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Souls, Minds, Bodies, and Planets[1]

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Separate Substances?

What does it mean to say that we have got a mind-body problem? Do we need to think of our inner and outer lives as two separate items between which business must somehow be transacted, rather than as aspects of a whole person?

Dualist talk assumes that we already have before us two separate things which we don't see how to connect. This is a seventeenth-century way of seeing the problem. It is tied to views in physics and many other topics that we no longer hold.

"Mind" and "matter," conceived as separate in this way, are extreme abstractions. These are terms that were deliberately designed by thinkers like Descartes to be mutually exclusive and incompatible, which is why they are so hard to bring together now. In Descartes' time, their separation was intended as quarantine to separate the new, burgeoning science of physics from views on other matters with which it might clash. It was also part of a much older, more general attempt to separate reason from feeling and establish reason as the dominant partner, feeling being essentially just part of the body. That is why, during the Enlightenment, the word "soul" has

1. Another version of this article appears in *Science, Consciousness and Ultimate Reality*, edited by David Lorimer and published by Imprint Academic in July 2004.

been gradually replaced by "mind," and the word "mind" has been narrowed from its ordinary use ("I don't mind" . . . "I've a good mind to do it") to a strictly cognitive meaning.

That was the background against which philosophers designed the separation of soul and body. And they saw it as an answer to a vast metaphysical question of a kind which we would surely now consider ill-framed. This was still the question that the pre-Socratic thinkers had originally asked, "What basic stuff is the whole world made of?" The dualist reply was that there was not just one such stuff, but two—mind and body.

In the seventeenth century, hugely ambitious questions like this were much in favor. Perhaps because of the appalling political confusions of that age, seventeenth-century thinkers were peculiarly determined to impose order by finding simple, final answers to vast questions through pure logic, before examining the complexity of the facts. In philosophy, as in politics, they liked rulings to be absolute. The grand rationalist structures that they built—including this one—supplied essential elements of our tradition. But there are limits to their usefulness. We do not have to start our enquiries from this remote distance. When we find the rationalist approach unhelpful we can go away and try something else.

How Consciousness Became a Problem

Officially, we English-speaking philosophers are supposed to have done this already over mind-body questions. Half-a-century back we agreed that we should stop talking in terms of a ghost in a machine. But our whole culture was much more deeply committed to that way of thinking than we realized. Existing habits made it seem that our next move would be quite simple. We could at last triumphantly answer that ancient, pre-Socratic question—which was still seen as a necessary one—by once more finding a single solution for it. We could rule that everything was really matter. We could keep the material machine and get rid of the mental ghost.

So behaviorist psychologists tried this. They tabooed all talk of the inner life, with the effect that, through much of the twentieth century, people who wanted to seem scientific were forbidden to mention consciousness or subjectivity at all. But this turned out not to work very well. A world of machines without users or designers—a world of objects without subjects—could not be made convincing. Gradually it became clear that the concept of the machine had been devised in the first place to fit its ghost and could not really function without it. Attempts to use it on its own turned out so artificial and unreal that the learned population eventually rebelled. Some thirty

years back, scientists suddenly rediscovered consciousness and decided that it constitutes a crucial problem. But the concepts that we now have for dealing with it are still the ones that were devised to make it unspeakable in the first place.

Colin McGinn has stated this difficulty with admirable force in his book *The Mysterious Flame: Conscious Minds in a Material World*:

> The problem is how any collection of cells . . . could generate a conscious being. The problem is in the raw materials. It looks as if, with consciousness, a new kind of reality has been injected into the universe. . . . How can mere matter generate consciousness? . . . If the brain is spatial, being a hunk of matter in space, how on earth could the mind arise from the brain? . . . This seems like a miracle, a rupture in the natural order.[2]

McGinn's drastic answer is that this state of affairs is indeed a real mystery—a puzzle that our minds simply cannot fathom because it lies outside the area that they are adapted to deal with. His suggestion is that there must be an unknown physical property, which he calls C*, that makes consciousness possible. This property is present in the stuff of brains, but it may be something that it is altogether beyond us to understand.

It is surely good news to find a respected analytic philosopher recognizing mysteries—insisting that there are limits to our power of understanding. But I shall suggest that we don't need to fall back on his rather desperate solution. This particular difficulty arises from a more ordinary source. Our tradition is leading us to state the problem wrongly. We really do have to start again somewhere else.

I will suggest that a better starting-point might be to consider directly the relation between our inner and outer lives—between our subjective experience and the world that we know exists around us—in our experience as a whole, rather than trying to add consciousness as an afterthought to a physical world conceived on principles that don't leave room for it. The unit should not be an abstracted body or brain but the whole living person. In order to show why this is necessary it will be best to glance back first at the tradition to see just how and where things have gone wrong.

Rationalist Wars

This takes us back to Descartes. But of course he is not personally to blame for our troubles. If he had never written, sooner or later someone else would

2. McGinn, *Mysterious Flame*, 13, 115.

certainly have made the dualist move. And it is most unlikely that they would have done it any better than he did.

As I have suggested, one factor calling for dualism was the general, lasting wish to establish reason as a supreme ruler, a separate force able to arbitrate the confusion caused by disputes between warring authorities in the world. But the special factor that made this need pressing at that time was the advent of a new form of reason, one that seemed likely to compete with old forms of knowledge—namely, modern physics.

Once that discipline was launched into an intellectual world that had been shaped entirely round theology—a world, too, where theological opinions were dangerously linked to international politics—some device for separating these spheres had to be invented. That device ought to have been one that led on to pluralism—meaning, of course, not a belief that there are many basic stuffs, but a recognition that there are many different legitimate ways of thinking. Different conceptual schemes can quite properly be used to trace the different patterns in the world without conflicting. But, instead, the train of thought stopped at the first station—dualism—leaving its passengers still stranded there today.

We see signs of this trouble whenever people raise this kind of question—for instance over the problem of personal identity. When we talk about relations between mind and body, we are asking what a person essentially is. Modern analytic philosophers have puzzled a great deal about this, usually setting out from John Locke's discussion of it and concentrating on just one point in that discussion—his famous example of the prince and the cobbler.[3]

Locke argued that, if we ask whether someone is "the same person" as he was in the past, the answer must depend on the continuity of his memory, not on continuity of substance, "For," says Locke, "should the soul of a prince, carrying with it the consciousness of the prince's past life, enter and inform the body of a cobbler . . . everyone sees he would be the same person with the prince, accountable only for the prince's actions."[4] So the "person" must be the memory lodged in the soul, not the body.

Starting from this little example, philosophers have produced a striking monoculture of science-fiction stories. They have repeatedly asked whether various kinds of extraordinary beings would count as "the same person" after they had undergone equally extraordinary kinds of metamorphosis. Their answers tend not to be very helpful because, when we go beyond a certain distance from normal life, we really don't have a context that might

3. Locke, *Essay Concerning Human Understanding*, Bk. 2, ch. 27, Section 15.
4. Ibid.

make sense of the question. And—as students often complain—these speculations seem fairly remote from the kind of problems that actually make people worry about personal identity in real life, which are mostly problems that arise over internal conflicts and clashes of loyalty to different groups around us. We will come back to these conflicts presently.

The difficulty of talking sense about detachable souls afflicts real, professional science-fiction writers too, for their art is deeply committed to dualism. They often produce transmigrational stories in which characters in a wide range of situations keep jumping into other people's bodies, or having their own bodies taken over by an alien consciousness. It even happens in *Star Trek*, which shows how natural the thought still is today. But, in order to be convincing, the authors have to fill in a rich imaginative background that links this situation to normal life. And these stories are still strangely limited because they proceed on such an odd assumption.

They treat soul or consciousness as an alien package radically separate from the body. They go on as if one person's inner life could be lifted out at any time and slotted neatly into the outer life of someone else, much as a battery goes into a torch or a new cartridge into a printer. But our inner lives aren't actually standard articles designed to fit just any outer one in this way. The cobbler's mind needs the cobbler's body. It is not likely that two people with different nerves and different sense organs would perceive the world in the same way, let alone have the same feelings about them, or that their memories could be transferred wholesale to a different brain. Trying to exchange their bodies is not really at all like putting a new cartridge in the printer. It is more like trying to fit the inside of one teapot into the outside of another. And this is something that few of us would attempt.

Ships and Pilots; Batteries and Torches

It is surely very interesting that so many writers of science fiction (sci-fi) have signed up for this strange metaphysic. Of course, there is nothing odd about their dealing in metaphysics in the first place. Sci-fi arises out of metaphysical problems quite as often as it does from those in the physical sciences, and good sci-fi stories can often be metaphysically helpful. But reliance on this particular metaphysic seems to be part of a rather unfortunate recent attempt to simplify the relation between our inner and outer lives by talking as if they were indeed completely separate items. This has the unlucky effect of making it even harder to connect them sensibly—even harder to see ourselves as a whole—than Descartes' separation of mind and

body had already made it. Since his time, dualism has persisted. In fact, it has grown a good deal cruder.

It is interesting that Descartes himself did not actually show souls as totally irrelevant to their bodies. Though he ruled that they were substances of different kinds, he placed them both firmly within the wider system of God's providence. He thought God must have good reasons for connecting them, even though those reasons were obscure to us. In fact, Descartes surprises his reader by saying twice explicitly that the soul or self is *not* actually a loose extra added to the body. He writes: "*I am not only lodged in my body as a pilot in a vessel* . . . I am besides so intimately conjoined, and as it were intermixed with it, that my mind and body compose a certain unity. For if this were not the case, I should not feel pain when my body is hurt."[5]

Descartes actually knew quite a lot about nerves. He saw that treating the soul as an alien, arbitrary item raised great difficulties about action and perception, so he assumed some underlying connection. And in this he was in tune with Christian thinking, which insisted on the resurrection of the body. Souls needed bodies, so God would restore the bodies at the resurrection.

But unfortunately Descartes' occasional statements of this link don't stop him arguing all the rest of the time that the separation is absolute. He identifies his self, his "I," entirely with the soul, the pure spark of consciousness. He speaks of the body as something outside it, something foreign which the soul discovers when it starts to look around it. (The pilot wakes up, so to speak, and finds himself mysteriously locked into his ship.) Descartes rules that, "the natures of these two substances are to be held, not only as diverse, but even in some measure as contraries."[6] They have no intelligible relation. Only God's mysterious plan can hold them together.

A soul conceived in this way is, of course, well-fitted to survive on its own after death, which is something that concerned Descartes. It could travel well. *But immortality is not the first thing we need to consider when we form our conception of ourselves*. Before we fit our minds out for the afterlife we need, first and foremost, to have a view of them that makes good sense for the life that we have to live now. By making them so thin and detachable as to be thus independent, Descartes put our inner lives in danger of looking unnecessary.

As the Enlightenment marched on and God gradually faded into the background, the enclosing framework of providence was lost, while the

5. Descartes, *Meditations on the First Philosophy*, Meditation 6, "Of the Existence of Material Things," 135.

6. Ibid., Synopsis of the Meditations, 76.

conviction of a gap between soul and body remained and hardened. Increasingly, the advance of physical science made matter seem intelligible on its own. Mind and body did indeed start to look more like ship and pilot. And then, starting from that picture, people began to wonder whether the pilot was actually needed at all. If perception and action were physical processes that could go on without him, had he any function?

These were the thoughts that led the behaviorist psychologists to drop him overboard, leaving a strictly material world of self-directing ships—uninhabited bodies. Descartes' theistic dualism turned into materialistic monism. Subjective experience was dismissed as an ineffective extra, a mere by-product, irrelevant froth on the surface of physical reality. That is why, for a time, people who wanted to seem scientific were not allowed to mention their own or anybody else's inner experience.

But it is very hard to discuss human life intelligibly if you have to ignore most of its more pressing characteristics. Even the most docile of academics don't obey these vetoes forever. So, as we have seen, eventually some bold people who had noticed that they had inner lives suggested that there was after all this "problem of consciousness." (Apparently, it was just one problem . . . .) And now everybody wants to talk about it. But it is notably hard to do so.

One thing that makes the difficulty worse is that scientifically-minded people tend to see this problem of consciousness as a problem of how to insert a single extra term—consciousness—into the existing pattern of the physical sciences and handle it with methods that are already recognized there as scientific. Thus, the famous Tucson conferences on the subject set themselves the goal of producing, not an understanding of consciousness, but "science of consciousness," which it is presumably hoped would be just one more scientific speciality, perhaps something comparable with the sciences of particular kinds of material?

This project is an attempt to revive Descartes' highly abstract soul—his pure spark of consciousness—and to fit it in somehow within the study of the physical world. Since the whole point of separating off this soul-concept in the first place was that it couldn't be handled by the methods used on the physical world, this can't work. Descartes was right about that and McGinn is right to follow him here. What we need now instead is to stand back and consider human beings quite differently—not as loose combinations of two incompatible parts, but as whole complex creatures with many aspects that have to be thought about in different ways. Mind and body are more like shape and size than they are like ice and fire, or oil and water. Being conscious is not, as Descartes thought, a queer extra kind of stuff in the world. It is just one of the things that we do. Verbs are needed here, not nouns.

To grasp this, we need to start by abandoning both the extreme abstractions that have reigned on the two sides of the divide so far.

Inner Lives Are Neither Simple Nor Solitary

At the mental end, we need to get right away from Descartes' idea that the inner life is essentially a simple thing, a single, unchanging entity, an abstract point of consciousness. He put this point strongly. Unlike body, which is always divisible, mind, he says,

> cannot be conceived except as indivisible. For we are not able to conceive the half of a mind, as we can of any body, however small . . . . When I consider myself as a mind, that is, when I consider myself only in so far as I am a thinking thing, I can distinguish in myself no parts, but I very clearly discern that *I am somewhat absolutely one and entire*.
>
> . . . [A]lthough all the accidents of the mind be changed, —although, for example, it think certain things, will others and perceive others, *the mind itself does not vary with these changes*.[7]

This story abstracts entirely from the inner complexity, conflict, and change that are primary elements in all subjective experience. Locke's discussion shows well how misleading this abstraction is. Locke did not dismiss the idea of a separable self or soul, but he asked what it would have to be like if it did exist. He was intrigued by the idea of reincarnation because he had (it seems) a friend who claimed to have been Socrates in a former life. So he asked what we would say if we did come across a case like this where the familiar whole seemed to be divided.

Is the transmogrified prince still the same person? Yes he is, said Locke, provided that he keeps his memories. The word *person* is, he says, essentially "a forensic term," one centring on responsibility, and we are only responsible for what we can remember doing. With continuity of memory you can still be called "the same person." But if you now have a different body, you can't be called "the same man."

This suggestion notoriously led to further muddles. But Locke was surely right that any usable idea of a self or person does have to be the idea of something complex and therefore of something socially connected with the surrounding world. It must be an entity that incorporates the whole content of a life, the richness of a highly contingent individual experience. The cobbler would not be who he is without the connections established

7. Ibid., 76, 139, 77.

by his cobbling. Even within the restricted forensic context, Locke sees this need for complexity because of its bearing on justice. What (he asks) is to happen if an offender really has no continuity of memory? In that case, he says,

> the same man would at different times make different persons; which, we see, is the sense of mankind in the solemnest declaration of their opinion, human laws not punishing the mad man for the sober man's actions, nor the sober man for what the mad man did, thereby making them two persons; which is somewhat explained by our way of speaking in English, *when we say, such an one was "not himself" or is "beside himself."*[8]

If this defendant was not himself, then who was he?

It seems that after all people are not simple unities, they are highly complex items often riven by inner conflict. Even the law, which usually ignores these complications, cannot always do so and in ordinary life they are matters of the first importance. We often have to consider, not just "is this man in the dock the same person?" but "am I myself altogether the same person? Am I (for instance) really committed to my present project?" or again "which of us within here should take over now?" There are law-courts inside us as well as out in the world. A friend of mine used to say that he unfortunately contained a committee. The trouble was not just that the members didn't always agree, but that, when they disagreed, all too often the wrong person got up and spoke all the same

The truth is that the unity of a human being is not something simple and given. We could easily go to pieces and that would be our final disaster. Harmonizing out inner life is a project central to our existence, a difficult, continuous ongoing enterprise, an aim that has to be continuously struggled for and is never fully attained. Carl Jung called it "the integration of the personality" and thought it was the central business of our lives.

The Importance of Conflict

Plato, who was a very different kind of dualist from Descartes, thought so too and gave conflicts of this sort a central place in his theory. These conflicts take place (he said) within the soul itself and they are a torment to it. The soul is by no means a unity. It is divided into three parts: good desires, bad desires, and reason, which is the unlucky charioteer trying desperately

8. Locke, *Essay On Human Understanding*, 196. Emphasis mine.

to drive this mixed team of horses.[9] This is, of course, primarily a moral doctrine. But it is also an integral part of Plato's metaphysic and its psychological acuteness has been widely recognized.

Its difference from Descartes' scheme shows plainly that *there is not just one way of dividing up a human being*. There is no single perforated line marking off soul from body, no fixed point at which we should tear if we want to separate them. Many ways of thinking about this are possible. None of them is especially "scientific." Each is designed to bring out the importance of some particular aspect of our life. Plato's main concern was with emotional conflicts within the self, notably those that surround sex. Descartes, by contrast, was most disturbed about an intellectual conflict, one that arose between two different styles of thinking. It is not surprising that these different biases led them to different views about what a person essentially is. But something that they have in common, and which we may want to question, is that they both wanted to settle the matter by finding one ultimate arbitrator—by crowning one part of the personality as an absolute ruler and calling it reason.

Just as Hobbes, in trying to end political feuds, put all his trust in a single absolute sovereign, so these moralists, in discussing the feuds within us, want to appoint an inner monarch against whom there is no appeal. They aren't prepared to leave decisions in the hands of a committee. And plenty of people have tried to find that monarch. But their efforts have never been altogether satisfactory. Today, we may well think that, although the committee system gives us a lot of trouble, it is perhaps the least bad alternative that is available to us.

Once we notice this inner complexity we begin to see that it makes the solipsistic isolation of the simple "thinking thing" impossible too. Inner complexity echoes, and is linked to, a corresponding complexity in the world around us. The divided self is not an independent unit, quarantined from outside interference. Wider patterns outside affect its structure. As Locke saw, a person who has a memory must be an active social being, one capable of being involved in responsibility. Our personal identity is shaped by the surrounding world, depending radically on the attitudes of others.

Thus, when King Lear's daughters begin to treat him rudely, he first says to Goneril "Are you our daughter?" and then

> Doth any here know me? Why, this is not Lear;
> Doth Lear walk thus? speak thus? Where are his eyes?
> Either his notion weakens, his discernings

9. See Plato, *Phaedrus*, sections 246–57.

> Are lethargied – Ha, waking? – 'tis not so.
> Who is it that can tell me who I am?
> To which the Fool replies, "Lear's shadow." [10]

At this point Lear is speaking somewhat sarcastically. But he soon has to confront these questions literally. The whole point of the play is that his identity has so far centred on being treated as a king. He can't see how to exist without it. And though his case is a specially dramatic one, this point about the crucial importance of social context holds for all of us. The role that we play in the social drama has huge force in shaping who we are. No human being exists in the artificial isolation of the Cartesian pure thinker. When Lear asks who he is, it would not help him to be told that he is a thinking thing.

The Price and the Rewards of Dualism

Descartes supposed himself to be abstracting from all social influences. He thought he had withdrawn into a realm of pure intellect, designing *a priori* an impartial picture of human knowledge. But the most withdrawn thinkers still take the premises of their reasoning into their study with them. Descartes was in fact responding to certain quite particular pressures of his own time, trying to resolve the doubts and debates that fuelled the fierce religious wars of his day. He hoped to find a system of thought so universal, so compelling that it could accommodate conflicting theological views and also take in physical science, which might soon begin to rival them.

He devised his dualism as a way of fitting that new science into European culture without harming its Christian background. And, because he wanted above all to unify the system—to avoid doubts and divisions within it—he concentrated intensely on the problem of knowledge. He made the assumption, which has turned out not to be a workable one, that by reasoning we can get absolute, infallible certainty for our beliefs. That is why the soul that he pictured turns out to be essentially an intellect, a reasoning and knowing subject rather than an acting or a feeling one. For him, the centre of our beings is the scientist within.

For a time this ingenious division of intellectual life did succeed. It suited Newton well enough. For a great part of the eighteenth century, scientists managed to divide themselves internally to suit the two permitted viewpoints. In their work, they could function as pure thinking beings—that is, essentially as mathematicians. They could view the world around

10. Act 1. Scene iv, lines 215 and 223–28.

them as an abstract moving pattern, a mass of lifeless, inert particles driven ceaselessly here and there by a few simple natural forces. The rest of the time they could respond to it normally as a familiar rich, complex jumble full of living beings who supplied the meaning for each other's lives. A benign God still regulated the relation between the two spheres.

But as time went on and technology advanced, the more abstract, scientific way of thinking gained strength and pervaded people's lives. Inevitably, conflicts between these two approaches were noticed. As the gap between them widened and became more disturbing, it grew hard to treat them as having equal importance—hard not to ask "but which of these stories is actually the true one? Which tells us what the world is really like?" People felt that this question had to be answered—that one realm must be accepted as genuine and the other demoted to an illusion. They felt this because it seemed that, if both were equally real, there was no intelligible way of connecting them and reality was irremediably split. Hence McGinn's worry about "a new kind of reality." Hence the question that disturbs him and many other people: "If the brain is spatial being a hunk of matter in space, and the mind is non-spatial, how on earth can the mind arise from the brain? . . . This seems like a miracle, a rupture in the natural order."[11]

Or, as he puts it after citing a lively sci-fi illustration, "The point of this parable is to bring out how surprising it is that the squishy gray matter in our heads—our brain-meat—can be the basis and cause of a rich mental life."[12]

But this is an extraordinary abstraction from reality. Brains do not go about being conscious on their own. Meat is, by definition, dead and these brains belong to conscious, living creatures. Conscious pieces of matter are never just consignments of squishy grey matter, sitting on plates in a lab like porridge. They are living, moving, well-guided bodies of animals, going about their business in a biosphere to which they are naturally adapted. And the question about them is simply whether it makes sense to diagnose *consciousness* as an integral, necessary, appropriate, organic part of the behavior of such entities—including ourselves—or whether it is more reasonable to suppose that they might all just as well actually be unconscious.

What Sort of Explanation?

It is important to notice exactly what we are trying to do here if we want to "explain consciousness" in a way that resolves McGinn's metaphysical

11. McGinn, *The Mysterious Flame*, 115.
12. Ibid., 8.

difficulty. The point is not, of course, just to find some physical condition that is always causally conjoined with it. We want to make that junction intelligible—to show that the one item is in some way suitable to the other.

When one is trying to find the connection between two things in this way—for instance the connection between roots and leaves or between eyes and feet—the best approach is not usually to consider these two on their own in isolation. It is to step back and look at the wider context that encloses them. In the case of consciousness that context is, in the first place, organic life and, in the second, the power of movement.

Any being that lives and moves independently, as animals do, clearly needs to guide its own movements. And the more complex the lives of such beings become, the more subtle and varied must be their power of responding to changes that are going on around them, so that they are able to respond flexibly. That increasing power of responding calls for an ever-increasing power to perceive, think, and feel. So it necessarily calls for consciousness, which is not an intrusive supernatural extra, but as natural and appropriate a response to the challenges that confront active life as the power of flying or swimming. Plants can get on without such a power, but animals could not because they are confronted with problems of choice. We ourselves do a lot of things unconsciously—that is, without attention. But when a difficulty crops up and a choice is needed, we rouse ourselves and become conscious of it.

There is no miracle here. The really startling factor in this scene is something that is usually ignored in these discussions, namely the introduction of life itself. Indeed, one might be tempted to say that consciousness is merely the superlative of life—just one more increase in the astonishing power of spontaneous development and adaptation which distinguishes living things from stones. Once life is present, the move from inactive creatures to highly-organized moving animals is simply one more stage in the long, dazzling creative process which is already a kind of miracle on its own, but one that is not usually treated as a scandalous anomaly.

Discontinuities Within

Can it be true that there is not really an alarming gap here? If so, what is it that has made this particular transition seem so strange?

The answer is, I think, that the sense of strangeness arises simply from *the shift that we have to make in our own point of view when we consider it*. When we are confronted with a conscious being such as a human, all our social faculties at once leap into action. We cannot doubt that it has an inner

life. Questions about its thoughts and feelings at once strike us. We bring to bear a whole framework of social concepts, a highly sophisticated apparatus that works on quite different principles from the one we would use if we were thinking about squishy grey matter in the lab.

This shift of methods can raise great difficulties, particularly on the many occasions when we need to use both these ways of thinking together. To use an image that I have suggested elsewhere, it is as if we are looking into a large aquarium through two opposite windows—trying to harmonize views of the same thing from quite different aspects. This trouble arises for instance over mental illness. We find it very hard to bring together our thoughts about the inner and the outer life of disturbed people—again, perhaps including ourselves. We often run into painful confusions. But *the clash in these cases is not a cosmic clash between different forms of reality. It is not a clash between ontological categories in the world, not a clash between natural and supernatural entities. It is a clash between two distinct mental faculties within ourselves, two distinct ways of thinking, along with the various emotional attitudes that underlie them. It constantly raises moral questions about how we should act in the world, questions about what is most important in it*.

This discontinuity does not, then, actually raise metaphysical questions about what is real. But of course that does not mean that it is trivial—quite the contrary. The difficulty of bringing together the different parts of our own nature so as to act harmoniously is a crucial one that pervades our lives. The reason why we are so highly conscious is that we are complex social beings and this means that our choices are never likely to become simple.

Matter Is Not Simple Either

As I suggested earlier, the sense of bizarreness infesting the mind-body conjunction is made worse by the extreme abstraction to which both these terms have been subjected. Here I think the parallel with apartheid is actually quite illuminating. “Black” and “white” are extremes of the color-range. If they are colors at all they are colors that are never actually seen on any human skin. The use of this dramatic contrast to categorize the vast range of people found in South Africa or anywhere else imposes a quite irrelevant, artificial way of thinking, an approach that distorts all perceptions of these populations and makes it impossible to understand their diversity realistically. In the same sort of way, the sharp contrast between extreme

conceptions of mind and body has obscured our thinking when we try to meditate on the complexities of our nature.

We have seen how, at the mental end of this mind-body axis, the idea of soul or mind became narrowed to a bare point of consciousness. But at the other end of it too the idea of matter has also been narrowed. Indeed, muddles about matter have probably been even more disastrous than muddles about mind.

Under a blindly reductive approach, the conscious animal that we ought to be asking about is reduced to a brain and even the brain loses its structure, becoming just a standard consignment of chemicals—inert porridge, squishy grey matter-as-such. It was indeed a central doctrine of seventeenth-century dualism that matter-as-such is inert and can do nothing, all activity being due to spirit. That is surely the conviction that still makes people like McGill feel that a miracle must be involved if something material takes the enterprising step of becoming conscious.

This thesis of the inertness of matter is not often stated explicitly today, but it is often implied. Peter Atkins expressed it strongly in his book *The Creation* when he made the startling remark, "Inanimate things are innately simple. That is one more step along the path to the view that *animate things, being innately inanimate, are innately simple too*."[13]

Animate life, Atkins suggests, is not a serious factor in the world. It is just a misleading surface froth that obscures the grand, ultimate simplicity revealed by physics. Life has no bearing on consciousness, which (he explains) appears in the universe independently of it:

> Consciousness is a property of minute patches in the warm surfaces of mild planets. . . . Here now (and presumably cosmically elsewhere at other times) the patches are merging through the development of communication into a global film of consciousness which may in due course pervade the galaxy and beyond. . . . Consciousness is simply complexity. . . . Space itself is self-conscious. . . . Consciousness is three-dimensional.[14]

This is scandalously muddled talk. Consciousness is not a property of such patches, but a property that (as far as we know) is found nowhere in the universe except in certain rather complex living beings—in fact, in animals. And that is the only context in which its presence makes sense.

This kind of attempt to make consciousness respectable as an isolated phenomenon, without mentioning biological considerations, by inserting it directly into physics and treating it mainly as a basis for cybernetics, the

13. Atkins, *The Creation*, 53.

14. Ibid., 71, 73, 83, 85.

IT revolution, and the colonization of space is rather prevalent at present. Similarly David Chalmers suggested that, in order to avoid reducing mind to body, we should take "experience itself as a fundamental feature of the world, *alongside mass, charge and space-time*."[15] This list shows his conviction that, in order to be fundamental, a feature must belong to physics. He does not name life as one of these fundamental features, and he goes on to remark with satisfaction that, if this view is right,

> then in some ways a theory of consciousness will have more in common with a theory in physics than a theory in biology. Biological theories involve no principles that are fundamental in this way, so *biological theory has a certain complexity and messiness about it*, but theories in physics, insofar as they deal with fundamental principles, aspire to simplicity and elegance.

In talk like this, the desire to keep one's theories clean of messy complications takes precedence over any wish to get a useful explanation. Such physics-envy is one more consequence of the unlucky fact that, in the seventeenth century, modern physics gained huge status because it was invented before the other sciences. This gave the Newtonian vision of the physical world an absolute standing as the final representation of reality, which is why that vision is still the background of much thinking today. It is surely the source of Atkins's amazing contention that all the things in the world are innately (whatever that may mean) simple.

That drastic assumption of simplicity was a central part of the seventeenth century's determination to get final, authoritative answers to all its questions. Physicists today have learnt better; they do not make this assumption. Like other scientists, they still look for simplicity, but they know they have no right to expect it. And they have, of course, altogether abandoned the simplistic doctrine of inert matter. Solid, billiard-ball like atoms have vanished entirely. As Heisenberg pointed out long ago,

> Since mass and energy are, according to the theory of relativity, essentially the same concepts, we may say that all elementary particles consist of energy. This could be interpreted as defining energy as the primary substance of the world. . . . With regard to this question *modern physics takes a definite stand against the materialism of Democritus* and for Plato and the Pythagoreans. The elementary particles are certainly not eternal and indestructible units of matter, they can actually be transformed into each other.[16]

15. Chalmers, "Facing Up to the Problem of Consciousness," 200–219.
16. Heisenberg, *Physics and Philosophy*, 58–59.

In fact, when physicists abandoned the notion of solid particles, the word "materialism" lost its old meaning. Though this word is still used as a war-cry it is by no means clear what significance it ought to have today. That change in the ontology of physics is one scientific reason why it is now clear that the notion of matter as essentially dead stuff—hopelessly alien to conscious life—is mistaken. But an even more obvious reason is, of course, the Darwinian view of evolution.

We now know that matter, the physical stuff that originally formed our planet, did in fact develop into the system of living things that now inhabit its surface, including us and many other conscious creatures. So, if we are still using a notion of physical matter that makes it seem incapable of giving rise to consciousness, we need to change it. That notion has proved unworkable. We have to see that the potentiality for the full richness of life must have been present right from the start—from the first outpouring of hydrogen atoms at the big bang. This was not simple stuff doomed forever to unchanging inertness. It was able to combine in myriads of subtle ways that shaped fully active living things. And if it could perform that startling feat, why should it be surprising if some of those living things then went on to the further activity of becoming conscious?

Disowning the Earth

Many people have pointed out that Descartes' notion of the secluded soul played a part in the rise of individualism by cutting us off from our fellow-humans. But until lately less attention has been paid to the way in which it cuts us off from the living world around us. Descartes viewed all non-human animals, equally with plants, as literally unconscious automata. An animal, he said, does not *act*. It is driven. Human bodies too were automata; their only difference from the rest of the machinery was that they were driven by the alien soul set within them. All organisms, along with the planet they inhabited, were merely arrangements of inert matter. Life belonged only to spirit. And though views about consciousness have softened somewhat since his time, the more general idea that the rest of the biosphere is something foreign and decidedly beneath us has not shifted half as far as it should have done.

This idea still centres on the old notion of physical matter as inert and alien to us. It is worthwhile to notice here where this notion came from. Though Descartes used it for his purpose of isolating physics, it is not an objective conception demanded by science. It is part of an ideology that was long encouraged by Christian thinking, an ideology that centred on fear

and contempt for the earth, which was seen primarily as the opposite of heaven. Human souls were conceived as having their real home in a remote spiritual paradise. Earth was at best a transit-camp, a place of trial through which they must pass. All sorts of nuances in our language still reflect this drama. Thus, the Oxford dictionary gives as the meaning of *earthy*: "Heavy, gross, material, dull, unrefined, . . . characteristic of earthly as opposed to heavenly existence."

Pre-Copernican cosmology set this heaven literally in the sky, beyond the concentric spheres that bore the sun, moon, stars, and planets. The earth was held to be merely the dead point in the middle of the system, the midden to which worthless matter that could not move upwards eventually drained. That central position was *not* seen as a sign of importance, as is often said, but as a mark of worthlessness, of distance from the celestial heights that held everything of real value. After all, what lay at the centre of earth itself was hell.

Accordingly, when Copernicus displaced our planet from its central position, Christian people did *not* feel the humiliation that is often said to have followed that move. Of course there was a sense of confusion and insecurity. But human souls still had their celestial citizenship. Their salvation was still essential cosmic business.

This sense of complacent independence from the earth did not die away, as might have been expected, when confidence in the Christian vision declined. Secular Westerners who stopped seeing themselves as Christian souls subject to judgment did stop expecting their previous welcome in the sky. But this did not lead them—as one would think it might have done—to conclude that they might be only rather gifted earthly animals. Instead, they still managed to see themselves in the terms that Descartes had suggested as pure intellects—detached observers, set above the rest of the physical world to observe and control it. When they stopped venerating God, they began instead to venerate themselves as in some sense the supreme beings in the universe—intellectual marvels whose production must have been the real purpose of evolution. This rather surprising position is expressed fully today in the Strong Anthropic Principle, and to some extent by other manifestoes of what is now called Human Exceptionalism.

Human intellect, in fact, now shone out as supreme in isolation from the whole animal background that might have helped to explain it, and from the rest of the biosphere on which it depended. "The mind" did indeed begin to look like a miracle, a self-supporting phenomenon without a context. As Roy Porter says, "In a single intrepid stroke, Descartes had disinherited almost the whole of Creation—all, that is, except the human mind—of the attributes of life, soul and purpose which had infused it since

the speculation of Pythagoras and Plato, Aristotle and Galen."[17] The physical universe no longer seemed to be what Plato had called it, a mighty living creature. It was simply a more or less infinite pile of raw material provided for humans to exploit.

That exploitation accordingly went on without much check throughout the Industrial Revolution. The pile of resources did indeed seem infinite. Doubts about this are, of course, beginning to be felt now. But the sense of humans as essentially independent, powerful, super-terrestrial beings is still extraordinarily strong.

Some people—apparently quite a lot in the United States—still ground this confidence in the Christian heaven, expecting to be carried off there in chariots when disaster strikes. Others use the sky differently, advertising future desirable residences in outer space rather than in the traditional heaven. And even among people who don't go for either of these scenarios, many are still confident that scientific ingenuity will always resolve our difficulties somehow. The vision of ourselves as essentially invulnerable minds independent of earthly support, colonists whose intellects will get them out of trouble whatever may go wrong, is still amazingly strong.

Life and Its Effects

This flattering illusion of human separateness and self-sufficiency is surely the really disastrous legacy still left over from Cartesian dualism. It is closely linked to the idea that physical matter is inert. That idea makes our planet appear as a mere jumble of blindly interacting particles senselessly forming themselves into handy products for us to consume. If we want to move to a more realistic notion of ourselves, we need to have a more realistic conception of what the earth itself is—namely a living, working system.[18]

That is why we now need James Lovelock's concept of Gaia. This idea is not just some idle Californian fancy, a futile substitute for traditional religion. It is the worldview that fills in the appropriate background to our new, more realistic idea of ourselves as working parts of the biosphere.

The point is that this biosphere does not consist of two separate parts any more than we ourselves do. It is not an inorganic machine that has accidentally got infested by some irrelevant life. Instead it is a working whole—an organic system, whose living components continuously affect the rest in a way that determines the fate of the whole. There is now plenty of evidence

17. Porter, *Flesh in the Age of Reason*, 65–66.

18. I cannot discuss this topic at length here, but I have done so in the end section of my book *Science and Poetry*.

that the reason why our planet has not become a dead one—one unable to support life, like Mars and Venus—is that the biota on it have continuously modified its soil and atmosphere in a way that has made possible their own survival and development. Without this work, they would not be here and neither would we. We are not the owners and engineers of this system. We are a tiny dependent part of it.

Today, this idea of the self-preservative function of life is no longer dismissed as bad science. It is widely accepted. There are now many Departments of Earth Science where the interdependence of living things with non-living is taken for granted. In these departments geologists and biologists work together, in a way that they never used to do, to investigate the details of this process.

But, of course, these scientists are not required to look at the wider implications of that interdependence. It is not their business to consider how this new view of the earth ought to affect our conception of ourselves. In fact, they usually manage not to notice how far-reaching those implications are, how many questions they raise about the notoriously puzzling concept of *life* itself. And they are helped in this inattention by avoiding the actual name Gaia. Indeed, in order to make it easier for them to accept his scientific message Lovelock himself at one time considered dropping the name Gaia and substituting "geophysiology."

But in the end he decided that the wider problems are too important to allow this kind of evasion. The change needed cannot be encapsulated in this way. It is not one internal to the physical sciences; it affects the whole shape of our thought.

The Mystery Is Within

After the enquiry that we have been making, two questions may well occur to us. One is, "Why has the unworkable mind-body dualism that we have been examining lasted so long?" The other is, "Why did scientists studying the earth not notice earlier that organisms might have causally affected the planet, as well as vice versa? Why did they take it for granted that life was merely an inconsequential by-product of inorganic phenomena? Why, in fact, did biologists and geologists not talk to each other on these matters until the last few decades, when, to their own surprise, they have suddenly brought themselves together in departments of Earth Science?"

I think the answers to these two questions are related. The delay on both points springs from the difficulty that we have in bringing together two very different ways of thinking—two sides of our personality—two distinct

approaches. When we are dealing with conscious subjects we think socially. When we deal with lifeless things we treat them as objects. These two approaches call out different faculties within us.

The relations between these faculties are not at all simple. It is often hard to see which of them to use. We see cases (such as trees) that seem intermediate. We also see others (such as mentally ill people) for which we are sure that both methods are needed. In fact, because our social life is so pervasive, it is probable that both play some part on most of our transactions with the world around us. The art of combining these two approaches—of making them work together in our lives—is as necessary as the art of using our two eyes together, or as using sight together with touch. The idea that it is always scientific to avoid the personal approach—that we should be always "objective" in the sense of treating everything as an inert object—is an unworkable fantasy. It can only produce a terrible mental squint.

McGinn is quite right to say that there are real mysteries in the world, matters that we are not at all well-equipped to understand. Foremost among these mysteries are those that concern the inner structure of our own minds, the relation between different parts of our lives. We are not totally helpless here. We can make some sense of this structure if we attend to it carefully. But if, instead of attending to it, we simply project its conflicts onto the outer world and try to deal with them there by metaphysical conjuring, we shall get nowhere.

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