

FUNCTIONALISM, IDENTITY THEORIES, THE UNION THEORY¹

Ted HONDERICH

Abstract. A person's mind includes a sequence of mental or conscious events – sensations, perceptions, thoughts, beliefs, emotions, desires, intentions, and the like. A person's mind may also be taken to include a set of dispositions to mental events, no doubt to all of the mentioned kinds of them. The dispositions, including a supposed sexy sub-set to which Freud paid attention, are neural, since there is not anything else they can be. That a neural structure (or anything else) is a disposition is merely the fact that it is persistent and the fact that it together with something else will or would make up a causal circumstance for a later event, say my conscious hope at this moment that this paper will persuade you of something.

Keywords: functionalism, identity theories, the union theory, the mind, philosophy of mind.

Hume has the fame of first seeing that there seems no reason to take a person's mind to be any more than the sequence of mental events – we could as well say mental states – and the set of dispositions.² (Of course there is the implicit fact that the sequence is internally related in several ways, most notably in that some of the events are memories of others – that is what makes it a single sequence.) Hume has the fame, more particularly, of noting that when we observe our mental lives, or better, when we recollect the moment just past of our mental lives, we never recollect anything but mental events. That is, we never recollect anything in any sense mental which is external to mental events, which thing possesses, underlies or organizes them. A person is not such a mental entity, but, in so far as mental facts are concerned, just a single sequence of mental events. Hume's truth should neither be overlooked or taken for anything else. It is not a denial of the subjectivity of mental events, of which more in due course.

¹ This paper in its second and third sections is hardly more than a summary of what is laid out elsewhere, mainly in Chs. 1-6 of my *A Theory of Determinism: The Mind, Neuroscience, and Life-Hopes* (Oxford University Press, 1988), and identically in a paperback of Chs. 1-6 of that book, *Mind and Brain* (Oxford University Press, 1990). For a short, untechnical account, see Chs. 1-6 of *How Free Are You? The Determinism Problem* (Oxford University Press, 1993). For comments on earlier drafts of the present paper, I am really grateful to Jonathan Blamey, Tim Crane, John Heil, Jennifer Hornsby, O. R. Jones, E. J. Lowe, Paul Noordhof, Jane O'Grady, and Mike Targett. We are not all in agreement. Perhaps not in perfect mutual comprehension either.

² David Hume, *A Treatise of Human Nature*, Book 1, Part 4, Section 6.

1. Functionalism

The Mind-Body Problem is the problem of the relation of mental to simultaneous neural events. (It is not, as I understand it, the problem of the relation of mental events to their explanatory antecedents, including neural dispositions.) To deal with the Mind-Body Problem we evidently need conceptions of both mental and neural events. What in general are mental or conscious events? What is their nature? In the past couple of decades, Functionalism has seemed to be an answer offered to this question so fundamental to the Philosophy of Mind. Does Functionalism really provide an answer, an adequate characterization of mental events in general?

There is a lot of loose talk in this neighbourhood, and much argument by slogan. There is also a lot of scientized reflection of uncertain philosophical virtue – by, as you might say, those with the policy of Penelope's wooers.³ Also, if you are looking for something of which the thesis of variable or multiple realization is actually true, you could do worse than by starting with Functionalism itself. So it will be as well to be definite about what I have in mind in speaking of Functionalism. Let me first exclude some things.

Functionalism is not the banal assertion that (1) all mental events, however conceived, at least typically have certain causes and effects. Everybody believes something of that sort, save perhaps some remaining defenders of Free Will and a couple of Epiphenomenalists. Nor is Functionalism the assertion that (2) all mental events, conceived independently of their causes and effects, at least typically do have certain causes and effects. Perhaps most non-Functionalist philosophers of mind accept something like this, while Strict Functionalists, as I shall call them, do not, since they deny the possibility of a conception of mental events independent of the causes and effects. Nor is Functionalism to be taken as the somewhat stronger proposition of Determinism that (3) all mental events, conceived independently of their causes and effects, do always and without exception have certain causes and effects. At least very many non-Functionalists accept that, while Strict Functionalists do not, again because of the contained assumption of an independent conception.

Nor, to turn away from mental events in general, the genus, is Functionalism to be understood as the proposition that (4) kinds or species of mental events, say beliefs or intentions, do have typical kinds or species of causes and effects. That is very true. Nor is Functionalism the proposition, which I and many other accept, that (5) each of beliefs, intentions and other kinds of mental events are to be understood or defined partly in terms of kinds of causes and effects. Who ever set out to understand desires wholly independently of action or behaviour?

³ Those who study particular sciences and neglect philosophy are like Penelope's wooers, who made love to the waiting women.' Aristippus. Bacon, *Apothogems*, No. 189.

Another thing to be put aside is (6) the belief that kinds of mental events, as well as token mental events, can be successfully discriminated, individuated or identified just by their causes and effects – where that is not a claim about their nature, or the whole of their nature. The belief is very likely true. With respect to events of any kind, what is more common than successful individuation by cause or effect or both?

Functionalism as I am understanding it is also not (7) just the program, obviously a fruitful one, of investigating, theorizing about, giving formal accounts of, and finding analogies to the causal sequences in which human mental events occur – the genus of them or its species. That program will contribute to any full account of mental events, but is not to be confused with something else. (8) Let me add, finally, that there are various theories and doctrines that fall under names got by adding a prefix to 'Functionalism'. The prefixes include 'Classical', 'Metaphysical', 'Methodological', 'Machine', 'Homuncular', 'Wide', 'Narrow', 'Teleological', 'Sober', 'Weak', and so on. I am concerned only with any of these which is or approximates to Functionalism as I am understanding it.

Functionalism as I am understanding it, which comes in two kinds, purports to be a complete answer to the question of what mental events in general are. That is, it purports to give all of the common nature of mental events. Does it? If so it will of course distinguish mental events from all else.

In Strict Functionalism, the first and most interesting of the two kinds, mental events at bottom are said to consist in no more than events which stand in certain causal relations.⁴ That is, an event in so far as it is mental is at bottom no more than an event which stands in certain causal relations. We are to understand, certainly, that there is no further true and very different characterization of mental events, events in so far as they are mental. They have no further and very different mental character.

Mental events, more particularly, are in causal relations with (i) input, (ii) what are called other 'inner' events, and (iii) output. That is the basic answer to the fundamental question of the Philosophy of Mind. Hence my wanting that glass of wine over there consists fundamentally in an event which was (i) an effect of such things as the glass of wine, (iia) also an effect of such things as an inner event having to do with my seeing the glass, (iib) a cause of other inner events, and (iii) also the cause of such things as an arm-movement in the direction of the glass. This account of my wanting the glass of wine, already far from simple because of the occurrences of 'such things as', can be enlarged by saying of the causal relata of the wanting that they stand in causal relations to other things than the wanting. We thus get a 'holistic' account of the event, something in accord

⁴ I leave out complications having to do with logical or computational as against causal relations, which do not affect the issue.

with 'the holism of the psychological'. But what we have in description of the mental event or the event as mental remains no more than causal relations.

All that is pretty vague, but here is no need to be more precise.

Shall we take it that Strict Functionalism asserts of the mental events of which we know most, our human mental events, that they have no other properties than the causal ones? Shall we take it, that is, whatever we say about how they are 'realized' in our brains, that they do not have neural properties? Philosophers who do this evidently make their account of our minds, of our mental events, ethereal. Those of them who are fleeing traditional mystery about the mind, fleeing talk of ghostly stuff, succeed in making our mental events into yet less than ghostly stuff. It is perhaps not careless to say that these philosophers at least aspire to make our mental events into no more than relations. In defining Strict Functionalism, let us not take this disastrous path.

Let us rather follow other philosophers to be found in this neighbourhood and take it that in Strict Functionalism the mental events of which we know most, human mental events, are also neural events. This Identity Theory, which I shall take as contained in the Functionalism in question, reduces to just the proposition that certain of our neural events have certain causes and effects. (The proposition both completes this Functionalism's account of our mental events and serves as its solution to the Mind-Body Problem in so far as we humans are concerned.) But it is noted that it is a possibility of some sort that events of other kinds than neural, say silicon events for a start, could stand in the same causal relations. Indeed, silicon events could have replaced our neural events without any repercussion for the given facts of mentality. The silicon events could have stood in the same causal connections. This is the proposition of variable realization or multiple realization, of which a great deal is made.

So much for how I understand Functionalism and in particular Strict Functionalism. Supporters of Strict Functionalism typically pass by a basic and general objection to their conception of our mental events – often pass it by in the course of considering what seem to me lesser objections which are by-products of the basic and general one. Let us not follow them, but hesitate.

What we have at bottom is that human mental events in so far as they are mental consist in no more than events which are certain effects and causes – effects of input and other inner events, causes of other inner events and output. (Add more talk of causal relations if you like.) And, whatever might have replaced them, our human mental events are also neural. That is all there is to them. No matter what is taken to be essential to them, which of course is their causal connections, they are just neural events in certain causal connections. It is imperative to note that they are not made anything more than that by the proposition about variable realization or replaceability. It doesn't add anything more about their nature, constituents, or properties. Nothing at all.

Will it be said that talk of nature, constituents and properties is obscure and doctrine-ridden? No doubt, and rightly, but the talk will have to be clarified in accordance with the sound idea that a thing's own nature, constituents or properties do not include the thing's uniqueness or want of uniqueness in all or any respects. To discover that something is replaceable by something else is not to discover more of its nature. No question about it itself is answered by way of propositions about its uniqueness or replaceability. There seems even more reason to say this than to say the same about propositions about a thing's relations generally.

I suspect that in the haze of doctrine, many Functionalists and their fellow-travellers do not see that nothing is added to their account of our mental events as neural effects and causes by the proposition of variable realization.⁵ They mistakenly suppose that by variable realization, by what they might call untying the mental from just the neural, or extending the mental beyond the neural, or indeed making the mental independent of the neural, they have given some place or recognition to an inescapable conviction about the mental, a conviction which is one part of or one thing expressed in our ordinary conception of our mental events. That conviction is simply that our mental events have other or more than neural and causal properties. More will be said of our ordinary conception of mental events in the second part of this paper, in another connection. That the given conviction is inescapable and part of the conception seems to me beyond doubt.

To speak differently, given that this Functionalism reduces human mental events to neural events in certain causal connections, it shares the principal rebarbativeness of a family of doctrines including Eliminative Materialism and the earlier 'nothing-but' Materialism rejected by Davidson and almost everyone else – the Materialism that issues in the declaration 'Conceiving the Art of the Fugue was nothing but a complex neural event'.⁶ That family of doctrines includes a denial of our mental events as having other than or more than neural and causal properties. That is rebarbative, and no doubt Strict Functionalism taken as an account of our mental events will because of this basic and general objection follow Behaviourism into the honourable past of the Philosophy of Mind.

The objection of rebarbativeness does not overlook differences between Functionalism and members of the given family of doctrines. I am aware for a start that Eliminative Materialism may be said to deny, and to intend to deny, the existence of mental events, and that Functionalism may be said to intend to save

⁵ Perhaps this is true of Kim Sterelny, *The Representational Theory of Mind* (Blackwells, 1990) Others with iron stomachs do certainly see the fact. David Lewis did so in his early paper, 'An Argument for the Identity Theory', *Journal of Philosophy*, 1966.

⁶ D. Davidson, 'Mental Events', *Essays on Actions and Events* (Oxford University Press, 1980), p. 214.

them, to offer an account of them, indeed to express our common conception of them. Only for Eliminative Materialism are our common mental categories like categories in witchcraft. The two doctrines are nevertheless alike in allowing to what we take to be our mental events only some or other neural and causal properties. It is for this reason that Functionalism will follow Behaviourism into the past.

This will happen, as it seems to me, as soon as the haze clears, despite the fact that it is not easy to construct a fundamental argument against Strict Functionalism.⁷ This is so since it is difficult, perhaps impossible, to find a premise more secure than what we adversaries of this Functionalism are asked to prove, that our mental events satisfy the inescapable conviction that they have other or more than neural and causal properties. This is annoying but not much of a weakness of our case, any more than it is a weakness of my belief that I am now in pain that I probably cannot construct an argument with a premise stronger than that belief. Hume, by the way, said exactly the same of arguing against someone who claims to perceive a self in addition to mental events. For Hume, there was nothing more secure than that there is no such perception to be had.

Consider a second Functionalism, not strict. It is distinct from certain other philosophies of mind, indeed many, only in emphasis. Mental events in general are said to have their causal properties as their essential or distinctive properties, and of course also said to have neural or silicon properties or the like. But it is now allowed that some mental events may have other properties, taken as needing less emphasis. They may have qualities spoken of in terms of 'qualia', or 'what something is like' or 'what it is like to be something', or 'raw feels'. In particular some of our human mental events may have these additional properties.

This Lenient Functionalism, as implied, allows for some human mental events which lack the additional qualities. Thus it faces the general objection that in part it has the rebarbative character of Eliminative Materialism and the like. Its careless and curiously disjunctive conception of the other human mental events, which have or may have the additional properties, is in line with the thoughts of various defenders of mental events as ordinarily conceived. That careless conception and the thoughts from which it comes are in my judgement very useful but insufficient. They do not try to characterize directly and in a general way the nature of mental events. Be that as it may, however, the careless conception in assigning certain properties to some mental events is enough to stand in the way of the Identity Theory included in Lenient Functionalism as well as in Strict Functionalism.

⁷ The objection of rebarbateness can be said to beg the question, and hence not to be 'an argument'. That shows that there is a role in inquiry for something other than 'arguments', or, better, despite what I say in the text, that 'arguments' can be too narrowly conceived.

We will be coming back to Identity Theories, and to what may be a proof of their failure – which proof I rely upon in what has just been said about Lenient Functionalism. As mentioned earlier, we shall also be considering our ordinary conception of our mental events – and what can be made of it. Certainly it is an attempt to characterize directly and in a general way the nature of our mental events. Consider now a more radical objection to Strict Functionalism, again overlooked by its proponents in their concern with this or that lesser difficulty. It is that this Functionalism is incoherent.

As remarked above, any adequate account of mental events in general must distinguish them from all else. How does Strict Functionalism attempt this? How does it try to distinguish these events from others? We are told that at bottom they are events which have certain causes and certain effects. The identification of these mental events then plainly depends on the identification of the causes and effects. It depends in part on the identification of input and output events. For present purposes, we can restrict ourselves to input and output events, and leave aside other inner events.

Which are these input and output events? What distinguishes input events from others, and what distinguishes output events from others? Let us again think of humans. What distinguishes input events, such as an input event involving the glass of wine, from other environmental events which are causal with respect to humans, say one having to do with a flea of mine of which I am unaware? Clearly input events are not all the environmental-causal events. What distinguishes output events, such as the arm-movement towards the glass, from other bodily events which are effects of internal human causes, say the bodily event which is unintended perspiration? Clearly output events are not all such bodily-effect events. To speak differently, Functionalists are not and cannot be concerned with all the causal sequences which run through a body, but only some. They want the ones some of whose inner events are mental. How do they find them?

It is pretty clear how Strict Functionalism standardly proceeds. What it in fact does, unreflectively, is to take input as exactly environmental causes of mental events, with the mental events understood in something other than the causal way. Plainly they are conceived in our ordinary way. For a start, these mental events are conceived as having more than causal and neural properties. So with output. That is bodily effects of mental events, with those mental events understood in something other than the causal way. It is our ordinary way.

But then Strict Functionalism proceeds in this standard way on the basis of exactly what it denies, a true characterization of the nature of mental events themselves in terms of something other than their causal relations. It is incoherent in that it proceeds precisely on the basis of what it denies.⁸

⁸ Cf. E. J. Lowe, section 4, 'Real Selves: Persons as a Substantial Kind', in *Human Beings*, ed. D. Cockburn (Cambridge 1991).

Will you say at this point that I have missed or obscured a simple point? Science has regularly been interested in and identified some class of events, say certain hereditary events, maybe having to do with eye-colour. It has taken this class of events to have a cause, and hypothesized about the nature of that cause. Often its nature has been discovered. This is how things went with the gene. Will you say that Functionalism does just this sort of reputable thing?

That seems to me a confusion. The scientific procedure is not near to the standard procedure of Functionalism. Functionalism begins, not with something analagous to hereditary events, already identified, but with something analagous to the gene, which it then uses to identify other events, and which it then claims to understand wholly in terms of those events. It denies that it presupposes and depends on a conception of something analagous to the gene, but, as said, it does use just that conception in order to specify the causal relata. That seems to me not good science but bad philosophy. If the science was analagous, and bad, it would proceed from the hereditary events to the gene, and then deny it used and depended on any other conception of the hereditary events but their being effects of the gene.

Is it necessary that Strict Functionalism proceeds in its standard way? Perhaps it can contemplate only two other options. It must (a) pick out a sub-class of environmental-causal events or a sub-class of bodily-effect events by means which make no reference at all to mental events, or (b) pick out the sub-classes by means of a reference to mental events which does not render Functionalism incoherent.

Perhaps some will be tempted to think that this Functionalism can proceed in the first way. They will say something of the following sort. 'Well, can't we just start by specifying a class of environmental causes straight-off, including causes of receptor-events in eyes and ears, and specifying a class of bodily effects straight-off, say limb-movements and speech-productions – and then say mental events are what come in the middle? How does that presuppose an idea of mental events which makes the whole thing incoherent?'

There is a plain reply, that the procedure does depend on the fatal idea, at the start. Specifying the sub-class of environmental causes is and can only be done by choosing those that have certain effects, mental events somehow conceived. Necessarily these mental events are conceived as other than just effects of environmental causes. So with specifying the right class of bodily effects. That is how the unnoticed flea and the perspiration get excluded, as they need to be.

Something else does not need to be added, but usefully can be. There is no special or intrinsic character had by some environmental causes and some bodily effects and such that the Functionalist can somehow depend on this character to advance her enterprise. Special categories of environmental causes and bodily effects do not pick themselves out. One relevant fact here is that it is conceptually

and nomically possible that any environmental cause and any bodily effect go with no mental event at all, however conceived. This is so of stimulation of the retinas and of an arm movement in the direction of a glass of wine or my lips producing the sounds in 'Pass me that glass, sweetheart'.

If the first option fails, what of the second? Can Strict Functionalism pick out sub-classes of causal-environmental events and bodily-effect events by means of a reference to mental events which does not make it incoherent? Perhaps you will be tempted for a moment to the idea that Functionalism can depend on this conception of mental events: those events to which we ordinarily but mistakenly or wholly unenlighteningly ascribe a certain character. This character will be the one spoken of in terms of 'qualia', 'what it is like to be something', and so on.

This option has several peculiarities, including its own fatal disability. It depends on the thought that we mistakenly or unenlighteningly characterize a certain set of events. But mistakenly or unenlighteningly characterizing a set of events requires that we must already have discriminated them. We must have a conception of them. This cannot be a conception that picks out nothing, or anything. Thus this line of Functionalist thought also depends, at one remove, on exactly what it denies, a conception of mental events in terms of other than their causes and effects.⁹

Let me make one final remark here on something implicit in what has been said. If Strict Functionalism did have no conception of the genus mental events but the causal one, or no conceptions of such species as belief and intention but causal ones, all its propositions would have an analytic nature which they seem to lack – and which, I think, most Functionalists must wish them to lack. For a start 'mental events in general are those which have certain causes and effects' would be nothing other than the proposition 'events which have certain causes and effects do have those causes and effects'.

2. Identity Theories

It was said above that we have an ordinary conception of our mental events, a conception of their general nature, a conception which includes the conviction that they have other or more than neural and causal properties. It is a conception owed to direct reflection on all of them, and in particular to our capability of recalling any mental event just past. (That we can do this is surely beyond

⁹ There is also what may reduce to a variant of the second option, proposed to me by Paul Noordhof. It is that the Functionalist can initially identify mental events as those events to which we have direct or introspective access, without saying anything of their nature. This needs more attention than I have room to give it here. So does what may be regarded as a general response to the incoherence objection by Tim Crane in his 'Mental Causation and Mental Reality', *Proceedings of the Aristotelian Society*, 1992, pp. 193-5.

question. Whether this recalling was misdescribed by advocates of 'introspection' is a question that can be put aside.) The conception is therefore owed to what can be called Mental Realism, the policy of reflecting directly on mental events in their reality rather than turning away to this or that more tractable fact pertaining to them, such as the logico-linguistic features of sentences about them¹⁰ or their causal relations, or whatever else.

When I recall my experience or mental event a moment ago of seeing the line of trees out the window, I recall a content. It is not the trees, since if my visual cortex and a good deal more of my brain had been the same, but those trees had not existed, I would have had the same experience with the same content. This content is for me very certainly not just a bare causal term, like something-I-know-not-what in a mechanism about which I know only what affects it and what it affects. Indeed, it seems that contents can exist for me without my knowing their causal relations. Further, as hardly needs to be added, the content I recall is for me not at all a neural fact – and hence not something only causal and neural.

The idea of content is already the idea of something necessarily in relation to something else. That the idea of content is in this way relational is owed to the recallable fact of something distinct from content but also, as we can say, within the experience or mental event. It is another component. This other thing, for various reasons, is not a person. Initially we are tempted, not only by tradition, to call it a subject. Even initially we can resist the temptation to make more of it than we can discern, more of it than a property of a mental event. We can have, I think, no view of it as a causal term, and certainly no view of it as neural.

As for the relation between subject and content in a mental event, it is difficult to resist an initial step of taking them to be in a way interdependent. No content without subject, and no subject without some or other content.

There is no doubt that such reflections as these rapidly issue in problems. One group of problems has to do with a content's standing in a second relation. This is its relation to an object – in the example, the content's relation to the trees. This relation, we naturally say in beginning, consists in a content's being an effect of and representative of the object. Trying to make some initial sense of representation, and the true thought that in standard representation we need to be aware of what does the representing, may result in further reflections on the relation between content and what was called subject. It may result in the conclusion that this relation is certainly not one such that the subject is standardly aware of the content – aware of it in the way that I am aware of the trees. This is a denial of contents as subjective objects of awareness, which is to say as sense data and the like.¹¹

¹⁰ See for example Davidson, 'Mental Events', *op. cit.*, pp. 209-212.

¹¹ On subjective objects of awareness, see my 'Seeing Qualia and Positing the World', in A. J. Ayer: Memorial Essays (Cambridge, 1991), ed. A. Phillips Griffiths, pp. 129-51.

An attempt to understand the second part of the content-object relation in terms of the second – to understand representation in terms of the causal relation – may also force reflection on the subject-content relation, and indeed issue in the conclusion that even restrained talk of a subject is perhaps dispensable. The question arises, at any rate, of whether we should try to restrict ourselves just to some notion of non-standard awareness of content.

A further group of problems has to do with another of our convictions, so far unmentioned. It is the conviction of the givenness of objects, the givenness of the world. It includes a denial of any kind of awareness of content as against object, an understanding of content as the presentation of object, and a rejection of global scepticism about the world. The denial of any kind of awareness of content makes for yet more difficulty about what was initially called the subject-content relation.

I wish to propose but one proposition in connection with this brisk and less than perfectly comprehensible summary, or rather, in connection with the reflections summarized.¹² It is a proposition which concedes and does not seek to avoid the great difficulties faced in thinking directly about the mental. The proposition is that the reflections have a distinctive subject-matter, certainly not only causal and/or neural, whose existence is undeniable. It is a subject-matter which determines agreement or disagreement with the admittedly deflationary course of reflections. The subject-matter exists as the subject-matter of those deflationary reflections, and certainly does not evaporate in the course of them. Mental events have distinctive properties or a distinctive character, badly understood but undeniable.

In sum, each mental event has what can be called, a little grandly, a character of interdependent duality, a duality of two interdependent parts. Put into somewhat philosophical language, this is our ordinary conception of our mental events. (The duality, as will be noted, has nothing to do with mind-brain dualism.) As we can say briefly and less grandly, each mental event has a character of subjectivity.

So – we can at least begin to characterize the general nature itself of mental events. And we need to. To flee the obscurity, to eschew Mental Realism, is to fail to enter into what has first claim on the name of Philosophy of Mind. It is to fail to deal with its fundamental question. Giving up on Mental Realism also makes any true solution to the Mind-Body Problem highly unlikely. If we have no decent sense of the nature of mind, what will keep us from mistaken views of its relation to body?

¹² The reflections in question are pursued in 'Seeing Things', forthcoming in *Synthese*. I refer to them partly for the additional reason that they may indicate that those who espouse Mental Realism are not necessarily inclined to free-and-easy or credulous thinking about the mind.

What is that relation? How are properly-conceived mental events related to neural events, in particular events within a human Central Nervous System? Neural events are electro-chemical events. Their nature is becoming increasingly well-known. It is evidently unlike the nature of mental events just indicated.

Let me note, however, that neural events are not effectively characterized as physical events. They are not thereby distinguished from mental events, and, as might also be said, they are too much distinguished from them. There is a basic conception of what is physical, having to do in part with extension in space and time, which conviction does not have the disability of being relativized to contemporary science, future science or completed science. There seems to me no serious objection to regarding mental events as physical events according to the basic conception. That is not to say that their mental properties are electro-chemical, or that the Mind-Body Problem is resolved or made much easier. It is made somewhat easier by the fact that the mental and neural realms are allowed to have something in common, physicality.

The various sciences which together make up neuroscience may be said now to have established a general proposition to which empirical philosophers and commonsensical persons have long been inclined. That is the proposition that every mental event is intimately related to a neural event: in a kind of necessary connection with it. Just as there are no ghosts, which is to say no minds or persons floating free of bodies, so there are no ghostly mental events either. To speak of a neural event, of course, is not necessarily to speak of anything simple, anything owed to outmoded doctrines of brain localization.

The Proposition of Psychoneural Intimacy by itself rules out some philosophical theories about mind and brain. (It rules out, for example, the central idea of Dualist Interactionism. That idea is that sometimes an earlier mental event, somehow independent of the brain, causes a later neural event, and sometimes an earlier neural event causes a later mental event as independent.) The Proposition of Psychoneural Intimacy, for good or ill, has as a natural product the theory, or rather the family of theories, to the effect that each mental event is identical with a neural event. Such mind-brain theories, Identity Theories, have had a certain dominance which they may now be losing. They are, I think, open to a certain refutation.

The refutation depends, first, on what has already been asserted, that mental events have a certain distinctive character, different from that of neural events.¹³ The refutation depends, secondly, on taking a certain clear view of what must be meant by asserting of one event e_1 that it was numerically identical to another, e_2 . What must be meant is that the one event had all and only the properties of the

¹³ The proposition that mental events have this distinctive character of course makes pointless the Identity Theory within Strict Functionalism, which theory asserts that mental events are no more than neural events with certain causal roles.

other, or that the referent of 'e1' had all and only the properties of the referent of 'e2'. This view of identity, owed to Leibniz, is distinct from much else, including a good deal about theoretic reduction, bridge laws and the like, which in fact does not serve the purposes of Identity Theorists. In fact, much that is said of theoretic reduction and the like is more in accord with something to which we will come, the Union Theory.

Thirdly, the refutation depends on asking a certain question of any Identity Theory. What properties does the theory take a mental event to have had?

There are two possible answers. If the answer given is that the mental event had only mental properties, as ordinarily or realistically conceived, then a certain intolerable conclusion follows. The neural event to which it was identical also had only such mental properties. The given answer mentalizes the brain. Similar reasoning shows the absurdity of answering, to a related question, that the neural event had only neural properties. In this case the mind is neuralized. These intolerable conclusions, what can be called True Identity Theories, might be said to respect the Proposition of Psychoneural Intimacy. That is little consolation.

There are other Identity Theories, so called, which may result partly from seeing the absurdity of True Identity Theories. At any rate, they clearly intend something different. In answer to the question of what properties were had by the mental event, they answer that it had both mental and neural properties. This enables them to avoid mentalizing the brain or neuralizing the mind. This also makes them into something very different from True Identity Theories. They are Dualistic Identity Theories. They involve a dualism of properties. But that is not what is most important.

One of two things that are important has to do with a further feature or features which these theories have, and a certain general requirement essential to thinking of mind and brain.¹⁴ First the general requirement.

(i) We find it impossible to believe that mental events or mental facts, these being conceived in the ordinary way, are not part of the explanations of our actions. Such mental events or facts are ineliminable parts of the explanations of actions, and also of later mental events. This requirement that we put on theories of mind and brain can be called the Proposition of Mental Indispensability, or indeed the Proposition on the Falsehood of Epiphenomenalism. Certainly it is not inconsistent with neuroscience.

Dualistic Identity Theories, as I am understanding them, have the further feature that they assign causal efficacy to only the neural properties of mental events. In part, as it seems to me, this move is owed to a misconception of neuroscience. They also have the further feature that they assert only the relation of identity with respect to the neural and the mental properties of a mental event.

¹⁴ As the diligent reader can work out, the Identity Theory within Lenient Functionalism is of this sort.

What this comes to, evidently, is that all that they assert of the neural properties and the mental properties is that they were properties of the one event. It is denied, or not asserted, that the neural and mental properties were in nomic or lawlike connection. For this reason such theories are also spoken of as Token Identity Theories as against Type Identity Theories.¹⁵

Dualistic Identity Theories, despite strenuous attempts to be in accord with it, therefore run afoul of the Proposition of Mental Indispensability. The mental properties of an event are given no causal role with respect to later mental events and actions. They are no more given a causal role than the colour of something is given a causal role by the fact that the weight of the thing has such a role.¹⁶ It may be thought that they could still satisfy the mentioned Proposition if they were to allow for nomic connection between mental and neural properties, but this they do not do.¹⁷

(ii) The second important thing to be noted about Dualistic Identity Theories is that contrary to natural expectation they also fail to satisfy The Proposition of Psychoneural Intimacy. It seems easy to think that anything calling itself an Identity Theory must satisfy the Proposition, but this is not so. The Identity Theories we are considering are merely to the effect that a mental property is a property of an event which also has a neural property. That by itself is far from giving us what the Proposition of Psychoneural Intimacy requires, which is some kind of necessary connection between the mental and the neural. A mental property is made no more intimate with a physical than my height with my politics.

Still, it is not possible in this paper to do more than sketch a central part of the proposed refutation of Identity Theories. Without attempting more, I now turn to what seems to me a superior proposal about the Mind-Body Problem.

3. The Union Theory

An arguable solution to the mind-body problem must be a product of at least the several requirements or constraints that have been mentioned. It must proceed

¹⁵ The names may be misleading. In an ordinary sense of 'type', types of mental properties might go with types of neural properties without nomic connection. To assert mental properties are in nomic connection with neural properties is indeed to assert that types go with types, but to assert that types go with types is not necessarily to assert nomic connection.

¹⁶ For elaboration of my own view of this point, on which there is now some agreement, see the books mentioned in Note 1 above and also 'The Argument for Anomalous Monism', *Analysis* 1982, 'Smith and the Champion of Mauve', *Analysis* 1984, and 'The Union Theory and Anti-Individualism', *Mental Causation*, ed. J. Heil and A. Mele (Oxford University Press, 1993).

¹⁷ In fact allowing for nomic connection, so long as only neural properties are allowed to be causal, will result in an inconsistent theory. See my discussion of Neural Causation with Psychoneural Correlation, *A Theory of Determinism: The Mind, Neuroscience, and Life-Hopes, or Mind and Brain*, in each case pp. 154-7.

from an adequate conception of the mental, as Functionalism does not. It must be in accordance with Psychoneural Intimacy and also Mental Indispensability, which is not the case with the Dualistic Identity Theories.

The Theory of Psychoneural Union, or the Union Theory, consists in three parts, the first being a certain hypothesis. That hypothesis, the Hypothesis of Psychoneural Nomic Correlation or just the Correlation Hypothesis, has to do with a mental event and a simultaneous neural event. It is to the effect that they stand in a certain connection. The hypothesis is this:

For each mental event of a given type there exists some simultaneous neural event of one of a certain set of types. The existence of the neural event necessitates the existence of the mental event, the mental event thus being necessary to the neural event. Any other neural event of any of the mentioned set of types will therefore stand in the same relations to another mental event of the given type.¹⁸

The hypothesis relates mental events only to neural events, and for that reason alone is different from the idea of Functionalists about the variable realization of mental events not only in our Central Nervous Systems, but in silicon and whatever else. The hypothesis does specify a many-one relation, but this holds between just the neural realm by itself and the mental. It specifies this many-one relation rather than a one-one relation since it appears to be a fact that different types of neural events can stand go with but one type of mental event.¹⁹

The Correlation Hypothesis depends on an explication of nomic relations, and in particular the relation of two events such that the first necessitates the second and the second is necessary to the first. What the relation comes to, in my view, is that certain conditional statements are true. For one thing to necessitate another is for it to be true, roughly, that since the first occurred, then, whatever else had been happening, the second would still have occurred. The Hypothesis, since it concerns simultaneous events, may with reason be said not to take the neural event as causal with respect to the mental, or of course the mental event as causal with respect to the neural. The Hypothesis asserts more than the supervenience of the mental on the physical, since supervenience as usually understood falls short of being nomic connection.²⁰

¹⁸ It may be useful to relate some usages. The genus mental events, as mentioned at the beginning of this paper, has in it the kinds or species which include beliefs generally and intentions generally. Each kind or species has in it a multitude of particular or token mental events. Each of these is of a type – the type which includes identical token events.

¹⁹ I now have some doubt that nomic connection between mind and brain must be one-many. There is something to be said for a one-one relation. What I have no doubt about is that the mind-brain connection is nomic.

²⁰ However, see Davidson's recent and perhaps revisionary account of supervenience in 'Thinking Causes', in *Mental Causation*.

What the Correlation Hypothesis comes to in part, informally speaking and by way of an example, is that my thought of Lublin a moment ago stood in a certain tight relation with a certain neural event, and if another event of exactly that type occurs, I or somebody else will be thinking of Lublin in exactly the same way.

There is nothing in the mentioned fairly standard explication of nomic relations which stands in the way of such relations holding between mental and neural events, as the Hypothesis supposes. Further, there is very impressive neuroscientific evidence for the hypothesis. In my estimate the evidence is overwhelming. Even if philosophical objections to the hypothesis did not seem open to good rejoinders, as they do, the evidence could be taken to overbear the objections.²¹ To speak too quickly, if there is a contest between a philosophical doctrine of the mental which stands in the way of its being in nomic connection with the neural, and, on the other hand, neuroscientific evidence that the mental is in nomic connection with the neural, it is the doctrine that must give way.

The second part of the Union Theory has to do with the causation of a mental event and the simultaneous neural event. (The causation is sometimes or often or perhaps nearly always a matter of the neural dispositions mentioned in passing at the start of this paper.) If we consider such a pair of events, as it seems to me, we must conclude that they constitute not two effects but one. This is only initially surprising, and clearly they must be so regarded. The argument rests in part on the idea that since a mental event, as just asserted, is necessary to the simultaneous neural event, it cannot be that the neural event is by itself necessitated by some prior causal circumstance. There can be no prior causal circumstance, something akin to a causally sufficient condition, for the neural event alone. If there were such a guaranteeing thing, the neural event would not have the simultaneous mental event as a necessary condition. It would not be dependent upon it.

The Union Theory in its third part is simply that each of a mental event and the simultaneous neural event may be causal with respect to an ensuing action or a later mental event. Each of the mental event and the neural event is within a causal circumstance for the action or later mental event.

The Union Theory, then, is that a mental event and the simultaneous neural event are nomically related, as specified by the Correlation Hypothesis, and that they constitute a single effect, and that each event may be causal with respect to an action or later mental event. (It is also true that the two events are in a less important sense a single cause.) The theory proceeds from an adequate conception of mental events. It will be evident that it is in accord with the Proposition of Psychoneural Intimacy. This is a matter of its first two parts. It will be equally

²¹ In particular I have in mind Davidson's objections to psychoneural nomic connection in 'Mental Events', *op. cit.*

evident that in virtue of its third part it is in accord with the Proposition of Mental Indispensability.

It is easy not to see clearly the similarities and dissimilarities which hold between mind-brain theories, and assumptions as to such similarities and dissimilarities influence us too much. Let me then examine some assumptions. It may be supposed, first, that the Union Theory is properly spoken of as a dualism or dualistic while Identity Theories are not. In fact this is as good as a mistake.

Certainly there is every reason to regard the Union Theory as 'more dualistic' than True Identity Theories, but they are open to the fatal objections noticed earlier and in any case are a minority of contemporary Identity Theories. Most contemporary Identity Theories, including the best-known one, Davidson's Anomalous Monism, are or appear to be Dualistic Identity Theories.

What these come to, when characterized as they were earlier, is the proposition that a mental property is a property of one event which also has a neural property. That is all that the talk of identity comes to. The Union Theory, in contrast, was expressed as the proposition that a mental and a simultaneous neural event are nomically connected, and a single effect, and that both events are causal with respect to actions and later mental events.

These ways of speaking produce the illusion that Dualistic Identity Theories are 'less dualistic' than the Union Theory. But it is no more than an illusion. There is no obstacle whatever in the way of stating the Union Theory in such a way that it disappears. What we can say is that the Union Theory comes to this: the mental and the neural properties of an event are nomically connected, and a single effect, and both properties are causal with respect to actions and later mental events. Both of Dualistic Identity Theories and the Union Theory, if stated with full metaphysical or ontological propriety, would in my view be stated in terms of individual as against general properties of our Central Nervous Systems. No doubt we should all go in for more metaphysical or ontological propriety.

Some readers may now wonder if the Union Theory is approximate to one of several sorts of Identity Theory famously discriminated by Davidson. He wrote:

"It may make the situation clearer to give a fourfold classification of theories of the relation between mental and physical events that emphasizes the independence of claims about laws and claims of identity. On the one hand there are those who assert, and those who deny, the existence of psychophysical laws; on the other hand there are those who say mental events are identical with physical and those who deny this. Theories are thus divided into four sorts: nomological monism, which affirms that there are correlating laws and that the events correlated are one (materialists belong in this category); nomological dualism, which comprises various forms of parallelism, interactionism, and epiphenomenalism; anomalous dualism, which combines ontological dualism with

the general failure of laws correlating the mental and the physical (Cartesianism). And finally there is anomalous monism, which classifies the position I wish to occupy.”²²

There is much that might be said about this, in addition to what has been noticed already – that anomalous monism (or Token Identity Theory) appears to assert a dualism of properties, and hence is a Dualistic Identity Theory, and that in general it is misleading to speak of the mental as against the physical rather than the mental as against the neural.

With respect to nomological monism (or Type Identity Theory) it is impossible that any consistent doctrine be monistic, in the strict sense of concerning but one thing and hence being a True Identity Theory, and also include nomic or lawlike connection within itself. Nomic connection requires two things. But of course the label nomological monism can be and is used to cover the proposition of which we know, that a mental and a physical property are both properties of one thing, a Dualistic Identity Theory.

Given this second usage, to come to the main question now under consideration, the Union Theory can of course be taken as approximate to nomological monism. Perhaps it is closest to that. However, it can also be taken as about as approximate to nomological dualism, although it is none of epiphenomenalism, interactionism, or parallelism. (The latter, I take it, cannot be what is usually often meant by 'parallelism', which is the doctrine that the explanation of the correlation of mental and neural events is not within those events, a matter of their nomic connection, but a matter of God's ongoing control or whatever.) Nothing hangs on whether the Union Theory is assimilated to nomological monism or nomological dualism. Its name has the virtue of distinguishing it from other forms of both, and much else that is in some relation to it.

There is also a more general conclusion to be drawn from these reflections on Davidson's characterization. 'Nomism' and 'dualism' are no longer of much use, and need a long rest. The same is true of 'Identity Theory'.

As with any philosophical theory, the Union Theory's worth needs to be judged partly by its capability of resisting objections. Of course there are very many of these, deriving from a wide range of philosophical doctrines, commitments and impulses. Let me finish by glancing at one objection.

The Union Theory is a paradigmatic instance of what is usually called Individualism, as against Anti-Individualism or Externalism. What this comes to, it might be said, is that the Union Theory offers explanations of the occurrence of a mental event wholly in terms of facts internal to the individual or person. These explanations are not partly in terms of facts external to the individual, facts of the individual's environment, in particular her linguistic environment.

²² 'Mental Events', op. cit., pp. 213-14.

But that characterization of the Union Theory may be unenlightening or misleading. Of course the Union Theory does consort perfectly with plain facts about the earlier explanatory role of environment with respect to mental events. We see, hear, and learn, with the eventual result that certain mental events occur. However, at the end of the story, there are sufficient explanations of those events within the individual.

As it seems to Tyler Burge, the Individualism of the Union Theory is faulted by what is taken to be the provable proposition that there is no sufficient explanation of at least certain mental events within the individual. Given the different things meant by 'arthritis' in two neurally identical but linguistically different worlds, a man's thought in one world that he has arthritis in his thigh may be false, and the neurally identical man's thought in the other world that he has arthritis in his thigh may be true, and the two thoughts may be different. If so, Individualism and the Union Theory in particular are refuted.²³

One response to this doctrine has to do with its central proposition. That is somehow to the effect that mental events have a dependency on environment which is distinct from the standard dependency consistent with the Union Theory and much else – a special dependency somehow distinct from the standard dependency involving eyes, ears and learning, however the special dependency may involve the standard dependency.

That special dependency remains obscure, true to its Hegelian ancestry. If it were to amount to no more than the fact that environmental facts enter into the individuation in a certain sense of mental events, then Anti-Individualism would be consistent with Union Theory. This is so since something can contribute to the individuation of something else without being at all explanatory of it – part of a full explanation of it. Effects and spatio-temporal location of something may contribute to its individuation. There are reasons for thinking, furthermore, that special dependency must indeed be conceived in terms of such individuation or something like it. Roughly speaking, all other alternatives are unbelievable or pretty much a mystery.²⁴

²³ T. Burge, 'Individuation and the Mental', *Midwest Studies in Philosophy*, 4, 1979, pp. 73-121.

²⁴ The argument is presented in my 'The Union Theory and Anti-Individualism', in *Mental Causation*.

