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GIVING DUALISM ITS DUE

William G. Lycan

Despite the current resurgence of modest forms of mind–body dualism, traditional Cartesian immaterial-substance dualism has few, if any, defenders. This paper argues that no convincing case has been made against substance dualism, and that standard objections to it can be credibly answered.

I have been a materialist about the mind for forty years, since first I considered the mind–body issue. In all that time I have seen exactly one argument for mind–body dualism that I thought even *prima facie* convincing.[1] And like many other materialists, I have often quickly cited standard objections to dualism that are widely taken to be fatal, e.g. [Lycan 1987: 2–3]—notoriously the dread Interaction Problem. My materialism has never wavered. Nor is it about to waver now; I cannot take dualism very seriously.

Being a philosopher, of course I would like to think that my stance is rational, held not just instinctively and scientistically and in the mainstream, but because the arguments do indeed favour materialism over dualism. But I do not think that, though I used to. My position may be rational, broadly speaking, but not because the arguments favour it: though the arguments for dualism do (indeed) fail, so do the arguments for materialism. And the standard objections to dualism are not very convincing; if one really manages to be a dualist in the first place, one should not be much impressed by them. My purpose in this paper is to hold my own feet to the fire and admit that I do not proportion my belief to the evidence.[2]

The dualism I shall defend is Cartesian, 'substance' dualism. 'Property' dualism is more popular nowadays, but it is logically weaker than Cartesian dualism (assuming that a Cartesian ego would necessarily have some irreducibly mental properties), and so must be more defensible.[3]

[1]It is the argument from qualia stated in my book *Consciousness* [1987: 84–5]. But it is countered by the Representational theory of qualia, defended by me there and in [Lycan 1996]; also, [Lycan 1998, 2001]. For the record, I now believe that there is a more powerful argument for dualism based on intentionality itself: from the dismal failure of all materialist psychosemantics; see note 8 below.

[2]In mitigation, I would note that no philosopher has ever proportioned her/his belief to the evidence, if only because we have not got any evidence. Cf. [van Inwagen 1996].

N.B., we also always hold our opponents to higher standards of argumentation than we obey ourselves. I have always felt entitled to thumb my nose at dualism so long as no valid deductive argument has been presented for it, each of whose premises I *must* accept.

My admirers (however many or few those may be) need not worry about my allegiance: I have no sympathy with any dualist view, and never will. This paper is only an uncharacteristic exercise in intellectual honesty. It grew out of a seminar in which for methodological purposes I played the role of a committed dualist as energetically as I could. That was a strange feeling, something like being a cat burglar for a few months. You could see there was a *modus vivendi* here, however uncongenial.

[3]But not much more. See [Lycan in preparation].

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I. Arguments for Materialism

Arguments for materialism are few. Tyler Burge and others have maintained that the naturalistic picture of the world is more like a political or religious ideology than like a position well-supported by evidence, and that materialism is an article of faith based on the worship of science.[4] That is an overstatement. But it is true that the original 20th-century materialists felt no need to defend materialism itself. Ryle gave no such argument that I can recall; he only inveighed against the particularly Cartesian 'dogma of the Ghost in the Machine'. Ullin Place, founder of the Identity Theory, gave none; he was originally a Behaviourist who bravely and honestly acknowledged that introspectible occurrent sensations were a problem for Behaviourism and, while making an exception for them, tried to account for them within the materialist framework, but without defending the need to do so.[5]

J.J.C. Smart was perhaps the first to offer reasons.[6] First, he appealed to the scientific view of the world:

> [S]ensations, states of consciousness, ... seem to be the one sort of thing left outside the physicalist picture, and for various reasons I just cannot believe that this can be so ... That everything should be explicable in terms of physics ... except the occurrence of sensations seems to me frankly unbelievable ....
>
> The above is largely a confession of faith ....
>
> [142–3]

Just so, and just so. I too simply refuse to believe in spookstuff or surds in nature. But this *argumentum ad recuso credere* is no *argument* at all; it is at best, in David Lewis's famous phrase, an incredulous stare.

But then Smart did advance a real argument; he appealed to mind–brain correlations: It is reasonable to think that every mental state or event at least has a *corresponding* type of brain state or event. The best, because most parsimonious, explanation of those correlations is that the mental states/events *just are* the 'corresponding' brain states/events. (In general: When Xs are invariably accompanied by Ys and you can find nothing to distinguish Xs from Ys, the best explanation is that Xs just are Ys.)

[4][Burge 1993]. I believe my own faith in materialism is based on science-worship; for a justification of the latter attitude (as opposed to an actual argument for materialism), see [Armstrong 1973]. But Armstrong also argues there for materialism; see below.

[5]Functionalism, the reigning materialism of the past 35 years or so, does not strictly entail materialism, but has been held largely because it is the least bad way of remaining a materialist. The only functionalist dualist I have ever known or heard of was the late Roland Puccetti (e.g., in [Puccetti 1981]; N.B., 'Functionalism' in his title meant, Functionalist *materialism*).

[6][Smart 1959]. Of course there had previously been the damningly quick Positivist argument from the Verification theory of meaning to Analytical Behaviourism, but: (i) That was no argument for materialism *per se*. And (ii) so much the worse for the Verification theory; in any number of cases, it led too quickly to bad metaphysics, such as the view that there are not really any little subvisible particles.

I firmly agree that parsimony or simplicity is a reason for preferring one hypothesis to another.[7] But it is a very posterior reason. That is, not only does it always carry the qualification 'other things being equal', but *many*, nearly all, other things must be equal before parsimony is called in to break the tie. And no party to the mind–body dispute will deny that dualists have found plenty of features that seem to distinguish mental states/events from neurophysiological ones—even if, as materialists contend, all those differences are ultimately specious. To anyone uncontaminated by neuroscience or materialist philosophizing, the mental does not *seem* physical in any way at all, much less neurophysiological. The parsimony argument does not even come in the door until it is agreed that we can find nothing to distinguish mental states from neurophysiological ones. And the latter will not be agreed any time soon.

More decisively, Smart's alleged correlations have never materialized. Notice that he certainly meant *type*-correlations; unless one were already presuming token identity, it would have made little sense to say that for every mental token, there is a 'corresponding' neurophysiological token. There may be a few type-correlations holding within particular species, but if so they are very few. Whatever is in common as between all human beings who believe that a Frenchman has been assassinated in Trafalgar Square (to take an old example of Dennett's), that feature could not possibly be characterized in neuroscientific terms; there are no 'Frenchman' neurons, nor 'assassination' areas of the cerebral cortex; at best the feature would be a complicated set of external psychosemantic relations to Frenchmen, to assassinations, and to Trafalgar Square. (And good luck to the psychosemanticist.[8])[9]

Matters improved when, independently of each other, David Lewis and D.M. Armstrong offered their respective causal arguments for identifying mental states and events with neurophysiological states and events. Their common idea was that mental concepts are causal role concepts, and so they afford role-occupant identifications (as in the case of genes and segments of DNA molecules) [Lewis 1966, 1972; Armstrong 1968: 89–90]. E.g.:

1. Pain = Whatever state of a person plays role P (being typically caused by tissue damage, and in turn causing wincing, crying out, withdrawal, favouring, etc.) [We know this *a priori*; we have all got the concept of pain.]

[7]That is, as more likely to be true. Despite obvious examples of curve-fitting and the like, not everyone grants this; e.g., eloquently, van Fraassen [1980]. In his contribution to the 1967 Presley volume, the late Don Gunner asked even more eloquently why simplicity should be a reason for belief: '[A] question should be raised as to whether the principles of parsimony and simplicity have not become restrictive principles of stinginess and over-simplification. (Nature is lush, prodigal, messy, wasteful, sexy, etc.)' [Gunner 1967: 4–5]. ('Etc.'?)

[8]For the record, I think intentionality is a much greater obstacle to materialism than is anything to do with consciousness, qualia, phenomenal character, subjectivity, etc. If intentionality itself is naturalized, those other things are pretty easily explicated in terms of it [Lycan 1996]. But in my view, current psychosemantics is feeble: it treats only of concepts tied closely to the thinker's physical environment; it addresses only thoughts and beliefs, and not more exotic propositional attitudes whose functions are not to be correct representations; and it does not apply to any thought that is even partly metaphorical. More on these failings in a subsequent paper.

[9]Not that Smart ever believed in type correlations between beliefs and anything physiological; he remained a behaviourist about beliefs. Also, as a referee has pointed out, there may still be species-specific *one-way* correlations that need explaining. I shall take up this point and offer a dualist alternative in section V below, in response to objection (5).

2. The occupant of role P = the firing of c-fibres (i.e., it is c-fibre firings that are typically caused by tissue damage, etc.).[10] [Discovered empirically by neuroscientists.]

∴ 3. Pain = the firing of c-fibres. QED

This was an important development, because the argument was deductive and obviously valid. But is either premise true? Premise 1 was counter-exampled early on by Keith Campbell and others: A state of a creature, or for that matter of an assembly of Tinkertoys or beer cans, could occupy the commonsense role of pain but without being mental at all, much less feeling like a pain.[11] (Remember, 1 is a conceptual or at least *a priori* claim; fantastical imaginary cases are fair play. And remember how little information there is in a commonsense causal analysis of pain; see, e.g., Armstrong's analysis on pp. 310–16.)

Also, 1 is a culpably good premise for materialists. *Obviously*, if the very concept of pain is a causal concept like 'poison' or 'sunburn' or 'footprint', and what gets caused is physical motion in the form of behaviour, it would be hard to resist the inference that pain is physical. 1 does not formally beg the question, but it comes close. And I shall argue shortly that a dualist can quite reasonably resist it. The dualist should never and would never accept 1 in the first place. Pain is first and foremost what presents itself to consciousness as pain, what feels like pain. That sort of sensation is indeed caused by tissue damage and does cause the customary behaviour, but those are plainly *a posteriori* facts. (For the dualist to insist that they are *contingent* would beg the question, but the present materialist claim is that they are not just necessary but *a priori*.[12])

More generally: The materialist of course takes the third-person perspective; s/he scientistically thinks in terms of looking at other people, or rather at various humanoid bags of protoplasm, and explaining their behaviour. But the dualist is back with Descartes in the first-person perspective, acquainted with the contents of her own consciousness, aware of them as such. Notice carefully that we need not endorse many of Descartes's own antique and weird views about the mind (that it is entirely nonspatial, that it has no parts, that mentality requires language). The point is only that we know the mind primarily through introspection. Duh! That idea *may*, very surprisingly, be wrong; it has been attacked by Ryle, by

[10]To correct a common misconception: Neither Place, Smart nor Armstrong mentioned c-fibres. C-fibres were introduced to the Identity Theory literature by Putnam in 'Minds and Machines' [1960]. Thanks to Jack Smart for the reference.

[11][Campbell 1970: 100ff.; Block 1978: 277–82]. N.B., this sort of counterexample should not be taken to encourage 'zombie' objections to materialism generally. It refutes only claims that (i) are conceptual and (ii) explicate mental expressions in terms of circumstantial and behavioural events described in ordinary English, as in Lewis's and Armstrong's commonsense causal theory of the mind (sometimes misleadingly called 'Analytical Functionalism'). It has no force against *a posteriori* versions of functionalism—at least, not on its own, without supplementation by cumbersome and contested apparatus such as that of David Chalmers [1996].

[12]As a referee has noted, not many materialists themselves accept premise 1. I am not sure whether even Armstrong does any longer.

Wittgenstein and by Sellars among others.[13] But it is obviously common sense, and to deny it is a radical move. N.B., it does not entail or even strongly suggest that the mind is *better* known than the body or the rest of the physical world.

Turning to the Lewis–Armstrong premise 2: it seems fine until one realizes that its first word is 'the'. 2 begs the question against the dualist view that role P is causally overdetermined: the typical causes cause both neural events and immaterial pain events, and pain-behaviour is doubly caused by the neural events aforementioned and the immaterial pain events. (One may feel—as I certainly do—that this overdetermination view is silly and stupid.[14] But on what evidence? Of course the view offends against parsimony, but as before, parsimony must wait till all substance has been adjudicated.)

In 'Naturalism, Materialism and First Philosophy', Armstrong [1981] gives a general argument for the thesis that we should count a thing as real and admit it to our ontology only if we can identify it by its causal powers, for: ' . . . if a thing lacks any power, if it has no possible effects, then, although it may exist, we can never have any *good reason* to believe that it exists' [1981:156]. That claim leads directly to materialism, Armstrong contends, because we know of no physical effects produced by supposedly immaterial occurrences; '[m]ost neurophysiologists would be astounded to hear that what happens to the brain has any other cause except earlier states of the brain and its physical environment' [ibid.: 154].

Of course the causal criterion is controversial, because numbers and sets seem to be exceptions. And the argument for it is flawed, because as we know from epistemology, knowledge does not require that one's belief have been caused by the fact known.[15] But in any case, the inference to materialism rests on remorselessly third-person scientism and (again) on the tacit assumption that the physical effects are not overdetermined.

David Papineau [2002] offers a simple deductive argument for materialism, based on the causal completeness of physics:[16] Conscious events have physical effects; all physical effects have sufficient physical causes; the physical effects of conscious causes are not, or not always, overdetermined by physical causes; therefore conscious events are physical events.

This is (indeed) an argument rather than merely a confession of faith. But Papineau admits that there is nothing to support the first premise against epiphenomenalism, pre-established harmony and other noninteractive dualisms save appeal to 'standard principles of theory choice' [2002: 23], and he does in fact appeal to parsimony: 'If both views can accommodate the empirical data equally well, then ordinary scientific methodology will advise us to accept the simple view that unifies mind and brain, rather than

[13]Ryle's material on this point was pretty desperate. Wittgenstein's Private Language Argument has never been well understood, much less generally accepted. Sellars [1956] argued more clearly for the publicity of mental terms' linguistic meaning, but even Sellars's detailed and ingenious account is contested at many points.The first-person perspective is emphasized by Searle [1992]; see also [Georgalis 2006].

[14]Its falsity is simply assumed by William S. Robinson [1982]—himself a dualist—and by David Papineau (see below). But for defence, see [Mills 1996].

[15]At least two reasons support the latter point: First, we have at least some knowledge of the future. Second, although *perception* requires causation by the state of affairs perceived, not all knowledge is perceptual.

[16]See also his excellent paper on the history of that idea: [Papineau 2001].

the ontologically more profligate story which has the conscious states dangling impotently from the brain states' [loc cit.]. Of course I agree, but this argument is hardly deductive, and without it the first premise begs the question.

And on behalf of good old Cartesian interactive dualism, the same point can be made against the third premise that I have made against Lewis and Armstrong, that so far as has been shown, physical events *are* systematically overdetermined by physical and nonphysical causes. As before, there is no evidence against that view; it only offends parsimony.

Besides, given quantum indeterminism, it is open to the dualist to deny that all physical effects have sufficient physical causes, as Descartes certainly did for the case of human actions. The argument for the completeness of physics itself has to be compelling enough to convince the dualist.

I know of no other arguments for materialism.

II. Objections to Cartesian Dualism

Here, very briefly, are the four standard objections I highlighted in *Consciousness* [1987]. (This was the usual perfunctory throat-clearing; we all know why Cartesian dualism was rejected.) (1) The Interaction Problem, of course. (2) Cartesian egos are excrescences, queer and obscure, and they are not needed for the explanation of any publicly known fact. (3) Even if conceptually intelligible, Cartesian interaction violates known laws of physics, particularly the conservation of matter-energy [Cornman 1978: 274]. (4) Evolutionary theory embarrasses dualism, since we have no idea how natural selection could have produced Cartesian egos; an immaterial substance could not possibly be adaptive.

In his well-regarded textbook *Matter and Consciousness*, Paul Churchland too has rehearsed objections (1)–(4) [1984: 18–21], and like Smart he appeals to simplicity. He adds two further criticisms: (5) In comparison to neuroscience, dualism is explanatorily impotent [ibid.: 18–19]. (This is not a repetition of (2). The point is neither that Cartesian egos are *entia non grata* nor that they are not *needed* for explanation. It is that the dualist theory itself explains nothing.) (6) All known mental phenomena are highly dependent on detailed brain function [ibid.: 20; Churchland says this 'comes close to being an outright refutation of (substance) dualism'].

There are even more objections, not mentioned by Churchland or me: (7) Ryle argued that Descartes got the epistemology radically wrong. If Cartesian dualism were true, we could not possibly ever know what was going on in someone else's mind; yet we have such knowledge very easily. (8) There are problems of unity and individuation. In virtue of what are the contents of a Cartesian mind contents of that mind rather than another one? We might answer that by reference to the uniquely associated body, but then what accounts for the unique relation between the mind and that body? (9) There is the more specific 'causal pairing problem' formulated by John Foster [1991] and pursued by Jaegwon Kim [2005]: Why does one

immaterial ego rather than another count as causally interacting with a given body? It seems there could be two Cartesian minds running exactly in parallel but having different sets of physical effects if any.

The case sounds overwhelming. But now suppose, if you can, that you are a Cartesian dualist. (Paragraph break to let that supposition sink in.)

Would you be cowed? No. There are nine objections to your view. Of course there are; any interesting philosophical view faces at least nine objections. The question is, how well you can answer them? And I contend that the dualist can answer them fairly respectably. I shall start with the Interaction Problem because I think it is by far the most damaging.

III. The Interaction Problem

Entirely nonspatial mental events could not possibly cause physical motion in the way that billiard balls cause physical motion; that is nearly tautologous. But (to my knowledge) no one has ever believed that mental events do cause physical motion in the way that billiard balls do.[17] What, then, is the problem?

I believe it is that even now we have *no good model at all* for Cartesian interaction.[18] Descartes tried the analogy of gravitational attraction, which was promptly blasted by Elisabeth. No one has done much better since.[19]

I agree that the lack of a good model is a trenchant objection and not just a prejudice. But it is hardly fatal as yet. For one thing, the lack results at least partly from the fact that we have no good theory of causality itself. The theories that have been called theories 'of causality' often seem to have been theories of different things, not of a single phenomenon with agreed-upon clear cases.[20]

More to the point, causal realism itself has not been popular until pretty recently.[21] Twentieth-century theories of causality were predominantly Humean, though of course there were exceptions. The more recently prevalent counterfactual theories such as David Lewis's [1973] are not antirealist, but they are semi-Humean, requiring only specific forms of counterfactual dependence; and no reason has been given why physical events could not depend counterfactually on Cartesian mental events. (N.B., if one says that the relevant counterfactuals need actual categorical truthmakers, one thereby gives up the counterfactual theory in question.

[17]It is just possible that Davidson's [1970] early view of events, causation and laws entails this.

[18]As Robinson puts it [1982].

[19]Of course, one can give up mind-to-body causation and go to epiphenomenalism, but that view retains body-to-mind causation and so does not claim to solve the Interaction Problem. It is motivated mainly by the causal closure of physics and the implausibility of overdetermination. (Being no scholar, I do not know whether these are what motivated Malebranche. But see Robinson [1982].) It faces extra objections of its own, but those too can be answered: [Jackson 1982; Robinson 1982; Robinson 2007]. Robinson is probably America's most committed and ingenious defender of epiphenomenalism. For myself, I do not see its advantages over Cartesian dualism as weighty.

[20]A similar but distinct point is made by Karen Bennett [2007].

[21]Notice a general tendency in philosophy: When working in one area, we feel free to presuppose positions in other areas that are (at best) highly controversial among practitioners in those areas. To take a limiting example, philosophers nearly everywhere outside epistemology presuppose that we have some knowledge of the external world. If we do have it—as I too presume we do—epistemology has delivered not one tenable account of how that can be so. (Except *possibly* my own; see my etc.)

Lewis himself held that the counterfactuals' truthmakers were facts about other possible worlds and relations between them, but that would not *per se* embarrass Cartesian interaction.)

Now, further: Give up any tacit assumption of physical determinism. I believe that will help reduce the sense of outrage, and even hint at a model: perhaps mind-body interaction is only probabilistic, as purely physical causation is.

And now acknowledge the prevalence of weird quantum phenomena. Though there is as yet no model for Cartesian interaction, microphysics gets more and more bizarre, and indeed itself resorts (on some interpretations of quantum mechanics) to quasi-mental vocabulary.[22] We cannot possibly be sure that no model for Cartesian interaction will emerge.

Finally, I have a revisionist suggestion. The big problem for interaction is and remains the utter nonspatiality of Cartesian egos. (By now we can all tolerate action at a distance. But action at a distance is at least at a *distance*.) My suggestion is that the dualist give up nonspatiality. Descartes had his own 17th-century metaphysical reasons for insisting that minds are entirely nonspatial, but we need not accept those. Why not suppose that minds are located where it feels as if they are located, in the head behind the eyes?[23] If it be protested that our heads are already entirely full of physical stuff and that two things cannot occupy the same region of space at the same time: (1) Immaterial minds are not physical. And what is true is only that two *physical* things cannot occupy the same region of space at the same time. For that matter, (2) our heads are *not* entirely full of physical stuff. Physically, they are mostly empty space, with minuscule particles zipping through them at very high speeds.

For the rest of this paper, I shall assume that minds, though immaterial, have locations in physical space. (It may be wondered wherein minds are

[22]N.B., I am very far from joining in the suggestion made by some that quantum mechanics can explain important facts about consciousness (e.g., [Lockwood 1989; Hodgson 1991; Smith 2003; Stapp 2004]). I do not believe that quantum mechanics could explain anything at all about consciousness *per se*; see [Lycan forthcoming]. The present point is only about models for Cartesian interaction.

[23]Since drafting this, I have learned that my bold move was anticipated by no less a figure than Isaac Newton (thanks to Hylarie Kochiras for the references):

> That substances of different kinds do not penetrate each other [i.e., co-occupy space] does not at all appear from the phenomena. And we ought not rashly to assert that which cannot be inferred from the phenomena.
>
> [Newton 1713: 360–1]

> No being can exist which is not in some way related to space. God is everywhere, created minds are somewhere, and body is in the space it occupies. Whatever is neither everywhere nor somewhere does not exist.
>
> [Newton before 1670]: 141]

Following Penelhum [1970: Ch. 2], dualist W.D. Hart [1988] tries to make room for the idea that an entirely disembodied person might be able to see real things as well as merely have visual experience, and he argues that that would require the person to be located in physical space. (Real seeing requires causal contact, and, according to Hart, causal interaction is a matter of energy flow within spacetime. Hart posits a nonphysical 'psychic energy' that will satisfy the conservation laws.)

Colin McGinn argues [1995] that although mental states and events have some space-related properties, they are fundamentally nonspatial. Therefore, he infers, 'we need, at a minimum, a new conception of space. We need a conceptual breakthrough in the way we think about the medium in which material objects exist, and hence in our conception of material objects themselves' [1995: 226]. That is, space has to be futuristically reconceived, in order to allow for the existence in the real world of items that are at best quasi-spatial.

immaterial, if they are spatially located. In at least two ways: they do not have other physical properties such as mass or charge; and unlike brain matter, they are not made of atoms or subatomic particles.)

IV. Objections (2)–(4)

(2) Excrescencehood: In complaining that Cartesian egos are ill-behaved entities that fail to earn their keep, the materialist here lodges firmly in the third-person perspective and assumes a very strong form of the 'Theory' theory, that the sole job of mental ascription is to explain facts about the physical world. But as before, the dualist cannot be expected to grant any such assumption in the first place. Cartesian minds are not explanatory posits at all, much less posited to explain physical facts. They are known from the inside, and there is nothing queer or obscure about that. (And arguments are given for the view that they are Cartesian rather than physical.) Nor is the strong 'Theory' theory tenable: as Kathleen Wilkes argued (e.g. [1993]), mental ascriptions have all sorts of uses other than explanatory ones.

(3) Laws of physics: Here I am not qualified to adjudicate. But it has been argued by E. Averill and B. Keating [1981] that the conservation laws regarding linear momentum and matter-energy come in weak versions and stronger versions.[24] The weak versions are what actually figure in physics. But they are logically compatible with Cartesian causation. The stronger versions have been adumbrated by some philosophers, but are not required for physics and also would beg the question against the dualist.

Classical Cartesian egos do have one property that is flatly incompatible with modern physics' conception of spacetime: Cartesian mental events occur in real time, but not in space; but that is impossible if time is only one of the four dimensions of spacetime.[25] Fortunately, we have abandoned Descartes' nonspatiality assumption.

(4) Evolutionary theory: At least as stated, the objection is that natural selection could not have produced Cartesian egos because they could not be adaptive. But that assumes an extreme Panglossianism: that a trait or entity could not emerge in the course of evolution by natural selection unless *it*, itself, were adaptive. No evolutionary biologist believes that. Frank Jackson [1982] points out on behalf of epiphenomenalism that many un- or maladaptive traits are concomitants or by-products of other traits that were adaptive.

More to the point, why could the egos not be adaptive, given that they causally interact with the physical? (We have already addressed the Interaction Problem, and are entitled to assume on the dualist's behalf that

[24]My philosophy of physics colleagues John Roberts and Marc Lange have at least cautiously concurred. See also [Larmer 1986].

[25]Actually, William Lane Craig [2001] has suggested that it is only 'coordinate time' that requires spatial coordinates; if time functions rather as a parameter, it is independent of space. I have no idea what that means, or whether it is true, or whether if true it would save Descartes. (But thanks to Ken Perszyk for the reference.)

minds and bodies interact.) The objector may appeal to the causal completeness of physics, even granting the possibility of overdetermination noted in our discussion of Papineau's argument: it is never solely because of a Cartesian ego that a creature did well in the struggle for resources and safety, and indeed the creature's physical characteristics would have taken care of that on their own. But on the overdetermination view, it was not, in fact, solely because of the physical characteristics either.

Unlike mine, Churchland's version of the evolution objection does not specifically appeal to adaptiveness. What he says is, rather:

> For purposes of our discussion, the important point about the standard evolutionary story is that the human species and all of its features are the wholly physical outcome of a purely physical process . . . We are notable in that our nervous system is more complex and powerful than those of our fellow creatures. Our inner nature differs from that of simpler creatures in degree, but not in kind.
>
> [1984: 21]

Which simply and blatantly begs the question.

(Since question-begging is such an elementary and easily identifiable fallacy, why do we seasoned professionals commit it as often as we do? (I am no exception.) I believe the answer is a more general fact: that we accept deductive arguments mainly when we already believe their conclusions.)

V. Churchland's Added Objections

Each of Churchland's two new objections is a bit odd. (Which is itself odd, because his book is a textbook.)

(5) Explanatory impotence: The premises are true; neuroscience explains a great deal and dualism explains hardly anything. But the comparison is misplaced. Dualism competes, not with neuroscience (a science), but with materialism, an opposing philosophical theory. Materialism *per se* does not explain much either. (It would have explained Smart's mind-brain correlations, had they existed.)

Materialism does have one explanatory advantage: obviously, it explains why brain facts are highly relevant to mental facts, better than dualism does. But the dualist does have an explanation: though many physical stimuli affect the mind, those that do are meagre in their information content. Even patterned retinal hits greatly underdetermine the incredibly rich visual experiences that result, and the immediate perceptual beliefs that the subject will form as a result of those. Prodigious transducing is needed in order to send the required gigantic mass of hyperfinely structured information to and through the pineal gland. And that is what the brain is for. (Plausible? Of course not. But, I think, only because dualism itself is not plausible. *If* one actually is a dualist and holds fixed the assumption of Cartesian interaction, the transducer explanation is pretty good.)

(6) 'Neural dependence': Here I must quote.

> If there really is a distinct entity in which reasoning, emotion, and consciousness take place, and if that entity is dependent on the brain for nothing more than sensory experiences as input and volitional executions as output, *then one would expect reason, emotion, and consciousness to be relatively invulnerable to direct control or pathology by manipulation or damage to the brain*. But in fact the exact opposite is true....
>
> [ibid. 20, italics original]

Of course the opposite is true. But why would any dualist accept the premise's second conjoined antecedent? What dualist ever said, or even implied, that the mind is dependent on the brain for nothing more than sensory experiences as input and volitional executions as output? Descartes himself knew very well that the mental depended in a detailed way upon the brain. And the transducer explanation applies here as well. We may even add that cognition may interdepend in a close way with brain activity: there is no reason to suppose that the mind can do complicated reasoning without the aid of a physical calculator; in the real world, most people cannot do complicated reasoning without the aid of a physical calculator. Mind–brain interaction may be constant and very intimate. (Here again, the picture is implausible, but only because dualism and Cartesian interaction are implausible in the first place. Subtract those two implausibilities, and the rest of the picture is not bad at all.)

VI. The Remaining Objections

(7) Epistemology of other minds: Cartesian egos were nonspatial, which made their epistemology seem utterly hopeless. But remember that Cartesian dualism is interactionist. Mental events (now occurring inside our heads) cause behaviour. And so, for all that has been shown, we know that our own mental events cause behaviour and we infer like causes from like effects. This is a far from satisfactory solution, but except for Analytical Behaviourism, no other is less problematic. The present objection adds nothing to the Interaction Problem itself.

Ryle thought that you can just see (some of) other people's mental states and events, and do not even unconsciously have to infer them. I think that view contains a very large grain of truth, even though I also think that the mental states and events themselves are neurophysiological states and events inside our skulls. But this is an issue in the philosophy of perception, not for philosophers of mind.

(8) Unity and individuation: Again, Cartesian dualism is interactionist. The contents of a Cartesian mind are contents of that mind (rather than another) in virtue of its exclusive causal connection to the relevant human body.

But then what explains the unique relation between the mind and that body? This is indeed an embarrassing question, but the answer is to be

found in whatever would explain the appearance of minds in the evolutionary process. The objection collapses into objection (4).

(9) The 'pairing problem': N.B., this is not cured by noting that Cartesian dualism is interactionist. But all parties agree that the problem would be solved if Cartesian minds were located in space. So it is not a problem for my version of Cartesianism.

Even without my spatializing move, there are options. For one thing, we need not grant that such differences in causal efficacy need explaining; causal relations may be brute [Robb and Heil 2003]. For another, as Karen Bennett [2007] points out, there are comparable differences in purely physical scenarios, so the dualist is not distinctively afflicted.[26]

I mean to have shown here that although Cartesian dualism faces some serious objections, that does not distinguish it from other philosophical theories, and the objections are not an order of magnitude worse than those confronting materialism in particular. There remain the implausibilities required by the Cartesian view; but bare claim of implausibility is not argument. Nor have we seen any good argument for materialism. The dialectical upshot is that, on points, and going just by actual arguments as opposed to appeals to decency and what good guys believe, materialism is not significantly better supported than dualism.

Yet, I am inclined to believe, the charge of implausibility is not irrational or arational either, and I would not want this paper to turn anyone dualist. Have a nice day.[27]

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[26]Foster [1991] offers an ingenious solution to the problem, but it is too complicated to expound here.
Since this paper went to press, I have learnt that Kim [2005] at least anticipated my spatializing move, and made several preemptive arguments against it. I find these unconvincing, but cannot discuss them at this stage.

[27]This paper was presented as a keynote at the 2007 AAP Conference at the University of New England. I am grateful to the AAP audience for their good humour and their useful discussion. And thanks to each of two *AJP* referees for extensive comments that have corrected some of the paper's inadequacies.

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