Article

What if Berkeley Had Gone to Berkeley? Neurophysiology & Physics in the Defence of Informational Idealism: Part I: The Problem of Experience

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Abstract

Our argument is divided into two parts. In this Part I, we stipulate and defend the existence of an experiencing subject or "self" that is not identical to consciousness but for whom consciousness is an objective experience. We then show that the relationship of time and space to moving objects requires that the self cannot be a part of space-time or made of matter and energy.

Keywords: experiencing subject, self, consciousness, objective experience, time, space, moving object, space-time, matter, energy.

Introduction

George Berkeley is well known as the proponent of the philosophical stance of Idealism. This position may be summarized as the belief that there is no external material reality; all that we experience exists only in our minds, and is sustained by its coexistence in the mind of God.

Idealism has attracted few followers. Nonetheless its status as wallflower in the dance of philosophy does not lie in its refutation. Rather it is more aesthetic – it just doesn't *seem* right.

The irrelevance of Idealism

This discomfort stems from four qualities. The first is the easy way idealism seems to lead to solipsism. If the universe exists solely in the mind of God, and if I am the only one that I am sure experiences that universe, how am I to distinguish myself from God? A second objection is that it is too clumsy. The thought that the moon might appear in the sky only when we look at it and blink out of existence when we turn away seems improbable. Thirdly, particularly in the modern world, it seems more human-centered than the universe appears to be. Finally, a fourth objection, attributed to Berkeley's contemporary, Samuel Johnson, is aesthetic rather than rational. Boswell quotes Johnson as kicking a stone and saying "I refute it thus" in reference to Berkeley's philosophy, using the solidity of the rock to deny the supposed insubstantiality of an Idealist universe.[1]

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[1] *The Samuel Johnson Sound Bite Page* #57. http://www.samueljohnson.com/refutati.html

In short, that which makes Idealism unattractive is not effective contrary argument, but that it seems not to reflect our experience. Idealism is a question which has not been so much answered as abandoned.

A contrary view

This paper is an argument to the contrary. Our thesis is that, Idealism, constructed in light of contemporary physics and neurophysiology, reflects completely the consistency and complexity of both the universe and the human brain as present day science understands them – and as Bishop Berkeley would have understood them if he had had the privilege of attending U.C. Berkeley (assuming of course that he had been unable to get into Stanford).

The Problem of Experience

The problem of experience is hard to describe not because experience is so unfamiliar, but because it is so commonplace. Experience is not just a part of our life; it is our life. All we can ever be aware of are the experiences produced by our brains. However, while our experiences are entirely created by the brain, they exist in a form – the contents of the mind - that so far cannot be explained by the things that the brain can do.

For example, let us grant that the brain can produce a pattern that corresponds to the taste of chocolate such that – presumably - every time this pattern occurs - the same thing occurs in our mind. But when we eat a piece of chocolate, we don't taste pulsing neurons; we taste chocolate. Furthermore, the taste of chocolate is nothing like a pulsing neuron. There is a profound qualitative difference between *producing* a pattern of neuronal impulses, and *experiencing* what that pattern engenders in our mind. How is this accomplished?

In order to answer this we must be clear about what we mean by the "mind."

The American Heritage Dictionary comes close to the use we intend, in its first definition for "Mind":

> The human consciousness that originates in the brain and is manifested especially in thought, perception, emotion, will, memory, and imagination.[2]

This definition contains some important features. First of all, the definition describes the mind as being something like the sum of all those qualities – thought, perception etc. - which we associate with conscious experience. Second, this definition clearly states the fact that those patterns which we experience are the manifestations of brain processes. That is, the mind is thus not the *pattern* produced by brain activity but is instead the sum of all those ways in which we –

[2] *The American Heritage Dictionary of the English Language: Fourth Edition*. (2000.)

however mysteriously - *experience* those patterns. A word used by philosophers of consciousness to refer to these ways is "Qualia."

The Qualia Problem

However there is a problem with the concept of "Qualia." Daniel Dennett, describes it in this manner: "'Qualia" is an unfamiliar term for something that could not be more familiar to each of us: the *ways things seem to us*."[3] Examples of this are limitless: the memory of a conversation with a friend; the way music sounds; the smell of a flower or a barn; the feel of snow. But Dr. Dennett goes on to state: "(The concept of qualia is) so thoroughly confused that…. any acceptable version would have to be so radically unlike the ill-formed notions that are commonly appealed to that it would be tactically obtuse--not to say Pickwickian--to cling to the term. Far better, tactically, to declare that there simply are no qualia at all."[4]

Dr. Dennett comes to this conclusion because he finds that, when he takes any particular qualia and tries to apply the kind of analysis to it that would meet the requirements of a definable term, he is unable to do so. For example, in attempting to tell whether or not glass of one brand of beer has a different taste (i.e. qualia) than another, he runs up against problems of memory (do I remember the other sensation correctly?), of associated feelings or sensations (I am sad drinking this one, I was happy then); or associated experience (I had just come in from mowing the lawn last time and was thirsty, now I have just had several glasses of water) etc. etc. Considered in this way, it would seem that there is no way to tell if this taste of beer is a unique experience or actually like anything we have tasted before. It is not that we do not *have* the experiences which we try to categorize as qualia. The problem is that each experience is such a unique and complex mixture that it resists the categorization necessary for definition.

But if we cannot classify qualia in any way other than as a gigantic collection of possibly unique and unrelated events, can we really make any sense of them at all?

Experience as epiphenomenal

What we have come to is the question of whether what we think of as our mind even has a definable existence. That is not to say that we do not experience feelings or sensations in our mind. The question is whether or not those feelings or sensations which we experience are sufficiently capable of definition as to be considered real in and of themselves. More precisely, the question is whether or not the brain (the material object) and its actions (the electrochemistry of neuronal activity), are all that actually exist, and the undefinable experiencing part is merely "epiphenomenal," just some sort of pseudo reality, a secondary byproduct of those brain patterns, a kind of mirage.

[3] *Quining Qualia* by Daniel Dennett : http://ase.tufts.edu/cogstud/papers/quinqual.htm
[4] Ibid

Experience as undeniable

The opposing argument for the independent reality of subjective experience is that, for each of us, the fact that we subjectively experience is self-evident and undeniable. That its reality cannot be demonstrated is due to its utterly subjective and private nature – that is, there is absolutely no way for anyone other than the person who has the experience to detect its occurrence, much less to share in its nature. Even so, the solitary witness to experience has no doubt that it is real.

This is a debate which is not so much difficult to win, as difficult even to have. All parties agree about physical reality, about the brain, about physics. There is agreement also about the correspondence between specific patterns in the brain and specific experiences.[5] Furthermore Dr. Dennett's objections to qualia are sound. The disagreement between those who argue that experiencing is real and those who espouse the epiphenomenal point of view seems to concern primarily what can be a legitimate topic for discussion. It is like a courtroom argument, in which the principle question is not about the interpretation of a piece of evidence, but about its admissibility. Is there a way out of this dilemma?

Differentiating that which experiences from that which is experienced

Sometimes the reason for an irresolvable dilemma is not that there is no answer but that we have asked the wrong question. Perhaps the question is not whether what we experience in our mind has any existence, either in some "outer universe" or even in our own mind. Perhaps the question is, no matter how experiences are engendered, do they not require for that existence, something real to *have* those experiences?

Hypothesis Part 1: An experiencing subject exists.

We begin our discussion of this question not by arguing for the existence of such a subject but by stipulating that it does, including what might be its necessary characteristics, and then examining the consequences of such a stipulation.

The characteristics of an experiencing subject.

Creating a complete list of such criteria is a difficult task because the list must be so subjective. On the one hand, the characteristics of an experiencing subject must be those which match that which each of us experiences. On the other hand, the act of experiencing is completely private, detectible only by the person who is doing the experiencing.

With this caveat, a set of characteristics to define an experiencing subject might be these:

[5] Even so, other than the results of electrode studies on the brain which are orders of magnitude more gross than ordinary brain events, the statement that "specific patterns in the brain produce specific experiences" is still only a conjecture. It is not however one whose truth or falsity has any significant bearing on the question at hand.

1. **Singularity:** An experiencing subject must be single, not divisible. Experiences are limitless; but that which unites them is that a single subject, a unique and persistent "I," experiences them.

2. **Continuity:** An experiencing subject must be continuous and permanent. There should be no place that we can go that our experiencing subject is not. This does not mean that we are permanently conscious: if we close our eyes we see nothing, but we still have eyes. If we become unconscious the experiencing subject may have nothing to experience. But when consciousness resumes, it is the same experiencing subject that once more has those experiences.

3. **Neither mind nor consciousness:** Consciousness and mind are both products of the activity of the brain and as such can be the format of experience, the context of experience, but not the subject who experiences.

4. **Associated with a single brain:** An experiencing subject must be associated with a single physical body – or, more precisely, with a specific individual brain. We do not have one person's experiences today and another's tomorrow.

5. **Not itself an experience:** Most subtle, yet most important: *an experiencing subject cannot itself be an experience*. We know with certainty that we have eyes, because of the certainty with which we experience vision; but our eyes do not see themselves

6. **Undeniability:** An experiencing subject – or, more precisely, that we are an experiencing subject – should seem real, believable, and indeed undeniable, even if the evidence for its reality can only be our conviction that we do experience.

7. **Identity with ourself:** But what have we just said? *We* experience. That we experience is at once the most personal and undeniable truths of our existence. As such, must we not ourselves – whatever it is we mean by "ourselves" - *be* that experiencing subject? Descartes held up his thoughts as the one thing he could not deny. Perhaps we might modify this to say that the mechanics of thinking are something that is done by the brain – but *I* am that which *experiences* those thoughts. Or in other words, "Experior, ergo sum," - I experience, therefore I am.

THE SELF

Before we go further, it's time to introduce a new term for "the experiencing subject." This term shall be the word "Self." But having chosen it, we must make a comment on the choice of "Self"[6] as the name for this entity.

[6] TECHNICAL NOTE: Henceforth in this work, we will assume for the purpose of our argument that the self is real, and is indeed the essential part of each of us to which the First Person pronouns refer. Therefore, when we use the pronouns "We" or "I", or when I say "you," or "she" or "him" – that pronoun is meant to refer to each of us *in our capacity as experiencing selves* – not simply as human beings.

Arguably we should have just invented a word. To use a word that already has a meaning and is in common use is to add both denotative and connotative baggage that is not included in our list of characteristics. However, when we turn once more to the formal definition of "Self" we find – under its philosophical meaning:

> **"**that which knows, remembers, desires, suffers, etc., as contrasted with that known, remembered, etc." and secondarily, "the uniting principle underlying all subjective experience.**"**[7]

This definition includes the characteristics of an experiencing subject – singleness, continuation, association with a single body, etc. which we listed above. As such, though it brings baggage, it is baggage that is largely consistent with what we intend. So we will go with it.

However, such a definition is not the end of this discussion, but the beginning. If we state that the Self exists – i.e. is real, then we must return to the question of what can we mean by reality.

Because in fact such a Self must have one more extremely important quality:

8. **Not part of material reality:** *it cannot be a construction of matter and energy, and cannot occupy space-time.*

Why not?

To answer this question we need to look at the problem of motion in time and the nature of the present moment.

The Problem of Motion

Why is motion a problem? [8] It is a problem because Time is a problem. That is, when we look carefully at how time fits in to the design of the universe as a whole, then motion – i.e. the ability of objects to change locations as time passes - should be impossible, meaningless, even unthinkable. This is due to the fact that, like matter and energy, while time and space appear to be two different things, they are essentially two forms of the same quality, different only in how

[7] *The Random House Dictionary*, (2002) Random House. The exact definition is "the ego; that which knows, remembers, desires, suffers, etc., as contrasted with that known, remembered, etc." and secondarily, "the uniting principle, as a soul, underlying all subjective experience." However to include either the word "ego" or 'soul" in the definition assumes more qualities than we have shown to exist.

[8] Conee and Sider (see Bibiliography #3) have a very lucid discussion of this problem.

they are expressed.[9]

To be precise, the fact that time is identical to space, yet *appears* to be different, is that which *seems* to permit motion. Motion is not instantaneous; it always takes some amount of time. Motion is possible only because the fundamental dimensional identity of time and space permits a *single* event to produce a simultaneous change in position in *both* of them.

But does it really permit such a thing? If we look more carefully we must realize that, for this change to actually be motion rather than merely extension there must be a change in another dimension as well. This process forms an infinite regression.

You have to have a feel for this in order for any of the rest to make sense. So let's go through an example. Let's begin with a universe that has no dimensions at all.

Ms. Point •

Meet Ms. Point. Her universe has no dimensions and neither does she. She has no height, no length and no width. She is standing on a dimensionless point of space, and occupies just one moment of time.

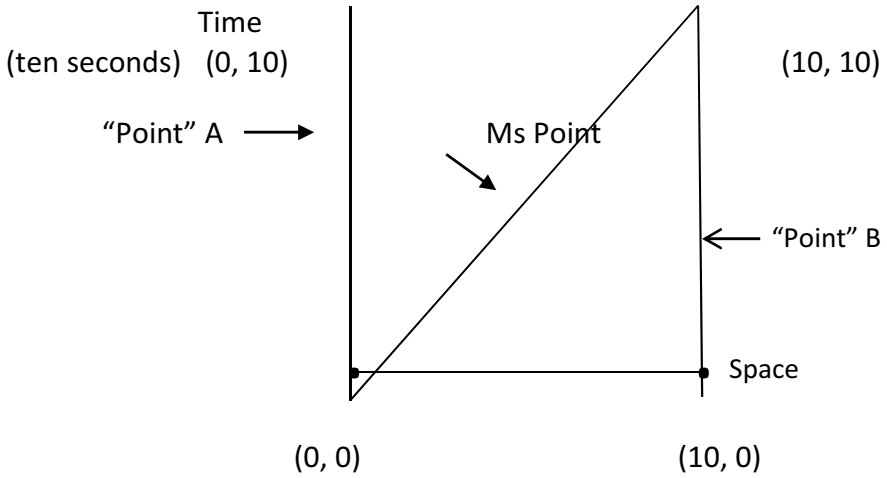
Obviously she can't do very much. So let's give her universe one dimension. And, to be specific, we will assume that the two points A and B, bounding that one-dimensional universe, are ten feet apart, and that Ms Point stands on point A

MS Point .(0)A_____.B (10)

This sort of gives her some breathing room – or does it? Let's imagine that she is standing on point A, and wants to go to point B. She clearly has the *space* to do so, but she doesn't have the *time*. So let's add a second dimension, one of time.

[9] While just *how* they are differently expressed is incidental to this argument, one way to think about it is that they interact with matter and energy in opposite ways. Thus the difference between matter and energy depends on the difference between space and time and vice versa.

Now she has a place to go to and time to go there. So let's let her go…



… and let's pretend that she goes there at the rate of one foot per second. Because B is ten feet away from A, it should therefore take ten seconds for her to do so.

Some interesting things just happened.

First of all, point A and point B are no longer points. They do not move in space, but they do exist (i.e. extend) in time, and, because they endure for ten seconds of time, they each form a line through all the points in time between the first second and the last.[10]

Second, because her move required some time to occur – that is, involved movement both in time and space, Ms. Point did not go *horizontally* to the point on this graph where point B was at the beginning of her motion. Instead she moved *diagonally*, so that she arrived at where point B is in space and time at the end of her journey. Point B has not changed its location in space, but during her journey it has changed its location in time, and so, to get to point B, Ms. Point must change position in both space and time – which is of course the definition of motion.

Finally, Ms. Point has changed as well. Despite her name, she no longer looks like a point; like points A and B, she now looks like a line. She does so because she now exists – as a point – at every point between A at time zero and B at time 10.[11]

But now we have a question:

Is Ms. Point a *moving* point, or is she a *motionless* line?

[10] Specifically "Point" A is now the line from (0, 0) to (0, 10), and "Point" B is now the line from (10, 0) to (10, 10).
[11] Specifically Ms. Point is now the Line from (0,0) to (10,10)

Let's look at the graph itself. If time is the vertical axis and space is the horizontal axis, and Ms. Point exists as a point in every place along the line between (A,0) and (B,10). If so, in what way is she *not* a motionless line?

All the information regarding her "motion" through time and space is on the graph. We have direction, distance, and rate of speed. However, what we call "rate of speed" nonetheless demonstrates no motion by itself. It is simply a ratio of the change in a spatial dimension versus a change in a temporal dimension. This could be as easily a ratio of extension rather than motion.

The answer is of course, that this line represents a succession of moving points because of corresponding movement in the dimension of space *and* of time. In short, if the line is really a single moving point, it must move in time in order to move in space.

But if she is moving in time, how *fast* is she going?

In order to move, you must move at a certain rate of speed. We know the rate of speed in space; it's one foot per second. But what is the rate of speed through Time? One second per foot? But a foot is not a unit of time; it is – of course – a unit of space. For her *extension* in time along the y axis to actually be *motion* we need it measure it as time per unit of time – like "seconds per second." In other words we need yet another axis that permits motion in the way the time axis does for space, in order to provide a rate of speed in the time dimension.

However, if we do so, once more we have the same problem. To be moving in that next dimension of time, we would need yet another dimension that permits motion to have a rate of speed, something like "seconds per second, per second." In short, for *every* added dimension that "permits motion," we need yet another dimension of time in to permit *that* movement to occur. If this is the case then, in order to move in any dimension, you need an infinite number of dimensions of time.

The problem is more basic. The need for each new dimension actually represents a need for a dimension in which motion is intrinsically possible *without* requiring another dimension. But that is not what dimensions are. Dimensions are that which permits the identification of *unique* location in space. But to be a unique location means not to be moving. Therefore, no matter how many dimensions we add, we will *never* come to a dimension which by *itself* will permit points to move. A series of points will always be a motionless, extended line.

And yet we can move. What's the solution?

The dual nature of time

It is time to stipulate a second hypothesis.

Hypothesis Part 2: The "passing" of time is simply extension in time and is identical to extension in space. The universe is not three dimensional and moving; it is four dimensional and static. [12] "Motion" is nothing more than our experience of simultaneous extension in time and space.

Let's look back at Ms. Point. Ignore the details. The essential idea is that, for this very simple motion, this very simple graph provides a *complete* description. The math works; the physics works; everything you can say about Ms. P's motion is encompassed by this graph.[13]

But nothing has actually moved.

The description of motion is complete; but on our graph no movement exists. And, because there is no motion, there is no problem with time. Once we make the choice to remove our idea of motion from our understanding of time and to consider extension in time as simply that – extension, not motion - then the problem of infinite regression goes away and we see that it is not actually a problem at all. A rate of ten feet per second no longer demands any extra dimensions; it is simply a ratio of two dimensions of extension

We can still plot orbits, navigate ships, aim projectiles, and throw baseballs. We have everything that we need to measure and describe that which we experience as motion. All we need to do is to is recognize that our motionless graphs and equations are not *metaphoric* descriptions of some actually moving thing, but *actual* descriptions of the thing itself.

Only one thing is required: that we get rid of a belief that our experience of "something moving" is actually "something out there."

What is "out there" is a complex extended four-dimensional universe that obeys all the laws of motion in three dimensions and time, but which does not actually move.

It's not that the universe is somehow stuck. From the point of view of the universe, everything is fine, thank you. Four-dimensional extension is all that the universe needs in order to be all that it is. The problem is ours. Because we can describe verbally, depict graphically, and characterize mathematically, that which we *experience* as motion; because those words graphs and characterizations are consistent and have predictive value; and because our experience of motion is so convincing - we therefore believe that our *experience*, and the real world *substrate* of that experience, must be the same.

But it isn't the same. It is in fact just an illusion – an experience produced by the brain.

[12] We will ignore the question of multiple extra spatial dimensions predicted by string theory. The truth or falseness of that idea does not change the argument.

[13] Ok not everything. I have left out issues such as acceleration and deceleration, inertia and all the other variables that govern real motion by real objects. However, each of these can also be described in graphs and formulae which do not move and thus the point is not changed simply by being made complex.

The Brain Problem

But that creates another problem. Perhaps the world is indeed four dimensional and static, but our brain is part of the universe. And how can a four-dimensional static brain do anything – much less produce experiences?

The answer is that it can't. However something else can *use* the brain to produce experiences – provided that that something is NOT a part of time and space. How does this work?

The self as "player" of the brain

Time for an analogy: let's assume that we want to listen to some music. So we go to our CD collection, take out a CD – let's say Glenn Gould's 1960 recording of the "Goldberg Variations," pop it into the player and settle back for a while to enjoy the performance. When we have done so, let's think for a moment about where and when the *source* for that music was, as opposed to the music itself.

The source of the music was the CD, so let's examine it carefully. On one side is just the label. However, on the other side there is a faint circle, not quite a shiny as the rest of the disc, extending from near the hole in the middle of the disc, out almost to the edge. Furthermore, if we had a powerful magnifying glass, we might be able to see that what appears to be a circle is essentially a long thin line. It is on this line that the information about the music is engraved as little bumps which can be read by the laser in the CD player which can then translate that information into sounds.

It isn't a straight line. In order to fit on the CD, it has to be "wound" in a continuous spiral from the center of the disc to its edge. But that is just a packaging decision. There is no fundamental reason why, instead of a disk, the same line could not be printed as a straight line, many yards long. So let's think of it as a long straight line, extending in a single dimension: length.

The line is the *source* of the music. However the musical *experience* is something which the CD player produced using the data from the CD. That experience *also* extended as a long line in a single dimension. Only in the case of the experience, the dimension was not length, but time.

Because of its extension in time, we experienced that the music began, lasted for a while and then came to an end.

But did the *source* of that music also begin and end?

Of course not; the question is meaningless. Throughout the experience, the parts of the CD which contain the beginning, the middle and the end of the piece simply – and simultaneously – existed. It was the CD *player* that took that motionless line and copied it from the dimension of length to the dimension of time; the CD itself did nothing but contain the information.

In the same way, the brain is the source of our experience, just as in our example of the CD, the bumps on the spiral line of my CD are the source of the music. But in order for us to have the experiences which the brain provides, we need something *apart* from the brain which *can* move within present moment after present moment and translate the static patterns of its neurons into subjective experience. In short we need a Self.

Hypothesis Part 3: All that we experience is produced by the self, "moving" "within" our static four dimensional brain, following the present moment down the dimension of time in the direction of the future.

However the analogy of the CD player leaves something out: the *creative* aspect of turning neuronal patterns into experience. What is it that creates the peculiar, private and individual ways in which we experience the universe? Why does chocolate taste like chocolate?

The self as the creator of experience, and the subject of experience.

In this sense the self is more like Glenn Gould, when he made the original recording. He did not make the notes up; the decisions regarding which keys to push – how hard, in what order – were made by Bach 300 years ago. Gould simply read those decisions on the motionless pages of music in front of him.

But then Gould did two things: First, he *created* the music by executing those commands on the piano keyboard; and then he *experienced* the music.[14] In the same manner, the brain presents the "musical score"- the substrate of experience; however it can neither create nor experience that "music" – because like the motionless CD, it cannot of itself do anything. In order to create experience, there must be a Self that both creates and experiences what is enabled by the brain.

Here is the point: This requirement, of "movement" of the self through the dimension of time in series of present moments – something which objects in time and space cannot do – is thus not simply one argument for the plausibility of a self that is not a part of space-time. It is an argument for the *necessity* of such a self.

Which creates another problem.

The Problem of the Present

Just what do we mean by "the present moment?"[15]

[14] That the two experiences – playing the music and hearing it – were really two experiences for him is clearly demonstrated by the fact that, if you listen carefully to his first recording of the piece, made back in the 60's, you can hear him humming along to the tune he hears even as his fingers create it. However, although his playing is brilliant, his humming is way off key.

[15] In the ensuing discussion we will not get into issues raised by the question, in special relativity, of whether the concept of "simultaneity" has real meaning and therefore whether it is possible to think of a "single" present moment. Without going into needless detail, the simultaneity question has to do with situations in which two

The dictionary is at its customary loss in defining concepts which are unique unto themselves, and winds up with tautological definitions such as "the present time." In quantum physics the present is that place in the space time continuum in which the collapse of the probability equation occurs, wherein the collection of all possible future actions or motions of a fundamental particle becomes the certainty of the single action that actually takes place - and which is now located in the past. We will just simplify that thought and define the present moment as that place in the dimension of time, moving in the direction of past to future, at which possible futures become fixed histories.

But no matter how we define it, the fact that time seems to contain something with the characteristics of a present moment at all is extremely odd.

Imagine the standard metaphor for time – a river. Let's think of "Old Man River" who just keeps rollin' along. But what is a river? It is an extended stream, starting somewhere upstream flowing down mountainsides, into the valleys and finally, somewhere downstream, reaching the ocean. But where, in such an image, is there anything resembling a "Present?"

After all, the entire river doesn't exist more in some places than in others; it exists everywhere all at once. From source to delta it just *is*. In this image, the present might be like a boat on the river floating down from the headwaters to the sea. However the boat, though moving on the river, is not a part of it. The river has no particular special place; it is the boat which does.

In the same way, when we look either backward or forward in time, we see no special points called present moments. All points are just points in time – except of course the one we happen to be standing on "at that moment". But what is it about this moment that makes it the present? And what is it about the present that changes "from moment to moment" to move the present down the direction of time.

But the present *is* a quality of time isn't it. Or if it isn't, then of what is it a quality and how does it fit in to the rest of our understanding?

We need to look a little more closely at just what it is we mean by the self "moving" through the brain and through time.

Here and Now

Let's begin by thinking about how we actually *experience* time and space. When we do, we notice something quite strange: though we remember the past, we are never in it; and though we seem to move towards the future, we never get there. We know that we were in the past yesterday, but then it wasn't the "past"; it was the present. We know we will be in the future tomorrow but, when we get there, it won't be the future; it too will be the present.

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different observers may perceive the same two events in reverse order – event A before event B for one observer and event B before event A for the other. The answer is twofold: First, these are questions of perception and are thus – in terms of this argument - experiential rather than external. Second, no two *adjacent* observers will have such a disagreement; differences will only occur at distances further than information could travel within the time necessary to confirm or deny simultaneity. In short, the "plane" of the present moment is bumpy but it is not torn.

To say this more precisely, if our universe is really four dimensional and static, then our body must extend in time from the past to the future. However, when we examine our body purely in terms of time as a dimension, we can find nothing about it that distinguishes any particular moment from any other. Our body existed yesterday; it exists today; hopefully it will continue to exist tomorrow.

Yet for the self - the reverse is true. Nothing that we experience is in the past, or the future. For us as the self, everything always happens Now.

Similarly, we are always Here. We can remember being downstairs, and when we go downstairs we will remember being upstairs. However, when we are downstairs, then downstairs is here, just as upstairs is here when we are upstairs. While our physical body is obedient to the laws of the universe, our experiencing self is doing something utterly different. For us, "Then" and "There" do not exist; all that exists is a boundless present moment, an eternal Here and Now.

Here and now are not experiences

But wait a minute, you may ask. How do you know that? Do we experience it? Do we remember it? And if so, didn't you say that the brain produces all experiences and memories? Therefore, isn't it the *brain* that produces that experience of here and now, that memory of the past, that imagination of the future?

Again, no. Let's look carefully at what we mean by "here and now." We can remember *places* that once were "Here"; that memory is certainly produced by the brain. But do we experience "Here" all by itself? What color is it? How does it taste? What does it look like? Also, now we may be experiencing ourselves sitting in a chair, reading a book. But do we experience, "Now" all by itself?

Here and Now are not objects to be experienced; they are not experiences at all. Instead they are the *context* in which experiencing is accomplished. Just as we know that we have a self because of the undeniable quality of having experiences, we know that we are here and now because "Hereness" and "Nowness" are not just another experience, but characteristics of *every* experience.

Hypothesis Part 4: The present moment is not a part of space time; it is intrinsic to the self. It is the source of the moment to moment "Informational" creation of the universe, and its simultaneous experience. The self occupies *neither* the past nor the future but instead *is* the eternal present. And as such, that eternal present moment is all that exists.

Another illustration: Imagine a circular quarter mile running track, just as you might find on the playing field of any high school. Now let's imagine that we step onto the track and begin to run.

As we run, we move around the track. However it is we that move, not the track. No matter how

fast we go or how far we run, the track itself is still. Furthermore, from the track's point of view (if it had one), there is no special point on it that is different from any other. It is just the track, always the track, and nothing else but the track. Lots of people run on it, but there is nothing special that differentiates any one person from any other.

On the other hand, from our point of view (and we do have one), there is a point on the track that is special and unique. But our being at that particular point on the track is not special for the track; it is only special for us. And the reason it is special and unique is the fact that we happen to be there.

It isn't even that the track that determines where we are. The track merely lends meaning to the statement that we are at any moment at such and such a place. It is we who determine where we are. Indeed the sentence is tautological; where we are is where we are.

In this analogy, the universe is the track. It does not include a special part called the present. Instead, as we travel through time, it is *we* who bring with us an *eternal* present – that is, a moment that is not a part of time. Here and now are eternal. But they are also instantaneous. They occur in sequence along the dimensions of time and space But that sequence is created in and by the present moment. It has no other meaning.

Finally – and very important, it is not just that an eternal present moment exists. It is *all* that exists. Nothing else does.

We have no access to the past: all we have is our present memories. We have no access to the future: all we have is our present capacity to anticipate. The illusion that we are moving through time is simply due to the fact that reality is sequential, but only the present instance of that sequence exists. The fact that past moments once existed is only manifest in the particular configuration of the universe at this particular instant in time. The future has meaning only in potentiality. But for all prior moments the torch has been passed. The torch exists in the form it does *because* of those past moments, but they exist no more. Nothing exists but the present moment.

But then did we not just say that the *self* was the present moment. Does that mean nothing really exists but the self? Yet have we not also said that the universe was a static four-dimensional reality that extended from the past to the future with no regard for a present moment?

Yes. And, yes.

But in order to see how that works, we have to talk a little more about reality. More specifically we need to talk about reality as information.