

Whither internalism? How internalists should respond to the extended mind hypothesis.

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Abstract: There has recently appeared a new position in the philosophy of mind: the extended mind hypothesis (EMH). Some of its proponents think the EMH, which says that a subject's mental states can extend into the local environment, shows that internalism is false. I argue that this is wrong. The EMH does not refute internalism; and in fact, it necessarily does not do so. The popular assumption that the EMH spells trouble for internalists is premised on a bad characterization of the internalist thesis – albeit one that most internalists have adhered to. I show that internalism is entirely compatible with the EMH. Seeing this should prompt us to reconsider the characterization of internalism, and in conclusion I make some brief remarks about how that project might proceed.

Keywords: active externalism, causal basis of the mind, extended mind, internalism, individualism, mental content, supervenience, vehicle externalism.

1. Internalism: a brief history

Prior to the mid-1970s, many theories of mind – e.g., Broad's (1925) emergentist theory, or Feigl's (1958) identity theory – entailed a claim that we would now call 'internal-

ist': that a subject's mental states are determined by that subject's internal physical constitution. But the claim in itself did not acquire an organized defense until the mid-1970s, when Hilary Putnam and others began to question it. Putnam stated a Cartesian assumption that he called 'methodological solipsism', which said "that no psychological state, properly so called, presupposes the existence of any individual other than the subject to whom that state is ascribed" (1975, 220). He formulated methodological solipsism so that he could then proceed to deny it, beginning a venerable externalist tradition. Tyler Burge continued Putnam's strategy in a string of influential articles in the 1980s. In 'Individualism and psychology', Burge gave what is now the paradigmatic statement of internalism (which he called 'individualism': see n. 1):

According to individualism about the mind, the mental natures of all a person's or animal's mental states (and events) are such that there is no necessary or deep individuating relation between the individual's being in states of those kinds and the nature of the individual's physical or social environments. (Burge 1986, 3-4)

Burge then proceeded to defend externalism by denying this internalist thesis.¹ Thus internalism became an overt philosophical view by first becoming a foil for externalists. Burge and company effectively invented internalism as a means to formulating their own view, externalism, which they defined as the negation of the internalist position.

Other philosophers undertook to oppose externalism by adopting the internalist view. However, they bought into Putnam's and Burge's formulation, accepting that the key claim of internalism was that mental states are determined solely by the subject's physi-

cal constitution. A few examples of internalists stating their views (under various names) will illustrate:

[T]he principle of psychological autonomy states that the properties and relations to be invoked in an explanatory psychological theory must be supervenient upon the *current, internal physical* properties and relations of organisms. (Stich 1978, 575, orig. emphasis)

The supervenience thesis [says that] every internal psychological state of an organism is supervenient on its synchronous internal physical state. (Kim 1982, 183)

Individualism is a doctrine about the natural kinds of psychology, the doctrine that the psychology of an organism depends only on features internal to it. (Sterelny 1990, 81)

What is it in virtue of which I am, at this moment, thinking a thought [that water is wet]?... [A] natural answer... is that I am thinking this thought due to the fact that my brain is in some particular state or configuration.... This is internalism; the facts in virtue of which I am having this thought are facts about what is occurring inside me. (Butler 1998, 1-2)

Many other such characterizations are easily found. Suffice it to say that the externalism debate came to be taken to concern the truth of something like the following supervenience thesis:

Traditional internalism (*INTERNALISM_T*): Each of a subject's mental states at time *t* supervenes on the subject's internal physical state at *t*.

The opposing externalist view, *EXTERNALISM_T*, is just the negation of *INTERNALISM_T*. I shall call this division of the logical territory the *traditional division*. According to the traditional division, internalism says that the physical boundary of a subject's body marks the maximum extent of the supervenience base of the subject's mind, while externalism

says that the supervenience base of a subject's mind extends beyond the physical boundary of the body.

I shall argue that this is a bad way of dividing up the logical territory. It awards to the externalist territory that ought to be neutral. It entails that if the supervenience base of a subject's mind extends *in any way* beyond the physical boundary of the subject, then internalism is false. The traditional division makes the physical boundary of the subject's body – usually assumed to be the skin – into a crucial *mental* boundary that the internalist must guard at all costs. Against the traditional division, I shall argue that internalism can and should tolerate certain extensions of the mind's supervenience base beyond the subject's body. Therefore INTERNALISM_T is not an accurate formulation of internalism.

2. Introduction to the problem, and goals of the paper

Until recently, the inaptness of the traditional division had not much mattered. This was because Putnam, Burge and their followers were the only people to actually occupy territory on the externalist side of the divide, and their territory was clearly marked out by the idea that the mind supervenes partly beyond the subject's body just because the *content* of many mental states supervenes partly beyond the body. (For example, my beliefs about water are held to supervene partly on the water in my environment, because it is my dealings with *water* that have made it the case that the beliefs are about water.) So it was clear that the philosophers who called themselves 'internalists' were disagreeing with this *content externalist* view.

But a new group of theorists has appeared, defending the *extended mind hypothesis* (EMH). Extended mind theorists hold that the supervenience base of a subject's mind sometimes extends into her environment not because the *content* of her mental states supervenes partly beyond her body, but because – to use some representationalist terminology – the *vehicles* of some of her mental contents are beyond her body. Some philosophers, such as Susan Hurley (1998), call the view 'vehicle externalism'. This name helps distinguish the EMH from content externalism, but it may mislead, for the term 'vehicle' implies representationalism, which many extended mind theorists oppose (cf. the first paragraph of §3). Still, 'vehicle externalism' effectively conveys the key idea that certain items in the local environment can partly *constitute* a person's mind – that the mind can literally extend into the environment. Content externalists do not make anything like that claim. They say that the mind is external *only* to the extent that mental states have their content determined by external facts. Content externalism holds that content is a relational property of (e.g.) a belief in much the way that monetary value is a relational property of a dollar bill. Just as it is possible to change a dollar bill's monetary value without changing its intrinsic physical properties – e.g., by having the Reserve Bank rule that all such bills will now be worth only 50 cents – content externalists say that it is possible to change a belief's content without changing its (or, if you like, its vehicle's) intrinsic physical properties. Content externalists are no more inclined to infer that the mental states themselves are not in the subject's body than economists are inclined to infer that your dollar bills are not in your wallet.² Extended mind theorists, however, are very much

claiming that some of your mental states are not (wholly) in your body. It is this claim that distinguishes the EMH from content externalism.

I shall assume that content externalism is opposed to internalism. Internalism should be formulated so that it denies content externalism. (I take no stand, though, on whether content externalism is true.) But I shall argue that internalism should be formulated so that it does *not* deny the EMH. To think that internalism rules out the EMH is to mistakenly think that internalism necessarily holds the skin (in humans) to be an unbreachable mental boundary. Consideration of the EMH should prompt a redrawing of the division between internalism and externalism so that the EMH falls in neutral territory, rather than on the externalist side of the logical divide. The EMH posits a kind of extension of the mind that is compatible with internalism.

Of course, some internalists may reject the EMH on its own terms. I do not deny them that right. The EMH does not *entail* internalism, which is why I describe it as falling in neutral territory and not on the internalist side of the logical divide. My point is that if an internalist denies the EMH, he is not merely upholding his commitment to internalism. He is *making a new claim* – one not entailed by his existing internalism. We should carefully distinguish internalism from this new claim.

I have made a terminological stipulation here, though it is not essential to my substantive point. My substantive point is that the view that denies content externalism (and any related claims – see n. 3) is markedly distinct from the view that denies the EMH. The terminological stipulation is that the name ‘internalism’ should be kept for the former view rather than given to the latter view.³ My reason for making this call is historical.

Since the view that is widely known by the name ‘internalism’ (and that has become characterized by INTERNALISM_T) was created in response to content externalism, it is simplest to retain the name ‘internalism’ for the view that opposes content externalism, rather than for the other view that has been caught up in its wake. If the EMH had been proposed *before* content externalism, and the movement in opposition to the EMH had got caught up in the movement in opposition to content externalism, then the opposite terminological call would have been recommended. There is nothing inherently special in the name ‘internalism’ other than the weight of recent historical precedent.

I proceed as follows. In §3 I describe the EMH, with the intent of showing that it deserves to be taken seriously. I do not pretend to show that it is true. For my purposes, the EMH is of interest just because it prompts a reevaluation of the traditional division. In §4 I show why the EMH cannot refute internalism. In §§5-6 I argue that the problem with the traditional division is real: the EMH really does deny INTERNALISM_T, and there are philosophers who take this fact to impugn internalism itself. In §7 I venture some tentative suggestions about how to reformulate internalism.

3. The extended mind hypothesis

The extended mind hypothesis has its roots in the weaker *hypothesis of embedded cognition*, a reaction against the view that cognition is constituted purely by operations on internal representations.⁴ Andy Clark (1989, 63-66), an early proponent, argued that since the environment itself can serve as a repository of information, organisms can ‘off-load’ some parts of cognitive tasks onto the environment. It is pretty uncontroversial that off-

loading happens sometimes. For example, consider using pencil and paper to multiply 345 by 87. Instead of doing the calculation ‘in your head’, which would require your brain to construct and manipulate a complex arithmetical model, you may use written numerals to reduce the cognitive load of the task.⁵ No one will deny that your cognitive activity of multiplying 345 by 87 is crucially supported by the pencil and paper, in the sense that without them you likely could not have performed the calculation. But the interesting claim of the embedded cognition hypothesis is that many other cognitive processes, where such a dependence on external items is not so obvious, actually work the same way – using environmental off-loading instead of internal representations. For example, psychologist Kevin O’Regan argues that the visual system, instead of maintaining an internal model of the surrounding environment, simply draws information from the environment only as required by current actions (e.g., O’Regan 1992; O’Regan & Noë 2001).

A stronger claim than the hypothesis of embedded cognition is the *hypothesis of extended cognition*, which says that cognition exploits external items so extensively and intimately that some of those items actually become constitutive *parts* of our cognitive processes. For example, applied to the mathematical calculation case, the extended cognition hypothesis says that not only do the pencil and paper obviate the need for certain internal representations, they actually form part of the cognitive process of calculating the answer: that is, the external items play such a central causal role in the process of calculation that they and the person together form a temporary *coupled system* that is itself a locus of cognition (Clark & Chalmers 1998, 8). The notion of a coupled system is a bit

fuzzy, but the main idea is that person and object engage in a complex and temporally extended causal interaction in which certain states of the external object are causally necessary to the completion of the task at hand.

The next step along this line of thought brings one to the EMH, which says that some *mental states* are external (which seems stronger than saying that a cognitive process is external). I shall focus on the influential treatment by Andy Clark and David Chalmers (1998).⁶

Non-occurrent beliefs are the obvious candidates for the EMH. Clark and Chalmers compare beliefs stored in a subject's memory with certain states of external items. They propose that if a state plays a causal role such that it would count as a mental state were it a state just of the brain or body, then *anything* that plays that role must be a mental state, whether it is a state of the brain, body, environment, or some combination of these. (Clark 2005 calls this the Parity principle.) Clark and Chalmers' main example concerns Otto, who has Alzheimer's disease and who therefore uses a notebook to store information. They argue that the entries in the notebook partly constitute Otto's non-occurrent beliefs, since the role the entries play for him is the same as the role played by a normal person's beliefs, stored in brain-based memory. They point out that the notebook's contents are readily available and are often crucial to the successful performance of Otto's actions, just as beliefs are taken to be (p. 13). They therefore conclude that if the non-occurrent beliefs of a normal person are part of that person's mind, then the contents of Otto's notebook are part of his mind. Otto's mind extends beyond his body.

For simplicity I shall ignore a couple of hedges Clark and Chalmers make. They never actually say that Otto's notebook *contains* some of his beliefs, but only that the entries in it *partly constitute* some of his beliefs. Each of these words ('partly' and 'constitute') represents a hedge: one against saying that any of Otto's beliefs are *fully* outside his body, and the other against saying that any of his beliefs are *located* outside his body. I tend to think that neither hedge is tenable; for my money, the EMH entails that Otto's notebook contains some of his beliefs. But I will not press the point here.⁷ For my purposes, all that matters is that the EMH holds that the supervenience base of the mind extends beyond the body *in a very different sense than* the sense in which content externalism entails that the supervenience base of the mind extends beyond the body. If (as I do) you take the standard view to be that all beliefs are *in* the body, then you should take the EMH to say that some beliefs are *outside* the body. But if you take the standard view to be just that all beliefs are *fully constituted* by states of the body, then you may take the EMH to say that some beliefs are *partly constituted* by states of the environment. I shall assume the former interpretation, but readers with sensitive ontological intuitions may assume the latter, weaker interpretation.

It is not just mentally-disordered subjects like Otto who might make use of 'external beliefs'. David Houghton (1997, 162) gives several examples of common external information stores that seem amenable to the same treatment that Clark and Chalmers give Otto's notebook: shopping lists, travel itineraries, architectural plans. Such items, the EMH proponent will argue, are more than mere external props – they actually contain some of our beliefs. So even if it is true that many, perhaps most, of our mental states are purely

internal to our bodies, the EMH rejects the inference that thought is *essentially* internal to our bodies. On the contrary, the EMH suggests that most of us make use of external memories on a fairly regular basis.

Notice that even if the EMH is not true today, it could *become* true. It seems possible that in the (maybe not-too-distant) future, our biologically-endowed memory could be enhanced by artificial systems. Science fiction writers have imagined such technology put on a microchip, which is then implanted in the brain and hardwired to its memory circuits. The result would be like a directly-accessed electronic notebook (as opposed to today's Palm-Pilots and their kin, which are accessed via visual perception).⁸ Few would deny that such an artificial memory system, hardwired into the brain, would contain *your beliefs* just as does your biological memory. If a person's non-occurrent beliefs, as encoded in her brain, are mental states of that person, then surely the states of the person's artificial system are also mental states of that person.

And then why must the artificial system be located in the body? It could play much the same role in one's mental life if carried in one's pocket and accessed less directly, perhaps via a kind of wireless network (with a transceiver implanted in the brain that transforms electromagnetic signals into neural signals, and vice-versa). Thus imagine a person of the cyber-future – call him Scotty – who has an electronic unit that records information, such as appointments, names, addresses, and perhaps video-recordings of important events. The unit is carried in his pocket, but is wirelessly connected to a transceiver implanted in his brain via which he is able to access its contents.⁹ I see no very

compelling reason to deny that the electronic unit carries some of Scotty's memories and beliefs.

Type materialists, who hold that the mind is identical with the brain, will of course reject such a claim. I cannot address their arguments (which I do not find convincing) here. But coming from anyone else, the objection that mental states must be based in neural material seems to simply beg the question.

In a related discussion, David Lewis (1980) considers whether someone with an artificial eye really *sees*. Lewis describes a prosthetic eye consisting of a small television camera, attached to the front of the person's head, and linked to a computer that relays input from the camera to electrodes implanted in the brain. Thanks to the prosthesis, the person experiences a visual image of the scene before him with just as much clarity as you or I can. But does he *see*? The question is analogous to the question whether, when Scotty accesses his electronic memory unit, he is genuinely *remembering*. Lewis thinks that the person with the prosthetic eye does genuinely see, and I similarly think that Scotty genuinely remembers with his memory unit.

Lewis lists several factors that, if added to the story, make the prosthesis "more convincing... as a means for genuine seeing" (p. 279). One is the location of the computer. It seems better, he says, if the computer is carried around in a knapsack rather than being stationary and linked to the camera and electrodes by radio. Similarly, Scotty's unit seems better as a means for genuine remembering if it is portable rather than stationary. Lewis then says that the story looks better still if the computer is surgically implanted in the person's body. Similarly again, imagining Scotty's unit implanted in his brain makes

it much harder to resist the intuition that its contents are part of his mind. But Lewis's key point is that if such matters influence our judgment of whether the person is really seeing, it is surely *just because they make the prosthesis seem more like a natural eye*. And he doubts that that should matter: "I see no real need for any limits on how a prosthetic eye might work. Even the least convincing cases of prosthetic vision are quite convincing enough" (p. 280). I agree, and I think the same point holds for what amounts to a prosthetic memory system such as Scotty's, and perhaps even (albeit in a far more primitive sense) Otto's notebook. No matter where they happen to be located, if such items behave like biological memory systems, that is enough for them to carry genuine memories.¹⁰

In order to require a response from internalists, the arguments for the EMH do not need to establish beyond a doubt that Otto's notebook carries some of his beliefs, or that your Palm-Pilot carries some of your beliefs, or that Scotty's artificial memory unit would carry some of his beliefs. The arguments only need to make these claims plausible – or even just make *some* of them plausible. That is enough to cast doubt on the assumption that the physical borders of the organism mark the spatial limits of the organism's mind. Naturally, I think the arguments do indeed achieve at least that much.

4. Inside out: why the EMH cannot refute internalism

My argument that the EMH does not deny internalism is quite straightforward. I shall point out that the kind of claims entailed by the EMH are parallel to some claims that intuitively are entailed by internalism itself. In fact, I claim that the EMH can be true *only if* it is compatible with internalism. The EMH *cannot* deny internalism.

In the well-known paper ‘Where Am I?’, Daniel Dennett (1978) imagines that his brain is removed from his body but remains in control of it via radio link. His brain remains in a laboratory in Houston while his body is sent to retrieve a nuclear warhead embedded a mile beneath Tulsa. Dennett’s brain and his body are exchanging information just as they were before the surgical separation, except that now the exchanges are occurring over a much larger spatial distance, and they involve radio signals as well as electrical and chemical signals.

Ought the internalist to consider her position falsified by Dennett’s fantasy? Surely not. What matters to the internalist is that in the fantasy, Dennett’s mentality still supervenes on his nervous system (or, more cautiously, on his body’s biological structure taken as a whole; see Schechtman 1997). It surely does not matter to the internalist where the nervous system itself is located, so long as it is doing its usual job. Now Dennett’s purpose was not to make a point about the tolerance limits of internalism, but I am not the first to notice that his fantasy can teach us something in that regard. Joseph Levine (1999) remarks as follows:

That the causal ground for consciousness might be spatially distinct from where the conscious mind takes itself to be is not a problem for the internalist. This could be either because the brain is really “over there,” not “here,” as Dennett’s example shows, or because, for some strange reason having to do with weird laws of nature, certain brain states are causally dependent on remote events in the requisite ways....

So the point of internalism is not to deny that the causal basis for conscious experience could be spatially extended beyond the body. Rather, the “inside” at issue is whatever it is that is the causal basis for the mind. (1999, 169)

Levine is speaking of conscious experience, but the point generalizes. Internalism has no necessary commitment to the mind's 'causal basis' (as he calls it) being limited to any particular spatial region. It should already be clear how we can apply this lesson to our consideration of the impact of the EMH on internalism. But let us move slowly, via two variant cases. I shall argue that if Dennett's case makes no trouble for internalism, then neither do the variant cases; and then nor do the cases typically proposed by EMH theorists.

Let me emphasize that we are considering how the internalist should respond to these cases *given that the EMH is true of them* – that is, given that they are cases in which the subject's mind extends beyond his body. We will *not* be considering whether the EMH *is* true of these cases. (But I argued in §3 that we ought to at least take the EMH seriously.)

First Dennett variant. A small region, R, of your brain is removed from your body, but remains normally connected to it (and to the rest of your brain) for the purposes of information exchange, just as Dennett's brain and body remained in normal informational contact. Region R's primary role is to store certain of your long-term memories. R continues to exchange information with the rest of your brain just as before. The only difference is that the exchanges are now occurring over a distance and involve radio signals as well as electrical and chemical signals. But according to the EMH, R still carries some of your memories.

This first variant ought not to bother the internalist any more than Dennett's original case. If taking the whole brain out of the head does not create a problem for internalism, then taking out only a part of it surely cannot. Again, what matters to internalism is not

where the brain is, or whether it is all ‘in one place’, but the fact that it is carrying out its operations in the usual way.

Second Dennett variant. Imagine that after a while R degrades due to the hazards of exposure to the external environment, and begins to lose functionality. Fortunately, it is by then able to be replaced with an artificial, electronic unit whose operations are more or less functionally identical to those of R (when it was working normally). So according to the EMH, some of your memories are now in an artificial unit outside your body.

Is the internalist troubled by this second variant? Again, I think not. Some may say that this variant *does* deny internalism, for your brain is no longer the sole ‘causal basis’ for your mental states. But this objection is unsound. Internalism has no brief against functionalism, and functionalism says that mental states can be realized in many different kinds of physical material. If some external objects, when placed in certain causal interactions with a person, can realize functional states that would more usually be realized in the person’s brain, then internalists, qua internalists, should not deny that those objects are part of the realization of genuine mental states. So the internalist can accept with equanimity the claim that in the second variant your mind extends beyond your body.

Yet the second variant is just like the case of Scotty. The only difference between the two is that Scotty’s electronic unit *supplements*, rather than replaces, his existing memory. But why should that matter? Imagine that Scotty, before acquiring the unit, was one of those unfortunate people who have a very poor memory. He acquired the memory unit in the hope that it would cover for his natural shortfall. Then imagine also that your region R played a relatively small role in your biological memory system, such that with-

out the artificial replacement for R, your memory would be about as deficient as Scotty's is naturally. Now, where is the difference between you and Scotty such that internalism rules that *you* count as having some external memories but *Scotty* does not? I see no such difference.

And finally, having seen that the second Dennett variant is no counterexample to internalism, we may note that the case of Otto is not so different from that of Scotty. Otto's external memory device is a paper notebook instead of an electronic unit; but why should *that* matter to the internalist? Again, insofar as Otto's notebook really does contain some of his beliefs or memories, internalism is not violated.

So the two Dennett variants, and the cases of Scotty and Otto, cannot possibly violate internalism. For in each case, either the subject's mind (specifically, certain bits of his memory) does *not* extend beyond his body, or it *does* extend beyond his body. If the former, then the case clearly does not refute internalism. And if the latter, then since the extension in question is not relevantly different from the extension that occurs in Dennett's original case, and since *that* case did not refute internalism, then the case in question cannot do so either.

Now, if no case of which the EMH is true is relevantly different from Dennett's original case, then no such case can refute internalism. And I hope to have shown in this section that no case of which the EMH is true is relevantly different from Dennett's original case. Otto is Clark and Chalmers' paradigm case of the extended mind, and we saw that even that case (assuming the notebook does contain some of Otto's beliefs) is not relevantly different from Dennett's original case. In short, the EMH posits that the mind can

extend beyond the head in just the same way in which Dennett's mind extended beyond his head in his fantasy case. Whether this extension actually occurs in any given case may be debatable (e.g., it could be held that although the EMH is true of Scotty, it is not true of Otto), but what is not debatable is that *even if* the EMH is true of a given case, that does not make the case into a counterexample to internalism.

We may put the argument the other way around. If cases such as Otto and Scotty are counterexamples to internalism, then Dennett's case must also be a counterexample to internalism. But it surely is not. So cases such as Otto and Scotty are *not* counterexamples to internalism.

So the EMH cannot entail that internalism is false. Therefore, if the EMH *does* entail that INTERNALISM_T is false, we need a new formulation of internalism.

But some readers will need convincing that the EMH *does* entail the denial of INTERNALISM_T, so I now turn to that task.

5. Is there really a problem with INTERNALISM_T?

It may be objected that I am inventing a problem where there is none. Specifically, it may be said that the EMH does *not* deny INTERNALISM_T, because it is clear that the 'subject' to which INTERNALISM_T refers will necessarily *include* any physical items that contain the subject's beliefs. According to this line of thought, if Otto's notebook really does contain some of his beliefs then the notebook is actually *a part of Otto*. If that is the case, then the EMH cannot entail that INTERNALISM_T is false, for any evidence that shows that a given object carries some of a person's beliefs will necessarily also show

that the object is a part of the person himself; and if the object is a part of the person, then the fact that it carries some of his beliefs does not violate the supervenience of his mental states on his intrinsic physical state.

If the objector's line were correct, my enterprise would be unnecessary. After all, I wish to show that the EMH does not entail that internalism is false; and the objection says that a correct reading of INTERNALISM_T already makes clear that this is so.

Unsurprisingly however, I am not convinced. Although the objection aims to establish the same conclusion that I want to establish – that the EMH does not violate internalism – it does so by asserting the following principle:

(*) Necessarily, if object X carries some of a subject S's beliefs, then X is a part of S.

The trouble is that it is far from clear that (*) is true. I do not say that it is *not* true; only that it is not *transparently* true. (See below.) The problem with INTERNALISM_T is not avoided by appeal to the meaning of the word 'subject'.

Clark and Chalmers would seem to endorse (*), for they take the EMH to entail that the subject himself can extend into the environment. If we resist this conclusion, they say, the parity between external informational states (such as the entries in Otto's notebook) and internal, non-occurrent informational states (such as memories encoded in Otto's brain) would force us to also exclude the internal states from the subject, thus ultimately "shrink[ing] the self into a mere bundle of occurrent states" (p. 18). However, this assessment of the risks of resisting (*) seems too pessimistic. There may be ways to pick out the physical boundaries of the subject that do not appeal to the instantiation of mental properties – for example, by holding that persons are identical with their bodies (e.g., Ol-

son 1997). That is, there may be ways of holding that the self, or the person, stops at the skin while *also* holding that the mind extends beyond the skin.

Indeed, one EMH theorist takes just this position. Robert Wilson (2004, 142) denies that the subject extends beyond the skin even if the subject's mind does. For him, even if the notebook contains some of Otto's beliefs, it is not part of Otto. The causal connections between Otto and the notebook make it part of his mind, but do not make it part of Otto himself. In defense of this view, Wilson points out that we routinely assign states to an entire person where, in fact, the person has those states only in virtue of the states of some *subsystem* (e.g., you, a whole person, can be in a state of smelling garlic in virtue of a state of just your olfactory system). He suggests that the same principle can be applied concerning states possessed in virtue of some external item. We already have, he says, "a principled basis for ascribing mental properties... to individual subjects rather than the wide systems of which those subjects are a part" (p. 142). A mental property does not have to be assigned strictly to the entity the states of which are responsible for the property's instantiation.

Whether or not one is convinced by his argument, Wilson's position is surely an open possibility. Therefore (*) is not transparently true, and so it cannot be used all on its own, without further argumentation, to show that the EMH is compatible with INTERNALISM_T. Some may say that Wilson's position is incoherent; but I do not see that this so. Admittedly, the claim that your belief states must be states of *you* has a lot of intuitive weight, and it does seem *unintuitive* that Otto's notebook could be part of his mind but

not part of Otto. Yet I cannot help suspecting that these intuitions simply reflect a prejudice ingrained by our normal ways of talking (see n. 8).

In any case, my stance here is quite conciliatory. I can allow that (*) *is* true. I am saying only that its truth is not transparent just in virtue of the meaning of the word ‘subject’. The use of that word (or any other we might substitute for it, such as ‘person’ or ‘individual’ or ‘agent’) in (*) does not decide the question of whether (*) is true. In order for it to decide that question, it would have to be transparently clear – amongst philosophers at least – what the word ‘subject’ means (in this context – i.e., in the term’s use in (*) and in INTERNALISM_T). But that is not the case. There is no such agreement on what it is to be a subject. So if we want to decide whether (*) is true, we will have to do some independent investigation into the issue of the spatial extent of subjects. But if we must do *some* conceptual spadework in order to reformulate internalism, why dig into the concept of the *subject* in the hopes of thereby revealing something about the *mind*, when we could dig into the concept of the mind directly?¹¹

6. The influence of the traditional division

It may now be said that, even if the EMH denies INTERNALISM_T, this does not matter, because no one thinks that INTERNALISM_T characterizes internalism anyway. In short, this objection says that in INTERNALISM_T I have constructed a straw man or a caricature.

In response, I point out that there are authors who clearly accept the traditional division, who demonstrably believe that INTERNALISM_T characterizes internalism, and who take the EMH to threaten internalism. They take evidence for the EMH to constitute evi-

dence against internalism just as much as evidence for content externalism does. This is because they take internalism to say that the mind supervenes on the subject's body.

For example, Robert Wilson has mounted an extensive externalist campaign in two books (1995, 2004). He characterizes the internalist view and his own view in terms of the traditional division.¹² That is to say, Wilson construes internalism as committed to the supervenience of the mind on the individual's intrinsic states: "individualism is the thesis that psychological states should be construed without reference to anything beyond the boundary of the individual who has those states" (2004, 9-10).

Wilson defends content externalism. But of more interest to me here is his 'wide computationalism' (first aired in Wilson 1994), on which one's cognitive system includes parts of one's environment. For example, he says that when one does a multiplication problem with paper and pencil, the cognitive activity includes the symbols on the paper (1995, 69). Thus wide computationalism is a specific variety of the EMH. (In his 2004, Wilson adopts the name 'locational externalism' for the EMH and related views: see p. 174.) Now since "the computational states of [a wide computational] system would not supervene on the intrinsic physical states of the individual" (p. 66), Wilson thinks that if wide computationalism is true, internalism must be false. His reliance on the traditional division is clear. He holds that since wide computationalism has it that some mental states (i.e., the wide computational ones) supervene partly beyond the subject's body, wide computationalism shows that internalism is false.

Another example of the traditional division's influence is in Tim Williamson's *Knowledge and its Limits* (2000). In chapter 3, Williamson attacks internalism on the

grounds that mental states are usually not decomposable into internal and external parts. In the course of his argument he says that the very *distinction* between the internal and the external can sometimes be in doubt (sec. 3.3). And this, he says, is a problem particularly for internalism, because “[the internalist conception of the mental] depends on separating the contributions of narrow and environmental conditions” (p. 75). Williamson’s idea is that in cases where internal and external states are very tightly causally linked, we may be hard-pressed to decide on the true extent of a person’s ‘internal’ state. For example (not given by Williamson), we may doubt that Otto’s mind is bounded by his skin, because his extensive interaction with his notebook suggests that the notebook itself should count as internal to Otto’s mind. Counting the notebook as environmental would be no more warranted than counting some part of Otto’s brain as environmental (cf. Haugeland 1995). Of course, we can always just *stipulate* that the skin is the relevant boundary. But Williamson’s point is that when there is a constant flow of causal connections across that boundary, such a stipulation looks unmotivated.

However, all this is a problem for internalism *only if the traditional division is assumed*. It is that division that imposes a sharp boundary between internal and external – usually taken to be the boundary of the subject’s body, as in INTERNALISM_T. Indeed, Williamson formulates internalism and externalism exactly as the traditional division dictates: “Internalism is the claim that all purely mental states are narrow; externalism is the denial of internalism” (p. 52), where he defines narrow states as those that supervene on the subject’s internal physical state. He therefore takes the instability of the internal-external distinction to count against internalism because he takes internalism to demand a

neat separation between mental states and environmental states. But internalists need not insist on that claim. They need not insist that the boundary of the body marks the boundary of the mind; and in fact, they need not even insist that there is such a fixed boundary *at all*. And without the traditional division, internalists are free to accept that certain external states, especially states of objects that are in close causal interaction with the subject, may fall (at least sometimes) within the supervenience base of the subject's mind.

How did philosophers such as Wilson and Williamson come to think that internalism is married to the idea that the mind is strictly bounded by the skin? We need look no further than the statements of internalists themselves, as exemplified by the four quoted passages in §1. Now you may say that only the most blinkered and literal reading of such theses could interpret them as INTERNALISM_T. But it must be emphasized that for the most part, they were stated *in the context of the debate over content externalism*.¹³ In hindsight it may appear just obvious that the authors did not intend their theses to rule out the possibility of cases such as the one Dennett imagines; and perhaps not that of Scotty, nor even that of Otto. Now I think that to this extent, hindsight is correct: the authors surely did not intend that. But crucially, nor did they intend for their theses to *allow* for the possibility of such cases. The authors did not *intend anything* regarding such cases. They were attempting to formulate a thesis in response to content externalism, and content externalism itself does not make those sorts of cases salient.

In short, internalists have typically taken internalism to be captured by INTERNALISM_T because, although in light of the EMH it is too strong, the EMH was simply not on

the radar when they were formulating their internalist thesis. A primary claim of my paper is that the EMH should prompt a reevaluation in that regard.

7. Conclusion

How are we to reformulate the internalist thesis so that it is compatible with the EMH? I will now try to sketch the direction I think we need to pursue. But ultimately, to fully specify the internalist thesis will require much more investigation into the nature of mind – investigation that I think the EMH ought to prompt. So my remarks will necessarily be programmatic.

Let us return to where we began: the content externalism debate. The debate concerns whether mental content supervenes externally. As in most debates however, the two sides share certain assumptions without which the debate could not proceed. Here a necessary assumption is that there is what we may call a *default supervenience base*: a bit of the physical world¹⁴ that both sides agree should fall within the supervenience base of the subject's mind. Of course, it is far from clear how to pick out that bit of the world, and formulating internalism in this way is distinctly unenlightening:

'Default' internalism (INTERNALISM_D): Each of a subject's mental states at time t supervenes on the default supervenience base of the subject's mind at t .

Intuitively, what we are trying to talk about is the bit of the world that contains the system in which a given subject's mental events occur. When you are wondering what to make for dinner, there is intuitively some location L where that event of wondering *happens*. Philosophers vehemently disagree about the relationship between the mental event

of wondering and the physical events at L (identity? constitution? realization?) but there is near-unanimity that L is somewhere within your body. However, extended cognition theorists will say that sometimes that consensus would be wrong – as when, perhaps, you are flipping through your scrapbook of recipes, in which case your *wondering* is partly constituted by the scrapbook itself. Extended mind theorists may go further and count the scrapbook as containing some of your beliefs (e.g. that oregano goes well with cheese dishes). These views, then, extend the default supervenience base beyond the skin. A key point of my paper has been that this sort of extension of the mind into the world is very different from the sort of extension promoted by content externalism.

Some internalists recognize this point. One such is Gabriel Segal (1991), who says that “Individualism is the thesis that the representational states of a system are determined by intrinsic properties of that system,” then adds that “It seems likely that whole subjects (or whole brains) make up large, integrated computational systems” (p. 492). He thus sees that the second premise is purely additional to internalism’s main claim.¹⁵ It is not easy, though, to formulate an internalist thesis along the lines of INTERNALISM_D based on what Segal says. We would have to resort to something like this:

‘Representational’ internalism (INTERNALISM_R): Each of a subject’s mental states at time *t* supervenes on the entity that constitutes the representational system that constitutes the subject’s mind at *t*.

Troubles abound here. For one thing, INTERNALISM_R introduces the fraught notion of constitution (twice!). And for another, it assumes that the mind is representational, which is not a necessary part of internalism.

We would be better to look to Levine (1999) for inspiration. Levine seems to be ostending the default supervenience base with his term “the causal basis for the mind” (p. 169; see the passage quoted in my §4), thus suggesting the following reformulation of internalism:

‘Causal basis’ internalism (INTERNALISM_C): Each of a subject’s mental states at time *t* supervenes on the causal basis of the subject’s mind at *t*.

This is far more suggestive than INTERNALISM_D, and lacks the troublesome features of INTERNALISM_R. Admittedly, the ‘causal basis’ locution remains in need of explication. Levine does not elaborate on it in the 1999 paper, but in his 2001 book he indicates that he means “the structure that core realizes the mind” (p. 116). The notion of the ‘core realizer’ of a mental state is Sydney Shoemaker’s. Shoemaker describes it as “a state that comes and goes as the mental state comes and goes, and which is such that, given relatively permanent features of the organism, it plays the ‘causal role’ associated with that state” (1994, 287). By the core realizer of a *mind*, Levine presumably means the structure that contains all the core realizers of its mental states. So by the mind’s causal basis or its core realizer, Levine means to denote the physical structure whose intrinsic states play the causal roles that we take to be characteristically *mental*.

We can now see that INTERNALISM_C neatly accommodates the EMH. For example, the reason Otto’s case creates no trouble for internalism is that (according to the EMH) the entries in his notebook play a causal role that we usually think of as belonging to mental states. If the EMH is true of Otto’s case, then his notebook is included in the

causal basis of his mind just because certain of its states play a characteristically mental role in his activities.

Again, it is not my intention here to claim that the EMH is true in any particular case. We may eventually decide that, at least for humans unaltered by cyborg technology (see Clark 2003), the EMH is false – that the skin was the right boundary all along. But on the other hand, we may decide that the EMH is true in some cases. The important thing is for internalists not to prejudge the issue based on inappropriate criteria, such as the purported fact (cf. §5) that the *subject* stops at the skin. If we formulate internalism as stipulating that the mind cannot extend past the physically-defined boundary of the body, we prematurely exclude the possibility that the EMH sometimes is (or will be) true. My argument in §4 showed that internalism should have no truck with such a stipulation. Internalism should not define the extent of the mind in purely physical terms. The internalist should have nothing to fear from the possibility that some environmental states play characteristically mental roles, and are therefore mental states.

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Acknowledgements

For helpful comments on an earlier version of this paper I wish to thank Brian McLaughlin, David Chalmers, and an audience at the Spring 2005 meeting of the New Jersey Re-

gional Philosophical Association, especially Pierre Le Morvan. Thanks also to an audience at the ‘Cognition: Embodied, Embedded, Enactive, Extended’ conference at the University of Central Florida in October 2007.

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¹ Strictly speaking, Burge defends *anti-individualism*, on which mental states supervene partly on the subject's physical or social environment. Anti-individualism entails externalism, but externalism does not entail anti-individualism, for an externalist might instead hold (e.g.) that mental states supervene partly on the subject's evolutionary history. I present Burge's formulation of individualism because it remains the main influence on internalists.

² Burge, admittedly, has not always been clear on this. But he has recently affirmed that "The facts (a) that the intentional content of a mental event is essential to the event and (b) the intentional content of a mental event is necessarily and constitutively dependent on relations to an environment, simply do not by themselves logically entail that the event, or its intentional character, is not in the head, much less that it is in the environment" (2003, 435).

³ Why not just call the former view (that denies content externalism) 'content internalism', and the latter (that denies the EMH) 'vehicle internalism'? Well, 'content internalism' implies opposition only to relational accounts of mental *content*, when in fact internalism would reject any theory that makes mental states relational. (Whether there actually are any such theories other than content externalism is debatable. On some construals, disjunctivism [e.g., McDowell 1982; Snowdon 1981] is one.) So I prefer the more inclusive 'internalism' to 'content internalism'. And as I have already mentioned, talk of vehicles suggests a commitment to representationalism, which internalism qua internalism does not require.

⁴ Supporters of embedded cognition include Dennett (1996), Donald (1991), Haugeland (1995), Hutchins (1995), Toribio (1997), and Tuomela (1989). The name ‘hypothesis of embedded cognition’ is from Rupert (2004), as is ‘hypothesis of extended cognition’ in the following paragraph.

⁵ You will probably have *visual* representations of the numerals on the paper. But these representations of the *written numerals* will not take part in any internal process of calculation, in the way that representations of the *numbers* 345 and 87 would if you were to do the multiplication ‘in your head’.

⁶ Other EMH proponents include Clark (1996, 2003, 2005), Houghton (1997), Hurley (1998), Rowlands (1999), and Wilson (1995, 2004).

⁷ Except in a footnote. In correspondence, Chalmers says it is no part of their position that the beliefs are *in* the notebook. However, Clark and Chalmers’ own words belie their official modesty on this score. For instance, they say that the “information in the notebook functions just like the information constituting an ordinary non-occurrent belief; it just happens that this information lies beyond the skin” (p. 13). If the information is in the notebook, and that information constitutes Otto’s belief, then it looks to follow that the belief is *in* the notebook. (Perhaps they hold that *no* beliefs have location. Others, such as Dennett (1991) and Baker (2001), have made that claim, but I do not pretend to understand it. Perhaps beliefs have no *precise* location; but that does not entail that they have no location at all. Certainly, at least the vehicles or (taking a term from functionalism instead of representationalism; see Shoemaker 1981, 97) the *core realizers* of beliefs have location. Further, adopting the Dennett-Baker view would seem to make the EMH itself otiose – for it is a hypothesis about the *location* of beliefs!)

⁸ Work is already being done on artificial memory systems intended to record and store vast amounts of data about a person’s life (including video of one’s daily activities), with more detail and precision than our brains can manage. My bet is that if such systems become commonplace, they will come to be regarded simply as part of their owner’s cognitive resources. Using them, I predict, will be seen as no different from thinking (cf. Clark 2003). Relatedly, in the *New York Times Book Review* Steven Johnson (2005) discusses – from the perspective of a professional writer – the search engines we now have for sorting through personal information, which are able to rapidly search vast numbers of documents and return those relevant to

your search criteria – including, most significantly, documents you had written but forgotten about. Johnson sums up the experience of using these programs as being “uncannily like freewheeling through the corridors of your own memory. It feels like thinking” (p. 27).

⁹ I do not assert that such a thing is empirically possible; but it may well be, and even if not empirically possible it is surely still conceivable.

¹⁰ Robert Rupert (2004) argues that any apparatus that lacks certain contingent features of human psychology (e.g., the fact that we have a very limited short-term memory, or the fact that certain psychological laws govern the process of forgetting) cannot be a part of a human mind. Since pieces of paper, Palm-Pilots, and other external items lack many of the information-processing features of our brains, they cannot be part of our minds. Now this argument is not just a blunt appeal to the importance of neurons, but I still find it unsound. I do not think we should demand that any item that does not have just the same information-processing profile as our brains therefore cannot form part of our minds. Suppose an electronic memory unit gives you the ability to retain much more information than your biological memory allows. Why should that increased capacity mean that the resulting information is not stored in *your memory*? And even if the unit behaves differently from your biological memory in other ways, I do not see why that shows that the unit does not contain your memories. (Compare: certain savants have memory systems that seem to work far differently than those of normal individuals, but we do not therefore deny that they are *remembering* when they draw information from those systems.)

¹¹ Brian McLaughlin suggests to me that the justification for (*) is just that if an object contains some of a person’s beliefs, then it’s an *organ* of the person – and a person’s organs are part of the person. But this justification would only open a larger can of worms, for it would require an analysis of the ‘organ’ concept. ‘Organ’ is a biological concept, so someone pushing McLaughlin’s line would first have to rebut the objection that only products of natural selection can be organs. Now it might seem that the rebuttal should come easily, since *artificial organs* are becoming increasingly common in medicine. If an artificial heart is an organ, then it is false that only products of natural selection can be organs, and the way is clear for (e.g.) Scotty’s electronic memory unit to count as one of his organs. However, many would resist this relaxed

definition of ‘organ’, claiming that so-called ‘artificial organs’ are not really *organs* but only *replacements* for them. So my response to this line of argument is the same as the response just given in the main text. It is not that I think the response *cannot* work, but that the task of driving it home would be far from easy. What started as a shortcut to the conclusion that internalism is compatible with the EMH would turn into a lengthy conceptual digression through contested territory.

¹² Wilson uses the term ‘individualism’ (rather than ‘internalism’), but does not mean it in Burge’s sense (see my n. 1). So I shall stick to ‘internalism’ in describing his work.

¹³ Keith Butler (1998) is an exception: his characterization of internalism occurs in a book in which he defends internalism against both content externalists and EMH theorists. Thus like Wilson and Williamson he subscribes to the traditional division, and therefore takes the EMH to threaten internalism. (Though unlike Wilson and Williamson, he thinks the threat can be deflected.)

¹⁴ For simplicity, I ignore substance dualism.

¹⁵ In a review of Wilson (1995), Segal (1997) points out that there is no obvious reason why an internalist could not accept that a cognitive system might be composed of elements both inside and outside the subject’s body (though he does not think Wilson shows such a move to be necessary).