Enlightenment, Consciousness and Relativity Theory: Exploring the Parallels Between the Speed of Light and Higher Forms of Awareness

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Abstract

The article seeks to explore the connections between special relativity and that aspect of consciousness known as enlightenment.The role played by the speed of light in correlating different frames of reference in the physical world is shown to parallel how enlightened consciousness can correlate differing frames of reference in the sphere of culture.In particular Einstein's twin paradox is examined in terms of its ability to shed light on the relationship between older cultures rooted in a kind of mythic consciousness and what are known as younger cultures rooted in a more rationalist frame of reference.The implications of such parallels are considered with respect to their ability to show that the physical world, at its deepest levels, has a kind of mind-like quality.

Keywords: special relativity, speed of light, enlightenment, twin paradox, consciousness, creativity, myth, old and young cultures

1. Introduction

The goal of the following discussion is to explore and develop connections between areas of knowledge that appear to be radically divergent: (a) enlightenment as an advanced state of consciousness that is common to many spiritual traditions; (b) human consciousness as explored by philosophy of mind; and (c) Einstein's special theory of

relativity wherein the speed of light (usually designated as 'c') plays the role of an unsurpassable speed limit for that which possesses mass.The demonstration of significant relationships between the foregoing allows one to reconsider the nature of physical reality as something that has fundamental qualities that are akin to consciousness.Thus, the reduction of mind-like phenomena to physical events associated with electro-chemical brain processes may be counter-balanced by seeing fundamental principles of physics – principles that underlie these very processes – manifesting or displaying qualities that in their essence are mind-like.

While I am hardly the first individual to interpret the real as being made up of something like consciousness, my exposition may be unique in developing hypotheses about consciousness that allow for an integration of mind-body by showing that body, as revealed by fundamental physics, is in essence mind-like and that specific elements of certain physical theories (in this case, relativity theory) reveal aspects of mind or consciousness that have been ignored or passed over.In particular I hope to show that consciousness, as related to relativity theory and the state of awareness known as enlightenment, may be understood in terms of two inter-connected aspects: contiguity and creativity.In the rest of this introduction, I aim to clarify these terms and thereby set the stage for the subsequent sections which will correlate the aforementioned aspects of consciousness with space and time respectively, explore their integration in terms of Einstein's vision of space-time, and ultimately relate the space-time invariant of the speed of light to that state of higher consciousness known as enlightenment.My conclusion will explore the implications of these relationships.

To begin, then, what do I mean by 'contiguity' and 'creativity' as inter-connected aspects of consciousness?By contiguity I attempt to distinguish consciousness from what is normally juxtaposed to it – namely, the external world as a place of division, fragmentation, and discontinuity.To the extent that consciousness is characterized by thoughts (intellectual, emotional, descriptive, spiritual, etc.) and that these thoughts have no boundaries with respect to each other, they point to the contiguity that distinguishes the inner world

of mind from the outer or external world of matter.In other words, there is something flow-like to consciousness and that flow-like quality, which can indeed be slowed by reflective analysis that generates boundaries, is inherently contiguous. Moreover, the contiguity points to another aspect of consciousness, which I would call a quality of 'within-ness' or internality. This can best be understood by analogy with being inside a room.Although the room might contain many objects, one is still within a common space with all those objects; and compared to what is outside the room, one has a relationship of contiguity with respect to those objects – relative to any objects outside the boundaries of the room. Contiguity may also be understood in the context of discourse, where two individuals speaking a common language exist in a more contiguous space than two others who speak different languages and each is ignorant of the other's language.In other words, while contiguity is a relative term and has a certain bearing on phenomena outside that of consciousness, it seeks to capture a quality of consciousness as flow or relative absence of boundary that appear to exist in the non-conscious realm to a lesser degree.

The second aspect of consciousness almost follows from the first. Creativity characterizes consciousness in view of how contiguity brings about the opportunity to create or bend things to one's will, desire, imagination, etc. If something is not close or is outside the range of contiguity, it is not so easily subject to the creative power of consciousness. Although it is easy to think of creativity with respect to the external world as in, for example, the creation, of a painting, such creativity is strongly mediated by the resistance that the external world places before us. Not only does one have to manipulate paints and brushes, one also has to struggle to realize whatever 'inner' vision animates one's creative project. With respect to consciousness, however, creativity is unmediated and spontaneous.For example, dreams are creations of consciousness that bespeak the power of consciousness to create a whole world – a world that is taken for real while one is dreaming probably because of the contiguity or flow that integrates the elements of the dream. Of course, the waking

world is also a creation, albeit one mediated by the conversations we have with others – conversations that have a cultural and historical depth of which we are often unaware.

While consciousness may have many other aspects, the reason I am focusing on contiguity and creativity is because they have bearing on both enlightenment and the speed of light as the cornerstone of relativity theory. With respect to the latter, one has a way of correlating the physical experiences of individuals in different reference frames, who are moving at constant speeds with respect to each other. With respect to the former, one has a way of correlating the personal experiences of individuals who are living in different cultural frameworks. Just as the speed of light is the key to showing space and time to be integrated into space-time, enlightenment is the key to showing contiguity and creativity to be integrated into what Ken Wilber (in his book, No Boundary) has called unity-consciousness. (p. 49) To establish this connection and show it to be more than a poetic analogy, I will conclude this introduction by examining how contiguity and creativity may be viewed as the internal forms of space and time or, what amounts to the same thing, how space and time exist as the external forms of contiguity and creativity.

1.1 Internal Contiguity and External Space

While external space is that in which we live, it is clearly distinguished from the inner space of consciousness. External space appears to be that which one could divide endlessly in a way that seems impossible with respect to internal space.Yet if contiguity reflects the flow-like quality of consciousness and that contiguity is characterized by a sense of shared space, there is a possibility of unimpeded motion as one thought succeeds another, and it is just such a possibility of motion within inner space that is analogous to motion through outer space.

If one asks the natural question as to what is moving, there is an obvious difference between the realm of internal contiguity and that of external distance. In the latter any object can be in motion, and that motion can be at a constant speed or accelerated. In the former, what appears to move is the thinking self, which is an evolving or shifting concatenation of

thoughts feelings, stories, etc. creatively articulating itself in an environment of other thoughts, feelings, stories, etc.To the extent that this 'creative articulation' is geared to maintaining or developing some common themes at the expense of other possibilities, to that extent does one have an identity, a person, a soul, a self that is distinguished from other evolving concatenations as well as from that which is deemed to be non-conscious.That there is a kind of motion to the self is hard to deny as thoughts follow upon each other in a more or less regular way although, upon confrontation with a problem, there is a kind of circular motion around the challenging question that continues until a solution is reached or there is a giving up.

Another point of analogy between inner and outer space pertains to the experience of distance.External space is a kind of backdrop wherein individuals undertake certain measurements that define distance between themselves, between objects, or between themselves and objects.Motion can increase or decrease that measured distance.Likewise the inner space of consciousness is also characterized by distance as when sets of ideas can mesh or harmonize or when they seem far apart or 'unharmonizable' with respect to some criterion (or measure) established by parties to a given discourse.Discourse or discussion can be utilized to increase or decrease the distance – complete agreement being a state where disagreement is decreased and replaced by total agreement.

To forestall two potential points of confusion at this juncture, let us (first of all) not be led astray by the observation that discourse, discussion, or conversation takes place in the external world of institutions, bodies, etc.What matters is the response of one concatenation of ideas to another.From an internal perspective, the set of ideas associated with the processes of communication is but another set of ideas harmonizable to differing degrees with other sets.Secondly, the contiguity of inner space is marked not only by distance between differing concatenations defining what might be called a field of discourse, but also by dimension.For our analogy might all to easily come to grief on the shoals of a

dubious comparison between a three- or four-dimensional outer space and a non-dimensional inner space unless some sense of dimensionality can be attributed to inner space.

How then might the dimensions of inner space be understood?If basic awareness of the world around us is taken to be one dimension, then another is what we repress (or 'is repressed' to the extent that the process is automatic) for a variety of reasons: the material repressed is somehow in conflict with the standard picture of the world shared with others; it somehow challenges the narrowness of our world-view; it is alien from a cultural perspective, etc.In any case, if the repressed area of consciousness is understood as the first dimension, then the non-repressed may be taken as the second.Beyond that must exist a third dimension where one reflects on the foregoing basic awareness and develops some kind of map of that dimension including perhaps its relationship to the primary dimension of the repressed.The discourse called science operates within this third dimension while the discourse called philosophy exists in a fourth dimension, where one reflects on the foregoing reflection.Can one then, in some fifth dimension, reflect on the reflection that is already reflecting on a more fundamental level of reflection?One senses here a kind of limit – that the fourth dimension where one reflects on a more basic level of reflection is as far as one can go given the concatenation of ideas, feelings, stories that we call individualized human consciousness.Perhaps a non-human concatenation could go further.However, at this point, one can only note the interesting parallel between the four dimensions of inner space and the four dimensions of external space-time – something that again lends support to the basic contention of this discussion that the external world is inherently mind-like.

1.2 Internal Creativity and External Time

Internal creativity and external time are notoriously hard to pin down much less relate to each other.While the former seems to bespeak an irreducible freedom – the freedom of an artist to realize some vision – the latter is normally associated with a strict determinism, where the present is a product of the past and the future is part of an inescapable trajectory that

pushes us to decay and death no matter what we may create along the way.Moreover, internal creativity appears fundamentally elusive, in that it seems to disappear the moment we reflect upon it (i.e., the third dimension of inner space discussed above).In other words, the world we spontaneously create in dreams or discursively co-create in our waking state evaporates in the wake of a refined analysis of language or of those concepts that we endlessly perfect in order to map out what has already been created.

Before the creative act of mapping there has to exist that which must be mapped, and in the very ordering I just described one can already see a temporal structure emerging in our use of the word 'before'.However, that which must be mapped is the creative act itself – an act which is inseparable from the world that is the object of mapping.While 'awareness', as a kind of default definition of consciousness, gives the impression that it (i.e., consciousness) is a kind of passive receiver of external impressions, creativity, as an essential and irreducible aspect of consciousness, draws attention to a power that brings to individuals capable of experience nothing less than a world – a world with innumerable details, a world where there is always more to notice and to explore, a world of such richness that we can hardly believe that consciousness was and is instrumental in its creation.

Because consciousness is also capable of focusing in on specific objects including itself, it is easy to ignore the amazing quality it displays in having a world – a non-specific object that manifests completeness (i.e., no holes or gaps), a vastness that shades into the infinite, an openness to exploration and elaboration, and a kind of stability that renders it more or less coherent.All of these qualities suggest a creative structuring, but none more than the fact that we can imagine that this world could be other, could be created differently, and that we know it could be created differently in virtue of our experience with other cultures, which have created worlds that contrast sharply with the one with which we are familiar.Moreover, even within our own cultural space strong disagreements about the fundamentals of reality suggest that one individual

can live in a world vastly different from another despite sharing many of the same cultural values.

Before I relate the internal creativity of consciousness to external time, I do not wish to have my position misinterpreted as some kind of idealism that denies the reality of the external world.Indeed, the internal makes little sense without an external, and that external realm has the potential to be structured in many ways.The creative power of consciousness is hardly diminished if those ways in which a world can be created are limited and not infinite.The point is that it structures and creates at the most basic levels.It does not just register the color white on the basis of a certain stimuli.For 'whiteness' is part of a creative structuring of the world that includes all the other colors, what colors mean, the objects that may be associated with these colors, the theories of how the body and mind work, etc; and while all these realities may not be present explicitly, they are there implicitly as part of a world that has been and continues to be creatively organized by consciousness and could have been organized differently.

Because creativity may also be thought of as bringing things together and pulling them into some kind of contiguous relationship and because that applies to those concatenations of ideas, feelings, and stories that constitute individuals as centers of consciousness, these centers will be prone to do the same with whatever new experiences enter into their relationships with the world (including, of course, other centers of consciousness).However, the very vastness of the world that consciousness calls forth in its creative power calls for these individualized centers to create organizing boundaries or structures to cope with this situation.What could these organizing structures be?Nothing less than time, that is, the past, present, and future and the causality that serves to link them together.

One has many experiences, and organizing them is a daunting, albeit creative, task.Should a center of consciousness wish to place a certain experience in abeyance, it can be relegated to a space called memory or it can be obliterated with an implicit knowledge of its obliteration.(e.g., "I have totally forgotten about that incident.")In either of these two

cases, a sphere of internal reality has been created, and it is called the past.Other experiences may be situated in a manner that they are not present, but for whatever reason one wishes to have them at a point that accords with a linear structuring of experience that places these experiences in a realm called the future.Moreover, to keep this temporal order coherent and not as arbitrary as might otherwise be the case, the events are connected by a power or force called 'causality', whereby some events are put into a relationship with others that not only places them in a place of priority but also views them as somehow engendering that which is deemed subsequent.In short, from an internal perspective, the creative structuring of a world of excessive richness with respect to certain centers of consciousness called human beings leads to the experience of temporality, which is made more concrete and mundane by understanding past events as sometimes causing present events, which themselves sometimes cause future events.

Of course, from an external perspective, causality is not seen as an internal organizing principle associated with temporality.A billiard ball that hits another causes it to move apart from any conscious act of which we are capable.Yet, imagine the consequences if humans were aware of causality as merely a 'strategy' that flowed from a need to focus on particular aspects of experience and thereby exclude others.In other words, if what I am calling 'tempero-causality'were understood as some kind of organizing principle, humans could very well learn to adopt other ones – principles that are more acausal or synchronous.Such indeed may be the way of the mystic or spiritual master; and while that kind of multi- or omni-focal consciousness might lie in our evolutionary future, I very much doubt that current forms of consciousness (as constituted by the now prevailing cultural discourses) would be open to such transformative challenges.By challenge here I mean the challenge of a greater freedom, where human consciousness would assume a greater responsibility for the power it has to creatively organize experience in such a way that it would not feel limited by the strictures of causality.Without this self-imposed limitation, the boundaries

separating us from the world and each other would become too 'porous' and a threatening de-stabilization might ensue.

2. Space and Time from the Perspective of Light Speed

With external space linked to internal contiguity and external time linked to internal creativity, the next stage of this discussion will center on how the speed of light, as a physical constant, and enlightenment, as a particular state of consciousness, are themselves inter-related.The speed of light acts as a kind of invariant with respect to movement through time and space insofar as its speed is always measured to be the same from all frames of reference even if these frames are moving at different speeds relative to each other.Likewise, enlightenment reflects a universal kind of wholistic- or unity-consciousness when viewed from different cultural frames of reference – cultural world-views that are otherwise quite different from each other.The central issue from the point of view of this discussion is whether the speed of light functions with respect to time and space (as aspects of the physical world) in a manner that is comparable to how enlightenment functions with respect to contiguity and creativity (as aspects of consciousness).If these two forms of interaction bespeak interesting parallels (which I believe they do), then important evidence has been brought forward with respect to how the external world is essentially internalistic or mind-like.

This section will tackle the physical world although, as a proviso, I must point out that my sketch of the special theory of relativity is necessarily truncated given the inherent complexity of the subject.For the purposes of this discussion what is central is the constancy of light speed, where visible light is but one kind of electro-magnetic wave. In this context special relativity is merely the application of Galilean relativity to electro-magnetic wave phenomena.Galileo established that, in a frame of reference that is stable or moving in a non-accelerated manner, all physical laws should be the same. (Wolfson, pp. 31-35)In other words, there is no way to tell, by the performance of any experiment, if one is stationary or in uniform motion with respect to some other reference frame.

Since light is a wave, a problem with this principle of relativity arises when one is moving at or close to the speed of

light.If one caught up with a light wave and were moving at a constant speed, one could supposedly see a stationary wave and thus the principle of all uniformly moving frames of reference being equivalent with respect to the performance of scientific experiments would be violated. (Wolfson, pp. 82-85) To maintain the equivalence of all uniformly moving frames, the one that was moving relatively fast with respect to another would still have to measure the speed of light as having the same value as the frame of reference that took itself to be immobile.

Einstein's special relativity resolves this apparent paradox by a set of formulas whereby time slows down and length is shortened from the perspective of the frame of reference that takes itself to be immobile.(Wolfson, pp.86-108) Of course, the mobile frame has as much right to take itself as stationary as the other frame, and from that perspective time appears to slow down and length is contracted in the frame that originally took itself to be immobile.Thus, while individuals observing each other within their own respective reference frames do not notice anything odd, their observed counterparts in the other reference frame appear to be living at a slower rate while being somewhat contracted in the direction of their apparent motion.And all of this so that each frame can measure light speed ('c' being approximately equivalent to 186,000 miles per second) to be a constant.

To make this point more clearly albeit in an over-simplified manner, we need only consider the formula relating distance (d), velocity (v), and time (t): d = vt.If v is approachingc (the speed of light) in some reference frame and c has the same value in the frame that is moving and the frame that is immobile, the frame that takes itself to be immobile will see a greater distance covered with respect to objects being measured in the mobile frame.But if c is constant, then the time factor (t) must be extended accordingly.Hence time appears to slow down in frame of reference taken to be mobile.

From the point of view of the present discussion, the upshot of Einstein's theory is the interlinking of a hitherto independently existing 3-dimensional space and a 1-dimensional time into a 4-dimensional unity called

spacetime.This interlinking follows directly from the speed of light being an invariant quantity with respect to all reference frames because motion in space can only be measured if it is properly related to an invariant spatio-temporal factor, that is, the speed of light.(Wolfson, pp. 169-170)In other words, there is no universal space independent of time.If, on the one hand, an object is moving in such a manner that it is too far away for whatever light it may be reflecting to reach an observer, then that object is effectively 'elsewhere'.That is, it is not in a position in space that can have any meaning for an observer.If, on the other hand, an object is moving at a distance that makes its reflected light available to a potential observer, then that object is part of the observer's spacetime world.

Given that light speed plays such a pivotal role in interconnecting space and time, the possibility of all observers moving at constant speeds with respect to each other reaching universal agreement as to their respective measurements becomes very real.Again the details are beyond the scope of this discussion, but the key principles are straightforward enough.For a frame of reference that takes itself to be stationary, it moves only along the time component of spacetime and has no real space component.If the 'stationary' frame conducts observations with respect to a 'mobile' one, then measurements would indicate that part of its motion through spacetime is spatial and a lesser amount is temporal.Again over-simplifying, one could think of the spacetime invariant as the hypotenuse of a right-angle triangle. (Parker, pp. 73-75) For any two observers moving in spacetime with respect to each other the hypotenuse is always the same, and what alters is either the 'time' side or the 'space' side of the triangle.If the time side goes up, the space side goes down proportionateley and vice versa.

The most paradoxical implication of this situation is the one associated with the space-traveling twin whose sibling remains on earth.(Wolfson, pp.122-125)Since each of the siblings may be taken as being at rest, and since time would slow down for the one taken to be in motion, then each of the siblings should be younger than the other when they are re-united after the journey – something which is self-contradictory.What resolves the paradox is that the two

motion states of each of the twins are not really symmetrical because, while the earth-bound twin moves only through the time component of spacetime, the space traveling sibling is accelerating and decelerating in order to make the round-trip journey .In short, the space traveling twin is not moving at a constant speed through spacetime and that breaks the symmetry that would render the two states of motion truly equivalent.In this respect, because the space traveling twin's journey has a much greater space component than time component, less time passed for that individual.Consequently, he or she returns at a younger age than his or her earth-bound counterpart.

From this non-mathematical summary of special relativity we can distill the following points, which will put us in a position to make the appropriate comparisons with enlightenment as a state of consciousness comprised of contiguity and creativity:

(1) The speed of light is an invariant for all reference frames moving at a constant speed, no matter how they are moving with respect to each other.

(2) Because of that invariance, space and time can no longer be seen as separate and unrelated aspects of reality, but must be combined into something called spacetime.

(3) A four-dimensional spacetime as a frame of reference allows one to reach agreement on different trajectories by viewing the 3-dimensional spatial component and 1-dimensional time component as inversely correlated.

(4) Light speed (c) functions as a kind of boundary to that which can be correlated inasmuchas events that are beyond that boundary in terms of their capacity to enter into our spacetime world have no real meaning for those in a position to conduct measurements.

3.Enlightenment and Consciousness

If the speed of light is invariant for all reference frames, can we say the same for enlightenment as a state of consciousness and can we relate that state to something that might play the role of a frame of reference with respect to human consciousness?Two terms have to be defined before we

can begin to answer this question: enlightenment and 'frame of reference from the perspective of consciousness'.

With respect to enlightenment, we are confronting a term that seems to be resistant to definition because of its inherent subtlety.An awareness of this state exists in most, if not all, cultures and it may loosely be defined as unity-consciousness.According to Ken Wilber, unity-consciousness is a state of awareness that is bereft of boundaries, that is, a level of awareness where the internal and the external are no longer seen as separate from each other.(Wilber, p. 52)Consequently, no mental energy is committed to boundary maintenance – and not just the trans-cultural boundary that separates the internal from external, but also the more culture-specific boundaries associated with good and evil, wisdom and folly, freedom, and slavery, etc.

As for frame of reference in a non-materialist sense, cultural assumptions act as a kind of container for groups of individuals to view their counterparts who live within the container of a different set of assumptions.An obvious question arises at this point, and it is based on the phenomenon of motion.While a frame of reference as understood by relativity theory involves motion with respect to another frame, how is motion to be understood from the perspective of a set of fundamental cultural assumptions?The simple answer revolves around the notion of progress, where some cultures seem to move forward by the development of technology, new economic practices, different political protocols, etc.Which cultures? A strong sense of such advancement was held by leading intellectuals in 18th-century Western Europe and its North American colonies.Ironically the term used to describe this cultural advance was called (in English) the age of Enlightenment, and figures like Condorcet (pp. 1-13) even outlined its progress in his famous essay, Sketch for a Historical Picture of the Progress of the Human Mind (1795).Ironic because this Western sense of Enlightenment is radically different from its more Eastern counterpart, which Wilber views as undermining the boundary between the internal and external realms of experience.Indeed, the Western understanding of Enlightenment is based on strengthening that boundary by

viewing the external as made up of non-conscious matter, and thus totally different from the conscious mind, whose main project is to dominate the external for the purpose of enhancing human possibilities of freedom.To the extent that the human consciousness is itself viewed as ultimately materialistic, a consciousness-denying world view was (and in some quarters still is in the process of being) developed accordingly; and while this might allow for the disappearance of the boundary between internal and external, one is still left with a world constituted by a multitude of scientifically articulated external boundaries – something that still flies in the face of Wilber's no-boundary understanding of enlightenment.

What is of particular interest with respect to the West's cultural frame of reference being in motion with respect to non-Western ones is how well this parallels the motion of the non-aging space twin with respect to his/her journey through spacetime in comparison with an immobile sibling.Interpreting the twin paradox in terms of the relationship between 'young' and 'old' cultures will go along way toward highlighting our basic thesis – namely, that external phenomena as described by special relativity behave in a manner that is interestingly mind-like.

First, the terms young and old culture are taken from Thom Hartmann's The Last Hours of Ancient Sunlight (New York: Harmony Books,1999), where he contrasts the rapacious, dominating, and alienation-from-the-world assumptions of contemporary Western civilization with those of the by now largely extinct tribal cultures.The latter are, of course, the older cultures, who saw their destiny as one of co-operation with creation (p. 154) while the former saw their destiny as that of domination – not only of the world, from which there was a strong sense of alienation, but also of one human group over another.The details of each assumption set need not concern us because it is the relationship between them that highlights and parallels the main elements of the twin paradox and the nature of consciousness in the context of true enlightenment.

Because the twin paradox is resolved with reference to different trajectories in spacetime, let us recall the earthbound sibling may be understood as having his/her trajectory caught up exclusively with the time dimension.Hence that individual moves exclusively through time and ages accordingly.Contrariwise, because the accelerating and decelerating traveler devotes a significant portion of his/her spacetime trajectory to space, less was devoted to movement through the time dimension and, consequently, less aging has taken place.(If there had been no acceleration or deceleration on the part of the traveler, the situation with the twin would have remained symmetrical, but then there would have been no subsequent meeting with the twin because that would have required some combination of acceleration and deceleration.)

Now in the earlier part of this discussion the idea of external time was correlated with that aspect of consciousness we called creativity, that is, having a world of great richness.The link to time emerged from the need to focus on that richness by relegating certain of its aspects to the past and the future.However, insofar as a tribal culture emphasized sameness and stability (Hartmann would say sustainability) this tendency to bring creative consciousness to a focus would be downplayed for the sake of broadening one's experience of living with the richness. Here we must examine more deeply the connection between internal creativity and external time, but fortunately that has already been done by the French philosopher, Henri Bergson, whose speculations about time and creativty (in the early part of the 20th Century) are partiucalrly apt.In this regard, Bergson's main point is that the external time of scientists and of Western philosophers in general is but a pale shadow of time as irreducible, non-quantifiable duration – duration not as an abstract linearity, but as "unceasing creation, the un-interrupted upsurge of novelty." (Henri Bergson, The Creative Mind – An Introduction To Metaphysics,trans. Mabelle L. Andison, (Mineola, New York: Dover Publications, 1947, 2007), p.7).

From the point of view of this discussion, pre-urban or tribal cultures might be thought of as 'old' in Hartmann's sense because the orientation of their collective consciousness is geared to creative time in the manner understood by

Bergson.These cultures certainly appear old from the perspective of more dynamic ones (and the West may be taken as most dynamic of all in a manner to be explained further on) because they seem not to have advanced, that is, they are rooted in the past and appear decrepit to those of a younger bent.The younger cultures also take themselves to be dynamic and thus more creative than their older counterparts; but while it would be foolish to deny the inventiveness of West, Bergson and Hartmann give us the tools to develop a different interpretation – one that sees the older cultures as having a trajectory in time (understood as internal creativity) for the following two reasons:

(1) Members of these cultural groups interact with each other and the world in a manner that bespeaks a respect for the dynamic spontaneity that seems to characterize reality.

(2) Consciousness is geared to what I would call 'mythic creativity' wherein the patterns of life are related to and given meaning by the foundational myths that cultures taking their cue from rationalist principles hold to be childish.

Expanding upon the last point, it is easy to ignore that a significant part of mythic creativity is oriented to time, to the great beginnings, to those ages long past when gods walked the earth, to those long distant epochs when humans were created and given the tools to live in the world, to the times when the principles underlying current practices were laid down.When rationalist approaches to reality downplay these stories, they miss the crucial point emphasized by C.G. Jung – namely, that these stories and symbolic tales are manifestations of what he termed the collective unconscious (Jung, pp. 77-78) and that living in some kind of non-repressive relationship with them gives life a temporal dimension that is absent from those cultures that consciously or unconsciously suppress these living embodiments of deep temporality. (Jung, p. 69) Since myths express and are expressed by the creative imagination, we have here a clear link between time and creativity – a link emphasized by Bergson albeit not usually in the context of ancient pre-urban cultures.

With regard to the first point about respect for dynamic spontaneity, we are suggesting that insofar as older cultures relate to the world as a place of animist forces (e.g., nature spirits and the like), to that extent is the world not subject to domination and requires instead a stance of respectful co-operation.In other words, if the world is seen as alive and full of spirits, an attitude characterized by a respectful propitiation of such forces makes sense even if fails to impress those of a more rationalist orientation, who accordingly would view the world as spiritless and thus appropriately subject to scientific manipulation.Moreover, inasmuch as these spirits are viewed as being of a greater age than the humans who enter into some kind of relationship with them, the richness of the world reflected in this situation clearly has a temporal dimension that is lost with 'younger' cultures who are quick to dismiss such possibilities.

Turning then to the younger cultures, they are akin to the space-traveling twin in virtue of their acceleration and deceleration, which means a de-emphasis on external time and internal creativity (as we have just discussed them) and a concomitant emphasis on external space and internal contiguity.The acceleration-deceleration aspect can easily be correlated not only with progress, but also with the exponential growth which threatens the very stability of the modern world.Population increase, human-made climate change, rampant consumerism, a technology and an economic system that are almost addicted to increasing rates of growth – all these are all part of the inherent unsustainability of the West.It is not then the movement in space – cultural or otherwise – that is at issue, for non-accelerated motion would be equivalent to being at rest.It is the acceleration that sets a younger culture at odds with its 'older' sibling, who is now virtually extinct.To the extent that creativity plays a role in younger cultures, like the contemporary West, it is less geared to articulating our complex relationships to our origins in a distant past than it is to conquering the present and perhaps even the future, which may be defined as liberty through technological mastery of the external world.

Science is not just the root of Western technology, it is also the place where contiguity – the internal analogue of external

space – figures prominently.Recalling that we defined the contiguity aspect of consciousness in terms of its flow-like quality experienced as a common space (in contradistinction to that which is outside of or external to it), one can see that scientific law based on mathematical equations is a powerful expression of such contiguity.Because one's attention is normally directed to the elements of the equation (e.g., mass, acceleration, and force as in Newton's famous equation, F = ma), it is easy to ignore that the equal sign (i.e., '=') has established an extreme or rigorous contiguity between these elements – a contiguity understood as a kind of absolute identity that, in a certain way, has become paradigmatic for younger culture consciousness.Within the framework of such 'equalitarian' rigor there is no room for the dynamic spontaneity of the mythic world; and while it is easy to appreciate the scientist's contempt for those soft-headed individuals who cannot do the math, the demands of symmetry suggest a deserving measure of disparagement for those who cannot do the 'myth'.

Of course, it is also the case that while many in the West cannot do the 'equalitarian' math either, the emphasis on the contiguity aspect of consciousness has more accessible manifestations – those associated with egalitarianism, that is, the political and economic imperatives that assert that everyone's value should be based on their own efforts and not on some irrational prejudice that arbitrarily devalues individuals on the basis of race, class, or gender.This aspect of the Western Enlightenment came to the fore in the wake of the American and French Revolutions at the end of the 18th Century, and in a sense one might interpret them as secular interpolations of the Christian 'revolution', which sought to affirm a universal value to all human beings (all have souls beloved of God).The point is that contiguity consciousness in its egalitarian emphasis seeks to homogenize people, for to be equal in rights and value they have to made somewhat the same.Otherwise a burgeoning of excessive difference would undermine the possibilities of creating a common space. Moreover, since the past with its 'inegalitarian' irrationalities was associated with extremes of devaluing differentiation,

there was a natural tendency to reject the past and all those Jungian archetypes that were living embodiments of a world-creating dynamism – a dynamism embraced by those 'older' cultures traveling through time rather than conquering space by homogenizing it in various ways.

At this point one can begin to see the outlines of a cultural critique from the perspective of a more universal form of enlightenment – one that integrates creativity and contiguity in a way that parallels the integration of time and space in special relativity.The contiguity aspect of consciousness, which emphasizes identity, wholeness and a lack of boundaries can by itself fall into a kind of corruption.Not only are its unities partial and limited to what can be established by mathematical reason, they are hostile to or even destructive of those who favor the creativity aspect of consciousness in its trans-rational or more mythic forms.Finally, there is the inescapable, albeit often denied, fact of failure – failure to create the common space characterized by universal valuation.The economic inequalities are simply too great, the intellectual chasm between those who can do the math and the vast majority who cannot is unbridgeable, and the sheer complexity of the culture that has emerged from an endless series of technological revolutions requires a bureaucratic structuring, the horrors of which Kafka interpreted in a chilling way.When the protagonist of his novel, The Trial, is executed for complex reasons that no one can ever understand, his last words reflect the ultimate devaluation that comes from a system that is reduced to serving only itself and not those it may have been designed to integrate into a place of universal valuation: "'Like a dog!' he said: it was as if he meant the shame of it to outlive him." (Franz Kafka, The Trial, trans. by Willa and Edwin Muir (Harmondsworth, Middlesex: Penguin Books,1953), p. 251)

Can one apply a comparable critique to those who travel through time and base their consciousness on a living encounter with those archetypes which connect older cultures to a distant past as a living creative force that infuses the present?At this point I can only speculate since older cultures do not appear to have kept records of the challneges that beset them.I am not here referring to the challenges of human survival in a land that was not subjugated to human power.I

am referring to failures in maintaining an authentic relationship with one's archetypes.If myths and the temporal wisdom they represent become overly formalized or just a set of fanciful tales, older cultures can experience a kind of degeneration of their consciousness – a kind of fall into what younger cultures might condescendingly call superstition. Here the wisdom of myth would be lost and replaced by such things as a compulsive propitiation of the gods, empty rituals rooted in fear, and ultimately an abandonment of natural wisdom for the artifical folly that seems to characterize a post-mythic world.Although he does not focus specifically on myth, the idea of an insane world of war, social and gender inequality, and hatred of the body is explored by Steve Taylor in terms of a transition from older neolithic cultures to others that are normally celebrated as the initiators of human civilization. (See Steve Taylor, The Fall – The Evidence for a Golden Age, 6,00 years of insanity, and the dawning of a new era (Winchester, UK: O Books, 2005).) Egypt, Sumer and the like might be taken as examples of cultures that have moved away from the journey through time; and while we might interpret some of their myths in terms of their residual archetypal depth, those who livied at that time might have lost touch with their gods or the repositories of the temporal wisdom that might have successfully guided human life in earlier epochs.

An interesting commentary on this situation may be found in the Old Testament Book of Job.One may take it as a kind of myth commenting on mythic consciousness itself – a tale that subtly explores alienation from mythic archetypes.When the protagonist, Job, suffers horribly because God allows it, Job's friends move from a stance of commiseration to to one of condemnation.Their need to see God as just overwhelms their sympathy for the suffering Job, who is seen as having somehow merited his harsh treatment.Yet Job's life was exemplary; and when he confronts God by affirming his innocence, God answers, not by vindicating Job's judgmental friends, but by pointing out how limited Job's understanding is of the vast scope of creation.(Book of Job, 38)In other words, God criticizes Job's presumption in daring to judge God on

anything.Job, forhis part, is overawed and duly does repent of his presumption.(Book of Job, 42, 1-6) He has been given a glimpse of God's true creative power, which reaches a curious climax is God showing Job two monsters of the deep – the Leviathan and Behemoth.(Book of Job, 40, 15-24; 41, 1-34)

If these monsters represent archetypes that exist in the unconscious (i.e., the sea, the deep), does the story of Job suggest that mythic consciousness has been repressed because it is at odds with the younger culture relationship to myth?Although Job's friends would not normally be considered superstitious or rigid, their view of God is conventional and, like that of Job, ultimately presumptuous.However, the tale does not call for a return to a non-alienating relationship with archetypes.Behemoth and Leviathan remain monstrous creatures of the deep unconscious, where they reside to this day unless brought into an integrative relationship with consciousness via some kind of Jungian therapy.The story may be articulating a young culture warning – namely, that suffering is somehow tantamount to our alienation from archetypal consciousness and that, while a rigid or conventional relationship to creative consciousness (represented by God as the transcendent and all-powerful creator) is wrong or misguided, the best we can do is limit our presumption.Job's fortunes are restored after learning this 'lesson', but it is more than a little doubtful whether the abandonment of presumption is an adequate substitute for what has been lost, that is, the non-alienated relationship with creative consciousness.

4. Enlightenment and the Resolution of Cultural Conflict

Just as differing spacetime trajectories can be reconciled using an inavariant built around the speed of light, we are now in a position to bring matters to a head by asking if different cultural trajectories can be reconciled using enlightenment as an invariant.The different trajectories have been discussed in the extreme forms of old versus young cultures; and insofar as the former emphasizes a 'temporal' orientation built on an engagement with mythic archtypes while the latter emphasizes a 'spatial' orientation built on an engagement with

'equalitarian' reason, we have the two aspects of consciousness represented in a state of relative dissociation.What are these aspects?They are creativity and contiguity, which if properly integrated would constitute the core of a reconciling form of consciousness – namely enlightenment.The previous section has linked 'creativity' to the mythic consciousness of older cultures.Not only does it bespeak a temporal connection to the gamut of lived experience, creativity touches on that aspect of consciousness associated with having a world, a totality of experience that is always in the process of being constructed by consciousness and which is constructed well if it is attuned to the larger patterns embodied in myth.Likewise, the previous section has connected 'contiguity' to the more rationalist-mathematical-technological consciousness of younger cultures.Here we have a kind of analogue to space, which is conquered by ever increasing attempts to dominate the world and bring it under the power of some kind of 'rational' system.

The key question then is whether or not enlightened consciousness can be understood as a harmonization of creativity and contiguity and whether or not that harmonization can serve to reconcile, not only the cultural tensions that divide old and new, but also the tensions within a given culture that have taken it too far in one direction (usually the 'spatial-contiguity' one) and thereby lost a kind of balance that enlightened consciousness could restore.With respect to cultural healing, there have been no small number of calls for new ways of thinking to solve the problems currently besetting us because to solve our socio-economic crisis utilizing the very assumptions which have engendered it seems quite futile.Yet new ways of thinking are, in virtue of their very newness, deemed suspect, and consequently there is a natural resistance to letting them play an effective role in the prevailing political discourse.Talk of enlightened consciousness must appear more than a little problematic to those committed to materialistic paradigms.However, the present discussion has attempted to mitigate such resistance by connecting enlightened consciousness in a novel way to one of the pillars of scientific understanding – namely, the special

theory of relativity and the twin paradox, which illustrates its range of applicability in a surprising way.Just as the speed of light brings together space and time, enlightenment brings together creativity and contiguity.

Let us recall that enlightenment is associated with what Wilber has termed unity consciousness.Unity here is at a very fundamental level, where the boundary between self and world is dissolved and seen as a barrier that stands in the way of enlightened consciousness.Thus contiguity or flow between self and world is clearly in evidence.But what of creativity as the other aspect of consciousness?Wilber does not explore this; but just as self-world may be the axis around which the contiguity aspect of consciousness plays, creator-created may be the axis around which the creativity aspect of consciousness functions.A text that may be considered a kind of foundation to young culture presuppositions is the Book of Job, where the disparity between creator (God) and the created (suffering Job) is highlighted.Even when Job is given a glimpse of the creative power, the vision only reinforces the chasm between creator and created.What this suggests is that a fully developed unity consciousness is one where the boundary between creator and created is overcome along with the one associated with self and world.In other words, enlightened consciousness, if it is fully unified, is one that knows itself as creator and created – a knowledge that complements a sense of contiguity between self and world.Indeed, the complementarity must be a mutual one because, if the world and self become part of a contiguous flow, the creative aspect of that world must become part of the individual's personal creativity.To put it another way, individuals are empowered as creators but only to the degree that their individuality is transformed into a oneness with the world.

There may indeed be other aspects of enlightened consciousness, but the one I am exploring does have certain implications relevant to this discussion.To integrate creativity and contiguity allows one to avoid the imbalances that transpire when they are dissociated, and in that sense a whole new mode of cultural discourse may be initiated – one that may correlate different trajectories and facilitate thereby

deeper levels of understanding.For example, if certain individuals, groups, or even cultures are directed toward rational contiguity, their creativity aspect may be under-developed.Likewise an excessive creativity orientation might incur serious difficulties in communicating with those who are unconsciously committed to the contiguity path.Only those who have managed to integrate creativity and contiguity (the internal analogues of time and space) in the unity consciousness of personal enlightenment are in a position to reconcile these differing trajectories toward what may be considered an ultimate goal of culture – universal enlightenment.What could this be but the dissolution of the final boundary – beyond the self-world disjunction, beyond the creator-created chasm, to the final division between those who have achieved enlightenment and those who have not?

Speaking from a more pragmatic and less theoretical perspective, a sense of self-world contiguity would facilitate a more refined and powerful ecological sensibility. A creator-created unity might be instrumental in overcoming all those religious differences that grow out of the unenlightened view that God as creator is radically different from an inferior human creation, which must abjectly follow divine commands.Could it not be the case that extreme creator-created differentiation translates into differing and dissociated interpretations of the creator – a situation tragically conducive to centuries of cultural dissension?Moreover, if self-world disunity wre overcome in the context of suitable cultural discourses, would that not facilitate a closeness to the world, which, as an expression of creative consciousness, would bring us closer to the creativity that we erroneously dissociate from ourselves?Concomitantly, if we grasped the full measure of our creative power as conscious beings, who actively participate in the discursive co-creation of the world, its anxiety-engendering otherness would be muted.To sum up, creativity and contiguity, as aspects of consciousness, were and are made for each other.Enlightenment is the realization and perfection of that inherent attunement, and addressing the current disattunement in a cultural, as opposed to exclusively

personal, vein would go a long way toward a unity consciousness characterized by universal enlightenment.

5. Conclusion – From Einstein to Gilgamesh and Back

The discovery that light speed as a universal invariant is instrumental in revealing the spacetime unity that undergirds their (i.e., space and time) apparent separation may be a harbinger for developing comparable unities in the sphere of culture.In that sense one may take the twin paradox, not just as a clever story designed to illustrate the workings of special relativity, but as a kind of modern myth describing the relationship between old and young cultures.Moreover, just as the return of the traveling twin closes a circle, the development of special relativity may also be thought of as closing a circle – in this case a circle defined by the archetype of the Orouboros or serpent biting its own tail.

Just what is this tale/tail?It is a very ancient tale – some would say the 'Ur-myth' of all young cultures, and it is not without significance in a discussion riddled with suggestive puns and allusions that the 'Ur-myth' concerns the king of Uruk, Gilgamesh, and that a serpent plays a certain role in the story.As will be seen, the climax has eerie tale-biting associations with special relativity as well as with the idea of old and young cultures.While the story itself seems to focus on the human quest for immortality, the theme of enlightenment comes to the fore in a manner that is highly suggestive of time dilation in special relativity.

After a long journey Gilgamesh meets Utnapishtim, a man who survived a Noah-like flood that destroyed all humankind long ago.Not only does he possess what Gilgasmesh is seeking – immortality – he tests the protagonist's worthiness by asking him to refrain from sleeping. (Epic of Gilgamesh, p114)Now wakefulness has strong associations with enlightenment.The term Buddha means the 'awakened one'.To survive a flood might mean to avoid a fall into the deep – a state of unconsciousness into which humanity must have fallen if it is alienated from its creative power the way Job and his friends appeared to be.In any case, Gilgamesh is not up to the challenge of wakefulness or enlightenment and falls into a deep sleep.In order to convince him of the length of time he

has been sleeping, Utnapishtim's wife bakes a loaf of bread for each day that Gilgamesh slumbers.Sure enough, upon awakening, Gilgamesh insists that he dozed off for but a brief moment and is duly amazed to find the seven loaves, each in a different state of freshness, staleness, and decay.The protagonist sadly realizes that wakefulness, enlightenment, and immortality are not to be his fate or destiny although the loss of immortality is the only thing that concerns him.

With respect to the idea of seeking enlightenment as wakefulness as well as the implication of time dilation, the aforementioned part of the story is of considerable interest.First, Gilgamesh is struggling for wakefulness (a symbol of enlightenment) and from his frame of reference he would be accelerating or moving at a speed closer to light speed than those in a frame of reference who are not so engaged.Who are those not so engaged?The hearers of the tale.Second, while those in the 'hearer frame of reference' can perceive a kind of time dilation for Gilgamesh (the seven loaves of bread being baked for each day that Gilgamesh sleeps), Gilgamesh, who naturally takes his frame of reference as the 'immobile' one, has no such awareness – that is, until he is confronted with the evidence.Third, his failure to achieve or maintain wakefulness reflects the trajectory of younger cultures, especially since the story keeps emphasizing the hero's journey through space – i.e., his overland travels.

Still, if the possibility of wakefulness has been lost, the possibility of keeping young is entertained in a manner that again has connections with special relativity.Utnapishtim tells Gilgamesh of a plant that grows underwater; and if he can retrieve it and bring it back to Uruk, then the old men can become young again. (Epic of Gilgamesh, pp 116-117)Aside from playing with the notion of young cultures, this part of the story may be interpreted in the context of how special relativity calls for an increase in mass as one approaches the speed of light.Gilgamesh must indeed put on 'mass' in the form of weights he attaches to his feet in order to overcome the buoyancy of the water and reach the special youth-bestowing plant.Unfortunately after retrieving the plant, Gilgamesh loses it to a serpent.He goes to bathe in a well of cool water, but

deep within a serpent senses the sweetness of the plant, snatches it, sloughs off its skin and returns to the well.Not only has the 'beast of the earth' the joy of the plant, but the 'stream' has carried it back to the original channels wherein it was originally found.

How may this part of the tale be interpreted in the context of young culture and what for it constitutes enlightenment?If one broadens the base of our interpretative framework to include the Garden of Eden story in Genesis, then the serpent may be thought of as representative of earthly wisdom, of knowledge of good and evil, that alienates humans from their Creator by an act of disobedience which occasions their expulsion from the 'Garden'.Yet is it not knowledge, the serpent, that is always renewing itself and thereby embodying the youthful quality of young cultures?The men might not grow young; but insofar as our knowledge is perpetually renewing itself, those who cleave to it can share in that youth.Such renewal of knowledge was termed enlightenment in the 18th Century.However, as the century drew to a close in an upheaval of revolutionary fervor, Goya echoed the sleep of Gilgamesh in his famous etching, The Sleep of Reason produces Monsters.The image shows a sleeping philosophe, from whose head or in whose dream a flock of malevolent owls spring forth. The owl as a symbol of wisdom has become monstrous, just as what we call a purely rational enlightenment is a kind of perversion of authentic enlightenment.And because perversions are frightening to face, do we not have to bathe in the deep wells of the unconscious to avoid confronting these monsters?

If I have taken the time to facilitate a discourse between myth and science, between creativity and contiguity, it was to give a glimpse into their profound and inherent affinity – an affinity that is ever perfected in enlightened consciousness.With special relativity, the wheel has come full circle, the mythic Ouroboros serpent has grasped its own tail.Reason may be awakening from its sleep-producing monsters, and in the reunion (facilitated by enlightened consciousness) of space-traveling twin with his/her time-traveling sibling both will have much to learn from each other.

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