

# Berkeleian Ontology as a Fundamental Approach to Consciousness

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## **Abstract**

*George Berkeley (1685-1753) put forward a doctrine of mental monism, claiming that reality is fundamentally mental, and the physical world is a derived construct. This paper puts forward a defence of this theory, using a version of Berkeley's semantic argument. We then ask: if we were to take Berkeley's ontology of mental monism seriously, what implications would it have for the theory of mind? Furthermore, if we were to adopt an uncompromisingly Berkeleian ontology, would the resulting theory of mind help us to explain psi phenomena?*

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# 1. Argument for mental monism

The argument that I shall present is, I believe, what George Berkeley had in mind when he put forward his ‘semantic argument’. Roughly speaking, Berkeley claimed that the word “matter” (taken in the usage that philosophers have given it) does not, and cannot, refer to anything. The word “matter” in that usage has no referential meaning. Berkeley did not elaborate much on this argument, so this section of the paper may be thought of as unpacking Berkeley’s semantic argument.

## 1.1 *What are we (really) talking about?*

My aim in this section is to investigate what non-philosophers mean when they make ordinary statements about physical states of affairs. The subject of the investigation is thus the mundane usage of language. Much of our behaviour, including our verbal behaviour, arises without our conscious deliberation on it. It is not unusual for us to say something without having a very clear idea of what it is supposed to mean. For example, I might say that my chair is comfortable, but I would find it hard to say what precisely I meant by that. I could give you miscellaneous pieces of information about its comfortableness, but I could hardly define what constituted its comfort. Even propositions about simple mechanical matters abound with indefiniteness. An example, given by Wittgenstein, was that of a person who points to the ground and says, “Stand there”, without meaning a definite point in space, but only a rough region. This is sometimes referred to as a ‘hedged meaning’, as opposed to a ‘precise meaning’.

Since mundane propositions are often lacking in definition, it might be thought futile to attempt a philosophical analysis of their meaning. In fact, the common vagueness of mundane propositions does not shield those propositions from analysis, but it does demand of the analyst a special caution. Time and again, philosophers yield to the temptation to assume a precision of meaning in everyday speech in order to apply the rules of logical inference. One has only to reflect on a few examples of mundane intercourse to realise that an everyday statement itself cannot be relied upon to convey the whole meaning, but that we must examine the context in which the statement is made. One example is, “I see my mother”, which will convey quite different meanings according to whether the speaker is looking out of the window, watching a home video, looking at a family photograph album, or has her eyes closed. This example is trivial, but the principle it illustrates is not. The same principle operates in this case: if a person looks up into the sky and says, “I see an aeroplane”, then a physicalist philosopher would regard her as asserting an observation of a physical object; but if we consider the ensemble of behaviour that the utterance slots into, we will find that the speaker is only making an utterance about her private mental experiences. This is a contentious point: there are plenty of philosophers who would insist that the utterance “I see an aeroplane” is actually about a physical object, even when it is pointed out that the speaker has, strictly speaking, no contact with the physical world, but has contact only with her experiences. I reject that claim for reasons that I shall expand on below.

We should also avoid falling into the trap of thinking that every statement is about something in some simple and direct manner. The complex formal systems of language can sometimes work rather like the cogs in a watch. If you take the back off a mechanical watch and peer into it, you will see a baffling array of cogs, each one of which is performing some essential function in the operation of the timepiece. The watch as a whole conveys meaning — it tells us the time. Yet, we could point to this or that cog and ask, “What does it do? Which aspect of time does it measure?”, and there is no straight answer. What each cog does is in relation to other cogs. In a comparable manner I think we should look upon the physicists’ statements about the sub-atomic particles. If an experimental physicist tells you that he’s going to smash some protons and anti-protons together this afternoon, you cannot just go down to the laboratory and take a look at this stuff happening before your eyes. All you are going to find at the lab are photographs of scratchy little lines traced out in a chamber filled with liquid or gas. From these pictures, plus the whole apparatus of sub-atomic physics, you can infer that there were some protons and anti-protons colliding with one another. My point here is that it is the edifice of physics as a whole that cashes out in observational

data. A statement that a proton and an anti-proton hit each other at a certain time and place just doesn't cash out into things you can see for yourself. As far as sub-atomic physics goes, this is not very controversial. In fact, when we consider quantum mechanical phenomena, it's actually the orthodox position. What I am claiming is that the same is true of not just sub-atomic physics, but the whole of physics, including the physics of macroscopic objects such as desks and chairs.

One reason for emphasising that physical statements are all interlinked is to try to break the stranglehold of our naive everyday idea that physical statements stand in a direct relationship with a physical reality. As if the statement "There's a bottle of whisky on the table" is a label for a physical state of affairs, and you can check that the statement is true by looking on the table. But in fact you cannot check that statement in isolation. For, the mere physical fact of the bottle's being on the table predicts no observational data at all. You also need to know what the light conditions are (after all, you cannot see the bottle in a completely dark room), and that you are in the room and your eyes have a line-of-sight to the bottle, and so on; and to hook those facts together you need the laws of optics to predict what the image will be on your retina, and the laws of neurodynamics to predict how the brain will react to the optical image falling on the light-sensitive cells. Finally, and mysteriously, you will need a bridging law to tell you that the brain activity will be associated with certain mental experiences of seeing the bottle on the table. Meaning does not come cheap.

The other reason is to emphasise the isolation of physics. Each proposition of physics comprises terms that are defined by other physical propositions, and all the propositions you conjoin and disjoin with them are physical propositions, and so are the propositions you can deduce from them. No other kind of proposition gets involved. Propositions about the contents of your conscious mind just don't appear in the system. The bridging laws that I mentioned earlier lie outside physics proper. The system is logically insulated from non-physical propositions. This is a crucial point.

## **1.2 Mental versus physical propositions**

Let us distinguish two types of proposition, the 'physical' and the 'mental'. The 'physical' proposition's substantives all denote physical things, such as:

- everyday objects (e.g. tables and chairs)
- astronomical objects (planets and stars)
- submicroscopic entities (atoms and electrons)
- physical intangibles (velocities, accelerations, forces, energies, fields of force)
- physical events (e.g. movements and impacts of bodies).

The 'mental' proposition's substantives all denote mental things, such as:

- visual sensations (the colours of your lover's eyes)
- olfactory sensations (the scent of jasmine)
- tactile sensations (the feel of silk)
- proprioceptive sensations (dizziness, body position, nausea)
- extrasensory perceptions — if they occur (clairvoyance)
- memories (the recollection of you first time you saw your lover)
- thoughts (mental arithmetic)

These two definitions (of mental and physical propositions) are a bit discursive, but I think they are good enough to convey what I intend the terms to mean. That is, given any particular proposition, there would be pretty good agreement among reasonable people as to whether it was physical, mental, or neither (but not unanimous agreement, unfortunately). I could make the definitions more definite by lengthening the list of examples; but their present form should be adequate. You might object that the terms have only been illustrated, not defined, but a sufficiently clear illustration may serve as a definition.

One class of mundane propositions that are difficult to classify as physical or mental comprises those that describe acts of observation of external bodies, for example, "I see an aeroplane". Is this

intended to mean, “I experience the visual image of an aeroplane” or, “The optical image of a material aeroplane has formed on the retinae of my eyes and this pattern has been cognised by my brain”? In a description of a dream or hallucination, the former only; in a discussion of electromagnetic optics, the latter only; in most mundane circumstances, the sentence must be regarded as an idiom representing both propositions. The confusion arises because “I” can be employed to refer to the speaker’s mind or to refer to her body. (Contrast “I feel happy” with “I am five feet tall”. The word “I” denotes two different entities, my mind and my body.)

Some people have difficulty in understanding the difference between denoting a material object and denoting the visual image of it. To many philosophers, nothing could be more obvious than the difference between, say, an aeroplane and the perceptual image of it. The layperson, though, has little use for the distinction. In everyday life, the images that are experienced do generally depict physical surroundings accurately, so that there is no practical need to have an idea of the difference in nature between a perceptual image and what it depicts.

Perhaps because the distinction is not needed in everyday life, some other philosophers deny that there are any mental propositions expressing perceptions such as “I experience red”. Any verb of perception must, in their view, denote a physiological process: “I experience red” must mean that light of a certain wavelength has impinged upon the retina and the signals transmitted to the brain and so on. When someone dreams of, or hallucinates, red, then these philosophers would say, “This person does not experience red but only thinks she does.” This is patently false. The conscious experience relating to the red is (sometimes, at least) exactly the same whether it is due to optical vision, to dreaming, or to hallucination. In plain English, as opposed to philosophese, we would not hesitate so say that we can experience red in a dream or hallucination.

### **1.3 Mental monism and fictionality**

I want to express the theory of mental monism by the assertion that the physical world is (intrinsically) fictional. You should understand this in a fairly straightforward sense, which I will try to make even clearer in the following subsection. For now, let us consider the following assertions to be the defining statements of mental monism and physical monism, respectively: (a) what is physical is intrinsically fictional; (b) what is mental is intrinsically fictional. We may define related doctrines in the same terms, such as mental-physical dualism as the claim that neither the physical nor the mental world is a fiction.

These I put forward as replacements for the common definitions of the monisms, which are respectively the assertion that mind alone exists and the assertion that physical entities alone exist. As they are definitions, I cannot offer an argument for their validity as such, but I do have an onus to justify my proposed definitions.

The more popular forms of the definitions (i.e. *defining* mental monism as denying the existence of physical things, etc) makes rational debate between their advocates impossible on the subject, for a precondition of reasoned discourse is that the terms employed be familiar to, and their meanings agreed upon by, the parties to the debate. In an argument over the monisms as popularly defined, there is disagreement over the meaning of the verb ‘to exist’, as follows.

Generally, one learns the meaning of everyday terms by observing how they are used by other people, rather than by looking up the definition of each term in a dictionary. In everyday life, people agree on which things exist and which things do not exist, although they do so without referring to an articulated definition of the verb “to exist”. (We might call this ‘implicit’ rather than ‘explicit’ definition.) Indeed, they would be unable to find a full definition of ‘existence’ in common circulation even if they sought it. It is apparent that this is not a sound basis on which to carry on a debate about mental and physical monisms, for we do not have consensual definitions of what the ‘existence’ of physical and mental things means — and if *per impossible* both parties agreed on whether minds and brains existed then the debate would not have arisen.

Lacking agreement on which things exist and which do not, we would need — if we were to debate monisms straightforwardly — to agree upon an explicit definition of the verb “to exist”. It does not

seem possible, though, to formulate a definition of the verb that both accords with everyday usage and agrees with the intuitions of both mental and physical monists.

On the one hand, the physical monists would prefer a definition along the lines of “The verb to exist means to occupy time and space”. Starting with a definition of that sort, it is easy to prove that non-physical minds do not exist. Indeed, it is because some people take this definition as one of their unquestioned background assumptions, that they find it incredible that any rational person can believe in mental monism. On the other hand, mental monists would prefer a definition along the lines of “The verb to exist means to perceive or to be perceived”. This cannot be used as a basis for the dispute because it analytically excludes physical monism. As a general principle, the monisms cannot be disputed rationally if a term of central importance, in this case the verb “to exist”, is given a definition that immediately excludes one or other of the monist doctrines.

I propose that this obstacle to rational debate can be removed by recasting the definitions of the monisms in terms of fictionality. The recast definitions, I suggest, convey the same intention as the popular definitions but possess the advantage that the meaning of each term in the definition can be agreed upon by advocates of both monist doctrines.

Of course, one is tempted to say something like, “A ‘fictional’ thing is defined to be something that does not exist, but which is spoken of as if it did”. Then the verb “to be fictional” would depend for its meaning on the verb “to exist”, and there would then be no advantage in defining mental and physical monism in terms of being fictional.

The concept of being non-existent, however, is not part of the meaning of the verbal phrase “to be fictional”: it is not a necessary condition for being fictional. It will be argued below that being fictional nonetheless does entail non-existence in a certain sense, even though the concept of being fictional does not itself rely on non-existence. This is a subtle but important distinction. It allows us to separate the argument into two steps.

In reading this, you might think that all I have done is to escape from the real problem, namely whether the mind and the brain exist and, if so, how they relate, and am pursuing a similar but different problem, namely whether the physical world is ‘fictional’. This is not so. When we arrive at the proposed conclusion that the physical world is fictional, we will then be able to go back and see that, in some senses, the physical world exists and in other senses it does not — but the sense in which it does not exist is the more fundamental of the two. It may sound like equivocation to say that the physical world both does and does not exist, but it is not: it is just a reflection of the manifold purposes to which we put our language, and of the propensity of words to carry quite different meanings in different situations. In the next subsection, we shall examine more closely the existence and, more importantly, the non-existence of fictional things.

### ***1.4 Fictional things do not (really) exist***

Like most words, the verb “to exist” is harder to get a firm grip on than we would expect. Firstly, let us consider in what sense a fictional thing may be said to exist. We can then go on to consider the sense in which fictional things obviously do not exist and, in turn, the hard cases where conventional usage is weak and we might be tempted to think that fictional things really can exist.

The sense in which fictional things do exist is a rather artificial one, but nonetheless one that is in full accord with normal linguistic usage. Here’s an example. In a detective story, you might be led to believe there was a conspiracy amongst some villains to commit a crime. Before you reach the denouement, you might say, “I believe there exists a conspiracy of persons X, Y, and Z”, but your friend might say, “No, I don’t believe the third person exists. Only two are involved in the conspiracy”; but after finishing the novel, you say, “We were both wrong. Persons Y and Z did not exist. X did it alone”. This is a wholly unexceptional usage of the word ‘exist’ applied to fictions. We can place mathematical entities in the same category, as in this example: “There exist two integers between -1 and +2”. I acknowledge there are philosophers who would deny this and assert that numbers and other mathematical objects are not fictions at all but exist in some weird space, but they are mistaken. The fictive nature of mathematical things is more readily apparent when we look at such esoteric objects as the square roots of negative numbers, rather than when we look at

such familiar ones as the natural numbers (1,2,3,...). Nevertheless, we have to be consistent and say that they are all fictive.

The foregoing use of language is limited to discussions of works of literary fiction. If you are attending a seminar on Conan Doyle's novels, you might reasonably expect people to talk as if Sherlock Holmes and his world existed. Outside that context, saying that something is fictional entails meaning that it does not exist — in the sense that it cannot partake of our lives, and that it cannot impinge upon us as a given. For instance, consider two children who are about to trespass in a neighbour's orchard. One might say to the other, "We can't go in there, Sherlock Holmes will find us out and tell the constable", and the other replies, "Don't be silly! Sherlock Holmes doesn't exist: he's just a fiction!" This is an unproblematic case of fictions not existing.

Now, however, let us consider some borderline cases. A novel might be written, which has a purely fabricated content, but which is subsequently found to be true, by coincidence. Surely one would say, "The story is nonetheless a fiction", not, "The story was, at first, incorrectly thought to be a fiction but is now known to be factual". One takes as decisive the author's fabrication of the story, not the coincidental correspondence with reality. We could call this the 'fabricative' understanding of fictionality.

In cases where the fiction turns out to be uncannily accurate, however, we might feel an urge to discard that understanding of what it is to be fictional. To deny my proposed fabricative view of fictionality, however, would commit us to further ramifications that are harder to believe. We would have to accept that the terms in a novel refer to things that the author did not intend them to. One difficulty with accepting that, however, is that it opens the floodgates to allow quite arbitrary interpretations. For, then, anything whatsoever that was capable of being the referent of a term in the novel could legitimately be regarded as the referent. This view would run completely against the usual notion of the act of meaning something. Suppose a novel, which was wholly fabricated by the author, described an affair between John Smith and Janet Jones; and suppose there were actually two John Smiths each having an affair with a different Janet Jones. To which John Smith would the sentences in the novel refer? The only reply we can make that is in keeping with normal language usage is that they refer to neither: they do not really refer to any John Smith at all. In cases where only the name of the character matches that of the physical person, we are happy to go along with the conclusion that the fictional characters do not exist even though their namesakes do. It is only in cases where there is a fuller and more complex parallel between truth and fiction that we are tempted to stray from the fabricative understanding of fictionality. To be consistent, however, we must apply the same rules in both the simple and the complex cases. The rule in question is this: if a story is fabricated about certain people, things or events, then those subjects denoted in the story do not really exist, and this rule applies irrespective of whether there do happen to exist some other people, things, and objects that possess the same qualities.

One fine distinction that must be made here is the following. A piece of writing (or any other communication) may deliberately involve both fact and fiction. For instance, a novel may be set in Los Angeles or Tokyo. Just because a piece of writing is considered a work of fiction, we need not feel compelled to think that everything in it is fictional. The relevant criterion is whether the author deliberately created the person, action, or thing in question, or whether she is describing what she has observed. What she invents is fictional; what she describes observations of is factual. Imagine a story-teller living in a remote part of the Amazon forests, without any contact with civilisation. If she were to create a story set in a mythical place that she invented and that she happened to call "Los Angeles", we would be bound to say that the setting of the story was just a fiction and did not really exist. Another author might, by chance, concoct precisely the same story and deliberately set it in the city of Los Angeles. In that case, the setting of the story would not be fictional, but real.

This is a subtle point, but one that is crucial to my argument. For, although I have presented this point in terms of stories that people make up for reasons such as entertainment, the logic of this point has wider application.

## **1.5 Reference versus denotation**

What a proposition *denotes* is determined jointly by what its terms denote and by its construction. A proposition in itself does not, however, *refer* to anything: only a statement made in a particular context conveys a reference. For example, the proposition “John lives in Mary’s cottage” will refer to quite different facts in conversations about John Smith and John Jones.

It is usual for the terms in a proposition to denote the very same things that are referred to in a statement of the proposition. There is, however, an important class of propositions in which the denotation and reference disagree: we may loosely call them ‘metaphorical’ or ‘allegorical’ propositions. Some of the things referred to in the statement of a metaphor will not be denoted by terms occurring in the metaphorical proposition. For example, the proposition “The stork brought Janet a baby” is metaphorical, because although the subject of the proposition is a stork, the proposition does not refer to any stork but rather refers to human childbirth. This is a partial metaphor, in which some terms (“Janet”, “baby”) denote what they refer to. An utterance of the proposition “The cat is out of the bag” is (usually) fully metaphorical, since what it refers to is not denoted at all. The utterance of it refers neither to the cat nor the bag. A metaphor may be of any length, not just a single sentence, and the extended metaphors are what we usually think of when using “allegory” as a literary term, while using “metaphor” for shorter constructions.

How can we tell whether a statement is meant literally or as a metaphor? Consider again the proposition, “The stork brought Janet a baby”. To tell whether it was true or not, we would not look for stork footprints — but for evidence of parturition. This suggests the general rule that if one would set about determining whether a statement is true by finding out whether the state of affairs it denotes is the case, then its meaning is taken literally. Otherwise it is understood metaphorically or idiomatically. In other words, we must look at the behaviour that would be involved in verifying the statement.

That tells us what the imputed meaning is that is understood by the recipient of an utterance. But it is possible that the author of the utterance intended a different meaning. To discover what the intended meaning was, we would look at the corresponding behaviour of the author. This brings us to a crucial and fundamental point: to judge whether a statement is fictional, we consider how the author arrived at the statement — by making it up, or by inferring it from some observed facts.

## **1.6 What physical assertions (really) refer to**

In any normal case, it will be quite clear what a physical proposition denotes; but it is not always obvious what a particular statement of the proposition refers to. The conventional view, of course, is that it refers to some instance of what it denotes. When a physicist makes an assertion about, say, an electron, the statement has the character of an hypothesis because (as the physicist will acknowledge) there is an element of inference, which may prove to be mistaken. In the physicist’s opinion, however, she is not fabricating a fiction about the electron, rather she is putting forward a statement about a state of affairs that she thinks is actual. That opinion is wrong, for the following reason.

In order to ascertain whether a physical statement is true, you would perform an experiment and then consider your observations. That is to say, whether the physical proposition is true is inferred from your perceptions of the outcome of the experiment and, moreover, it can be inferred only from that source. Therefore, the meaning of the proposition does not lie in the physical domain but in the perceptual, which indicates that a physical proposition is meant metaphorically, not literally.

When we apply this criterion, it brings out the looseness of a good deal of everyday speech. An example of this concerns the photograph: I might say, “I see my mother in this photograph”, and it is understood that this is an idiomatic way of saying, “I see a pictorial representation of my mother in this photograph”. What I am now saying is that the proposition “I see a table” is an idiomatic expression of a state of affairs that can roughly be summarised by saying “I experience a visual image associated with the physical nearness of a table to my body”. Obviously, expressing things with this degree of explicitness is impracticable: that is why we use idioms.

In pointing out that physical propositions are non-literal, it is not at all my intention to insist that we should say things in fully explicit forms instead of in idioms (which may not be possible anyway). My intention is to establish that they are indeed non-literal, with a view to examining the implications of this fact.

### **1.7 Intrinsic and contingent fictions**

Merely reading Shakespeare's play, we cannot tell that it is a fiction. We have to be told that a man fabricated the events that it relates. The propositions that it describes could have referred to the everyday world, but they happen to refer to a fictional one. Let us call this type of fictionality 'contingent'.

In another class of fictional entity is the four-sided triangle. This is 'intrinsically' fictional. Given a story about a four-sided triangle, one could tell at once that it had been made up.

Irrespective of whether a fiction is contingent or intrinsic, a fictional thing necessarily does not exist, as discussed above. Even if *per impossible* there could be something that matched the denoted physical thing, nevertheless the statement could not refer to it. At least, it does not exist in the basic sense — there is still the derived sense in which it can be said to exist within the fiction itself.

### **1.8 The physical world is intrinsically fictional**

A description of a physical process comprises terms whose denotations are outside the realm of direct experience. For example, we may open a textbook on physics and find there a passage informing us that material objects consist of imperceptibly small 'atoms'. Are these atoms fictions or does the physics textbook refer literally to them?

It is generally agreed that nobody can ever see or feel an individual atom. How, then, does the community of physicists arrive at its theory of the atom? The basis of the theory comprises, in the first instance, a series of experiments. The results obtained from those experiments can be explained most readily by the supposition of the atomic model of matter. Since the constituents of the model are not directly observed, they must be introduced by fiat. In effect, the physicists say "Suppose there were things, call them 'atoms', having these mathematical properties ..." and goes on through various calculations and arrives at a prediction of the properties that macroscopic objects would have if they were composed of the supposed atoms. It is then noted that these properties would imply the results that have been observed in experiments, and on those grounds it is proposed that the model is good for predicting future observations. The atomic theory becomes the accepted model for understanding the nature of macroscopic objects.

Nevertheless, despite the predictive success of the model, the fact remains that we do not make any direct observations of the atoms. So the atomic theory is a fiction: it is a story that physicists collectively made up in order to create a predictive apparatus. Moreover, it is intrinsically fictional, since atoms by their very nature cannot be observed.

### **1.9 Summary of the argument**

The argument presented above pivots on a linguistic point: how we actually use words that denote physical things. This does not mean that I am concerned merely with language and not with reality. On the contrary, I think the mind-body problem poses a substantive question that is very serious and worth while trying to answer. Language is, nevertheless, the medium in which we articulate and then examine our thoughts, and it is therefore possible that an incorrect use of our language could have led us to an incorrect understanding of reality. This, in turn, could have created the mind-body problem. If this is so, a good way to look for an answer is to take a close look at how our language works when we articulate statements about the mental and physical worlds. My claim is that our misunderstanding of what we are actually doing when we talk about the mind and the brain has trapped us into holding an incoherent metaphysical view. Specifically, the superficial similarity of physical and mental statements has led us to think that those statements refer

successfully to mental and physical things respectively, and this creates the profound mystery of how those different kinds of thing relate to each other. Stated thus, my claim coincides up to this point with that of the linguistic philosophers of the 1950s — such as Ludwig Wittgenstein and Gilbert Ryle — but after this point my argument goes in the direction opposite to theirs. Whereas their claim is that statements about the physical world are canonical and statements about the mental world are, in some sense, derivative, my claim is the reverse: that statements about the contents of our mind make genuine reference to the mind, whereas those about the contents of the physical world function in a different way. Wittgenstein made the analogy of a railway engine's cab, in which a number of levers are installed, each with the same kind of handle. A cursory inspection of these levers might suggest that they all work in the same way, but in fact their actions are completely different. Their similarity of form is due only to the engineer's need to handle them in the same manner, irrespective of their resulting action. Likewise, statements about the mental and physical worlds are similar in form, since they must fit into our conventional grammatical and linguistic practices, but their underlying actions are wholly different.

The crux of the difference concerns reference. In short, with mental statements we can succeed in referring to things, whilst with physical statements we cannot. Thus the functioning of mental statements is much closer to our expectations of how language serves us. The terms of physics do not — and cannot — succeed in reaching out of the symbolic, self-contained system of physics and engaging with some self-subsistent reality.

### ***1.10 Corollary: consciousness is not physical***

David Chalmers has drawn a lot of fresh interest to what has historically been known as the mind-body problem. He has renamed it the 'Hard Problem', to separate the philosophical problem of accounting in principle for how consciousness can arise in a physical world, from the 'Soft Problem' of scientifically studying the detailed correlation of mental and neural activity.

Under the Berkeleian theory of mental monism, of course, the Hard Problem becomes an easy problem, as the physical world is no longer considered to exist.

Nevertheless, the reasoning that has been presented in this section as an argument for mental monism can also be used independently to argue that consciousness is not reducible to the physical world. So, if you feel too uncomfortable with the radical claim that reality is primarily mental, you might nonetheless settle for the intermediate claim that reality is not exclusively physical.

The world that is described by physics consists of entities and operations that are defined wholly by their logical relations with other entities and operations within that world. A number of fundamental terms are allowed, such as mass and space, and all others are derived from them by declaring formulaic relationships between them.

Terms which denote things that are defined by their intrinsic qualities, as opposed to being defined by logical relations, do not and cannot feature in the language of physics. The immediate conscious sensation of seeing the colour red, for instance, is not something that is defined by its relationship to other things. There is a qualitative aspect that cannot be captured by relations. The terms that denote things of this kind can be defined only ostensively, not formally. We can do no more than say, "There! Look at that — that's what I mean by 'red'!"

Hence qualitative mental experiences can, by definition, never exist in the physical world. This is a metaphysical claim, but it is also a claim about language — the deeper reason for this is that the physical world itself is a fiction, a verbal construct.

A more concrete way of looking at the situation is to consider that all the physical facts of the world could be printed in black and white in a huge library of books. Somebody who read and understood all these books still would not be informed of the experience of red. Likewise, consider Frank Jackson's thought-experiment of the neuroscientist Mary: she somehow lives, studies, and works in an exclusively black-and-white world. There, she studies the neurophysiology of human vision, and acquires all physical facts about human colour vision. She knows all about different wavelengths of light, and how they are labelled as "red" and "green", and so on, by people with

colour vision. Then, one day, she escapes and sees colours for the first time. Now, she has acquired some new knowledge that she did not previously possess: what the colour red looks like. This, as Chalmers argues, shows that the world of conscious experience contains facts other than those of the physical world.

As we have seen, the reason that the voluminous description of the physical world, or Mary's laboratory notebooks, can capture all relevant physical facts without mentioning conscious experience is that they need only mention things that have been defined within the closed verbal system of the physical sciences. They include no ostensibly defined terms that refer to the contents of conscious experience.

This situation is more radical than some people think.

Some people, such as Chalmers himself, want to integrate consciousness into the natural sciences by making it out to be another fundamental element of reality, alongside mass and space. This misses the point. Consciousness is an ontologically different kind of thing from mass or space. We know this because words that denote things in the conscious world (including the word "consciousness" itself) perform a function of a different kind from words that denote physical things. The former can be given only ostensive definitions, the latter only formal definitions. Consequently, as I have argued above, the physical terms are incapable of bearing any referential meaning: the only meaning they have is a formalistic meaning constituted by their use as tokens within a closed language-game. Hence, the things they denote cannot exist. Contrariwise, the terms that denote things within the world of consciousness can and do bear referential meaning, and what they denote can exist. So, for Chalmers to suggest that consciousness could be a basic part of reality alongside mass and other physical primitives is to make a category-mistake (in Ryle's celebrated phrase). The physical world is, necessarily, derived by construction from the conscious world.

## **2. A Berkeleyian model of the mind**

In this section, I will sketch one approach that we can take to building up a theoretical model of the structure of the mind, from the Berkeleyian ontology of mental monism. I will refer to it as a 'Berkeleyian' model because it takes Berkeley's metaphysics as its starting point, although Berkeley himself did not propose the details that I will present here. A further justification for calling it a 'Berkeleyian' model is that, if we are going to develop any realistic theory of mind within the Berkeleyian framework, then I think we will inevitably arrive at something like the following. In other words, the logic of Berkeley's metaphysics entails a theory of mind comparable to what follows here. Nevertheless, it does go beyond Berkeley's own writings in two respects: first, the theory presented here suggests details of the internal informatic structure and dynamics of 'God' that Berkeley never addressed; second, it adopts the Vedantic Hindu claim that all minds are one in some sense, which is an idea that Berkeley hinted at in his unpublished notebooks and developed only loosely in his later work, *SIRIS*. I am not claiming that Berkeley himself would necessarily have agreed with this theory in its entirety. But I like to think that he probably would.

### **2.1 The metamind**

A terminological shift from Berkeley's writing is that I shall use the term 'metamind' for what Berkeley called 'God'. My main reason for doing this is just to make the theory more palatable to the majority of people in the scientific and philosophical communities who regard the word 'God' as so archaic as to be unusable, or who are put off by its assumed association with the explanatorily impotent notion of a magical *deus ex machina*. It is with some reluctance that I drop the word 'God'. There is a substantial body of historical literature in mysticism, in which people have reported introspective observations of precisely that entity that I shall be calling the 'metamind', and they have called it 'God'. In particular, the Hindu mystic and scholar Shankara had some insightful things to say about what he called 'Brahman', which, if it is translated at all, is normally translated as 'God'. On the other hand, though, I acknowledge that the word 'God' also carries a heavy load of religious, emotional, and anthropomorphic connotations, which I have no wish to

attribute to the metamind. Additionally, in recent decades, it has been used a hook for such anthropomorphisms as Neale Donald Walsch's *CONVERSATIONS WITH GOD*, the net result of which is to add illusions of familiarity and triviality to the intellectual debris that already encrusts what Rudolf Otto called 'the idea of the holy'.

Although Berkeley himself retained the term 'God' (which, in any case, he could hardly avoid without jeopardising his career in the church), it is interesting that he rarely ever makes any reference to the religious aspects of God. And he never mentions Jesus, the Christ of his professed religion, in his metaphysics. This reinforces the emerging picture of Berkeley as a deistic mystic, taking the inspiration for his philosophy directly from his own experience rather than from the abstruse theology of the Pauline Christian church. Berkeley seems instinctively to have distrusted Latin pontification. Likewise, the Hindu Shankara was clear that Brahman, in itself, possessed no anthropomorphic qualities whatsoever.

I shall, nonetheless, resort to writing in terms of 'God' when specifically discussing the philosophy of Berkeley or other Christian mystics, and in terms of 'Brahman' when discussing that of Shankara or other Hindu mystics.

Curiously, I have often found that in casual conversation and debate with other people, even those who deny that the concept of 'God' could ever have a place in our understanding of the world, the word "God" nonetheless emerges as a convenient, suggestive, and resonant tag for the metamind, even if it is understood only figuratively.

## **2.2 *Experientia***

Experientia are the elements that make up the contents of conscious experience. In the eighteenth century, John Locke employed the term "idea" to designate such elements. This was taken up and accepted as an entirely acceptable and uncontentious piece of terminology by Berkeley and others. In his later writings (especially *Siris*), Berkeley used the term "phenomenon" instead, as did Kant and Schopenhauer, albeit in a slightly different sense. Ernst Mach and the phenomenologists also used that term. In the twentieth century, the term "sense datum" came into vogue. More recently, the term "qualia" (plural "qualia") has been used to describe the irreducibly qualitative aspect of conscious experience.

The word "idea" has, of course, shifted its denotation very much over the past three centuries, so that now it means the same as "concept". Apart from that, these four historical terms have been subjected to fierce criticism, with critics variously denying the existence of what have been called ideas, phenomena, sense data, or qualia, or denying that those terms have any meaning.

That experientia do exist you can prove conclusively by inspecting the contents of your conscious experience. As soon as you wake up in the morning, you are confronted by experientia. It is therefore disingenuous for philosophers to argue that they do not exist. Such arguments really are not about the experientia themselves, nor do they concern any substantive question in the philosophy of mind. Rather they are verbal disputes about how to articulate what we know of experientia. The typical argument against experientia starts by taking some attempted formulation of a definition, identifies its flaws, and then proves that no such thing can exist. The whole exercise, however, stems from the mistaken assumption that experientia are things of the sort that can be given analytical definitions. In fact, it is surely evident from the nature of experientia that they are amenable only to ostensive definition. I point mentally to the contents of my experience and think, "These are experientia". If you do the same, then we have succeeded in defining the term. But we have done so in such a way that leaves no chink for the logic-chopping arguments to get a hold.

On the other hand, this ostensive definition of experientia attracts criticism of the sort that Wittgenstein presented in his famous argument against private languages. A simple way of drawing attention to what worried Wittgenstein is to ask, how do you know that what you refer to as experientia are the same as what I mean by the term? I regard A.J. Ayer's lucid critique of Wittgenstein's private-language argument, in his book *WITTGENSTEIN*, as an adequate refutation.

## 2.3 Experiential operations

We are doing things with experientia all the time. The mind is not a passive receptacle of experientia. Can we discern some basic operations out of which the rich repertoire of mental activity has grown? I think so, and I think that Berkeley had a shrewd view of this too. He claimed that we have fundamental operations of abstraction and conjunction. By ‘abstraction’, we must remember, he does not mean to allude to ‘general abstraction’, which is the impossible and self-contradictory kind of idea that John Locke wished to suppose. He means no more than cutting out parts of a sensory image. The Berkeleian set of basic operations are thus essentially the same as the cut-and-paste operations that we are all familiar with in word-processors. This is, for instance, how Berkeley believes we can form the idea of a centaur, even though we have never seen one: by abstracting the ideas of a man’s head and trunk, and a horse’s body, and conjoining the two. As always, we must beware of casting these operations into a form that presuppose a substrate. When we literally cut and paste, say from an illustration, the parts we cut out sit on the desk until we paste them into another location on a sheet of paper. In the mind, however, there is no spatial substrate.

## 2.4 The metaverse

In set-theoretic terms, the mental universe or ‘metaverse’ is defined as the union of all existing minds. So, it contains the conscious minds of all human beings and all animals in the world we see around us. It will also contain any disembodied minds, if they exist. It also contains streams of mental activity that govern the complete panoply of what we think of as natural phenomena, such as the weather, geology, chemical reactions, and the movements of the heavenly bodies — which are obviously not governed by any ordinary mind.

It is a key point that the mental universe is a union of minds, and not a set of minds. For instance, if  $A = \{a_1, a_2, a_3, \dots\}$  and  $B = \{b_1, b_2, b_3, \dots\}$  are minds comprising experientia  $a_1, a_2, a_3, \dots$  and  $b_1, b_2, b_3, \dots$  then the union is  $U = \{a_1, a_2, a_3, \dots, b_1, b_2, b_3, \dots\}$ , whereas the set of minds is  $\{A, B\}$ . This is important for two reasons. First, it conceptually creates a level playing-field in which we can model both inter- and intra-mind information processing by the same mechanism. In our example, it means that relationships between the  $a_i$  and  $b_i$  can be of the same kind as amongst the  $a_i$  or amongst the  $b_i$ . We do not need one mechanism for conveying and manipulating information within the contents of one mind, and a different mechanism for use between minds. A single mechanism performs both tasks. Second, it makes it possible to formulate a Platonic scheme in which mental universals can be constituted by shared particulars under a different mode of description.

I will refer to that which drives the natural phenomena that we see around us as the ‘metamind’. One question that I shall leave open for the moment is whether the metamind is a single mind or a collection of minds. At one extreme, we could envisage the metamind as being a unitary stream of consciousness, much like a normally operating ordinary mind, or we could envisage it as split up into a number of personalities. Or there could be huge numbers of independent streams of thought within the metamind, even down to the level of Leibniz’s monads. We could even envisage, at the other extreme, the metamind as isomorphic to the physical world at some level of description. This last option I shall call the ‘physicomorphic metamind’ hypothesis. It is the only version of the Berkeleian ontology that has any chance of acquiring any plausibility at all in the views of the typical natural scientist. It is closely related to panpsychism. Indeed, I would say that panpsychism differs from physicomorphic mental monism only in having added in a confused idea that the physical aspect has an independent ontological status. The model that I shall be proposing envisages a central ‘metamental engine’, which serves a vast number of ‘metamental objects’ — all of which are quasi-autonomous mind-like entities.

Outside this metamind are the ‘ordinary’ minds of individual beings such as people and animals. In the jargon, therefore the mental universe is a superset of the union of ordinary minds and the metamind. Whether it contains anything else is an open question. There might, for example, be minds of angels and demons as well as those of humans and animals. And we may or may not wish to think of such entities as being part of the metamind.

As I mentioned above, the metamind is Berkeley's 'God'. In Vedantic thought, it corresponds to something between Shankara's nirguna Brahman (the Godhead without attributes) and saguna Brahman (the Godhead with attributes). Philosophically, we should equate the metamind with the saguna Brahman, this being the active mind that governs the manifest universe as maya. Hindu traditions have, however, encrusted the notion of the saguna Brahman with layers of anthropomorphic mythology, even more than Christianity has. On the other hand, the nirguna ('without-qualities') Brahman clearly refers to a far more fundamental and, in a sense, abstract concept. The metamind is Brahman considered as manifested in the active production and maintenance of our experience of the world at large, but not as a personal god. You cannot imagine being the metamind.

## **2.5 Individuation of ordinary minds**

An 'ordinary mind' is a subset of the metaverse, closed under ordinary operations of mental access. By 'operations' I mean any of the actions that a mind can carry out on its contents, such as perceiving, thinking, recalling memories, imagining things, focusing, paying attention, and so on. By being 'closed' I mean that any operation carried out on any of the contents yields some new contents that are still within that mind. So, whenever you recollect a memory, or focus on some bodily sensation, you remain within your own mind and do not slip into someone else's mind. By 'ordinary' operations I mean non-psi operations, in other words, the mental operations that we employ in everyday life and which are recognised by mainstream science.

An ordinary mind has a first-person perspective, and a sense of privacy based on the closure of the mental operations. It possess the power of volition as well as cognition. An ordinary mind corresponds to a 'finite spirit' in Berkeley's terms, or a 'jiva' — or 'atman' considered under the mode of description of being embodied — (usually translated into English as 'soul'), in the Vedanta.

The manner of mental individuation that I am suggesting here provides a way of understanding the traditional Hindu and Buddhist doctrine that the consciousness of each individual is identical with the single consciousness of Brahman or God, and that the apparent separateness and privacy of individual minds is a misunderstanding brought about through maya. By 'identical' I mean here what logicians call 'numerically identical', as opposed to being merely 'qualitatively identical'. What we interpret as each person's individual consciousness not only has identical properties to God's consciousness, it is one and the same thing as God's consciousness. We do not normally see this, because maya hides it from our apprehension. The Sanskrit term 'maya' is often translated as 'illusion' but, like many terms of Hindu philosophy, this is misleading if it is taken to be a complete and literal expression of the Hindu concept. What maya refers to in this connection is that the structure of our daily experiences is such that they systematically lead us to interpret our experiences as forming an absolutely isolated mental space, whose only link to the outside world is through the senses. The term 'illusion' would imply that our experiences themselves are unreal. In fact, they are real in themselves — but what we read into them is not real. In fact, this is a point that Hindu commentators such as Shankara make, but is often overlooked in the soundbite-driven popularisation of Hinduism in the West. Moreover, consciousness itself is never an object of direct awareness, and therefore *a fortiori* we cannot have an illusory awareness of personal consciousness. We infer our consciousness from what we are conscious of: for instance, if I have a conscious awareness of the red colour of a rose, then I infer that there is a consciousness but I do not have a conscious awareness of the consciousness itself. The point of the Hindu and Buddhist doctrine is that we habitually make a mistake when we carry out that automatic inference: we infer the existence of a private, personal consciousness instead of a universal consciousness. The essential step in that erroneous inference is to identify one's consciousness with the mental objects of which one is conscious. At any moment, I am conscious of a limited number of colours and sounds, and smells and tastes, and so on, and the mental operations I perform always leave me within this stream of mental objects. If I identify my consciousness with these mental objects, then I am forced to conceive of my consciousness as a limited and private thing. Therefore an essential remedial step in the Hindu or Buddhist path to enlightenment is to formulate the distinction

between consciousness itself and the objects of consciousness, and thereby to see that consciousness is universal.

As a means of identifying pure consciousness, Eastern traditions offer a practice of meditation in which mental attention is controlled so that it can be focused selectively at will. One of mental attention's natural habits is to jump around a lot. The mind does not normally attend to something for more than four seconds at a time. Meditative practice enables one to sustain attention on a single mental object for much longer periods of time. The trick is then to drop all mental objects from this heightened state of attentiveness. What remains is pure consciousness. This is a featureless state, which retains no trace of personal identity or of any of the content that normally defines who we are. It is therefore qualitatively identical to everybody else's pure consciousness. To go from this to the claim that everybody's pure consciousness is one and the same may, at first, seem palpably false. There are two ways to make that leap: one experiential, the other ontological. A common report from those who have spent time in the state of pure consciousness or, indeed, in certain other altered states of consciousness, is that they have a direct awareness of the unity of consciousness. It is, of course, very difficult to describe this insight, and it may even be impossible to do so. The other approach, rather than to meditate, is to escape from the ontology of physicalism. Physicalism presumes that, since my mind is inside my head and yours is inside your head, that my state of pure consciousness and yours must be distinct since they are in different places. Rather, we must adopt the ontology of the Berkeleian mental universe, or metaverse, in which individual minds are defined by their content, which for each mind is a subset of the universal set. Here, there cannot be two or more pure states of consciousness, for there is no criterion by which they could be individuated. In this mental universe, or metaverse, you cannot say that one pure consciousness is in one place and another is in some other place, and that therefore they cannot be one and the same — simply because there are no places in the metaverse.

An analogy can be found in computer software. Consider a large mainframe computer, with dozens of people running programs on it. Normally each user will run her programs in a separate area of the computer's memory, which is shielded from access by anybody else's programs. Each user sees what appears to be a private memory space, which is closed with respect to the operations of reading and writing data. Some popular programs, such as word processors, however, are very large, and it would be wasteful of space to have an identical copy of the program in each user's space. A solution that has therefore been adopted is to employ a single, shared copy of the executable part of the program in a central part of the computer's memory, and to keep in the individual user's space only the information that is required for her personal use of the program — such as the text she is editing, and her cut-and-paste buffer. As far as the user is concerned, she still sees a completely private space, closed under any operations that she can perform. In this analogy, the shared copy of the program is like the universal consciousness; and the individual user's data is like the contents of an individual's mind. The analogy breaks down when we consider that what makes the program shared is its location in the physical microchip memory of the computer. For, in addition to that shared copy, one user could maintain her own personal copy. There is no analogous situation in the mental universe: there cannot be another pure consciousness in addition to the universal pure consciousness. This is because in the computer's memory space, things are individuated by their location, whereas in the metaverse they cannot be individuated by location because there is no location. In computer jargon, we might say that the metaverse is content-addressable with no spatial substrate.

## **2.6 Metamental objects**

While an 'ordinary mind', as the name suggests, corresponds to what we normally think of as a sentient being, a 'metamental object' corresponds to what we normally think of as an inert object, such as the writing desk I am sitting at. In the theory that we are deriving from Berkeley's ontology, however, each such object is not inert but active. It contains a basic pulse of consciousness and volition, although it is not developed into anything remotely as complex as a sentient being. It is, in fact, a component part of the metamind, or Berkeley's 'God'. The reason it must be active is that it has to respond to requests from sentient beings. To put it very crudely: if you want to know what a desk looks like, you telepathically ask it; and it replies by projecting a

visual image of itself into your stream of consciousness. To anyone who is familiar with modern computer programming methods, this will seem strikingly similar to ‘object-oriented programming’, which is used especially in virtual-reality systems. This similarity is not a coincidence: it just follows from the fact that the metamind is carrying out informatically similar tasks to those performed by man-made computers. (And, in fact, the terminology I am proposing is borrowed from the computing paradigm.)

This is how things have to work in the Berkeleian universe, because there is no material desk sitting there inertly reflecting light, which your material eyeballs can pick up whenever they point in a direction toward the desk. Recall that, in the Berkeleian universe, things exist only when they are perceived: hence, the image of your desk exists only when you or someone else perceives it, so if you want to see the image of the desk, you have to tell the desk (or, more properly, the metamental object of the desk) that you are looking at it. An interesting consequence of this basic consideration is that an object always knows when it is being observed, and who is observing it. This has implications for the understanding of psi phenomena, which will be discussed more fully later.

This use of metamental objects as an explanatory hypothesis is a refinement of Berkeley’s one-step model. According to Berkeley, whenever we look at the desk, ‘God’ gives us an appropriate image of the desk by referring to His ‘archetype’ of the desk. Here, I am dividing the metamind (Berkeley’s ‘God’) into functional components that I am calling ‘metamental objects’, each of which contains an ‘archetype’ in Berkeley’s sense. I am suggesting that each Berkeleian archetype is wrapped up in an active metamental object. As we go along, we shall see that this refinement brings considerable explanatory power when we look at psi phenomena, and that it affords an elegant economy for the whole scheme.

Let us start to define these objects more technically. Any act of perception by a sentient being has the effect of conveying a ‘request signal’. (I am using the word ‘signal’ in the abstract or automata-theoretic sense, without implying the existence of a transmitted entity that is the signal.) A ‘metamental object’ is a subset of the metamind, which receives request signals from an ordinary mind and responds by projecting imagery into it, in a ‘response signal’.

On this view, each object in the world is represented by an object in the metamind. When you look at an object, such as the desk, or reach out and touch it with your hand, your mind conveys a signal of some sort to the metamental object, which in turn delivers directly into your mind the visual or tactual imagery, as appropriate.

If you modify a physical object in some way, such as carving your initials into the desk, you send a ‘volitional signal’ to the metamental object, which is incorporated into the object in such a way that subsequent observers will detect it, and perceive the desk as modified.

It is well known to philosophers that objects are not natural kinds. Look at your desk again: is it one object (‘the desk’) or five objects (‘the desk top, and four legs’)? Do the drawers count as different objects, or are they parts of one unitary object (‘the desk’)? A more extreme example will be found by looking at waves in the sea. Undoubtedly each wave is a physical thing, and you can point to it and touch it, but the boundaries that separate the wave from the rest of the sea are not physical but psychological. You cannot discover the true edge of the wave, but rather we say, pointing with the hand, that the wave is this bit of sea water. There is no definite answer to questions about slicing the world into objects, as far as the physical matter is concerned. You cannot, for instance, look down a microscope and discover the boundary between one object and another. The division of the physical world into objects is not a physical fact but a psychological projection. (This, by the way, is what leads postmodern philosophers to make the misleading claim that objects do not physically exist, even within the discourse of physical science. In fact, within that discourse, what is denoted by a word like ‘desk’ does physically exist, even though the boundaries implied by the concept of the desk are not physical but psychological.)

So, how could it possibly be that the metamind has a separate metamental object for each physical object? If the division of the world into objects is subjective, which division would the metamind take? The answer is that the metamind chooses one canonical partitioning of the world into objects, which optimally suites its computational strategy, and constantly reviews and revises its working

partition. The criterion for the metamind's dividing the world into objects whilst generating it is much the same as our criterion for dividing it into objects whilst perceiving it. Namely, aggregates of matter that cohere as units in our perception and handling are deemed to be objects. The desk is a single object when you are writing on it, or moving it around in your study. It would have been separate objects if you assembled it from the factory in a kit comprising desk top, legs, and so on. Thus metamental objects can merge together, or split up.

## **2.7 Time**

The concept of psychological time is very hard to get a handle on. Physical time, by contrast, is easy: it is just one of the four quantitative dimensions of space-time. Even in the relativistic model that Einstein gave us, where time and space are non-trivially entangled in space-time, it is still just a numerical dimension. In the Berkeleian universe, however, physical time is, like the rest of the physical world, a fiction derived from the underlying mental reality. Therefore we need some way of accounting for time that does not beg the question by referring back to physical time. Unfortunately, I do not have such an account. All I can offer here is the suggestion that psychological time is not linear but cumulative. What I mean here by 'linear time' is a process in which each event happens in the present time, and is then swallowed up in the ever-growing reservoir of the past. In linear time, you can interact only with other things in the present. For instance, if I open a door and look inside a room, I can see only the room as it is now, I cannot see the room as it was fifty years ago. In short, the past is inaccessible. On the other hand, what I mean by 'cumulative time' is a process in which there is a continually expanding pool of events and states, in which each event that occurs still exists and can be accessed. In this model, we can indeed 'see' the room as it was fifty years ago, for the metamental object that represents the room in the metamind contains its full past history: so, if a sentient being sends a signal of the right type to that object, then the object will deliver the sensory image as from any earlier time.

I would stress that I am not putting this forward as an account of the nature of time. If it were, then it would obviously be circular, because the expanding pool of events is apparently doing its expanding in time. In fact, I cannot imagine how one could even begin to formulate an account of time. Some such account must be possible, because time is a real phenomenon, and needs to have some comprehensive explanatory account. We just haven't found it yet. What I am describing here is, rather, one aspect of the time-behaviour of mental phenomena.

Even by the standards of Berkeleian metaphysics, the hypothesis of cumulative time may seem strange. Certainly, there was no hint of this in Berkeley's own writing. So, let us see why the Berkeleian universe needs to have this time-behaviour. By the identity of indiscernibles, unchanging mental items are numerically identical. So time advances only in so far as things change. But in the metaverse only volition can make anything happen, so volition is the driving force of temporal advancement.

What happens when you modify something, such as carving the initial letters of your name on your desk? There is no underlying substance to undergo a change of state: the mental items are themselves the base reality. So, when somebody else comes along and looks at the desk and sees the carved initials, how are we to explain this? As I said above, the way is barred to the conventional physicalist explanation, that the substance of the desk has been modified, as there is no substance in this model. Rather, some extra functionality has been added to the metamental object. By Ockham's razor, the simplest way to model this is to suppose that the carver's intention is added into the object. So, when someone comes along and looks at the desk, they send a request signal to the desk's metamental object, which is now a complex that comprises the original object and the carver's intention, glued together.

So, when something is changed, it is by virtue of an added intention: the original is still present. This, by the way, also has interesting implications for understanding the paranormal phenomenon of psychometry.

## **2.8 Structure of metamental objects**

Following the analogy with man-made software, we may imagine each metamental object as comprising two components: a core of private, internal information that only the object itself has access to (which is pretty much what Berkeley thought of as the ‘archetype’ of the object); and a number of access functions, which receive and deliver public data to the observer, on request. As a first approximation, we might suppose that each sensory modality (sight, hearing, touch, and so on) corresponds to an access function that delivers outputs, but the only access function that permits inputs into object is that of muscular action (touching or hitting something, or speaking).

We must beware of falling into the trap of thinking of the private data as forming a static entity, as they would in a man-made computer. For it is in this connection that the metaphor breaks down: a man-made computer has a material substrate, a substance such as a silicon chip or a magnetically sensitised disk, that suffers modification when data are written into it. Nevertheless, at the abstract level of computer science, rather than computer engineering, the analogy still holds.

What we take to be the private data of the metamental object are all really volitional signals, initiated at various times in the past, stretching back to the first creation of the object. When I say ‘volitional signal’, I do not mean something separate from, and produced by, the volitional act, I mean the volitional act itself regarded as an element of the private data.

## **2.9 Ultimate unity of agency**

Throughout this section, I have talked as if the metamind were a separate entity that is outside the mind. This, however, is only a mode of description. Ultimately, we and the metamind form a single unit of agency. When we say that the metamind is outside the mind and that it injects our experience of the world into our minds, this is not the final analysis. To stay for a moment with figures of speech, it is better to think of metamind as standing over your shoulder, than as standing before you. Your mind is a subset of the metamind, but the singular agency of volition and perception is one and the same. In that sense, when you see a blue sky, ‘you’ are both generating that sensation of blue colour, and perceiving it, but ‘you’ do not notice that ‘you’ are generating it.

This, I believe, is the insight that Vedantic mystics attempt to articulate by saying that Brahman (God or world soul) is the same thing as the Atman (personal soul), the apparent difference being a delusion.

## **2.10 How can we talk about the mind?**

One of the functions of a language is to communicate information from one mind to another, or to the same mind itself, possibly at a later time. (Or it could involve some other information processing system than a mind, such as a computer.) What kind of language should we use to communicate facts about the phenomenal world?

The word “red” is a token that is associated with a particular collection of sense-impressions (of lipstick, blood, and so on). Its meaning has been established by its use in conjunction with red objects. In principle, the validity of this method depends on people having the same experiences when their physical sense organs receive the same stimuli. If a person is colour blind and cannot discern red from some other colour, then she will conceive of the meaning of the word “red” incorrectly. In practice, minor differences in the conceived meanings of words do occur, but in most circumstances the practical effect of these differences of conception is negligible. The more subtle a word’s meaning is, the greater will be the degree of variation in the conception of its meaning. I suspect that there is considerable discrepancy in people’s conception of what precisely the word “petulant” means — but it will hardly ever matter.

A word whose meaning has been established in such a manner is not suited to an ideal phenomenal language. If the phenomenal language is to serve its purpose, it must be capable of conveying information about phenomena in a precise manner.

Natural language can be used to express information about the physical world with whatever degree of precision we require. This has been demonstrated abundantly in the hard sciences. But we apparently cannot use it to express information about the perceptual world with any precision, let alone the emotional and intuitive worlds. I can describe what is on my desk with any level of precision I wish; but I can describe my visual image of the desk only approximately. I do not have the vocabulary or syntax to go into any detail about what precisely I am seeing.

The qualitative aspects of phenomena completely elude our natural language. The meaning of “red” is defined, not by saying what it is, but by listing red things. (Consider: defining the word “red” to a child that had never come across the word before, one would bring to her attention things that were red.) One would hope that an ideal phenomenal language would not suffer from this drawback, but that it would allow us to define such qualities as redness with total explicitude so that a person who was blind from birth could, upon receiving a definition of it, imagine it. In order to do this, the elements of the phenomenal language would have to be associated with the most primitive elements of the phenomena world. It would be a language unlike any we now possess. (We have become accustomed to thinking in words and this makes it difficult to think analytically in ways that are inexpressible in our natural language.) The use of language is inherently prescriptive: a sentence is an instruction to the receiver to think certain thoughts. That much is true of both natural language and the phenomenal language. We should therefore suppose that the basic elements in the phenomenal language would be instructions to the reader to perform mental acts of the simplest possible sort. What those instructions are is very unclear at present.

### **2.11 Metamental language**

In what form do different entities in the mental universe communicate? And in what style does it receive their replies? In what form does an ordinary mind issue its request and volitional signals and interact with surrounding objects? In other words, what is the metamental language?

There must be such a language, for a basic premise is that information in the form of commands and reports are exchanged between various entities. That information requires a language in which to be articulated.

As I suggested earlier, the constituents of this language must be experientia, for the fundamental reason that everything in the mental universe is experiential, and the lexemes making up this language cannot be an exception. We cannot tell in advance to which sensory faculty they belong, but it does follow that the human imagination can form instances of these lexemes in the mind. In principle, therefore, we can perceive, recognise, and issue commands in this language ourselves.

At first, it might seem bizarre to suppose that the metamind’s inner workings should be capable of being scrutinised by a mere human mind. Yet, that conclusion is forced on us by the fundamental premises that the operation of the metamind involves an exchange of information, and that the Berkeleyan universe is comprehensively mental.

The metamental language might involve new modalities over and above the sensory faculties with which we are familiar. On the face of it, our existing modalities, such as sound and vision, are accidents of our historical evolution. Moreover, occasionally individuals are born with congenital neural defects that deprive them of one or other sensory modality: they might be born blind or deaf. Therefore, we can conceive the possibility that the metamind uses an experiential language that the whole human race has always been blind to. In that case, we would have no conception of the lexemes of the metamental language. We do not as yet know whether the metal-mental language uses some novel faculty. Nonetheless, we could probably acquire the use of it.

Some of the surprise that people feel about the metamind’s using, say, visual imagery as its basic language can be assuaged by considering the economy that pervades the natural world, of which the metamind is part. Generally speaking, nature does not invent new mechanisms when it can re-use an existing mechanism in a new role. Here are some examples. Throughout the animal and plant kingdoms, the same DNA code — of thousands of copies of four amino acids strung out in a complex sequence along a double helix — is used as a universal language by which a parent instructs the blueprint for building offspring; throughout the animal and plant kingdom, certain

chemical substances serve a certain purpose in one organism and serve a completely unrelated purpose in another organism; or a chemical may serve completely different purposes in different organs of the same body. Likewise, it would be plausible to suppose that the same kinds of qualia are employed throughout all conscious minds. We cannot know what it is like to look through the eyes of a dog, but it would be in keeping with the economy of nature to suppose that the dog's visual qualia are much as ours are. What it is like to envision the world through a bat's echolocation may be different from anything a human has ever experienced: it may be that the sensory logics of vision and audition may not be rich enough to express the three-dimensional awareness that the bat presumably is conscious of. So, the bat may have utterly novel qualia. Notwithstanding bats, the rule probably stands that nature does not introduce new species of qualia except where informatically necessary.

Even if the metamind employs a hitherto unknown sensory modality in its language, we need not despair of ever getting our minds around it. It is a commonplace belief that a person cannot acquire sensations in a sensory modality that she was congenitally deprived of. But this is not so. Even a little reflection on the matter will reveal that every human must at some time experience novel qualia, of types that they have never before encountered. When a neonate first experiences the colour red, for instance, it encounters a qualia of a type that it has never before perceived. Where does that quale come from? A naïve Lockean answer would be that the red quale comes from the baby's eyes. That, however, cannot be the case. The eyes furnish the brain with colourless electrochemical signals: experientia exist only in the mind, not in the brain. It is evident that the mind creates the red qualia in itself in response to signals received from outside. In principle, after all, it could have chosen to label that same incoming signal with a different quale.

It follows that the mind has the capability of creating novel, hitherto unknown qualia. To be sure, this faculty is normally exercised only, or primarily, during infancy. After a short interval of time, the infant will have received signals from all her sense organs, and have labelled them with suitable types of qualia. There is no longer a need for the plasticity that enables the creation and allocation of new qualia. The point stands, however, that the human mind can, in principle, create new types of qualia. Therefore, even if the metamind does indeed employ an unknown mode of qualia in its language, we can still contemplate the possibility of training the human mind in such a discipline as would enable us to handle the lexemes of the metamental language.

### **3. A Berkeleian model of psi**

Although they are often regarded as being outside the acceptable bounds of science, psi phenomena have been firmly established as real anomalies. Dean Radin, in his book *THE CONSCIOUS UNIVERSE*, has laid out the evidence for this assertion. Also, Jessica Utts, in her paper "Assessment of the evidence for psychic functioning", has examined the massive programme of parapsychological research carried out for the US Government over a period of more than twenty years.

Three kinds of psi phenomena have been firmly established: telepathy, telecognition, and telekinesis. Telecognition is also referred to in the research literature as 'anomalous cognition', or 'remote viewing', and is traditionally known as 'clairvoyance'. Telekinesis is also referred to as 'psychokinesis'. Apart from the existence of these phenomena, a few characteristics have been established. First, the phenomena have a non-local character in so far as they are unaffected by distance or material barriers. Second, telecognition can involve the acquisition of any physical facts at remote sites, presented as mental imagery in any sensory modality (implying virtual transduction: for instance, the acquisition of visual images without any remote physical focusing of light). Third, all three processes — telepathy, telecognition, and telekinesis — can be targeted by means of mental intention. Fourth, telekinesis can operate only on random systems, apparently by modifying the probabilities of events without observably contravening any laws of physics. Fifth, telekinesis has a phenomenological site of action, in so far as it is not affected by the complexity of the physical changes that it entails, nor even whether the physical changes are retrospective (as in retrokinesis).

Although a wealth of experimental data have demonstrated these phenomena, no satisfactory explanatory theories have been developed. In my book, *PARANORMAL PHENOMENA AND BERKELEY'S METAPHYSICS*, I have criticised the energy and field models of psi. Here, I shall suggest a model of psi phenomena that takes Berkeley's ontology of mental monism as its starting point. The reasoning for this model is expanded in the book.

### **3.1 Telepathy**

Normally, we think of people as communicating through a physical medium of one sort or another. For instance, you talk to someone by sending sound waves through the air; or you write to someone by leaving ink marks on a sheet of paper. In the Berkeleyian universe, these forms of communication are construed as using the metamind as an intermediary. When you speak, for instance, you send a volitional signal to the metamental object that represents your physical body, which conveys a signal to another such object, representing the listener's body, which then projects the auditory sensation into her mind. Those metamental objects are components within the metamind.

In telepathic communication between people, that indirect route is by-passed and experiences are conveyed directly between two minds. It must be emphasised, though, that nothing is literally transmitted through any intervening space. Rather, what happens is that an access link is established between two minds. Whereas normally each ordinary mind is closed under operations of mental access (indeed, this is part of the definition of an ordinary mind), there seem to be specific methods by which an access route is set up, and experiences can be shared.

One is constantly tempted to think of telepathy in terms of transmitting something through an intervening space between two minds. Or, even if one successfully takes on board the notion of minds existing as adjacent entities outside space, we are still tempted to think of each mind as having a space-like extension. We might, for instance, visualise our private minds as bubbles of consciousness rubbing against one another — and to think of telepathy as breaching a barrier between two adjacent minds. These images are, however, seriously misleading. All things in the metaverse, including all our private minds, are inter-penetrating. If we are going to use a visual metaphor at all, a better one would be to think of the metaverse as a cloud of tiny coloured thought-particles hovering around at random: the red particles belong to your mind, the green ones to my mind, the blue ones to someone else. This, at least, conveys the sense of minds indiscriminately inter-penetrating one another. Telepathy, then, would involve two adjacent thought-particles merging and retaining both colours (say, red and green stripes), so that the same thought-particle would at the same time be in two minds.

Even the metaphor of a cloud of thought-particles, however, will lead us astray as we try to imagine the metamind. For the metamind is utterly and radically non-spatial, whereas our imagination is rooted in our sensory modalities, which are predominantly spatial. At least, the most information-bearing of our senses are spatial: vision, touch, hearing, and proprioception are all spatial. (Hearing is only weakly spatial, as it relies on two tiny holes on either side of the head, but we habitually project the sources of sounds into the three-dimensional space surrounding us, as is demonstrated by stereophonic music equipment.) We do have two non-spatial external senses: smell and taste. In most of us, these senses are weakly developed, although connoisseurs of wine and spirits do train themselves to analyse the olfactory and gustatory sensations into recognisable components. As a flight of fancy, one might explore the metaphor of the metaverse as being like a perfume, in which each ordinary mind is a separate scent, distinct yet commingling with all the others. Telepathy would be represented by two scents chemically blending together into a novel scent, rather than just commingling. Such a metaphor would, however, reach another limitation because it conveys nothing of the minds' being active things.

In short, we must strive to think of the metaverse in a new, non-spatial way. This is why I have used set theory as means of articulating what I want to say about the metaverse, and we must keep coming back to that way of describing it. Telepathy, on this view, involves setting up a stepping-stone link, a non-empty intersection between two minds.

### **3.2 Telecognition**

In the Berkeleyian model, each object in the world is represented by an object in the metamind. When you look at an object, such as a desk, or reach out and touch it with your hand, your mind conveys a request signal to the metamental object, which in turn delivers a response signal directly into your mind, containing the imagery —visual or tactual, as appropriate. Likewise, when you use telecognition to perceive the table remotely, you convey just the same request signal, and get back just the same imagery. The main difference is that, when you look at the desk with your eyes, the optical point-of-view that the desk employs when rendering the image is determined by the position of your head, whereas when you telecognise it, the optical point-of-view is decided arbitrarily by the position you want to see it from. Remote viewers find that they can steer their point-of-view to any point in three-dimensional space. We may speculate, therefore, that the request signal is a packet of instructions, one of which specifies the position of the virtual point of view.

Both the request signal and the returned sensory data must consist of experientia of some sort or another. It might be tempting to think of them as being imperceptible codes, but that is impossible. For, a fundamental feature of the Berkeleyian universe is that everything is experiential in nature. Therefore, for instance, the instruction that specifies the point of view must be an experientium. Judging from the comments of the remote viewers on how they engage in locomotion, it is plausible that this instruction for the point-of-view takes the form of imagery of the intended destination.

### **3.3 Telekinesis**

Let us now speculate on the functional organisation of the metamind. Berkeley made no attempt to do this, presumably on the grounds that he had no access to God's mind. In fact, we do know that the metamind carries out a lot of information processing in order to generate our experience of the world, and must obey the laws of informatics. In fact, it is surprising that there is so little in the literature of theology on the informatic analysis of God's mind, when this is one of the few routes by which we can infer anything about what is going on inside it

To picture Berkeley's philosophy, it is helpful to think of the world as a virtual reality system, in which the metamind is the software that (a) generates a three-dimensional model (which we approximate with what we call the physical world) and (b) renders it in mental experiences that are projected into our minds.

My basic working hypothesis for modelling the metamind is that it is constructed, and operates, economically. As I mentioned earlier, in connection with the metamental language, economy is observed universally throughout the natural world, in both organic and inorganic systems. Since the metamind is just as much a part of the natural world as everything else, we may suppose that it too is economical. (I have no proof of this. We may eventually discover that the internal workings of the metamind exhibit a baroque complexity.)

On the basis of the foregoing supposition (the 'hypothesis of economy'), I will suggest the following principle: the metamind determines physical facts as and when they are observed by conscious beings. I shall refer to this as 'just-in-time object generation'.

Most of the facts of the physical world will never be observed by anybody. For instance, the precise distribution of temperature in the middle of some planet millions of light-years away. If the metamind is running economically, it will not bother to compute the modelling for unobserved parts of the universe. Likewise, for those parts of the world that we do observe, it does not need to model them until the moment we make the observation. Even then, it does not need to model the object in any more detail than is required to deliver the perceptual experiences that make up the observations.

I am referring to this as 'just-in-time object generation' by analogy with the retail and manufacturing businesses that use 'just-in-time manufacture' to produce goods immediately before they are shipped to retail outlets, thereby avoiding the use of any warehouse.

At large distances, just-in-time generation may apply to whole planets or even whole solar systems. Closer to home, it will apply to the extensive details of the world around us that we assume are there, but we never observe them. Such as, how many cornflakes there were in your breakfast bowl this morning: the metamind needs to model only the ones at the top of the pile, which you actually saw. If, out of curiosity, you pull the cornflakes out one by one, the metamind will determine the position of cornflakes in each newly uncovered layer as you come to observe them.

The status of these unmodelled physical facts is that they simply do not exist. This is a generalisation of quantum-mechanical indeterminacy: if a particle is in a superposition of two states, then there is no fact of the matter whether it is in one state or another. Berkeleian indeterminacy, however, applies to things of all sizes. For instance, when a spacecraft first flew around the dark side of the moon, that surface of the moon had previously not existed, and the metamind decided at the time of observation time what it would look like.

The preceding sentence contains a subtle shift between language-games. Saying the spacecraft flew around the moon is in the language-game of physics. Saying the dark side of the moon did not exist is in the phenomenological language-game. I hope that the only people who will be confused by this are philosophers who wilfully choose to do so for doctrinal reasons.

Telekinesis, I suggest, acts upon the elements of the metamind that correspond to the parts of the universe that are not yet observed, and which are therefore indeterminate. For instance, when dice are cast, the way they fall depends on tiny details in the dice themselves and their environment — details that the mind can change before their effect is observed. From the perspective of the physical observer, it looks as if the telekinetic action has changed the probabilities of seemingly random events.

### 3.4 Retrokinesis

Just-in-time object generation provides an elegant solution to Helmut Schmidt's experimental observations of retrokinesis, which are impervious to explanation from any kind of physicalist framework. Retrokinesis (a.k.a. 'retro-psychokinesis') is the phenomenon in which someone can change physical facts in the past, using only mental intention. This can be fitted into the Berkeleian model by speculating that the act of telekinetic intention conveys a signal to the metamind, causing it to select one, rather than another, set of possible outcomes, amongst not-yet-observed physical facts — including facts in the past.

Formally, we can express it as follows. Let  $P_o(t_1)$  be the set of all physical facts observed by any conscious observer up to time  $t_1$ . This will include all physical facts that anybody has ever consciously witnessed in her life, human or otherwise. Now, as we have noted above, those observed facts will be only a tiny fraction of the complete set of all physical facts up to that time. So, given the actually observed facts  $P_o$ , there are infinitely many permutations of possible facts that were not actually observed but would nonetheless be consistent with the observations that have been made.  $P_a$  will denote a set of all physical facts, both observed and unobserved. There will be many such  $P_a$ , and I will denote them as  $P_{ai}$ . Each such  $P_{ai}(t_1)$  includes all facts, be they observed or not. Therefore, in particular, each set of all facts  $P_{ai}(t_1)$  contains the observed facts  $P_o(t_1)$  as a subset, that is,  $P_{ai}(t_1) \supset P_o(t_1)$ . We can consider the entirety of these possible histories, as follows. The collection of all these sets of possible facts,  $\mathbf{P}_a(t_1) = \{P_{ai}(t_1)\}$  is the set of possible histories consistent with the observations  $P_o(t_1)$ . So we can say  $\mathbf{P}_a(t_1) = \{P_{ai}(t_1) : P_{ai}(t_1) \supset P_o(t_1)\}$ . According to the principle of just-in-time object generation, the choice of which  $P_{ai}(t_1)$  is to be realised is left open at time  $t_1$ . This principle is motivated purely by the logic of mentalism, but it does have a suggestive similarity to quantum physics. Nevertheless the principle applies equally to macroscopic events that are not subject to quantum indeterminacy.

After time  $t_1$ , some new conscious perceptions will be had, so the cumulative set of observations will expand to  $P_o(t_2)$ . Not every set of all facts at  $t_1$ , that is, not every  $P_{ai}(t_1)$ , will be consistent with  $P_o(t_2)$ . So, out of the collection  $\mathbf{P}_a(t_1) = \{P_{ai}(t_1)\}$  only some can be expanded to become a  $P_{ai}(t_2)$  containing  $P_o(t_2)$ .

Let  $P_{o1}(t_2)$  and  $P_{o2}(t_2)$  be two possibilities for the physical facts observed by time  $t_2$ , both of which are of course consistent with the facts  $P_o(t_1)$  that were observed earlier, at time  $t_1$ . Of these two possible futures, suppose that  $P_{o2}$  is the desired outcome — the one that is being sought intentionally, or the one whose occurrence is synchronistically relevant. Now, out of all the possible histories  $\mathbf{P}_a(t_1) = \{P_{ai}(t_1)\}$  that support  $P_o(t_1)$  at the initial time  $t_1$ , there will be one particular subset  $\mathbf{P}_{a1}(t_1) \subset \mathbf{P}_a(t_1)$  each of whose members is consistent with  $P_{o1}(t_2)$  at the next time point,  $t_2$ , and another particular subset  $\mathbf{P}_{a2}(t_1) \subset \mathbf{P}_a(t_1)$  each of whose members is consistent with the other outcome,  $P_{o2}(t_2)$  at time  $t_2$ . Under mentalism, we can speculate that a mind could, at time  $t_1$ , somehow cause an element of  $\mathbf{P}_{a2}(t_1)$  rather than  $\mathbf{P}_{a1}(t_1)$  to be realised. Note that each  $P_{ai}(t_1)$  will include physical facts that refer to times earlier than time  $t_1$ . From a physicalist perspective it looks as if the mind at  $t_1$  is changing the past. From the mentalist perspective, though, that unpalatable conclusion does not arise: from that perspective, the undetermined physical events are all virtual, so they can be selected at time  $t_1$  with impunity.

It can be helpful to think of this in relation to man-made virtual reality systems. Those parts of the virtual world that have not yet been rendered and presented on the screen need not have become fixed and determined by the computer. If you are exploring a virtual building, say, opening doors and going from room to room, there may be some rooms that you have not yet visited. So, the computer may simply not have decided what it is going to put in those virtual rooms. The relevant part of its computer memory may just be blank. There may be no fact of the matter as to what is in the unopened rooms. Now, in this situation, the computer may decide to play tricks on you. If you decide to carry (in your virtual hand) some particular device such as a particular big key, then when you open a previously closed room, you may find inside a treasure chest whose lock is fitted by the key. In this encounter, you might think, “What a coincidence!”, or even “What synchronicity!”, but in fact the computer itself engineered the situation. When it detected what you were carrying, it secretly decided that it would put something relevant in the unopened room. It had complete freedom to do so, precisely because you had not yet observed the contents of that room.

My claim here is that the metamind may be playing precisely the same ‘trick’ when we encounter real-life synchronicity and visualised manifesting. The metamind detects what we are thinking, what we are intending or wishing for, and modifies those parts of the physical world that nobody has observed yet, but which will turn out to have significant implications.

### **3.5 Applied telekinesis**

Let us now look at potential applications of just-in-time object generation. We can consider two phenomena that are widely held to occur as part of daily life in New Age circles, but dismissed as necessarily nonsensical by stern, unbending physicalists.

‘Synchronicity’ is a phenomenon reported by Carl Jung, as meaningful coincidences that are causally unrelated, but which are psychically related to a mental state that you have at that time. ‘Manifesting’ is a phenomenon in which visualisation is used to produce some outcome in the external world. In both cases, it is held to be possible to influence future events, even though those events are themselves the product of chains of cause and effect, which may stretch back into the past, before the act of visualisation, or before the mental events that are supposed to trigger the synchronicity.

Can the Berkeleian model account for them? I suggest that it can do so, using just-in-time object generation as a mechanism, as described above. Let us take a look at some fairly specific examples of what may be just-in-time object generation in action.

### **Weather**

The first example, in fact, ties in with statistical observations reported by Dean Radin. The precise state of the air in the troposphere is never comprehensively measured by anybody. How the temperature, density, humidity, and wind velocity vary three-dimensionally throughout the bottom

eleven miles of the atmosphere determines what weather we have at the ground, but we never have a completely detailed picture of it. Meteorologists have only spot readings, at weather stations and weather balloons. From meteorological satellites, a lot more information can be obtained, but it is obviously limited to the radiation leaving the top of the atmosphere, and does not directly indicate the vertical distribution of physical characteristics throughout the depth of the troposphere, and moreover the information is still limited to a certain finite resolution in the two dimensions that it can scan. So, there are extensive ranges of physical facts in the atmosphere that cannot be observed. Nor can they be predicted. The atmosphere is a notoriously ‘chaotic’ physical system in the mathematical sense of the word. (‘Chaotic’ just means that the system is so sensitive that it may respond with a large reaction to arbitrarily small changes in initial conditions.) So, we just cannot tell what exactly is going on in the atmosphere. Therefore, the metamind could ‘modify’ those unobserved conditions, and nobody could ever detect any violation of physics, precisely because nobody will know what the exact distributions of density, temperature, water vapour, and wind were before the metamind made its intervention. Therefore, if people visualise good weather with the intention of manifesting it, and if the metamind detects those intentional visualisations, then it could respond by setting those unobserved facts in such a way as to produce the desired good weather.

This is just what Radin found in his investigations: that people can collectively induce good weather with their minds.

There are a few points I need to clarify. First, there is the nature of the metamind’s ‘intervention’ in the atmosphere. This may sound as if I am asserting that the metamind shifts parcels of air around, or moistens the air in one place whilst drying it in another. This is not what I am saying. What I am suggesting is that the physical characteristics such as temperature and humidity just do not have specific values in large parts of the atmosphere. They have only a probability distribution, which itself is determined by the conscious observations of the atmosphere at limited points. The metamind’s intervention is to restrict those probability distributions so as to make the desired outcome much more likely, or even certain, whilst remaining consistent with existing observations.

For people who are still locked into the picture of the physical world as being laid out, fully formed for an omnipresent viewer to see, this theory is unintelligible. For them, it is obvious that each part of the atmosphere has a definite temperature and humidity, and if the metamind is intervening in the weather, it must do so by miraculously redistributing the temperature and humidity and thereby breaking the laws of nature. That, however, is the wrong picture. In fact, the physical world does not exist like that. It is a virtual world defined by a database in the metamind that is only partly populated, and the populating of that database can be affected by mental intention without breaking any laws of nature.

## Healing

Russell Targ and Jane Kutra, in their book *MIRACLES OF MIND* discuss the possibility that a person’s internal state of health may remain modifiable until it is fixed with definitive observations and diagnosis. In their writing, however, they are still using the incoherent notion of transmitting influence back into physical time. But, if we translate their suggestion into the Berkeleian model of just-in-time object generation, then it is credible. Thus:

*Can we send healing thoughts into someone’s past, to help them to be less sick than they presently are? ... Surprisingly there are data that suggest we can facilitate this healing, so long as no one knows how sick the patient really is. ... [A]n early and definitive diagnosis of an illness might serve to “lock-in” the illness, thereby making it impossible to affect or cure it retro-causally.*

Because of their assumptions, they have presented this idea as a self-contradictory claim. They say they want change “how sick the patient really is”, which is not coherent. What I believe they are trying to articulate, and what the Berkeleian model says, is that how sick the person may be is not yet determined: there is no fact of the matter. The metamind has not yet populated the section of its database that constitutes the facts of the person’s internal condition. Consequently a bio-telekinetic

action could sway the metamind one way or the other, prior to an accurate observation being made of the internal state.

Targ and Katra cite some intriguing recent research by Schmidt, in which he reports retrokinetic experiments in which the pre-recorded but unobserved breathing rate of a person 'in the past' can be affected by telekinetic intention at a later time.

### **3.6 The targetting problem**

I have suggested that in normal perception the following events occur: a 'request signal' is conveyed from the percipient to the metamental engine, which directs it to the appropriate metamental object; that in turn will produce a 'response signal' containing the experientia appropriate to perceiving the corresponding object; and it will convey that response signal back via the metamental engine to the percipient. This communication is managed by the metamind, in two ways. First, the metamind attaches to the request signal some details of the observer's whereabouts, so that the metamental object can generate imagery for the correct perspective; and the metamind will synchronise request signals from different senses, so that, for instance, you can see and hear someone talking at the same time. Second, it will handle the returned response signals, organising them into a coherent, synchronised pattern.

In telecognition, the person will by-pass the metamind. She will convey the request signal directly to the metamental object, and she will then handle the returned response signal herself.

Targetting is a key problem in all non-local psi phenomena. If you want to convey a telepathic message to someone, how do you specify the intended recipient? By what navigational mechanism is the message steered to the correct mind? How does the intended recipient know which messages are intended for her and not for someone else? Likewise, if you wish to telecognise a remote site, how do you specify that site? By what mechanism is the request signal navigated to the target? How is the response signal steered back to you as originator? Also, in telekinesis, how do you make the telekinetic action hit the target system, and not over-shoot or go down the corridor and hit another system?

Two hypotheses may be entertained to explain navigation in acts of telepathy, telecognition, and telekinesis. I shall call them the 'soup model' and the 'spaghetti model'. In the soup model, the metaverse is thought of as an unstructured, directly content-addressable soup of mental stuff. To pick out a telepathic target or a telecognitive target, you just focus your mind on some distinctive detail of the required target, and it will be selected by a universal pattern-matching power, and the target will automatically respond. On the other hand, in the spaghetti model, to locate a target, you must trace a path through the intentions of other minds to the target.

Although it seems to be popular, I do not see how the soup model could ever work. In order to pick out an individual telepathic recipient, you would have to have a very clear mental picture of her, in order to differentiate her uniquely from possibly hundreds of other people on the Earth who have a similar appearance. Moreover, there are many experiments in which the telepath or telecognant is given only the barest of information. For instance, in the remote viewing programme started by SRI, the target for telecognition was variously given geographic coordinates, or encrypted coordinates, or a random number looking like coordinates, or the word "Target", with equal degrees of success.

Therefore, I propose the spaghetti model. To see how this works, consider the remote viewing experiments as an example. The monitor has a mental intention of the target, and it is evident that the remote viewer picks up on this. That, however, is clearly not enough, for the viewer must then navigate from the monitor's intention to the target itself. In the monitor's prior experience there must have been some direct or indirect contact with site. For example, she might have seen a photograph of the site, which might now be in a folder beside her. The viewer must therefore pick up on that picture, and from that picture link to the target itself. The existence of those spaghetti-like connections requires that every act of perception or volition leaves a permanent and navigable psychic link.

Those links are implied by the basic Berkeleian model of perception. Recall that, according to the Berkeleian ontology, things exist only when perceived. So, you must tell objects when you are observing them, so they will know that they have to render themselves in perceptual form, which you can then perceive. Consider, for instance, the desk in front of you. Your visual perception of it exists only when you are looking at the desk. The perception is not just sitting there wait for you to experience it. Therefore, when you open your eyes and look at the desk, you must send a signal of some sort to the metamind (which will be directed to metamental object of the desk), to trigger its generation of the requisite perceptual experientia. So, whenever you perceive something, you must convey a ‘request signal’ to its metamental object, which then conveys back to you a ‘response signal’ containing the experientia that make up your perceptual sensations. In order to deliver that response signal, the metamental object must know the return route, or be able to specify the return destination: so the request signal must have created a link. By means of that link the metamental object can direct its response back to you. (Otherwise, how would you ever receive the experientia that the metamind has generated for you?) A good analogy is the return address on an email message that has traversed the internet: you can follow it back to the sender.

In the extratemporal domain of the metaverse, those links are always accessible. As extraphysical time is cumulative, the links persist forever. Hence a subject can at any time connect into any such links that have been established, and follow them to their targets.

So, the model of telecognition is that the subject makes a direct connection to some pre-existing link; and, rather than sending a request signal to the metamental engine in the normal manner, she sends the request signal along that link, directly to the metamental object. The metamental object neither knows nor cares whether it has received this signal from an ordinary observation or a remote viewers. That object just processes the request signal and then uses the same link to convey the response signal back to the subject, again bypassing the metamental engine, and thereby delivering perceptual experientia.

This model has clear implications for testable experiments. I will outline two experiments here, to illustrate a research avenue that I think would be worth while pursuing.

## **Remote staring experiment**

To begin with, consider the remote staring experiments that Rupert Sheldrake has made famous, and on which Marilyn Schlitz has carried out a lot of rigorous work. In this experimental set-up, a staree sits in a room, being monitored by a closed-circuit television camera, while a starrer stares at the image on a screen. It has been found that the staree reacts when stared at through this indirect means. The Sheldrakean explanation, which I believe Schlitz finds plausible, is that a psychic ‘energy’ of some sort travels along the television cable from the starrer to the staree. I find this theory untenable — partly because I reject the energetic model of psi for reasons discussed elsewhere, and partly because it seems counter-intuitive that a basic, energy-like thing would possess enough intelligence to jump into the television screen and know which piece of wire to travel down. Why, for instance, does this psychic energy not go down the mains power cable and spook somebody in the power station instead? Or, for that matter, why does it not just go down the foot of the table that the television set is sitting on?

According to the Berkeleian model that I have proposed here, all that is required is that the ‘mental spaghetti’ should have been connected from what the starrer is staring at to the staree. Instead of a real-time television picture, it could be a video recording, or a still photograph, or a drawing, or an autograph. The theory proposed here predicts that the same success rate will be achieved.

Some interesting permutations of this experiment could be conducted with identical twins. In the following, I have imputed to the Sheldrakean model what I expect it to predict. (Sheldrake was non-committal when I asked him what he would expect the outcome to be.)

To do this, we must assume that the television pictures are digitised and pass through a computer, which can manipulate them. The twins, whom we shall call Mary and Jennifer, should be made to

look as similar as possible, with the same hair style and the same clothes, sitting in identical rooms, in the same position in relation to the camera. There are three phases to the experiment.

- The camera circuit will randomly switch between showing Mary and showing Jennifer. Both the Sheldrakean and Berkeleian models will predict that the correct staree will react to the staring. (The soup model, on the other hand, would predict that the wrong twin will respond half of the time.)
- Now, we use some real-time software to interpolate the two pictures. For example, the computer will first realign the images so that they are in exactly the same position on the screen, then it will interchange groups of pixels between the two pictures. It might be necessary to carry out some morphing operations to get a good match. The end result will be a composite picture that will contain equal amounts of Mary's picture and Jennifer's picture, and which the starrer will find indistinguishable from either Mary's or Jennifer's picture. The starrer is not told that it is a composite picture. According to both the Sheldrakean and the Berkeleian models, both twins will now react equally. (Depending on the details of the Sheldrakean model, we may or may not expect some diminution of effect size.)
- Finally, the computer displays the name of one of the twins, either "Mary" or "Jennifer", above the composite image. The starrer is still not told anything about the picture's being a composite. According to the Sheldrakean model, both twins will still respond equally, since the image on the screen will still be directing the psychic 'energy' to both twins. According to the Berkeleian model, however, the starrer now has a basis for following the psychic spaghetti link to one particular twin, and that twin will therefore react more. Whether the other twin will still react is not clear. My expectation would be that the starrer's mind would then interpret the display on the monitor as depicting the named twin and only that twin would react.

## Randomised tags

In this experiment, we have a pool of  $N$  starees (say, ten of them). Before the experiment, the integers  $1,2,3,\dots,N$  are randomly generated and stored in  $N$  randomly selected elements of an  $N+1$  array of memory cells in a computer program. The single unused element of that array is chosen randomly. The computer then, in a separate action, randomly generates the integers  $1,2,3,\dots,N$  again, and prints them out in random order onto sheets of paper, one number per sheet. Each staree is given one sheet to look at and memorise the number.

The experimenter chooses one staree at random, and types her code number into a data-entry screen on the computer. We will refer to this as the target number. The computer stores it in the one unused slot of its array, which we will refer to as the target's element of the array.

Then a series of, say, a hundred trials begins. In each trial, the computer selects one memory cell out of its array of  $N+1$ , and displays its contents on the screen. The starrer then stares at that number, with the intention of influencing the person whose number it is. (The starrer has not been told which number has been assigned to which person.)

The Berkeleian 'spaghetti' model predicts that (i) the only staree who will react will be the targetted person, and that (ii) that staree will react only when the starrer gets the target number from the target's element of the array. It is important to note that, amongst the other  $N$  numbers that will randomly turn up, there will be one that is numerically identical to the target number — but it will not enable the starrer to induce a reaction in the staree. For instance, suppose that  $N$  is ten, and the target number is six. Suppose that when the  $N$  elements of the array are initially populated, the number six happens to end up in element no. 9; and when the experimenter selects number six as the target number, it happens to end up in element no. 2. The prediction is that only staree number six will react, and she will react only when the number from element no. 2 is displayed. The reason for this prediction is that only element no. 2 contains a number that is psychically linked to a staree. Although element no. 9 contains a numerically identical value, it does not possess that psychic connection. Of course, the 'soup' model would predict that the staree will react with both elements

no. 2 and no. 9. (What would be predicted by an energy model, Sheldrakean or otherwise, I have no idea.)

As far as I am aware, nobody has done this experiment. Even if the prediction that has been derived here from the Berkeleian model turns out to be wrong, I think it will be an illuminating experiment to do.

### **3.7 Metamental daemons**

A metamental object is characterised by having no intelligence of its own. It is ‘dumb’ in computer jargon. We can also consider another kind of entity, which I shall call a daemon, which possesses a rudimentary form of intelligence, but lacks the fully reflective conscious awareness and self-awareness that characterises sapient beings such as people.

The term ‘daemon’ originates in Plato’s writings, where it denoted a powerful entity responsible for governing the manifest world. In the computer industry, it has taken on the less grand but more useful meaning of an autonomous program that is continually scrutinising its environment and, when the circumstances are right, reactivates itself and sets about performing some task.

The evidence for the existence of metamental daemons is highly contentious. I have argued elsewhere that phenomena that present themselves in such diverse forms as angels or ufos are in fact such daemons, which have been generated by deeper mental forces in the collective unconscious in order to perform some task, as suggested in Carl Jung’s theory that they are exteriorised projections.

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