University Press, 1997), and William Hasker, *The Emergent Self* (Ithaca, NY: Cornell University Press, 1999). Critcisms and defences of dualism can also be found in Peter van Inwagen and Dean Zimmerman (eds.) *Persons: Human and Divine* (Oxford: Clarendon Press, 2007) and in Robert C. Kroons and George Bealer (eds.) *The Waning of Materialism* (Oxford, 2010).

[37] Two important collections on intentionality are Andrew Woodfield (ed.) *Thought and Object* (Oxford, 1982) and John McDowell and Philip Pettit (eds.) *Subject, Thought and Context* (Oxford, 1988). See also C. Anthony Anderson and Joseph Owens (eds.) *Propositional Attitudes* (Stanford: CSLI, 1990).

and mental content are bound up with issues in the philosophy of language and logic, in particular with semantical issues concerning meaning, reference and the logical form of propositional attitude reports. So several of the papers here include discussions of related issues in the philosophy of language.[38]

In the first essay (chapter 44) John Searle argues for a completely general understanding of the intentionality of intentional mental states and events that invokes the notion of the satisfaction or correctness conditions associated with them.[39] Chapters 45-49, by Burge, Dennett, Blackburn, McDowell and Crawford explore the special nature of the intentionality of singular or "*de re*" thoughts, thoughts directed at particular spatio-temporal objects. All these articles develop themes found in the earlier classic articles in volume one by Russell ('Knowledge by Description and Knowledge by Acquaintance') and Quine ('Quantifiers and Propositional Attitudes'). Crawford and Dennett focus on the distinction between so-called *"de re*" and "*de dicto*" propositional attitudes. Crawford argues that various problems surrounding the distinction stem from conflating it with another, different distinction Quine draws between *relational* and *notional* belief (in chapter 11 of volume 1). Once the two distinctions are clearly separated the problems vanish. Using a series of characteristically amusing examples, Dennett attempts to debunk the whole idea of the *de re-de dicto* distinction.

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[38] For a large selection of articles on the philosophy of language see the volumes on the philosophy of language in the same series as this one: A. P. Martinich (ed.) *Critical Concepts in Philosophy: Philosophy of Language*, 4 vols. (London: Routledge, 2009), which includes a survey of recent issues in philosophy of mind and language by Tyler Burge, 'Philosophy of Mind and Language: 1950-1990', which originally appeared in *The Philosophical Review* 101 (1992). Burge's survey is also reprinted in Heimir Geirsson and Michael Losonsky, *op. cit.*.

[39] His theory is developed in great detail in his book *Intentionality* (Cambridge: Cambridge University Press, 1983).

John McDowell argues that the intentional contents of singular thoughts are object-*dependent*: the existence and identity of their mental contents depends upon the existence and identity of their objects (cf. Evans in chapter 52).[40] Consider the thought *That is a raccoon* had by me while looking at a particular raccoon. According to the doctrine of object-dependence, if no raccoon at all had in fact been there to be singled out by me, owing perhaps to a referential illusion or hallucination, then there would have been no singular thought content for me to entertain. The object-dependent view has the consequence that a thinker could suffer the illusion of having a thought when he was not, because his would-be thought failed to pick out an object. But can one really be mistaken about whether one is having a thought? That the answer to this last question is No is the very reason why Russell (chapter 2, volume 1) notoriously restricted the possibility of genuine singular thought about contingently existing particulars to those whose existence and properties we cannot be mistaken about, namely, mental entities, such as after-images and other so-called "sense data." Blackburn defends a broadly Russellian view which he calls the "universalist view of thoughts," according to which the identity of the mental contents of singular thoughts is object-*independent*. Several different thought episodes can all share the same universal content even though they are targeted on different objects or even on no objects at all. Tyler Burge also maintains that the contents of a singular or *de re* thoughts are object-independent but he rejects the Russellian idea that the shared object-independent content is universal in the Russell-Blackburn sense. According to Burge, singular thoughts, such as *de re* beliefs and judgements, contain an

[40] The object-dependent conception of singular thought is discussed and defended further in various essays in McDowell's collected papers *Meaning, Knowledge and Reality* (Harvard, 1998) and a recent essay 'Evans's Frege', in Jose Bermudez (ed.) *Thought, Reference and Experience* (Oxford, 2005). See also his book *Mind and World* (Harvard, 1992). A very detailed object-dependent theory is Gareth Evans's in his posthumous *The Varieties of Reference* (Oxford, 1982), which was edited by McDowell.

irreducibly singular component (represented in logical form by a free variable) that can be contextually applied to different objects or no objects at all.[41]

The remaining chapters in the third volume cover the internalism/externalism debate about mental content, naturalistic theories of mental content, and knowledge of the contents of one's own mind.

In chapter 24 of volume 1 Putnam argues for a kind of externalism about some kinds of linguistic meaning; but he seems to think that thought content is internal in the sense that it is not determined by relations to the wider environment but only by the intrinsic physical states of individuals. In 'Individualism and the Mental' (chapter 50) Tyler Burge extends and deepens Putnam's arguments and thought experiments and applies them to the intentional or representational contents of specifically mental states and events, arguing that these too are externally individuated.[42] Externalism (or "anti-individualism," as Burge and others call it) about mental content is, roughly, the idea that the intentional or representational contents of many of our thoughts are determined by certain relations we bear to entities or factors external to our bodies, such as features of the wider natural and social environments in which we are embedded. Internalism (or "individualism") is the contrary view that the intentional contents of most or all of our thoughts are not determined by the specific relations we bear to entities or other factors beyond our

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[41] Burge's view on singular representation, both in thought and in perception, has been developed in much more detail in a series of very recent papers and a book. The book is *Origins of Objectivity* (Oxford, 2010) and the papers include: 'Five Theses on *De Re* States and Attitudes', in Joseph Almog and Paolo Leonardi (eds.) *The Philosophy of David Kaplan* (Oxford, 2009) and 'Disjunctivism and Perceptual Psychology', *Philosophical Topics* 33 (2005). See also the postscript to 'Belief *De Re*', and other essays, especially 'Other Bodies', in his collected papers *Foundations of Mind* (Oxford, 2007).

[42] See also Burge's other essays on anti-individualism collected in his *Foundations of Mind,* as well as the critical essays and his replies to them in Martin Hahn and Bjorn Ramberg (eds.) *Reflections and Replies. Essays on the Philosophy of Tyler Burge* (MIT Press, 2003).

physical bodies.[43] In chapter 51 Jerry Fodor argues that in order for representational states to play an explanatory role in cognitive psychology they must individuated internalistically; scientific psychology, in other words, needs a notion of "narrow content" that supervenes locally on brain states, even if it is true that commonsense psychology operates with a notion of "wide" or "broad" content.[44] Brian Loar (in chapter 53) criticises Burge's arguments for anti-individualism and argues for a different kind of internalist position and a different account of narrow content. Gareth Evans and Robert Stalnaker criticise internalist arguments and the related notion of narrow content and defend externalist positions.[45]

Many philosophers have challenged Brentano's claim (in chapter 1 of volume 1) that only mental phenomena have intentionality, that is, that only mental states and events can be directed at things beyond themselves. Surely there are some non-mental physical things that possess intentionality. Most obviously, spoken or written language has intentionality. Symbolic inscriptions written in ink, such as this very sentence, are about things, they mean things. Paintings, musical notion, traffic signs, and Morse code all have intentionality. A defender of Brantano will point out, however, that this intentionality is derived from the intentionality of minds. If there were no minds to use language there would be no linguistic intentionality. Only minds have "underived" or "original" intentionality. If this is right, then strictly speaking Brentano's claim should be that only

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[43] Externalism is defended by Robert A. Wilson, *Boundaries of the Mind. The Individual and the Fragile Sciences* (Cambridge, 2004) and internalism by Gabriel Segal, *A Slim Book about Narrow Content* (MIT Press, 200). See also Colin McGinn, *Mental Content* (Blackwell, 1989).

[44] See also Stephen Stich's 'Autonomous Psychology and the Belief-Desire Thesis', *The Monist* 61 (1978) and his *From Folk Psychology to Cognitive Science. The Case Against Belief* (MIT Press, 1983).

[45] Stalnaker's position is laid out in a series of essays reprinted in his *Context and Content* (Oxford, 1999).

mental phenomena have underived or original intentionality.[46] But this thesis too has been challenged by those philosophers who hold that there are such things as "natural signs" that "indicate" or "carry information" about the state of the environment in which they are situated. Clouds mean rain, tree rings indicate the age of a tree, columns of mercury carry information about ambient temperature, compasses point north, and so on. These natural signs have a kind of original intentionality; whether they point to things or states of affairs beyond themselves in no way depends on them being used by minds to do so or even on the existence of minds. This kind of allegedly non-mental intentionality forms the basis for some so-called "naturalistic" theories of mental content discussed in chapters 55–57 that seek to explain intentionality in non-intentional terms. Some of these theories appeal to causal or nomological relations between internal states of organisms and states of the external environment to ground intentionality; others to a notion of biological function.[47] Millikan and Dretske each defend different versions of the latter approach, called *teleosemantics*. Loewer critically surveys these naturalistic theories, including Jerry Fodor's asymmetric-dependence theory[48], arguing that they all either fail to accommodate essential features of intentionality (outlined by Chisholm in chapter 10 of volume 1) or subtly appeal to intentional notions to repel counter-examples, and hence

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[46] For more on the distinction between derived and underived intentionality, see Searle, *The Rediscovery of the Mind* and John Haugeland, *Having Thought* (Harvard, 1998). Daniel Dennett, 'Evolution, Error and Intentionality', reprinted in his *The Intentional Stance*, argues against the distinction.

[47] See Fred Dretske's *Explaining Behaviour* (MIT Press, 1988) and *Naturalizing the Mind* (MIT Press, 1995), Ruth Millikan's *Language, Thought and Other Biological Categories* (MIT Press, 1984) and *White Queen Psychology and other Essays for Alice* (MIT Press,). See also Graham MacDonald and David Papineau (eds.) *Teleosemantics* (Oxford, 2006).

[48] See Jerry Fodor, *A Theory of Content and Other Essay* (MIT Press, 1990).

are ultimately circular. He concludes that it remains very unclear whether intentionality can really be explained or naturalized in this way.[49]

Some have thought that externalism implies that we cannot know what we are thinking unless we also know what kind of external environment we are situated in. But if this is so, does it not contradict the apparent fact that we have "privileged first-person access" to the contents of our own thoughts through introspection alone, without the need to consult or investigate the features of the environment in which we are situated? Donald Davidson and Tyler Burge (in chapters 58 and 59) argue that, despite initial appearances, externalism about mental content is compatible with privileged access or self-knowledge. In the following chapter Michael McKinsey criticises Davidson and Burge, arguing that externalism is incompatible with self-knowledge. McKinsey argues that if we do have privileged access, if we do know what we are thinking through introspection alone, then externalism implies the apparently absurd claim that we can know contingent facts about our external environment through introspection alone.[50] In the final chapter in this volume Sydney Shoemaker explores other issues about self knowledge, such as its role in

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[49] Loewer also briefly considers another approach known as "inferential role" or "conceptual role" or "functional role" semantics. This approach goes back at least to Wilfrid Sellars, 'Some Reflections on Language Games', *Philosophy of Science* 21 (1954): 204-228; see also his 'Meaning as Functional Classification', *Synthese* 61 (1974): 64-79. Important work in this tradition includes: Hartry Field, 'Mental Representation', *Erkenntnis* 13 (1978): 9-61, Brian Loar, *Mind and Meaning* (Cambridge, 1981) and 'Conceptual Role and Truth Conditions', *Notre Dame Journal of Formal Logic* 23 (1982): 272-83, Gilbert Harman, 'Conceptual Role Semantics', *Notre Dame Journal of Formal Logic* 23 (1982): 242-56 and '(Non-Solipsistic) Conceptual Role Semantics', in Ernest Lepore (ed.) *New Directions in Semantics* (London: Academic Press, 1987), Colin McGinn, 'The Structure of Content', in Woodfield (ed.), *Thought and Object*, *supra*, Ned Block, 'Advertisement for a Semantics for Psychology', *Midwest Studies in Philosophy* 10 (1986): 615-78. For criticism see Jerry Fodor and Ernest Lepore, *Holism. A Shopper's Guide* (Blackwell, 1992), chapter 6. For a recent defence of the approach, see Mark Greenberg and Gilbert Harman, 'Conceptual Role Semantics', in Ernest Lepore and Barry C. Smith, *The Oxford Handbook of the Philosophy of Language* (Oxford, 2006). A good critical survey of various types of naturalistic approache is Robert Cummins, *Meaning and Mental Representation* (MIT Press, 1989).

[50] For further discussion see the essays in Peter Ludlow and Norah Martin (eds.) *Externalism and Self-Knowledge* (Stanford: CSLI, 1998) and in Susanna Nuccetelli (ed.) *New Essays on Semantic Externalism and Self-Knowledge* (MIT Press, 2003).

rational deliberation and its relation to second-order beliefs about one's first-order beliefs.[51]

The fourth volume on consciousness covers problems that both functionalism and physicalism allegedly face in accounting for "qualia"; the so-called "hard problem" of phenomenal consciousness; different kinds of consciousness; the internalism/externalism debate as applied to perceptual experience; general theories of consciousness, such as representational theories and higher-order thought theories; the distinction between conceptual and non-conceptual content; and the nature of the perceptual relation itself.[52]

In the opening chapter (62) of the fourth volume on consciousness, Gareth Matthews argues that Descartes introduced a new concept of mind as consciousness, an indubitable and self-transparent awareness of experience. As he puts it, "Descartes does something much more than simply isolating one function traditionally assigned to soul, namely, thinking, and supposing it to be independent of the rest. Instead he develops a new concept, consciousness, which includes thinking plus the 'inner part' (so to speak) of sensation and perception." For Descartes, the immortal and immaterial mind includes sensory experiences – or at least the "inner" component of sensory experiences, because it includes all and only those things of which one is indubitably aware and one is indubitably aware of putative sensational and perceptual experiences. These inner features of experience are of course the allegedly intrinsic phenomenal features of qualitative mental states—"qualia"—that continue to plague functionalism. In

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[51] Shoemaker develops this theme further and related ones in some of the essays in his *The First-Person Perspective and Other Essays* (Cambridge, 1996).

[52] Important collections of essays on various aspects of consciousness include: Aleksandar Jokic and Quentin Smith (eds.) *Consciousness. New Philosophical Perspectives* (Oxford, 2003), Ned Block, Owen Flanagan and Güven Güzeldere (eds.) *The Nature of Consciousness. Philosophical Essays* (MIT Press, 1997), Thomas Metzinger (ed.) *Conscious Experience* (Imprint Academic, 1995), and Martin Davies and Glyn W. Humphries (eds.) *Consciousness* (Blackwell, 1993).

'Functionalism and Qualia', Sydney Shoemaker defends functionalism from the "curse of the qualia," to borrow Stephen White's phrase[53], by responding to the notorious "absent qualia" and "inverted qualia" arguments against functionalism.

Frank Jackson and Joseph Levine (in chapters 64 and 65) argue that qualia presents a problem for materialist views. Jackson presents his famous knowledge argument, about Mary the colour scientist trapped in a black and white room, for the conclusion that qualia are non-material.[54] Levine argues that even if qualia are in fact physical there can be no reductive physical explanation for how this could be: there is an "explanatory gap" between the scientific material facts and the conscious qualitative facts.[55] Levine's explanatory gap argument and Jackson's knowledge argument, together with Kripke's modal argument (from chapter 23 in volume 1), are three central anti-materialist arguments that have been the subject of intense recent discussion. Chapters 66-70 (by Loar, Flanagan Papineau, Harman and Block) discuss these arguments, among others, such as the inverted spectrum argument. Flanagan focuses on Jackson's knowledge argument and Papineau on Kripke's modal argument. Loar attempts to defuse the arguments by appealing to the notion of a phenomenal concept.[56] Harman argues that the anti-physicalist arguments are best countered by the idea that the content of conscious experience is representational.

Although Brentano (in chapter 1 of the first volume) does not clearly distinguish between them, there is a strong and a weak doctrine about the intentionality of the

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[53] Stephen L. White, 'Curse of the Qualia', *Synthese* 68 (1986).
[54] See Peter Ludlow, Daniel Stoljar and Yujin Nagasawa (eds.) *There's Something about Mary. Essays on Phenomenal Consciousness and Frank Jackson's Knowledge Argument* (MIT, 2004).
[55] See also Joseph Levine, *Purple Haze. The Puzzle of Consciousness* (Oxford, 2001).
[56] See Torin Alter and Sven Wlater (eds.) *Phenomenal Concepts and Phenomenal Knowledge* (Oxford, 2007).

qualitative mental states and events involved in perception and sensation. The weak doctrine says that pain and other bodily sensations, as well as sensory perceptions, have intentionality; the strong doctrine says that they have nothing but intentionality, that their qualitative nature is exhausted by their representational nature. It is consistent with the weak claim, but not with the strong claim, that sensations have non-intentional properties as well as intentional ones, variously called "qualitative" or "phenomenal" properties, or often just "qualia." The strong position asserts the reducibility of the phenomenal or qualitative to the intentional. Somewhat confusingly, both positions have been called "intentionalism" or "represetationalism" (sometimes "representationism") about qualia; but it is important to keep them distinct. Harman argues for the strong position that the qualitative features of experience are nothing but representational features. Other forms of strong representationalism are defended by Fred Dretske (chapter 72) and Michael Tye (chapters 74). Tyle defends a representational theory of the bodily sensation of pain.[57] Ned Block criticizes Harman's arguments, arguing for the weak position, agreeing that experiences have representational content, but arguing against the reduction of qualia to representational aspects of experience.

Tyler Burge (chapter 73) explores and refines a well-known distinction of Ned Block's between *phenomenal consciousness* and *access consciousness*.[58] David Rosenthal (chapter 71) discusses another important distinction between *state consciousness* and *transitive consciousness* (distinguishing them both from *creature*

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[57] See also Tye's *Ten Problems of Consciousness. A Representational Theory of the Phenomenal Mind* (MIT Press, 1995) and his *Consciousness, Colour and Content* (MIT Press, 2000). Dretske's strong representational theory is elaborated and defended in *Naturalizing the Mind*.

[58] Block briefly draws the distinction in his critical review of Daniel Dennett's *Explaining Consciousness* in *The Journal of Philosophy XC* (1993), and develops it more fully in 'On a Confusion about a Function of Consciousness', *The Behavioural and Brain Sciences* 18 (1995), both reprinted in his *Consciousness, Function and Representation.*

consciousness) and argues that state consciousness is to be explained in terms of transitive consciousness. This theory of consciousness is known as the "higher-order thought" (HOT) theory, according to which, as Rosenthal puts it, "We are conscious of our conscious mental states by virtue of having accompanying thoughts about those states."[59]

Colin McGinn (chapter 75) argues for the pessimistic conclusion that the explanation for how material states and processes give rise to consciousness may be "cognitively closed" to us, simply beyond our capacity to understand. Kathleen Wilkes, on the other hand, in chapter 76, questions the very existence of a "problem of consciousness" at all, arguing that all we really have is a heterogeneous class of phenomena, all of which are best explained by science without invoking any general notion of consciousness as such. In chapter 77, David Chalmers takes a view very different from both McGinn and Wilkes. He distinguishes between the "easy problem" and the "hard problem" of consciousness. Explaining the nature and existence of conscious experience, the fact that it is like something to have conscious experiences, in Nagel's famous phrase (from chapter 25 of volume 1), is the hard problem. Chalmers argues for a position of "naturalistic dualism," according to which the hard problem is solvable but only by treating consciousness as an ontologically fundamental feature of reality not reducible physically.[60] John Searle (in chapter 78) argues that consciousness is essentially a biological phenomenon to be explained by the biological sciences. In the following chapter Daniel Dennett opposes the idea that the subjectivit

[59] Rosenthal's HOT theory is developed in the essays in his *Consciousness and Mind* (Oxford, 1995). A different higher-order theory, the higher-order-perception theory (HOP), is advanced by William Lycan in his *Consciousness and Experience* (MIT Press, 1996).

[60] The view is developed extensively in his book *The Conscious Mind* (Oxford, 1996) and further refined and defended in *The Character of Consciousness* (Oxford, 2010).

y of consciousness, its first-personal character, puts it beyond the scope of normal science, and argues that the best way to study and explain consciousness is precisely from a third-person perspective he calls "hetero-phenomenology."[61]

The last three chapters (80-82) focus on the nature of perception and perceptual experience. Martin Davies discusses the debate over internalism and externalism (covered in the third volume, chapters 50-54) as applied to the content of perceptual experience. He defends Tyler Burge's further claim that the content of perceptual experience is externalist from attacks by internalists.[62] Christopher Peacocke discusses the recently debated question whether perception has a kind of non-conceptual content and argues that is does.[63] In the final chapter, Tim Crane argues that the real issue in the philosophy of perception concerns, not the existence or nature of qualia, as representationalists and anti-representationalists seem to have it, but the more fundamental question whether perception is genuinely relational in nature.

In her recent survey of twentieth-century philosophy of mind, Sarah Patterson has rightly remarked that "The story of philosophy of mind in the twentieth century is in part the story of the fortunes of physicalism."[64] Many of the selections in these volumes bear witness to this statement. Materialism was certainly the orthodoxy in late twentieth-century philosophy of mind. If there is anything distinctive in general about the beginning of twenty-first century philosophy of mind, perhaps it is the gradually increasing

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[61] Dennett's theory of consciousness was originally presented in *Consciousness Explained* (Little, Brown, 1991). The excerpt here is from his more recent treatment in *Sweet Dreams. Philosophical Obstacles to a Science of Consciousness* (MIT Press, 2006).

[62] See Burge, 'Individualism and Psychology', *The Philosophical Review* 95 (1986), reprinted in his *Foundations of Mind.*

[63] For more on this debate see York H. Gunther (ed.) *Essays on Nonconceptual Content* (MIT Press, 2003).

[64] 'Philosophy of Mind', in Dermot Moran (ed.) *The Routeldge Companion to Twentieth Century Philosophy* (London and New York: Routledge, 2008), p. 525.

questioning of the materialist framework itself.[65] Whether loosening or abandoning materialism will pay dividends, whether, in Tyler Burge's words, "Philosophers should be more relaxed about whether or not some form of materialism is true,"[66] is something that future philosophy of mind holds in store.

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[65] See, e.g., the following collections: Howard Robinson (ed.) *Objections to Physicalism* (Oxford: Clarendon Press, 1993), Carl Gillett and Barry Loewer (eds.) *Physicalism and its Discontents* (Cambridge: Cambridge University press, 2001), and Robert C. Kroons and George Bealer (eds.) *The Waning of Materialism* (Oxford, 2010), and Barry Stroud, *The Quest for Reality. Subjectivism and the Metaphysics of Colour* (Oxford, 2000), chapter 3: 'The Physical World'. In *Physicalism, or Something Near Enough* (Princeton and Oxford: Princeton University Press, 2005), Jaegwon Kim attempts to determine how much physicalism we can lay claim to after half a century of debate. The philosopher of science Bas Van Fraassen offers a highly critical discussion of materialism in his *The Empirical Stance* (New Haven and London: Yale University Press). Daniel Stoljar, *Physicalism* (London: Routledge, 2010) surveys the state of the art. The classic 19th century scholarly work on the history of materialism is Frederick Lange's *The History of Materialism* (1865). See in particular the third edition translated by Ernest Chester Thomas and with an introduction by Bertrand Russell: *The History of Materialism and Criticism of its Present Importance* (New York: The Humanities Press, 1925).

[66] 'Mind-Body Causation and Explanatory Practice', in John Heil and Alfred Mele (eds.) *Mental Causation* (Oxford: Clarendon Press, 1993). The quotation is from p. 360 of the reprinted version in Tyler Burge, *Foundations of Mind*.

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