

MIND AND BRAIN IN THE 17TH CENTURY

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1. Can matter think?

Descartes bequeathed to his successors what he and they thought to be a sharp, deep split between the mental and the material. He thought it was a split between things, with every thing belonging to one of the two kinds and no thing belonging to both. According to him, a human being is a pair, a duo, a mind and a body; or, more strictly, a human being is a mind that is tightly related to an animal body. The exact nature of that relation was one of the problems that Descartes never solved to his own satisfaction, let alone to anyone else's.

Not all of those who took over the split thought that it was a split through things. It was possible to hold - as I am sometimes inclined to - that material properties are radically different from mental properties, neither being reducible to the other, and yet there are single things, not pairs or duos or small committees, that have properties of both kinds. In the language of the 17th century, that is the belief that *matter can think*, i.e. that an item that bumps and shoves its way through space can also be the subject of thoughts and experiences and perceptions.

In that century an impressive amount of intellectual energy went into debating whether matter could think. I'm going to pick out of that debate certain strands that I hope are still of interest today. They certainly interest me. Such understanding as I have of the philosophy of mind - I mean of what is actually *true* about mentality, not merely of the history of men's opinions about it - has come from tracking some of the 17th century writers as they beat their way through the undergrowth. I don't mean that they eventually led me to true conclusions, which I gratefully swallowed. They got most things wrong, I believe; but there is a lot to be learned from working out *where* they were wrong and *why*.

2. Descartes' reasons

Why did Descartes hold that his mind was one thing and his body another? His most interesting argument for this goes as follows.

He held that any portion of matter has parts, smaller bits that are related to one another so as to constitute the bigger portion. Even if we don't accept that for *all* matter, it certainly holds for the best candidates for the title of "thinking matter", namely animal bodies or brains. Any one of those is a lot of smaller things interrelated in certain ways. But, Descartes said, his mind was not an aggregate of parts. It had different faculties or capacities, of course: memory, perception, reason, and so on; but these are just different *qualities* of a single mind, he said, not *parts* of it. They are comparable with the animal's ability to walk and to eat and to digest, not with its legs and its head and its guts. So, he concluded, his mind could not be a material thing, since all of those do have parts. And he was willing, I don't fully grasp why, to draw conclusions about minds in general from premises about his own mind in particular.

Why was Descartes so sure that his own mind was not an aggregate of parts? Well, he thought that any mind was fundamentally open to inspection by its owner: indeed he drew the line between what is mental and what isn't largely in terms of what can be known by introspection and what can't; and he thought he could just *see* that his mind was ultimately single and not an aggregate. This puzzled me for many years, until at last I read Kant's *Critique of Pure Reason* and found an explanation. Kant conjectures that Descartes was sure that his mind was not made

up of parts because he couldn't make sense of the idea of *introspectively seeing or sensing his mind as an aggregate of parts*. Nor can I or anyone else make sense of this, for the reason that Kant gives: in any such seeing or sensing there has to be oneself, one's whole unexamined and undivided mind, to perform the mental act in question.

But I also agree with Kant that this is just a limitation on how we can directly experience our minds, not on what our minds can actually be like.

About twenty years ago this came to be strikingly illustrated by facts about the mental functioning of people in whom both cerebral hemispheres are working properly except that the direct neural connections between them have been surgically cut. As is now widely known, such people get through most of ordinary life with no trouble, but situations can be contrived in which their loss shows up: for example, they are asked to do with the left hand some task that requires information possessed only by the hemisphere controlling the right hand; the left hand fumbles, and the right hand tries to help it out. Phenomena like these invite us to see all normal people as having minds with parts or sub-departments, and to see these special folk being different only in that in them there is some breakdown in communication between the parts. I'm not insisting that that is right; merely saying that it is plausible, and gets some support from the data. But all of that support comes from oddities in the behaviour of the people; one of them might, on being informed about his behaviour, come to the same conclusion himself; but it seems not to make sense to suppose that someone could reach that conclusion about himself - namely that his mind is a collaborating set of sub-minds - purely on inner evidence, an introspective perception of the different sub-departments communicating with one another. That, in a nutshell, is Kant's lesson: I cannot directly perceive my mind as having parts, but it may have parts for all that.

This bit of work of Kant's is fine, and true; it explains what lay behind Descartes' argument, and explains why it is not sound.

Descartes had another argument - more famous, but worse - for the conclusion that minds and bodies don't overlap. It was a peculiar thought-experiment that seems to have convinced nobody else. When about a dozen of his contemporaries sent him written comments on his masterpiece the *Meditations* (he had asked them to), almost all of them took aim at this thought-experiment argument, and he didn't defend it well. I don't intend to spend time on it, except to report that it too illegitimately draws conclusions about what your mind is like from premises about how it seems introspectively to you.

3. Locke's agnosticism

Let's move across the British channel and down history half a century: we come to John Locke, who was vastly influenced by Descartes in all sorts of ways, including taking over his split between thought-properties and matter-properties. He wasn't tempted by either of Descartes' arguments for the view that bodies cannot think; and in his *Essay Concerning Human Understanding*, when hammering home his views about how little we do or *can* know, he cites the question of *whether matter ever thinks* as a prime example of a large, central question to which we shall probably never know the answer.

This agnosticism is easy to understand. Locke had a picture of reality as consisting of *things* with *properties*; and he took over from Descartes the division of properties into two sorts, pertaining to mind and matter respectively, with no logical commerce between the two - no implications from one to the other and no inconsistencies between them either. So, he thought, there is nothing that makes it absolutely impossible that matter should think, and nothing making

it absolutely necessary that whatever thinks should be material. For matter to think is just for a thing to have a bunch of properties of one kind and a further bunch of a quite unrelated kind. The question “Does any matter think?”, according to his view of it, is not like the question “Are any cannibals carnivorous?” or “Are any cannibals vegetarians?” - each of which can be answered just by thinking about it - but rather like the question “Are any cannibals short-sighted?”.

So, just by thinking about what conceivably could or couldn't be the case, we shall get nowhere, Locke thinks. It is not absolutely impossible - it's not *logically* impossible - for there to be thinking matter; but it could be that there is none, for it is not absolutely necessary that whatever thinks should be material. His next step is to conclude that if we can't settle the question in that way, we can't settle it at all. Each human being has a physical and a mental aspect, says Locke, and this could come about in either of two ways: either God has “given to some systems of matter, fitly disposed, a power to perceive and think”,¹ in which case some matter thinks; or God has “joined and fixed to matter so disposed a thinking immaterial substance”, in which case no material systems think for themselves, but some are linked with immaterial substances that do the thinking. And we can't possibly choose between these, Locke says, because there can't be any empirical content to the idea of a portion of matter that thinks. For him there is no way the evidence *could* let us choose between “This portion of matter thinks” and “This portion of matter is associated with an immaterial substance that thinks”. In his own words: “We know not to what sort of substances the Almighty has been pleased to give the power of thinking, which can be in any created thing only by the good pleasure and bounty of the creator.”²

4. Leibniz's opposition

Leibniz read Locke's *Essay* with some admiring approval and a larger measure of dismay and condescension. He wrote a long French-language commentary on it, the *New Essays on Human Understanding*, which has the form of a dialogue between himself and Locke. In this dialogue, each time Locke expresses himself as agnostic about whether matter thinks, Leibniz comes down on him like a ton of bricks. He agrees that thinking matter is not absolutely impossible - it is not like a vegetarian cannibal. But he doesn't agree that there is nothing more we can do to discover whether any matter does think. When Locke sets up his alternative ways for God to associate thought with an animal body - by letting it think, or by inserting into it an immaterial substance that thinks - he implies that it is for God to choose *arbitrarily* which alternative to adopt. Locke does frequently credit God with arbitrary choices - picking A rather than B at whim, so to speak, and not because A is better or more reasonable or natural than B - and he sometimes expresses that arbitrariness idea by speaking of “the good pleasure of the creator”.

Leibniz pounces on this angrily: this “good pleasure of the creator”, he says, is neither good nor pleasure; the implication that God might act without a reason is impious, and is also objectionable at an even deeper level. Leibniz is a rationalist in the sense that he thinks there is a reason for *everything* - there is a satisfactory answer to *every* “Why”?-question - and this basic commitment to reasonedness, to there being no absolutely brute facts, requires that God always acts for a reason and never arbitrarily.

¹ John Locke, *Essay Concerning Human Understanding* IV.iii.6, at 540:16 in the edition by Peter Nidditch, (Oxford: Oxford University Press, 1975).

² Ibid, 541:5.

I remark in passing that in this sense of “rationalist”, Descartes was not a rationalist though he is standardly classified as one. He said that good things are good because God wants them, and that it limits God’s power to suppose that there are standards of goodness that are independent of his will. Leibniz says that God wants good things because they are good, and that Descartes’ view implies that there is no content to the statement that God is good - it merely means that he wants what he wants. More radically still, Descartes said that absolutely necessary truths - such as that $2 + 1 = 3$ - are made true by God, and that it would be a limiting of God’s power to say that *he* could not have made it the case that $2 + 1 =$ something other than 3. You can guess what Leibniz thought about that! He said that Descartes’ God is no God at all, because he is neither good nor reasonable, since each of those virtues consists in conformity to *independent* standards of virtue and rationality.

I wish that Leibniz’s rationalism were right but I’m sure that it can’t be. I want there to be no absolutely brute facts - no cases of “That’s the way the cookie crumbles” with nothing more to be said about it - but I’m afraid that unexplained brute factuality can’t be avoided. It may be good for our intellectual health never to accept that we have reached a rock-bottom inexplicable fact, and always to insist on looking for explanations. But even if *each* particular fact can be explained - for example by saying that it was caused by some antecedent fact, and so on backwards to infinity - it makes sense to think of the *entire* (perhaps infinite) sequence of things and events, past, present and future, and to ask why *it* is actual rather than some other entire series. The answer can’t come from *inside* the series, because such an answer would be a part of the question; and it can’t come from *outside* the series because there is nothing outside the series. So there is no answer.

Leibniz thinks otherwise, however. He thinks he can answer the big “Why?”-question that I have just asked - Why is this world the actual one? - but I shan’t discuss that. All that matters now is just that he *does* hold onto his rationalism, and is led by it to conclude that whatever God does is unarbitrary, is inherently reasonable, so that the question of *why* he acts as he does always admits of a satisfying answer, even if we don’t always know what it is.

With that doctrine up his sleeve, Leibniz looks at the alternatives that Locke says are open to God - making animal bodies think for themselves and adjoining to them immaterial substances that do the thinking for them - and he judges that one is more reasonable than the other, and is therefore the one we should believe God to have adopted. I quote from him:

Whenever we find some quality in a subject, we ought to believe that if we understood the nature of both the subject and the quality we would conceive how the quality could arise from it. So within the order of nature (miracles apart) it is not at God’s arbitrary discretion to attach this or that quality haphazardly to substances. He will never give them any that are not natural to them, that is, that cannot arise from their nature in an explainable way.³

So a reasonable God won’t let any material object think unless its thinking arises naturally from its material nature.

Although I don’t accept Leibniz’s rejection of brute facts, it is doing good service for us here by putting wind into the sails of the question of whether matter thinks, rescuing it from the becalmed agnosticism in which Locke had left it. Locke was right that the question in his form of

³ G.W. Leibniz, *New Essays on Human Understanding*, edited and translated by Peter Remnant and Jonathan Bennett (Cambridge: Cambridge University Press, 1981), p. 66; see also pp. 378-382.

it couldn't possibly be answered, but now we have something we can get our teeth into: Could there be a material system - a brain, for instance - whose physical workings were sufficient to explain all the states and activities of a mind?

5. Leibniz's mill

Leibniz, as you will have guessed, answered No. He regards it as "certain that thought can't be explained in terms of matter", and goes on to develop this point of view:

A sentient or thinking being is not a mechanical thing like a watch or a mill: one can't conceive of sizes and shapes and motions combining mechanically to produce something that thinks, and senses too, in a mass where formerly there was nothing of the kind. So sense and thought are not natural to matter, and there are only two ways in which they could occur in it: through God's combining matter with a substance to which thought is natural, or through his putting thought into it by a miracle.⁴

He is thinking of a miracle as something arbitrary, and therefore bad and not to be believed in, though it is not absolutely impossible. Locke, as we shall see, *agreed* with Leibniz that matter could not naturally produce thought; where they part company is in their different attitudes to miracles, that is, to irregularity, brute factuality, arbitrariness.

Leibniz *often* says that matter could not produce thought. Here is how he puts it in his work the "Monadology":

Perception . . . cannot be explained on mechanical principles, i.e. by shapes and movements. If we pretend that there is a machine whose structure makes it think, sense, and have perception, then we can conceive it enlarged, but keeping to the same proportions, so that we might go inside it as into a mill. Suppose that we do: then if we inspect the interior we shall find there nothing but parts that push one another, and never anything that would explain a perception. Thus perception must be sought in simple substances, not in what is composite or in machines.⁵

This was evidently a favorite line of thought of Leibniz's, but it is not very good, for at least two reasons.

Firstly, it pretends to know what kinds of operations occur at the submicroscopic level in organisms - that that level contains "nothing but parts that push one another". This is shut-minded in two different ways. It supposes that 17th century physicists *knew* that at the macroscopic level the main outlines of physics were permanently fixed - it's a matter of "mechanical principles, i.e. shapes and movements", and that's it. It also supposes - and indeed Leibniz says outright - that "we know that there is no essential difference between large and small bodies, but only a difference of magnitude". As he puts it in one place:

Material particles, however small they might be, could not be combined or modified so as to produce perception; seeing that large particles could not do so (as is obvious), and that in small particles everything is proportional to what can happen in large ones.⁶

This assumption that the very small differs from the large *only* in being smaller wasn't special to Leibniz. It was been described by C.D. Broad as a blank check that all scientists wrote on the

⁴ Ibid., pp. 66f.

⁵ Leibniz, "Monadology", section 17.

⁶ *New Essays*, p. 440.

bank of Nature; there weren't enough funds to cover it, and it was just good luck that the check didn't visibly bounce until the 19th century.

Still, although everyone else was guilty of it too, I do hold against Leibniz this shut-minded attitude to the future of physics - this dogmatic confidence that research would never take physics far beyond the bounds of impact mechanics, whether on the large scale or the small. Leibniz was in many ways gloriously open-minded, but not about this.

Even at that time there was reason to think that bodies can not only *push* but also *attract* one another. That may not help us to understand how matter could produce thought, but is at least a warning against wearing blinkers. Locke is an interesting case. He wrote that he used to think that all physical action occurred through impact "until Mr Newton wrote his incomparable book", which converted him to a belief in gravitational attraction. Locke promised to amend accordingly the subsequent editions of his *Essay*, but he mostly didn't. He fiddled with almost every sentence in the later editions, and yet we still find him saying, for example, that "impulse" is "the only way we can conceive that bodies operate in".⁷ Evidently, the blinkers were hard to get rid of.

The second defect in Leibniz's "mill" argument is this. Even supposing that the basic properties and powers of matter are just the ones acknowledged by impact mechanics, Leibniz hasn't shown that they could not produce thought. Remember that he is not demanding that all a thing's qualities be absolutely necessitated by its basic nature, but just that they relate to it in an intelligible, non-arbitrary fashion. He will allow it to be a contingent, God-ordained truth that things with nature N also have property P, so long as God has a good reason for basing N on P rather than on Q; there must be something about N and P that makes them fitting for one another. That is all that Leibniz is demanding. Now, is it so utterly obvious that no physical N (with this understood in terms of shapes, sizes, motions etc.) could have that relation to any mental P? Leibniz apparently did find it obvious, or thought it could be made obvious by the thought-experiment of the "mill"; and I hold that against him. It is not obvious; it needs to be supported by argument; and he doesn't supply any.

6. Locke's God argument

On this point, Locke did better. I have remarked that he held as Leibniz did that matter could not produce thought; he would have agreed with Leibniz about the mill. But where Leibniz merely says that his view is "obvious", Locke provides an argument. It is deeper and more interesting than Leibniz's thought about the "mill", as well as being less dogmatic and blinkered. In it, Locke argues that any thought worthy of the name must exhibit patterns that have no analogues in the behaviour of unaided material systems, so that such systems could not be the cause of mentality.

The argument is mentioned in passing in one of the main discussions of thinking matter in the *Essay*. Locke asks whether matter could, unaided, *produce* thought, and answers emphatically that it could not: matter could think, but only if there were already a thinking being that enabled it to do so. In a world lacking mentality, he says, mentality couldn't come into existence purely through a change in the physical arrangements. His argument for this occurs in a chapter where he

⁷ Locke, *Essay* II.viii.11.

is trying to show that there is a God and to find out what he is like. Having proved to his own satisfaction that there has from all eternity been a thinking being, which is the source of all other thought in the universe, he then considers whether that being could be material. He takes this a step at a time. Could God be a single atom? No. Could God be something more complex than an atom, but not owe his thoughts to that extra complexity? No, that would be like God's being a more decorative atom. What remains is the possibility that God is a complex material system which thinks *because of* its complexity of physical structure and operation.

This is the hypothesis that the universe contains thought because, and only because, there is a material system whose structure and mode of operation cause it to be a thinking thing. The structure is purely physical, and the mode of operation must be purely mechanistic, with nothing happening in it because of the intentions of any designer or guardian. We are considering the God who is the source of *all* mentality in the universe: any designers or guardians must result from the workings of the material system we are now discussing, and cannot help the system to work in the first place.

Even if you don't much care whether God could be a system of matter, you may have reason to attend to Locke's argument. His question of whether God (the source of all thought) could think as a result of the movement of his parts is all of a piece with the question of whether thought could arise naturally, explicably, in a godless physical world. Either way, it's the question of whether *unaided* matter - matter that is not miraculously interfered with from the outside - could produce thought.

Here is Locke's case for saying that thought could not enter the universe in that way:

If it be the motion of its parts on which its thinking depends, all the thoughts there must be unavoidably accidental and limited; since all the particles that by motion cause thought, being each of them in itself without any thought, cannot regulate its own motions, much less be regulated by the thought of the whole, since that thought is not the cause of the motion but the consequence of it. [And so] freedom, power, choice, and all rational and wise thinking or acting will be quite taken away. So that such a thinking being will be no better nor wiser than pure blind matter; since to resolve all into the accidental unguided motions of blind matter, or into thought depending on unguided motions of blind matter, is the same thing.⁸

I admire this beautiful argument. Going much deeper than Leibniz's mill, it does not assume that 17th century impact mechanics must be the final truth in physics, or that the laws governing the very small must be the same as those governing the large. Let us now see how it does work.

The argument can be seen as saying that

There is some kind of regularity or orderliness such that: (1) no movements of bits of matter can have it unless they are already under the guidance of thought, (2) something that lacks it cannot cause something that has it, and (3) thought that is worthy of the name must have it.

I have put this in the form "There is some kind of regularity . . ." because if the argument is stated in terms of "regularity" as such, it becomes fatuously wrong. For then it implies that the movements of particles that are not guided by thought must be a mere chaotic jumble. We know better than that, and so did Locke. He can't have forgotten that in a pendulum clock, for instance,

⁸ Locke, *Essay IV.x.17*.

there are orderly, regular, patterned movements that result purely from an underlying *physical* structure of the right kind.

What, then, was he talking about? He might say: “My topic is a certain *very high degree* of ordered complexity that is required for thought, properly so called. The behaviour of a pendulum clock, though admittedly regular, is too simple to illustrate what I am talking about.” But that would be a risky line to take. If a simply structured clock can exhibit simple patterns of behaviour, why should not more complex patterns - up to any level of complexity you like - be achieved by physical things whose structures were more complex in the right ways?

Someone might come to the rescue of this version of the argument by contending that nothing could *get* the right kind of ordered complexity of physical structure unless some thinker had designed it. In pre-Darwinian days this was a popular contention, often used to argue that some designer must have made the plants and animals. But when Locke makes such a point in another part of the *Essay*, he does so by asking

Whether it be probable that a promiscuous jumble of printing letters should often fall into an order which should stamp on a paper a coherent discourse, or that a blind fortuitous concourse of atoms, not guided by an understanding agent, should frequently constitute the bodies of any species of animals.⁹

He answers of course that anybody with his wits about him will know straight off that these are utterly improbable. The wording seems to have been carefully chosen: without thinking authors it is not “probable” that coherent prose should “often” get written; without help from a designer it is not “probable” that animals should “frequently” come into existence. Locke is rightly not saying that a fortuitous concourse of atoms *could never* come to constitute the body of a pig or of a human being; it’s merely unlikely to happen often.

His God argument, on the other hand, is about whether something is *possible* just once, not whether it is *probable* as a common occurrence. So the two have nothing to do with one another, and we still don’t know how the God argument is supposed to work.

7. Mechanism and teleology

Faced with this point about the orderliness of the behaviour of a pendulum clock, Locke would reply that the clock’s movements are wrong not in *degree* or *amount* of ordered complexity but rather in *kind*. The kind he has in mind is, I believe, the kind *teleological* - that is, the order manifested by a system in which things happen *so that* other things may happen, or where an event can be explained by reference to what it is for or what it leads to.

So the argument runs as follows. Mentality essentially involves teleology: the mind reaches out to possible futures, leading people to do things so as to bring about various upshots, thus endowing them with “freedom, power, choice”; the teleological nature of mind is the source of the possibility of “rational and wise thinking [and] acting”. Further, there cannot be anything goal-oriented about the “accidental unguided motions of blind matter”, that is, the movements of matter that is not guided by thoughts. Therefore no such movements could be a sufficient cause for mentality.

In that statement of the argument I have thrown in some phrases of Locke’s that suggest that he was thinking of teleology. The most potent word is “blind”: the unguided motions of particles

⁹ Ibid., IV.xx.15, in the Nidditch edition at p. 716:23.

are blind because the particles go where they are pushed, without reference to what the upshot of that will be; whereas (according to Locke, if I understand him aright) the mental movements that we call “thought” *essentially* involve foresight, looking ahead, doing things because of what they will lead to. From now on, I shall assume that I am right in thinking that teleology is at the heart of Locke’s argument.

The argument is valid, and I think its first premise is true. As I have argued in a book I wrote twenty years ago, the best way to get mentalistic concepts rooted in the world is through teleology: we ground mentality in theories saying that animals do things because they think they will lead to certain upshots.¹⁰ And this has to be accepted by anybody who thinks, as do most philosophers of mind today, that an understanding of the mind must put at its center the concepts of belief and desire, and that neither of these makes sense except in the context of a theory that also treats of the other. That commits them to tying mind to teleology, because *desire* is essential to mind and is a teleological notion.

But I do not accept the second premise of Locke’s argument: although a lot of work remains to be done on this, it can hardly be doubted today that some behavior that can be explained in purely mechanistic, non-teleological terms - explained in terms of what *causes* the behavior - can *also* be explained in terms of what the behavior is *for*, that is, explained teleologically. The dog digs in the ground so as to get the bone, or because it thinks that’s the way to get the bone; but it is *also* true that each movement that the dog makes is caused, pushed from behind, explainable purely in terms of neural impulses and the like. Of course it isn’t enough just to assert this; one needs some account of *how* it can happen that both sorts of explanation can validly be given for the very same events. Many contemporary philosophers seem to take it for granted that this can be done somehow, without going into the details of how; but I think they must have in mind something along the lines of the account that I give in the book of mine that I mentioned a moment ago. It’s too long a story to cram into this lecture; but I could answer questions about it in the discussion period if you like.

8. Enter Spinoza

One more journey through space and time: I want to jump back across the channel once more, this time to Holland, and to go back about twenty years. This brings us to Spinoza working on his *Ethics*. This book contains not only ethics but also metaphysics and philosophy of mind. It is a strange, recalcitrant, remote work - a creaking apparatus of elaborate “demonstrations”, supposed to be like those of Euclid’s geometry but nearly all of them invalid; it is full of technical terms that are either unexplained or given explanations that cry out for explanation in their turn; but it also contains passages of connected prose that are some of the most memorable and provocative in the whole literature of philosophy.

Altogether, Spinoza’s *Ethics* gives the effect of standing at an astronomical distance from the rest of philosophy; and it is true that many of those who have attended to Spinoza’s work have taken an attitude to it that is religious rather than philosophical - an attitude that leads them to object to one’s trying to get *clear* about what Spinoza was saying so as to argue with him about it. But some of it can be got clear, and is deep and interesting. Furthermore, as I shall now argue,

¹⁰ Jonathan Bennett, *Linguistic Behaviour* (Cambridge: Cambridge University Press, 1976).

some of Spinoza's philosophy of mind belongs to a different intellectual world from that of Descartes, Leibniz and Locke because it belongs rather to *our* world - the thought forms that are dominant in the late twentieth century.

Spinoza holds that *every* mental state or event is strictly paralleled by a physical state or event. He doesn't say that the mental is *caused by* the physical, because of a special view of his about what it takes for a relation to be a "causal" one. But he holds that between brains and minds there is an absolutely dependable regular *match* - you can't get any change into someone's thinking without making a corresponding change in his brain, and on the other hand if a brain of a certain kind comes into existence it will dependably and naturally be associated with a mind. I stress "naturally": Spinoza will have no truck with divine intervention, not because he thinks (like Leibniz) it would be bad for God to interfere with the natural order, but because he holds that there is no God outside the natural order.

So there it is. Spinoza holds that anything a mind can do is strictly modelled (and in a sense accounted for) by things that physical systems can do. This flatly rules out Locke's view that there is something about mental behavior that cannot be matched by the random movements of blind particles; and it brings Spinoza closer to currents of thought in the late 20th century than any of the other philosophers I have mentioned.

Western thought would have developed faster if Spinoza's real philosophy had received more attention. As things were, it was left to Wittgenstein in the first half of our century to warn clearly against regarding minds as . . . Well, I'll let Wittgenstein speak for himself:

Understanding, meaning, interpreting, thinking . . . seem to take place in a queer kind of medium, the mind; and the mechanism of the mind, the nature of which, it seems, we don't quite understand, can bring about effects which no material mechanism could. Thus for example a thought (which is such a mental process) can agree or disagree with reality; I am able to think of a man who isn't present; I am able to imagine him, "mean him" in a remark which I make about him, even if he is thousands of miles away or dead. (*Blue Book*, p. 3)

And a little later, discussing what gives a word meaning, bringing the marks on the page to life, he attacks the idea that this is done by associating the word with a mental image:

If the meaning of the sign is an image built up in our minds when we see or hear the sign, then let us [try] replacing this mental image by some outward object, for example a painted or modelled image. Then why should the written sign plus this painted image be alive if the written sign alone was dead? --In fact, as soon as you think of replacing the mental image by a painted one, and as soon as the image thereby loses its occult character, it ceases to seem to impart any life to the sentence at all. (It was in fact just the occult character of the mental process which you needed for your purposes.)

This is one of the great passages in modern philosophy, in my opinion. It would be hard to exaggerate the cleansing power of the idea that one is tempted to tolerate inexplicable mysteries - falsehood, referring to what is absent, conferring meaning on a dead sign - regarding them as tolerable because they occur in the mind, and that one way of fighting this temptation is never to credit minds with any power that one couldn't also attribute to bodies.

The sad thing is that Spinoza *had* all this three centuries earlier. His doctrine of the parallelism between mental and material committed him - and he knew it - to holding that there are no patterns of behavior in the life of the mind that are not also present in some parts of the physical world. But this doctrine of his didn't catch on. In fact, virtually all of Spinoza's

contributions to technical philosophy have been pretty much ignored: he has been attended to more by worshipers at his shrine than by philosophers, more by solemn people than by serious ones. This is partly his own fault: his special mixture of strengths and weaknesses, virtues and vices, illuminations and fogs, made it likely that he would fall into the wrong hands.

But there is also a special reason why his refusal to regard the mind as occult didn't do much good. Suppose there is something you have taken to be a fact about the mind, and then, when you consider it in the light of warnings by Spinoza or Wittgenstein, you come to feel that there is something spooky, occult, inexplicable about it. What are you going to do? There are two choices: one is to worry away at it until you *have* understood it, taken away its occult character; the other is to deny that it is a fact after all. Spinoza tended to take the latter alternative.

For example, he said that there is no such thing as a downright false belief, and that all so-called error is really a sort of ignorance; and his ground for this seems to have been that he did not see how a real, unmysterious bit of the natural world could be *false*. It was wonderful that he saw enough to ask the question "How can a natural object be false?", but he gave the wrong answer to it.

Another example of the same tendency - and this brings me back to my main theme - was that instead of looking for teleology in the world of matter he denied that there was any teleology in nature at all. He rightly saw a teleological explanation as one in which an event is explained by reference to a *later* event: She put bait on the hook in order that the fish should bite it. The biting comes after the baiting, and yet it is supposed to explain it; this, said Spinoza, turns nature upside down, and treats effects as though they were causes. It can't be right, he concluded; and so teleology is a myth - there isn't any of it anywhere. I applaud his not saying "Well, there is teleology in the mind", and leaving it at that, on the assumption that the mind is a queer kind of medium, where spooky and occult things can happen. But it's a pity that he didn't fight his way through to understanding how teleology *can* be legitimate, and *doesn't* really turn nature upside down. His attempt to avoid using any such teleological notion as that of *purpose* terribly distorts his whole account of human motivation, and must have contributed a good deal to his not being taken as seriously as he deserved.