

EXISTENTIAL REFLECTIONS

John L. Bell

Reflections on Algorithmicity and Consciousness

Why should one believe that conscious awareness is *solely* the result of the combinatorial complexity of the brain - the idea that the brain is some kind of computer performing calculations? What is the connection between consciousness and calculation: could it be transformation of quantity into quality? The claim that the one is reducible to the other is unconvincing—as unlike as chalk and cheese! In his book *The Emperor's New Mind*, Roger Penrose acknowledges this.

In any case, supposing that one were to become convinced on “scientific” grounds that there is no option but to regard consciousness as, ultimately, a matter of computation, how would one go on to formulate a cogent computational account of the evident and irreducible *subjectivity* of consciousness: the fact that a conscious being has access only to its own—and to no other—consciousness?

I have long been convinced that whether any "objective" account of consciousness will fail to do justice to its uniquely subjective character. In the words of Hermann Weyl, such an account

may be objectively adequate, but it is shattered by the desperate cry of Judas: Why did I have to be Judas! The impossibility of an objective formulation to this question strikes home, and no answer in the form of an objective insight can be given. Knowledge cannot bring the light that is I into coincidence with the murky, erring human being that is cast out into an individual fate.

Penrose and the AI community appear to share the belief that such an account is possible—and presumably necessary! Indeed the AIsters, at least in Penrose's portrayal, claim already to be in possession of it. Penrose himself is skeptical of this claim, but still cherishes the hope that a satisfactory “objective” account of consciousness will somehow emerge from future developments in physics. In any event, the fact that both parties believe such an account to be formulable in principle sharply distinguishes them from philosophers who take consciousness seriously, e.g. Descartes, Husserl who regarded consciousness as an irreducible “given”.

I believe that the inescapably “external” or “extensional” character of any “objective” account of consciousness renders it incapable of addressing the irreducibly subjective or “intensional” phenomenon of actually *being conscious* - just as mathematical theories of time necessarily fail to capture the phenomenon of *being in time*. Scientific theories are not intended to capture the essence of the subjective - to that extent scientific knowledge is limited.

Whether thought and objective reality are, in the last analysis, algorithmic in character is a question of some subtlety. The Gödel incompleteness theorem establishes the “nonalgorithmic” character of the truth of a particular arithmetical statement *A at the level of a specified formalism*. On the other hand, the truth of *A* can be established within a *strengthened* formalism, thereby reinstating “algorithmicity” of the truth of *A*. But now, inevitably, new “non-algorithmically verifiable” statements show up at the level of the strengthened formalism, and the whole business starts over again. The point would seem to be that, while “algorithmicity” is manifested locally at higher and higher levels of description and is likely to be an essential constituent of such descriptions, nevertheless diagonal arguments show that algorithmicity *cannot* be imposed *globally*, that is, uniformly and simultaneously, on *all* levels of description.

The apparent ubiquity of algorithmicity, or, more generally, symbolizability, should not mislead us into believing that the world is itself an algorithm or a symbol.

Reflections on the Oneiric Self

*Cast a cold eye
On life, on death
Horseman, pass by!*
— **Yeats**

To awaken is to collapse the wave function of dreaming

----- **Bemnhall**

Reflecting on the differences between the two selves each of us possesses – let me term them the *conscious* self – the self of which one is aware when one is awake – and the *oneiric* self, the self that emerges, if murkily, when one is asleep, and whose only experiences are dreams – it is quite striking that, while the oneiric self sees and hears, it lacks certain senses, for example (in my case, at least) the olfactory and the tactile. But this very fact confers certain “advantages” on the oneiric self. For instance, the oneiric self’s lack of tactile sensibility reduces what the conscious self would feel as actual pain to a kind of diffuse anxiety. In contrast with the conscious self, the oneiric self is characterized by its lack of volition, its passivity, its incapability of understanding tenses, its inability to control the direction of its temporal tangent vector. From the point of view of the conscious self, it resembles the past (conscious) self, over which the conscious self has no control. On the other hand the essential ephemerality of the oneiric self enables it to avoid the boredom, the meaningless repetition, that burdens the conscious self: while my oneiric self, at any rate, is often subject to anxiety, it never experiences boredom – or at least, my conscious self, in the effort of recollection, has filtered that out! The conscious self, when it awakes, recalls its oneiric self as a kind of fleeting version of its past conscious self, as a kind of automaton, a version of itself deprived of the volition and self-consciousness that the conscious self ineluctably attributes to itself. So the conscious self has something denied to its oneiric equivalent: however bored, however anxious, however tormented, the conscious self always has the potential escape into sleep, that is, into an escape from full consciousness, yet at the same time accompanied by the hope, the conviction even, that consciousness will soon be fully restored – thereby, in recollection, liberating the oneiric self from its fleeting existence – an existence entirely dependent on the reawakening, the re-emergence, of the conscious self into objective time. (This is, in turn, dependent on the continued functioning of that conscious self’s material brain, which disrupts the continuity. In any case, as Shakespeare has observed: “life’s time’s fool, and time must have a stop”). Nevertheless, the oneiric self has another advantage over the conscious self, namely, the plasticity of the dream-world within which it dwells, the world of pure willless imagination where natural law is suspended, and also through the idea suggested by stratified dreams that there is an inscrutable relationship between mind and reality – or at least what the mind takes to be reality – which is simply not accessible within the waking state.

While the oneiric self may experience what the conscious self would regard as quite startling deviations from natural law, distortions of the familiar – all those

defiances of gravity, etc., that make (the recollection of) dreaming so delightful, and on occasion, in the form of nightmares, so harrowing— the oneiric self seemingly cannot escape the spatiotemporal categories to which its conscious counterpart is subject. For example, it still experiences linear time, even if with discontinuities (the “jump-cuts” of dreams), it does not travel into the past, it is never in two places at once, etc. In fact the (or at least my) oneiric self is quite conventional, a mere distortion of my conscious self, except for the fact that only *it* is the subject of stratified dreams— leading to the idea, already mentioned, that there may be a *hidden* arrangement to the world which is not immediately accessible to the senses, in which, perhaps, the same spatiotemporal (basic categorical) laws prevail but within which another dimension beyond the temporal-linear also figures. Pure SF of course—but I can only blame my oneiric self for these fantasies!

The *content* of the sensations or experiences of the oneiric self resides in the *recollections* of the conscious self upon awakening from a dream. So if in this sentence we replace “oneiric” by “past”, “conscious” by “present” and “on awakening from a dream” by “reflecting on the past” we obtain the assertion: the *content* of the sensations or experiences of the past self resides in the *recollections* of the present self reflecting on the past. This shows that the oneiric self bears a certain resemblance to the past self. But of course there is a crucial difference: from the standpoint of the present self, the past self is merely the present self *as it was in the past*, with no essential change in the meaning of “self”. To put it in terms of a proportion,

$$\textit{Present self} : \textit{Past self} = \textit{Present} : \textit{Past}.$$

The cancellability of the “self” term here indicates that it is an invariant, a substrate, the terms “present” and “past” then being no more than temporal modifiers. Now entertain the corresponding proportion

$$\textit{Conscious self} : \textit{Oneiric self} = \textit{Conscious} : \textit{Oneiric}$$

What can be made of this? Is the sense of the term “self” here the same as in the above proportion? Clearly there is a difference between the two: the present and the past can be interpreted objectively, outside the mental states of the subject, so that the first proportion expresses a correlation between the subjective and the objective. The second proportion, on the other hand, expresses a correlation

between the subjective and the *metaphysical*. The cancellation of the term “self” here leads to genuinely new categories: the dreamt and the actual—transcending the linearity of objective time and suggesting possibilities even, so to speak, “undreamt”.

Can the past self be viewed by the present self as an “idiot” with the same irritation that the present self can be so regarded by itself? No, because time has honed down those irritations and pains experienced by the (recollected) past self to the point at which the present self can regard them with equanimity.

The Tangent Space of Dreams

*From the remorseless twist, the grip, of the actual
A dream, or a nightmare, is the ego's escape.
The ego set free to follow its own bent.
Dreams are tangent vectors of a sort.
Only not straight
But still curved, still twisted.*

The retreat into sleep, and thence to dreams, to slide from Hypnos into the embrace of Morpheus, should overcome the reverses encountered in actual life (“knitting up the ravelled sleeve of care”), even if the oneiric self reproduces, in an immediate yet curiously reduced (but not colourless) way, all the mental pain experienced by its correlated conscious self. After all, the oneiric self resembles the conscious self to the extent that both experience anxiety, fear, pleasure, and also understand language, etc. What the oneiric self lacks is not consciousness, but *self-consciousness*, —better, the awareness of its own existence— the grip of the idea that it is *actual*, it genuinely *exists*. The oneiric self is a kind of abstraction, a mere sketch of the actual self. Lacking a body, it has only the bare notion of such, and so is, in particular, rendered immune to pain. The price paid for this mercy is the loss of *will*, the directed volition, the *conatus* of the conscious self. Accordingly it might be said that the oneiric self dwells in a kind of tangent space to the manifold of the conscious self. Indeed, on awakening, the conscious self, in recollecting a dream, is often struck by the idea that its oneiric self is a kind of “first approximation” to its own nature - the first couple of terms of its Taylor expansion, so to speak - perhaps lacking only that self-consciousness - embodied in the

higher-order terms of the Taylor series- which somehow provide the ultimate confirmation of one's waking existence.

In its efforts to control the future, the conscious self strives to bend the outer world to its will, and so necessarily lives in a curved, even twisted space. The oneiric self, by contrast, rushes off at a tangent. Just as the tangent bundle is a linearized presentation of a curved manifold, the oneiric self is a simplified, graphic counterpart to the conscious self. But, unlike its mathematical correlate, the oneiric self retains some of the "curvature" of the conscious self.

Reflections on the Self, Consciousness and Time

The existence of objective time, together with its flow from past to future, has been challenged by philosophers, and even, latterly, by physicists. But the majority of thinkers in the past accepted that the world is immersed in objective flowing time. Both Newton and his mentor Isaac Barrow certainly did; the latter put his conviction on the matter so beautifully:

whether things move or are still, whether we sleep or wake, Time pursues the even tenor of its way.

Objective flowing time can, and often is, compared to a flowing river. Take the Amazon, for example. Geologists assert that the Amazon originated some 11 million years ago. This means that 11 million years ago both the river *and its flow* had objective existence, the former spatiotemporally, the latter in time. Now if one's physical body is likened to a river, and one's subjective time-consciousness to the river's flow, then the following proportion suggests itself:

River : Flow = one's body : one's time-consciousness

Of course this proportion is inexact since on the left side the river and its flow are both objective - an objective entity and an objective process, respectively - while on the right

side one's body is an objective entity while one's time-consciousness is a subjective phenomenon.

Sceptical philosophers have denied the existence of the self. Hume famously reported that when he examined his own thought processes he turned up a mere flux of impressions, with nothing like a "self" binding these impressions together. I do not doubt that this is a faithful, objective report of his own subjective investigations. My own self-analysis has led to different conclusions. When, "to the sessions of sweet silent thought, I summon up remembrance of things past", it seems clear to me that it is a grasped entity called *I* - my *self* - that is doing the summoning. What the self is summoning through memory is its previous mental states - both in subjective and objective time. That being the case, from a mathematical point of view, the "self" might be thought of as a *map* of some kind, denote it **Self**. The domain of **Self** should be time, taken in the subjective sense. The codomain of **Self** will presumably be the mental states of the subject, as these vary in subjective time. The recognition that one actually has a self then amounts to acknowledging the *objective* existence of the correlation between the two subjectivities of time and mental states correlated by the map **Self**.. Should the codomain of **Self** include just conscious mental states or should it also embrace unconscious, or less than fully conscious mental states, for instance oneiric states? I am not sure.

A principal function of consciousness is the creation of the present. Objectively, there is no "present". Aristotle questioned the existence of time on the grounds that none of its parts can be said to exist: the past no longer exists, the future does not yet exist, and the present, while it may exist, is a sizeless instant and so cannot be considered a part of time. The present is not a part of objective time. It *is* part of subjective time, generated by consciousness. In a sense the present constitutes *all* of subjective time, since it is the nature of thoughts to be presented to consciousness only in the present. Even memories of the past and anticipations of the future are summoned up in the present.

If the present exists only for consciousness, subjectively and not objectively, the same issue arises for consciousness itself.

Consciousness is a form of temporal embroidery which only the embroiderer can see. It is a display visible only to the displayer.

The irresistible forward flow of objective time drags the subject over all obstacles it may anticipate.

Subjective time is truncated while objective time is not. This constitutes the faith of the "temporal objectivist".

The great enigma: how can the brain, as an objectively existing entity, engender the subjectivity of the "I"? Put this question aside for the moment - as Husserl would say, apply the *epoché*. This amounts to starting with what is immediately given. And what is immediately given to me? Just my own awareness and its content, sensations etc. And that very immediacy further requires that I say that my access to my awareness is given in the present, the "now". While (my) awareness is necessarily in the present, it can, through a kind of stretching of the (specious) present, be directed at various objects such as sensations, appearances etc. These objects vary with the time that they are presented to awareness. Awareness can also, by the application of a certain mental discipline, be directed at *itself*. From this emerges a new object of awareness, one that in its essence does not vary with the moment at which it is grasped, namely, the awareness of *subjective temporal flow*, Husserl's *time-consciousness*, the experience of a flux or flowing or changing present in its purest sense. The flow is itself an embodiment of change, but its intrinsic form is unchanging. But, while pure in its fluidity, awareness of the temporal flow reveals it to possess an additional quality, namely, *one-dimensionality*, and hence, like a river, a *direction* in which it flows. This directed flow is described as *from past to future through the present, the "now"*. The content of the *present* is what I am *immediately aware of*, immediately "presented". That content has an intimacy which is denied to the content of the *past* which is what I summon up through *memory* - through those "sessions of sweet silent thought" - which are presented indirectly to my awareness, as representations of contents that, so to speak, *were* part of the present, that is, contents of which I *have been* immediately aware. Note that these are *representations* of past content and are only actually "present" insofar as I am immediately aware of them: it is their *content* which is not experienced directly. Thus in summoning up the past, awareness divides its content into two components: an immediately grasped representation of the contents of the past as remembered, together with an awareness that what is immediately grasped *is* such a representation. Finally, the content of the *future* is created by *imagination*, employed in such a way as to present to awareness, in an indirect way, configurations which *could become* part of the content of the present, that is, configurations of which I could become immediately aware.

When awareness is directed at itself, many different qualities, or objects, may emerge. For example, if I see a green leaf, I am aware of its greenness, and if I direct my awareness to my awareness of the greenness, in doing so I become aware of a particular quality of my awareness, namely that it is directed towards a green leaf. Similarly for any other object of my attention. Now there is one object, or quality which *always* emerges when awareness is directed at itself with sufficient focus, namely *subjective temporal flow*. This leads to the insight that my awareness is a manifestation of subjective temporal flow associated with *me*, a flow of consciousness whose specific form uniquely determines my subjectivity, indeed my very identity. It is a short step from that insight to the recognition that the awareness of *any* conscious being is a version of subjective temporal flow shaped in the manner specific to that being. To employ an analogy, due essentially to Heraclitus, rivers have in common the fact that each is a manifestation of flow, but the form of that flow varies with the river and determines its identity. The practice of meditation is connected with this insight. It enjoins us to still the flux of thoughts and impressions coursing through our minds, through our individual awareness, whose varied forms distinguish us. Meditation is intended to replace that varied flux by stasis, which through its nature admits no distinctions, so revealing a unity, a single awareness, a single consciousness.

Direct accessibility to consciousness. I have no direct access in the present to the content of my own past awareness, only indirect access through *memory*. My constant access in the present to my own awareness leads me to affirm with certainty Descartes' *cogito ergo sum*. We can be certain of nothing except as it is given in the present. But whatever certainty we achieve in the present is instantly snatched away by temporal flux, with the sole exception of the certainty that a flux is still in place. The *cogito* is confined to the present. Nevertheless, through a shift of tenses I can also affirm, admittedly with a reduced degree of certainty, *cogitabam, ergo eram*: I thought, therefore I existed. This is put objectively. Subjectively, it should be phrased, *I remember that I thought, therefore I existed at the time of thinking*. (Not up to the Latin here!) This seems to me, *contra* Hume, to furnish a grammatical basis for the belief in the idea of the self as subsisting through time.

If I am materialist and accept that my consciousness is in some mysterious way a product of (or at least correlated with) neural processes in my brain I also have to acknowledge that I have no direct access to the physical activity going on there. When I close my eyes I may see flashes in my retina but I cannot see the underlying neural

“wiring” that presumably produces these flashes. Nevertheless, unlike direct access to past mental states, the brain *could* be wired up in such a way as to give consciousness direct access to its own neural activity. This is the essential point of Philip K. Dick’s story *The Electric Ant*, in which an android is directly presented with evidence that its own subjective awareness is the result of nothing more than the scanning of a tape unspooling in its chest – note, not its head!

I can say that I have direct access to the content of my present awareness, and I *had* direct access to my past awareness, even if I do not have such access now. This is essentially predicated on the certainty *to me* of my existence in the present. But, even in the present, I do not have, and indeed have never had, direct access *at all* to the content of the awareness of *other minds*, in particular that of *your* mind. I am certain of *my* own existence *in my present*, but I am also certain that I have no direct access to *your* certainty of *your* existence in *your present*. The fact that I *now* have no direct access to my past awareness is strikingly analogous to the fact that I *never* have direct access to *your* awareness. Above I attempted to infer the existence of my past awareness (not that I ever doubted it!) by subjecting Descartes’ *cogito* to a shift of tenses. To affirm the existence *to me* of your awareness (not that I ever doubted that either!) in the same spirit I could resort to some further grammatical conceits. First, invert Descartes’ maxim to obtain *sum, ergo cogito*, and then shift persons to affirm *es, ergo cogitas*: you exist, therefore you are aware. *Voila!* Ah, if only philosophy were as clear-cut as grammar.

To return to the great enigma: how can the brain, as an objectively existing entity which can (in principle) be inspected by anybody (including oneself) engender the subjectivity of the “I”, which is accessible only to *me*? I am sufficiently materialist to accept that thinking, awareness, subjectivity do not take place without the presence of a functioning brain, just as I accept that my existence is tied to a certain region in objective spacetime. I accept that, before I was born, and my brain was formed, my subjectivity did not exist. I accept that, when my brain dies, my consciousness will die with it. *Credo in doctrino materialismo*. I can even accept naturalist explanations of the emergence of consciousness, and the claim that conscious awareness is an attribute of brain activity that is “local” in the sense that it is directly accessible only to the individual brain in which that activity is actually taking place. But the recognition of the local nature of conscious awareness in this objective sense does not, and cannot, do justice to the *experience* of this local phenomenon by the *subject* associated with the individual brain. As philosophers have long recognized, the existence of subjectivity is an objective (or at

least transsubjective) fact, but the essence of subjectivity is not conceivably reducible to any objective description of the material conditions necessary for its emergence.

In *Cartesian Meditations* Husserl says:

Among the Objective sciences there is a science of subjectivity; but it is precisely the science of Objective subjectivity, the subjectivity of men and other animals, a subjectivity that is part of the world. We are envisaging a science that is, so to speak, absolutely subjective, whose thematic object exists whether or not the world exists.

Here the “science of subjectivity” is phenomenology, and the assertion that “its thematic object exists whether or not the world exists” provides the basis for the application of the Husserlian *epoché*. This detaches the subjective, regarded as an objective part of the world, from that very world, whose existence is thereby “bracketed”, thus enabling the subjective to be to be studied *sui generis*, bestowing on it an existence independent of whatever the actual material conditions – the existence of brains, bodies etc.- necessary (perhaps) for the presence of subjectivity and consciousness in the objective world. This procedure is implicit in the practice of mathematics (and Husserl, after all, was a mathematician by origin). Consider elementary arithmetic, for example. Whenever we make an arithmetical calculation – or entrust it to a computer – we employ formal rules of operation with numbers (commutativity, associativity, etc.,) which we implicitly assume will give correct results *independently* of whatever physical objects (apples, dollars, etc.) the calculation procedure is applied to. This independence enables arithmetic, and accordingly all mathematics, to be treated as “a science whose thematic object exists whether or not the world exists.” Of course, the mathematical *epoché* is better known by the term *abstraction*. This means the ignoring of incidental features of individual objects in the external world, not the wholesale ignoring of the external world itself.

The Subjective is not manifested within the Objective. Here is a simple example that demonstrates this. A friend and I are sitting at a table in a Chinese restaurant. Knives, sharp as razors, have been provided for the diners to slice the pieces of meat and fish into strips awaiting immersion in the liquid simmering in the hotpot on the table. I pick up a knife and attempt to slice the meat for both of us. My hand slips and I slice my thumb. Blood flows. I see it. My friend sees it. I experience the pain. But my friend is spared the pain. He is presented only with the visual evidence of the flow of blood, and so undergoes just a single “objective” experience. I, on the other hand, as well as

witnessing the “objective” flow of blood, also undergo the “subjective” experience of pain. My “double” experience distinguishes me as the *subject* in this scenario. By his witnessing the flow of blood alone my friend can be considered to represent the Objective. However sympathetic he (as the “Objective”) may be, he cannot directly experience my subjective pain. In this sense the Subjective is not manifested in the Objective.

“*This too shall pass*”. In objective time, yes, of course, since objective time, like the old newsreels, marches relentlessly on. Objectively, the past is the past: the present “this”, by the time it is identified, has already “passed”. But in subjective time, memory may ensure that the sting implied in the wish that “this” too shall pass may not pass for consciousness as long consciousness persists: “this” (or the memory thereof) is only extinguished with the extinction of consciousness itself.

The billions of consciousnesses on the earth can be likened to the constellation of stars in the sky, yet the bodies in which these consciousnesses are entrapped are confined to the terrestrial sphere. It’s very strange that nonmaterial entities should be subject to gravity.

It is part of the essence of developed human consciousness to recognize both the I and the Thou. But that very recognition can lead the I to *envy* the Thou. The simplest, purest consciousness is that of a human baby which presumably lacks a self-conscious I, and so also lacks the idea of a Thou and is thus spared the scourge of envy. Human babies are unconscious solipsists.

The principal function, indeed the essence of consciousness, and its objective correlate, subjectivity, is the precipitation of the present from the flux of objective time. I believe this to be true for any conscious being, whether or not it possesses self-awareness, or even a temporal sense, the grasp of the idea of past or future time, let alone a capacity for expressing that idea. Even a nonconscious being such as a clock precipitates the present through its ticking. It is the nature of conscious awareness, of subjectivity itself, to be immersed in the flow of time in such a way as to enable it, if is sufficiently evolved, to capture, and then identify itself with the fleeting moment at which it is continually actualized. Conscious experience takes place only in the present.

The strange thing is that consciousness is yoked not just to objective time but also to a physical body, within which one's consciousness apparently dwells. I am a member of that likely less than happy minority who believe that consciousness ceases to exist, in an objective sense, with the death of the body. Like most beliefs, my belief that consciousness ends with physical death is built only on indirect evidence. Doubly indirect, actually. I have no immediate evidence for my belief, however strongly held, that anybody else's consciousness *actually exists* when he or she is alive, since I lack direct access to it. That being the case, how could I possibly have direct access to the fact of termination of something to which I had no direct access in the first place? So can I be so sure that another's consciousness ceases to exist with his or her death? This observation applies to the sadly expanding company of people I have known and loved who are now deceased. I am not certain that their consciousnesses no longer exist, but I choose to believe it to be the case.

A subtler problem emerges when one contemplates *one's own* death. I have immediate access to my own consciousness, and so am presented with direct evidence for its existence. This evidence is direct precisely because it is presented to my consciousness. But it is clearly impossible to provide analogous direct evidence that my physical death leads to the cessation of my consciousness, since the cessation of my consciousness leaves nothing to which to present such evidence. Wittgenstein essentially affirms this in *Tractatus* 6.4311:

Death is not an event of life. Death is not lived through.

The passage continues:

If by eternity is understood not endless temporal duration but timelessness, then he lives eternally who lives in the present. Our life is endless in the way that our visual field is without limit.

Only if consciousness in some form survives physical death is direct evidence of the fact available, in principle, to the subject. In *Tractatus* 6.4312 Wittgenstein reflects on this possibility:

The temporal immortality of the soul of man, that is to say, its eternal survival also after death, is not only in no way guaranteed, but this assumption in the first

place will not do for us what we always tried to make it do. Is a riddle solved by the fact that I survive for ever? Is this eternal life not as enigmatic as our present one? The solution of the riddle of life in space and time lies outside space and time.

I cling to the belief that consciousness ceases with the death of the body, despite the fact that I could never be provided with direct evidence of that cessation. (But then, there are very few beliefs based on direct evidence.) My belief is closely connected with my acceptance of the uninterrupted forward march of objective time, that juggernaut which drags both subjectivity and the associated physical body over every possible obstacle, like a locomotive dragging twin cabooses, the caboose of the body and the caboose of the mind. After a finite objective time has elapsed, the second, mental caboose, the caboose of subjective consciousness, is uncoupled from the first caboose of the physical body, along with the locomotive of objective time, which continues to chug indefatigably into the future. What then happens to the second caboose, the caboose of consciousness, after it is uncoupled from the rest of the train? The monist materialist would deny the very existence of this second caboose, regarding it as an illusion engendered by the first caboose. The dualist believer in both souls and bodies would maintain that the second caboose, once detached from the objective train, is shunted off into a siding beyond the main line of objective time, to "await" its recoupling to a passing train of objectivity.

It is a commonplace that the present is by its very nature ephemeral, it "slips away" into the past. Thus the past grows through the incessant "slippage" of the present, itself driven back, in Camus' phrase, by the wind from the future.

The past has an inherent stability that the present and the future lack. It is not subject to the uncertainties and vicissitudes of time. In that respect the past possesses an objectivity, an independence denied both to present and future. The "was" is objective in a sense that the "is" and the "will be" are not.

The binding of consciousness to the present is graphically demonstrated by the pair of opposites: pleasure and pain. Like all sensations, pleasure and pain are experienced only in the present, but they from a temporal standpoint they differ, while displaying a certain symmetry, in that the experience of pleasure is desired to be extended into the future while the experience of pain is desired to be consigned to the past. . One can

recall an appealing piece of music or an unpleasant scene, and pretty well reproduce in memory the associated pleasure or displeasure. But the most potent forms of pleasure and pain, orgasm and agony, respectively, share the feature that their presentness, their intensity, cannot be reproduced purely by memory. The experience of extreme pleasure or pain expands to fill the conscious present, obliterating all other sensations and thoughts. The present *is* the pleasure or pain. And at the same time, the future reduces to the hope that the pleasure will be extended, and the pain stopped.

How can subjectivity be reconciled with the material? The ancient, stubborn mind/body problem. The four traditional solutions are

1. The Vedantist solution: there is a single undifferentiated reality in which both the subjective and the material are illusions.
2. The idealist solution: only subjectivity truly exists, the material is, if not exactly an illusion, no more than a byproduct of mental activity.
3. The materialist solution: only the material world truly exists, mental phenomena are byproducts of physical activity in the brain, so consciousness, subjectivity and the self are in some way illusions .
4. The dualist/religious solution: there are two substances mind/soul and matter, which exist independently but in some mysterious way interpenetrate in brains.

It is the inherent nature of objective reality to exist; but subjectivity, lacking direct access to objective reality, can do no more than develop a rational belief in the latter's existence. For subjectivity, existence is attributed automatically to what is immediately presented to it, namely thoughts, experiences, sensations, etc. For subjectivity, objective reality is, as Kant saw, a transcendental concept, requiring the positing of a mode of existence (Sartre's *etre en soi*) different from the mode of existence of the subjective elements immediately presented to consciousness. The essence of materialism is the displacement of the immediately presented subjective existence by the new mode of "objective" existence. This has occurred essentially for two reasons: first, the fact that subjective existence is *local* in being accessible only to a single individual consciousness; and second, the fact that it is *ephemeral* in being indissolubly tied to the present moment, passing into nonexistence with the passing of the moment. Objective existence, on the other hand, is considered to be both *global* in being presentable, in

principle at least, to any individual consciousness, and *persistent though time*, i.e., not vanishing with the passing moment. These two features were taken to confer a robustness on objective existence which was denied to its subjective counterpart. This was the reason that Plato ascribed true, objective existence to the Forms, which he regarded as unchanging.

What I believe truly exists: my Pluralist credo:

Space, Time, Matter : the Objective category

The Self, Subjectivity, Consciousness: the Subjective category.

Michael Dummett writes:

It makes no sense to speak of a world, or the world, independently of how it is apprehended. [...] How things are in themselves consists in the way that God apprehends them. That is the only way in which we can make sense of our conviction that there is such a thing as the world as it is in itself, which we apprehend in certain ways and other beings apprehend in other ways.

Yes, but the world may simply *be there*, existing quite independently of the admitted senselessness of our speaking of it without acknowledging the source of our own belief in its existence. I have on occasion felt that the universe is an exquisite, intricate mechanism—a *constructed* mechanism perhaps, but, if so, a construct manifesting artifice beyond purpose, simply *running* – to do nothing more, like a musical box, than embroider time. This notion has been accompanied a joyous conviction that the whole of reality is truly the same, a neutral, complex, purposeless—indeed beyond purpose altogether—yet fundamentally benign mechanism whose sole *raison-d’etre* is activity on a vast, incomprehensible scale.

Brains are material things, and so, like stones, planets and stars, like all material things in the meso/macro domain, exist in an objective sense. This means that each material thing in the meso/macro domain, the brain in particular, can, in principle, be directly observed, but its objective existence is not dependent on its actually being observed. The individual consciousness, the mind, on the other hand, does not exist in

this objective sense. It cannot be “observed” in the sense that, for example, an objectively existing thing such as a stone can be observed. An individual consciousness can only be “observed” reflexively by the subject associated with that consciousness through the process known as “self-consciousness”. Yet the individual consciousness does have a mode of existence which, although not objective, is completely self-evident to the associated subject. Call this *subjective* existence. Interestingly, subjective existence shares with its objective counterpart the property of not being dependent on “observation”. To be conscious it is not necessary to be self-conscious.

The principle of conservation of matter implies that the brain, as a physical object, survives the point (its ‘death’) at which it ceases to function organically. The spiritualist, or mentalist, who believes in ‘life after death’, adheres to a analogous principle, which might be called the principle of conservation of mind, namely that, just as the brain continues to exist as a material entity after it ceases to function organically, so the mind associated in life with that brain continues to exist as a mental entity, only no longer attached to the original brain.

Reflections on Aging

Aging is a retreat from aspirations accompanied by a stubborn resolve to retain whatever cognitive ability one possessed in one’s youth.

As I age, and my memory frays at the edges, I have not lost my faith in the principle of the conservation of matter. Occasionally it happens that I’ve put something in a certain place and later not found it where I clearly remembered I had put it. My ensuing search for the missing object, and my hope, even expectation of finding it, is undertaken not just on my subjective conviction that I did actually put it there, but on my faith in the objective principle of the conservation of matter which ensures that it has not just evaporated. So when (and if) the missing object is found I praise, not my memory, but whichever god is responsible for the stability of things. More interesting are the cases, occurring with increasing frequency, in which I cannot recall where I have left a certain object, my glasses, for example. In my search for the object, I can no longer invoke a specific memory as to its location, but must rely on a blind faith in the principle of conservation of matter.

When I was young(er), I regarded the essential pointlessness, the meaninglessness, the ultimate lack of purpose of existence as virtually axiomatic. But that pointlessness was global; it was a large-scale feature of the universe that did not affect me personally, something I could acknowledge with an easy insouciance. In someone more psychically sensitive than me, the acknowledgment of the pointlessness of existence could have led to serious depression. But in my case the recognition that existence lacks a global purpose did not lead to clinical depression, on the contrary, that lack of purpose seemed quite compatible with the local, everyday sense of purpose that animates, even if unconsciously, all living beings, and myself in particular. Within the ceaseless, yet apparently purposeless forward flow of objective time, conscious beings establish, mainly through physical action, local, if impermanent eddies of purpose. This seemed clear, if unarticulated, in my youth. But as I've aged that easy tolerance of global pointlessness with its occasional eddies of purpose, its fitful flashes of illumination in the prevailing gloom, has been displaced by a local, far less tolerable, version of pointlessness, one taking a much more personal form.

In "Perpetual Motion" I wrote

At some point in my first year at Christ Church I came to feel oppressed by the growing conviction that life is essentially pointless. On waking the miracle of returning consciousness would quickly give way to the dismal prospect of having to face the surfeit of hours in yet another frittered day. Saturated with ennui, I wallowed in a self-created swamp of futility, made all the more viscous by my reading of such novels of existential angst as Sartre's Nausea, Hesse's Steppenwolf and Huysmans' Against the Grain. I took to lying face down on the floor of my sitting-room for what seemed hours at a time – given my impatience, it was probably no more than minutes – hoping for enlightenment, or a providential knock on the door. Neither being forthcoming, I would rouse myself and seek companionship so as to exorcise, in feverish talk, the demons of loneliness and boredom. I now believe my depression was caused largely by the stripping away of the vestiges of prodigism I had clung to for so long. It was painful having to face up to the fact that my mathematical efforts were unlikely to set the world on fire. I camouflaged my fear of professional mediocrity by the cultivation of a flippant attitude to the whole business of doing mathematics, probably convincing nobody, including myself.

This was the reflection of a 50 year old on his feelings at 20. As a recently "retired" man of 74 how would I now express my feelings on the above matters? Something like the following:

I came to the conclusion long ago that life is essentially pointless, at least in a global sense. I don't believe in the teleological idea that my life, or any other life, or life in general, is directed towards some purpose beyond its termination. I don't think that such a belief is absurd, far from it. But I don't believe that the local purposes we all share (many of which we are passionate about) sum to some global purpose that transcends the objective time within which those passions of purpose actually occur. 'At 9.04 p.m. I had the overmastering impulse to write down "At 9.04 p.m. I had the overmastering impulse to write down"' That's an objective report of subjective experience. Like everything else, both subjective experience itself and objective reporting on it are sucked into the objective past. The ephemeral nature of the subjective is an objective fact, and should be celebrated for what it is. Subjectivity exists only in the present, and that's objective fact. Conversely, the present only exists for a subject. Yet, if there were no subjects, I believe, with Isaac Barrow, that objective time, now shorn of the subjective present, whether things move or are still, would still pursue the even tenor of its way.

Dylan Thomas famously urged old age not to go "gentle into that good night". I believe that the most desirable way for one's life to end is to go "sudden into that good night", with no forewarning, abruptly achieving deliverance from the pain, anxiety, boredom and anticipation of extinction to which consciousness is subject. Of course, the sudden plunge into nothingness also eliminates the possibility of any future pleasure, but this is the price to be paid for deliverance.

As I age, and look back at my own work, I'm less envious of others' superior efforts. But I'm still mostly dissatisfied with my own.