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Localisation of consciousness applied to the study of anomalous temporal experiences

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Abstract

Certain psi phenomena, in particular time-slips and scene changes, can be more clearly defined when placed in the context of modern physical theories. Any point of conscious contact is localised in an almost infinite-dimensional space of material configurations that generates our perspective of the world at any instant. This is referred to as the *principle of localisation*, which requires a non-physicalist theory of mind.

Normal life is seen to satisfy a defined set of constraints within this model. Events where these constraints are breached may be interpreted as psi phenomena. Scene changes and time-slips into the past are most easily described this way. It is not established that all reported psi phenomena fit within this framework, which itself cannot be regarded as a complete and formal theory in the scientific sense. However, as an overarching framework it provides a suitable context in which to visualise some psi events.

1. Introduction

A hypothesis describing the mind-matter relationship, first proposed by David Albert and Barry Loewer (1988), is applied to the investigation of alleged psi phenomena. In this work we restrict our attention to those phenomena fitting under the headings of *time-slips* or *scene changes*. Although these phenomena are rare in the extreme, they are most easily explained in terms of the theoretical framework proposed, which is rooted in current physical theories. In the past, particularly during the century 1850-1950, reliance on biology and neuroscience has directed research on a path towards mind-body physicalism. However, recent developments in physics, beginning with the emergence of relativity, tell a very different story. So what is this hypothesis and, on what known facts is it based?

The *principle of localisation* of consciousness has an axiomatic structure based on two postulates. There is a detailed explanation of this in (Austin, 2020[a], Ch8), and it is also outlined in (Austin, 2020[b], p1). The postulates on which the theory is based are

Eternalism: Physical reality consists solely of a timeless landscape of fixed features that we experience as events.

Experience: Our conscious dynamic experience of the world is real.

The first postulate, *eternalism*, is rooted in the development of modern physics, particularly throughout the twentieth century. These included the emergence of relativity and quantum mechanics, and are discussed further in section 2. The other postulate, *experience*, is often thought of as being in conflict with eternalism. This is because assertions that they are in conflict tacitly assume mind-body physicalism in which the existence of the mind is wholly dependent on the physical structures of the brain. Taking both of these postulates seriously therefore, implies a non-physicalist interpretation of mind. For our purposes it is easier to consider a dualist interpretation where the mind is regarded as an entirely separate entity from anything physical. Another non-physicalist interpretation, *idealism*, is where matter depends wholly on mind for its existence. But this may invoke complications not relevant to our purpose. This possibility is, of course, not invalidated.

The principle of localisation is so called because the point where the mind is conscious of the physical *timeless landscape* is highly localised at every instant of experience. We call this the *point of conscious contact*. The interaction between the mind and the physical world is one-way, physical events affect the mind, but the mind cannot affect anything physical. This seems counterintuitive until we realise that *all events* include all possible *counterfactual* events, which may be described as choices not taken. The timeless landscape referred to is therefore much larger than the sequence of events we call history. For example, the mutually exclusive choices of whether to lift your right arm to a higher position or not, both exist in the timeless landscape. The choices exist *a priori*, they do not happen. Once we have a grip on this simple yet unfamiliar idea then a clearer picture of anomalous temporal events and other psi phenomena should emerge. What the theory cannot tell us at present is how separate minds interact directly, if they do at all. Therefore the theory must be regarded as incomplete.

Prior to relativity the universe was considered to be a dynamic deterministic system dependent on an external universal time. From the middle of the nineteenth century there was a growing realisation that physics is underpinned by a set of conserved quantities sufficient in number to render the dynamics of any closed system entirely predictable. This is known as the *causal closure of physics*. Biologists increasingly saw this as evidence that both behaviour and sensory experience could be accounted for in purely physical terms. Because biology and neuroscience of the early twentieth century did not need to draw on the emerging theories of relativity and quantum mechanics, there was no reason to suspect that science could have any further bearing on the mind-body problem. For these reasons, by the middle of the twentieth century mind-body physicalism had become almost irreversibly entrenched.

With the development of modern physics came the realisation that the physical world is much larger than the familiar three-dimensional base space. Beyond this there is an almost infinite-dimensional space of matter and field configurations within the base space, known as a configuration space (C-space). Moreover, physical time can be thought of as no more than an ordered sequence of matter configurations existing timelessly as a line of points within a universal C-space. This *timeline* together with our three-dimensional base space form a unified space-time governed by relativity theory. However, this greatly expanded universe, such as it is, leaves no room for time as experienced duration espoused by Henri Bergson (1910) for example. In 1922 Bergson and Einstein famously disagreed over the nature of time, where for Einstein time is spatialised into an extra geometric coordinate leaving no room for experienced dynamics in the physical world. Bergson on the other hand, describes phenomenal time, internal to and dependent on the mind; this is an important distinction. Therefore the situation is resolved by allowing experienced duration to exist as a function of a nonmaterial mind whose point of conscious contact with the physical world *moves*, with respect to its own internal time, through the objective timeless landscape of C-space.

Although we treat nonmaterial minds objectively, they are also considered irreducible, and therefore not definable in any material sense. Their locations also remain undefined. The only real clue to their (our) existence in any meaningful sense is a mind's point of conscious contact with the physical world. Moreover the reasons for a nonmaterial mind's direct connection to a small region in base space, i.e. the brain, also remain elusive. Fortunately answers to these questions, desirable though they are, are not required for us to make some progress. If these questions could be answered however then they may provide a basis for controlled testing of psi phenomena.

Because we assume a dualist theory of mind, this opens the possibility that normal paths through C-space may become disrupted in certain ways. It is important at this stage to distinguish between the mind and consciousness. We assume consciousness to be a property of the mind, where the latter is treated as a non-physical object. Consciousness itself is a faculty of an individual mind to be aware of external stimuli, whether acquired via physical senses or not. In this model, one unanswered question is how an objective mind is connected to a sequence of matter configurations we call a brain. We can imagine consciousness being localised, which is to say, existing at one point in time at any instant but still moving along the timeline of the brain with respect to its own internal phenomenal time. In this way, the mind is only aware of input acquired through the sensory organs attached to the brain. This is

the essence of normal life where Bergson's phenomenal time is approximately correlated with Einstein's physical time. It is our proposal that disruption of this normal path or sequence, for whatever reason, may manifest as psi phenomena experienced only by the mind whose path is disrupted. Most reports of psi events are from single individuals, but on rare occasions multiple witnesses are involved. Whether each individual within a group experiences exactly the same sequence of psi stimuli remains an open question. For our purposes we define psi phenomena as any event categorised under any one of the headings:

1. Clairvoyance/clairaudience/clairsentience
2. Telepathy
3. Precognition/retrocognition
4. Psychokinesis/poltergeists
5. Out of body experience (OBE)
6. Near death experience (NDE)
7. Memories of past lives (reincarnation)

This list is recognized by most people irrespective of whether they are believed to be real. The proposed localisation of consciousness model will certainly influence how each of these is interpreted. Psychokinesis, for example, would not be interpreted as some special force generated by the mind, because this would be contrary to the closure of physics principle. Instead it could be that the mind is displaced along an abnormal path through C-space, where the path is defined only by different positions of the object that is seen to move. The object has not moved, only the mind has *moved* along this abnormal path through C-space. There would be no external physical evidence that the object had moved during the psi event. Any video footage for example, would show that the object had remained stationary at the point where it was seen to stop. The source of any accompanying sound might also be difficult to ascertain if we are assuming no actual movement, but no doubt it could be hallucinated in some way.

Of the other items in this list, clairvoyance (audience) is an ability to receive visual (audible) information directly, and not via the physical senses. The related phenomenon of clairsentience is where an individual mind feels the truth of a particular state of affairs, which is subsequently verified and could not have been known by physical sensory means. These faculties may also be grouped under the heading of extrasensory perception (ESP).

OBEs and NDEs appear to be displacements of the point of consciousness out of, or away from the physical body. In OBEs the displacement is in the base space, whereas in NDEs the individual experiences another undefined realm often interpreted to be the afterlife. Depending on your viewpoint, OBEs and NDEs are closely related to ESP since the mind acquires the experience directly and not via the physical senses attached to the brain. Also, a closely related phenomenon is telepathy where minds are able to communicate directly, therefore bypassing any physical structure.

Interpretation of past life *memories* may be literally correct, or they may be shared memories of a collective mind associated with other individuals. Either way, if these are not constructions of the brain then they indicate that nonmaterial minds can carry their own

memories. None of these faculties or phenomena is ruled out by the localisation of consciousness hypothesis. Moreover we believe the proposed model to provide a clearer context in which to examine such phenomena.

This work is primarily focused on retrocognition (item 3 in the list). This is often referred to as a time-slip because, barring small historical details, the subject perceives seeing or being in a scene recognisable as the past. At any given instant we each see a particular snapshot of the world that defines our position in C-space. In a naïve sense this is reflected by the positions of every elementary particle at that instant, including those making up your body. All changes including the movement of your body, changes in brain state and movement of external objects, reflect the movement of your nonmaterial mind through the timeless landscape of C-space. When a temporary shift into the past is experienced, the path recognisable as normal life (a normal sequence) is disrupted and this can be interpreted as the point of conscious contact abruptly shifting back into history by, in many cases, several decades or even centuries. Nothing physical moves however, but the witness may still have a real sense of being in the past. These experiences are often fleeting and on a few occasions last for several minutes. One example where four individuals experienced living in the past for several hours, *the vanishing hotel* (section 4.1), appears on closer examination, to be a combination of both normal and psi events.

Time-slips into the *future* (precognition) are also allowed by the model. Future times, like the past, are distinct from the present but are unknown. Even here our model is still able to cope, it is just that in this context, there is no predetermined future. All possible futures exist but we cannot know which one we will experience until we arrive there. Precognition however, may be a faculty by which a subject perceives a most likely future under present circumstances. This may be intimately connected with the wave function of quantum mechanics, which is a function whose value is dependent on the local matter configuration (our location in C-space). The probability of a particular future configuration can, in principle, be calculated directly from the wave function alone via what is know as the Born rule, according to which, larger magnitudes of the wave function correspond to higher probabilities for corresponding sequences of configurations. In other words, some future configurations can, in principle, be determined to be more likely than others. There is the possibility that an individual mind may sense the wave function, as well as local configurations, in some way. And like matter, most physicists believe the wave function to be a physical object, not something epistemic or mind-dependent. For a more comprehensive discourse on the objectivity of the wave function, see (Pusey, Barrett and Rudolph, 2012). If minds can sense the wave function across many possible futures in the short term then this is a potential mechanism for precognition.

Closely connected to time-slips are scene changes where a subject witnesses something counterfactual. In most cases this is usually an artificial structure of some kind. Here the term *counterfactual* refers to an event or series of events, which can be verified never to have taken place. These mostly involve a subject briefly seeing a building of some kind at a particular location, only to return to the same place later and be unable to locate it or discover any trace that it ever existed. In our hypothesis we may explain such events or configurations of matter as not being on our historical timeline, but may have been a subject of a planned

development that never came to fruition. Hence the structure still exists in C-space somewhere without being part of the sequence we call history.

In the next section a brief overview of modern physical theories is provided. This will hopefully provide justification of the objective existence of this and all possible counterfactual histories that physics allows. Here it is seen how the scientific view of reality has evolved from one of a dynamic three-dimensional universe, envisioned by Newton, to one that is timeless and, for all intents and purposes, infinite-dimensional. The latter is expected to be unfamiliar to the general reader, and this will generate some difficulty. However, it does provide a context in which we may be seen as nonmaterial minds navigating our way through this larger reality.

Section 3 introduces the idea of a *normal sequence* of configurations that defines temporal experience. This is also discussed in terms of speculations on the *distribution of minds* throughout C-space. The definition of a normal sequence is seen as one of a set of *normal constraints*, which together restricts the nonmaterial mind to all that it needs to experience normal life. Momentary breaches of these constraints may be interpreted as particular psi phenomena depending on the circumstances.

Section 4 describes time-slips and scene changes, phenomena discussed at length by Andrew MacKenzie (1997). Physical time travel, as popularised in science fiction, is ruled out as an explanation. During a time-slip or a scene change however, a nonmaterial mind experiences a temporary dislocation in its normal sequence. One particular case of a dislocation in time allegedly lasting several hours, the *vanishing hotel*, that was not covered by MacKenzie is described. Although on closer examination, many elements of this experience may be described in more mundane terms, there is still at least one aspect of this case that demands a more exotic explanation if the claims are to be taken seriously. Three other famous time-slip examples are also considered, the *Versailles adventure* and the *Kersey case* are both discussed at length by MacKenzie while another, one of many incidents occurring on Bold Street, Liverpool, UK reinforces the claim that the phenomena is location dependent. General scene changes, also defined as discontinuities in normal configuration sequences, may also be fitted into the principle of localisation. This offers a more refined version of Price's explanation for *spectral houses* (MacKenzie, 1997, p126), which is also discussed.

2. Modern physical theories

As part of our endeavours to make sense of the various manifestations of psi phenomena we need to gain a basic understanding of the physical world around us. In this way it becomes easier to discriminate between conventional behaviour and anything considered anomalous. Science as we know it today progressed rapidly from the early sixteenth century, but it was not until the beginning of the twentieth century that a wider context began to emerge in which the status of the conscious mind could be more clearly defined. Initially this broader perspective consisted solely of relativity theory and as the twentieth century unfolded it widened further with the emergence of quantum mechanics and eventually though still incomplete, quantum gravity.

Prior to the birth of relativity, notwithstanding the classical mechanics of Joseph-Louis Lagrange in 1788 and Maxwell's (1873) electromagnetism, understanding of the physical world was largely couched in terms of Newtonian mechanics. In this setting the role of time was one of being an absolute and irreducible fact of the universe. Time was considered to be outside of physics or put another way, physics was within and dependent on time. The universe therefore was modelled as an extended three-dimensional object with the capacity for dynamic change.

The dynamic universe provided a backdrop for the study of other phenomena within the physical world. In hindsight we can see that Newtonian mechanics can be boiled down to just one equation, $\mathbf{F} = m\mathbf{a}$, stating that a mass, m, will accelerate in the same direction as an applied force, $\mathbf{F}$. However, simply applying expressions like this to, for example biological systems was beyond impractical. Hermann von Helmholtz (1847) was the first to propose the conservation of energy, which was not part of Newton's original framework. Moreover the more general classical mechanics of Lagrange did not include it either. The required extra constraint is one where we assume the Hamiltonian expression (energy) to be constant for any closed system. Von Helmholtz's motivation was to aid in the study of highly complex biological organisms, and in this endeavour it proved to be an invaluable tool.

Throughout the nineteenth century the catalogue of conserved quantities: energy, momentum, angular momentum etc. had grown to the point where every physical effect was considered to have a physical cause. This was termed the *causal closure of physics*, which became a powerful motivator for physicalism (Papineau, 2001; Austin, 2020[a], section 7.1). Throughout the eighteenth and nineteenth centuries biology grew in sophistication and the same can be said of neuroscience during the twentieth century. As progress continued it became clear that there were no processes that could not be explained by known scientific laws, therefore there were no *sui generis* special or vital forces that could account for the existence of a nonmaterial soul as proposed by Descartes. This ultimately led to the demise of Cartesian dualism on which many religious persuasions had pinned their beliefs.

2.1 Relativity

Around the turn of the twentieth century a conflict between Newtonian mechanics and Maxwell's electromagnetism eventually came to a head. Newtonian mechanics had rested on two postulates:

The laws of mechanics are invariant under Galilean transformations

Time is invariant under Galilean transformations

where Galilean transformations in Newtonian mechanics discriminate between inertial frames. The conflict stems from the fact that Maxwell's theory points to an invariant speed of light under transformations between inertial frames. This was confirmed when tested by AA Michelson and EW Morley in 1887, and subsequently gained further support from long-term observations of double stars. As a consequence the postulates above are discarded and replaced by

The laws of physics are invariant under Lorentz transformations

The speed of light in a vacuum is constant in all inertial frames

The first postulate here is essentially the same as in the original pair where Lorentz transformations discriminate between inertial frames in a relativistic context. The significant change is in the second postulate, which has been replaced entirely. The consequences of this are profound in that it led Einstein to his theory of special relativity in 1905 and, more importantly, to Minkowski's unified geometry of space-time in 1908, which had the form of a four-dimensional static manifold. A picture of an observer's *world line* meandering through space-time is shown in figure 1

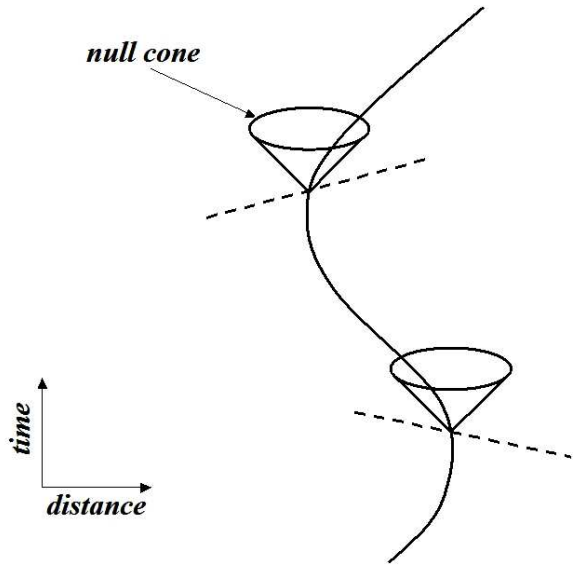

Figure 1: An observer's world line in space-time meandering under acceleration in different directions. At two points she transmits an omnidirectional light signal indicated by the null cones. The dashed lines through those events join simultaneous events as seen by the observer at those points. Dissimilar orientations of the dashed lines indicate the relative nature of simultaneity.

In figure 1 we are shown the path of an observer in space-time with two space dimensions suppressed. Initially moving left to right she decelerates then changes direction. While accelerating in the opposite direction she transmits a momentary flash of light in all directions, which expands to form a null cone in space-time. At this same event a dashed line joins events that she would describe as simultaneous. After changing direction for a second time she transmits another flash generating a similar null cone. The dissimilarity of the dashed lines' orientation indicates the absence of absolute simultaneity. A path of light emitted in the direction of travel always bisects the angle between the world line of an observer and the local space of simultaneity. The variation of simultaneity and the time dilation effect (not shown in figure 1) are important features of Minkowski space-time.

In relativity, we replace the notion of simultaneity by the terms *timelike*, *spacelike* and *null*. Timelike separated events have invariant order and can be connected by the world line of a slower than light particle. Spacelike separated events, on the other hand, cannot be so connected because the required faster than light signal linking them is outside of known physics. Moreover the temporal order of spacelike separated events may be viewed either as irrelevant or observer dependent. Null paths form the boundary between these classifications of space-time separation, and can be traversed by any light speed signal or particle. An observer travelling a null path between two distinct null separated events will experience zero delay between them. For this reason null separated events are deemed causally connected, but not chronologically connected. These three classifications of separation carry over entirely to curved space-time in the presence of gravitating masses.

When we add a third postulate stating that

…uniform gravitational fields are equivalent to frames that accelerate uniformly relative to inertial frames (Schutz,1985, p122)

and apply the differential geometry of Bernard Riemann, we obtain the general theory of relativity, arrived at by Einstein and independently by David Hilbert in 1915. In this theory geometric distortions of space-time manifest themselves as curved trajectories followed by material objects under the influence of gravity. Such trajectories, known as geodesics, are paths of zero acceleration that become straight lines in the absence of massive gravitating bodies. Notwithstanding the effects of gravitating matter and fields throughout the universe, space-time still retains all the properties of the special theory locally.

A noticeable consequence of this is that known reality is increased in dimensionality from a dynamic-three to a static-four. Moreover, and even more importantly, it is impossible to define a space of absolute simultaneous events. That is, for two observers occupying distinct inertial frames, their respective spaces of simultaneous events in space-time do not coincide even if momentarily *occupying* the same point. This was illustrated earlier in the text relating to figure 1. The significance of this is that time really is nothing more than a fourth physical dimension. This prompted the quote by the philosopher Peter Kroes

…it is dubious whether coordinate time deserves to be called 'time' at all. (Kroes, 1984, p441).

And it radically contrasts the Newtonian view of reality where simultaneity is something that we can all agree on. In the relativistic world there is no absolute simultaneity.

In the context of mind, we cannot deny that we are present at one point only in space-time at every instant of experience. Our bodies on the other hand are, barring tragic circumstances, timeless features distributed across many decades of coordinate time between birth and death. This is the first clue from modern physics that the mind is an object distinct from anything physical. As far as can be ascertained it was the mathematical physicist Hermann Weyl who first committed anything in writing to this effect in his now famous quote

The objective world simply is, it does not happen. Only to the gaze of my consciousness, crawling upward along the life-line of my body, does a section of this world come to life as a fleeting image in space which continuously changes in time. (Weyl, 1949, p116).

Relativity theory represents the first robust scientific support for a philosophy of time dating back to Parmenides in the fifth century BCE known today as eternalism in which all events, past, present and future exist timelessly as points in a space-time manifold. It is a philosophy in which it makes sense to refer to past and future events in the present tense, simply because they are just elsewhere.

At this point it is illuminating to briefly remark on a debate concerning time between Einstein and the philosopher Henri Bergson on 6th April, 1922. Einstein's comparatively new theories of relativity treated time in a spatialised form that Bergson was unhappy with. Bergson recognised that it could not explain our experience of duration, which is felt rather than measured. In short Bergson's duration is subjective, it is a function of the mind. Bergson also argued for a universal time, however if it is a function of many minds then its relativisation should not pose any problem since individuals can occupy different inertial frames.

One thing that Bergson could not tolerate however was the concept of a single predetermined future as implied by the theories of relativity. For Bergson the future must always be open otherwise there is no room for free volition. This is a feature that is rescued by that other great development in twentieth century physics–quantum mechanics. In hindsight it can be argued that Bergson and Einstein were each defending distinct concepts. Spatialised time and subjective duration are correlated during life in the physical world, just as the quale of colour is correlated with the wavelength of light impinging on the retina. These two concepts are easily confused. The question that still remains is: how do we deal with the very powerful feeling that we all have free will? This is where quantum theory comes in to play.

2.2 Quantum mechanics

The persistence of the way we perceive external reality as an ordered sequence of classical states, has indoctrinated us to believe that this perception is at the root of reality. Classical mechanics, which reinforces this perception, was thought to be a complete theory of physics, and this was still the state of affairs at the beginning of the twentieth century. However, almost a century earlier Sir Humphrey Davy had begun to experiment with an early form of incandescent lamp, which gave a controlled output of *blackbody* radiation. Blackbody radiation has a characteristic spectrum emitted by heat sources that do not reflect light impinging on them, hence its name. A good example is glowing hot coals. But, more importantly as the nineteenth century drew to a close, there was growing realisation that the behaviour of blackbody radiation did not conform to any existing theory of the time. The persistent problems led to an early form of quantum mechanics where the rules governing radiation from heat sources, supplemented classical mechanics. This conclusion, by Max Planck in 1900, modelled radiation as discrete wave packets called *quanta*, as opposed to previously assumed continuous waves. However, the new theory was still rooted in classical physics, which describes the world in terms of material objects with well-defined locations and velocities at specific points in time. Further details are not germane to our discussion

here, but the interested reader is referred to (Austin, 2020[a], pp185-92, Gasiorowicz, 1979, Ch13).

During the first quarter of the twentieth century there were three further stages of development that culminated in what we know today as quantum mechanics. These developments were, (i) the explanation of the photoelectric effect by Albert Einstein in 1905, (ii) the Compton effect discovered in 1922, and (iii) the DeBroglie hypothesis in 1923. The first two established the particle nature of radiation, while in the third, Louis DeBroglie turned this idea on its head by suggesting that matter can be viewed as wavelike. This ultimately led to quantum mechanics, which in its more popular wave function formalism first appeared in 1926.

Calculating the outcome of a quantum process involves solving Schrodinger's wave equation, which encapsulates the rules of quantum mechanics, and where the solution is the wave function. The interesting point here is that knowing the exact distribution of the wave function does not provide us with precise information about the location and velocities of sub-atomic particles. Furthermore, the wave function is not distributed over space-time, but rather over space-C, which is a manifold where *time* in space-time is replaced by C-space, see figure 2.

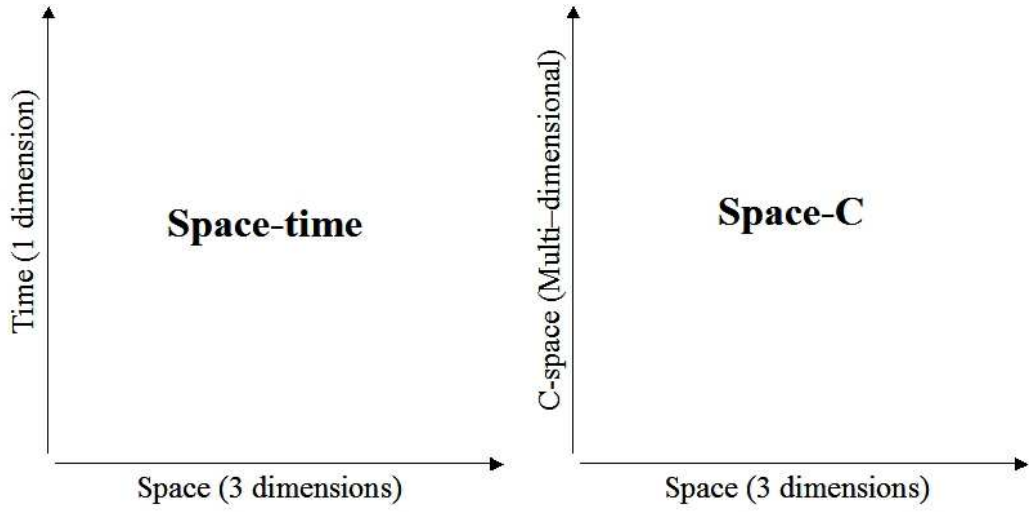

Figure 2: Comparison between space-time and space-C. The vertical axes represent sets of configurations. In the space-time case configurations are ordered along one dimension (time ordered), whereas in space-C events have no *a priori* order.

In figure 2 we see a comparison between space-time and a more general manifold, space-C. In both cases the vertical axis consists of matter configurations, with the horizontal axis representing our familiar three-dimensional base space. Because time is one-dimensional, associated configurations may be ordered, whereas in space-C order only makes sense when we choose a particular path through C-space. When such a choice is not yet made there exists a whole plethora of possible paths through C-space. This is one way of describing Everett's (1957) *"Relative State" Formulation of Quantum Mechanics*. And because of the many possible paths, this has become known as the *many worlds interpretation*. This is a popular interpretation of quantum mechanics, which is minimal in its assumptions. It may also be

called a *pure wave* interpretation, and to its hardened supporters, this is quantum mechanics. Competing *interpretations* have additional assumptions such as the existence of other mechanisms governing the evolution of the wave function (collapse theories), or the existence of other physical fields (hidden variables). Therefore these should not really be viewed as interpretations of quantum mechanics, but rather as rival theories. There is only one interpretation of quantum mechanics (Deutsch, 1996, p226). So how do quantum effects manifest themselves in a C-space context?

The best way to answer this is in terms of a single path through C-space where coordinate time is a parameter along this path (figure 3).

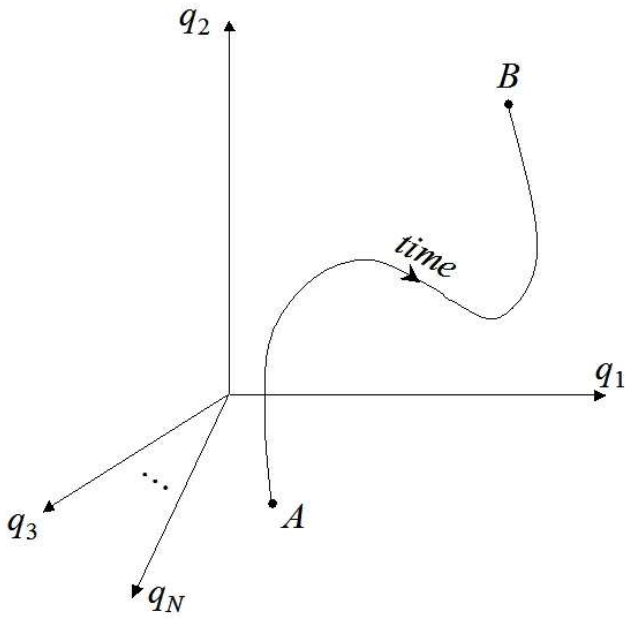

Figure 3: The path of a system through its own C-space with N dimensions. The arrow labelled *time* shows the order of configurations that the system passes through between the initial state, A, and the final state, B. Here we can imagine that any pair of the general coordinates, q_N, shown is at mutual right angles.

Figure 3 may either represent the history of a laboratory based closed system such as an electron's path from a source to a scintillation screen, or the history of the entire universe over a specified period between points A and B. In the latter case the position at any instant, within the universal C-space is defined, in any specified coordinates, by the positions of every elementary particle in the universe plus the instantaneous potentials of all fields (gravitational, electromagnetic, nuclear etc.) over the entire base space. However, because of the wave nature of matter associated elementary particles are viewed as little wave packets, which may be spread out over a small region of the base space. This makes their positions uncertain, which is a symptom of Heisenberg's *uncertainty principle*. Moreover fields, which are usually modelled as smoothly varying, will also have similarly uncertain potential values. This built in uncertainty has nothing to do with possible shortcomings of instrumentation; they are a natural feature of physical reality itself, which is derived entirely from the wave

equation. The overall effect of this is that if we zoom in to a point on the time path between *A* and *B* in figure 3, it will appear fuzzy. All the particles' positions are uncertain in all directions of the base space, therefore the fuzziness of this line will extend in all directions of C-space. Because we can indirectly observe this fuzziness via procedures such as the *double-slit* experiment (Gasiorowicz, 1979, p161), this indicates the objectivity of the universal C-space, as opposed to regarding it as something abstract. This also removes the need to invoke mysterious extra dimensions often proposed in some explanations of psi phenomena.

This prompts the question as to whether the dimensionality of the universal C-space can be estimated. In the current known universe and with our presently incomplete theories of quantum gravity, based on the assumption that space-time is discrete at a scale of around 20 decades smaller than an atomic nucleus, *N* in figure 3 can be estimated at 10^{123} ("1" followed by 123 zeros), a very large but still finite quantity.

The path in figure 3 can be viewed as a ridge of high probability immediately surrounded by high dimensional regions of low probability. This will limit the uncertainty associated with quantum effects. Therefore when we observe macro-sized objects in everyday life, their positions appear sharp and well defined, and therefore we tend not to appreciate the quantum nature of the universe we inhabit. One may ask at this point how this is connected with free will.

One feature that figure 3 does not show is that the path from *A* to *B* continuously bifurcates with the resulting branches not shown. However, we can imagine branching ridges of high probability surrounded by deep valleys and plains of lower probability. Branch points are where a nonmaterial mind has an opportunity to make a choice, for more detail see (Austin, 2020[a], p295; Austin, 2020[b]). A clearer picture of this mechanism is starting to emerge through the work of Hameroff and Penrose (2014) where short lived quantum states in the microtubules, part of the neural structure of the brain, split (decohere) into classical states of which the subject only sees one. The population of microtubules in the brain is sufficiently large that the branching, and the feeling that we are free to choose our actions appears continuous, for a comparatively more technical summary of this mechanism see (Austin, 2020[a], pp377-81). In the next section we examine this mechanism in a very general way, from the viewpoint of the nonmaterial mind and suggest a way to define normal sequences of configurations that we recognise in daily life.

3. Nonmaterial minds and normal sequences

If we assume that the entirety of space-C is timeless then we need to account for experienced dynamical changes that are sufficiently consistent to be regarded as empirical evidence in their own right. Moreover all other empirical input including the whole of science comes to us through the filter of our dynamic experience. The experience of time passing may be broken down into an ordered succession of configurations, for which most people have an intuitive feeling, anything beyond this may therefore be considered anomalous. In consequence there is a need to provide a concrete definition of a normal sequence. However, caution is required because extremely low probability sequences can still satisfy the

definition of a normal sequence. For example we may see shards of glass on a floor suddenly converge and form into a pristine wine glass before leaping up onto a nearby tabletop. This sequence does not violate any physical laws, it is just the time reverse of something commonplace and not quite irreversible. So let us first consider normal sequences, as this will help to clarify our thinking.

3.1 Normal sequences

Given a matter configuration specified as precisely as quantum theory allows at one time, a closed system may be predicted to be within a precisely defined distribution over a range of classical states at a later time. A sequence of events leading to a classical state as overwhelmingly improbable as the reassembled wine glass for example, is no less valid as a normal sequence than any other more probable chain of events. This incredibly improbable sequence still has a nonzero probability. Technically we may say that it is within the envelope of the wave function, which we can encapsulate within the following definition of a normal sequence,

Definition: Normal sequence

(i) Given any *time ordered* sequence of classical states, the probability of a future configuration, given the present one, is greater than zero.

(ii) In the limit of a continuous C-space, the sequence of classical states is also continuous.

The first condition states that for the realisation of one classical state, the next has a nonzero probability, it is not necessarily most likely. The second says that consecutive classical states are adjacent in C-space, in other words the C-space path has no breaks in it. Classical states (configurations) are just locations in C-space, with the wave function being distributed over many configurations. In this context only minds are localised and can meaningfully follow normal sequences. It is in the context of normal sequences that we now briefly consider individual and collective mental states allowed by the principle of localisation.

3.2 Distribution of minds

In the model we are considering your nonmaterial mind is in contact with the physical world at one point in C-space at any instant of your experience. But this does not define the locality of the mind itself, only the point at which it *touches* the physical world. This point of conscious contact moves from one configuration to the next with respect to your phenomenal time, thereby providing your experience of a continuously changing world. However, this is one mind only and does prompt the question about the distribution of other individual minds across C-space. When you interact with other people you can only know about your own mind, you cannot infer the presence of another nonmaterial mind in the person you are talking to. Many philosophers refer to this as the *mindless hulk problem* reflecting their revulsion for such a possibility. However, it may be that things are not really all that bad, because all the possible world lines of all living organisms are timeless and can be repeatedly traversed by many minds. There are four currently recognised models for the distribution of nonmaterial minds, which we briefly describe here. A more detailed description of these models taken together is provided elsewhere (Austin, 2020[a], chapter 12).

The first publication of the principle of localisation in the form presented here is credited to David Albert and Barry Loewer (1988). These authors consider two of the four mind distribution models. The first is the single minds view (SMV) in which nonzero distances in C-space separate individual points of consciousness. This includes solipsism where you believe that your mind is the only one in existence, a situation I think most would find rather unpalatable and not very convincing. The model favoured by Albert and Loewer however, is the many minds view (MMV) in which distinct individual points of consciousness are densely packed throughout all of the branched timelines in C-space. If this is correct then we could guarantee the conscious status of every person we physically interact with, and would nicely dismiss the mindless hulk problem.

A few years later Euan J Squires (1993) proposed the universal mind view (UMV). In this model a universal mind consisting of many individual *token minds* is confined to one time on one timeline. Any choice made by one token becomes a *fait accompli* for all of the others. This is because, in contrast to the two previously discussed models, the tokens are tightly bound together in such a way that does not prevent independent navigation of the base space, but binds them to the same location in C-space. This implies that all of the tokens (points of conscious contact) are always spacelike separated, meaning that large separations in base space do not potentially violate the model–it is highly nonlocal in a *hidden variables* sense (Austin, 2020[a], p233).

Figure 4 shows an example where three tokens occupy their respective bodies, O_1, O_2 and O_3, and are each at the point of making independent choices, *A* or *B*, associated with simple bifurcations in C-space. In this idealised example there are eight possible choices for the associated universal (collective) mind.

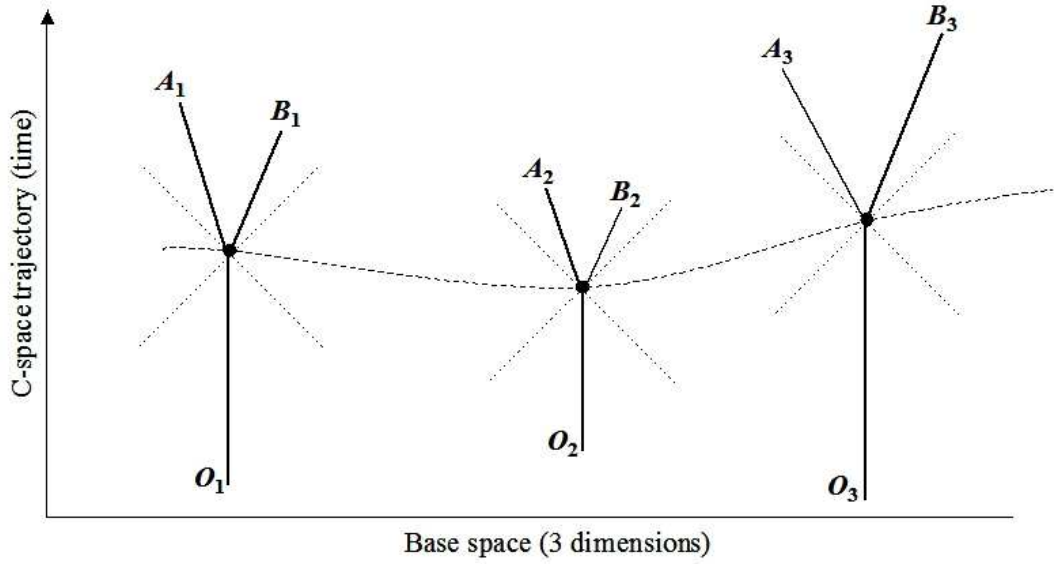

Figure 4: Three nonmaterial token minds consciously contact bifurcation (choice) points along the world lines of their respective bodies (O_1, O_2 and O_3). Each individual has two choices, *A* or *B*. The spacelike dashed line indicates the distribution of the collective mind, and the 45° dotted lines crossing through each individual mark null (light like) separated events.

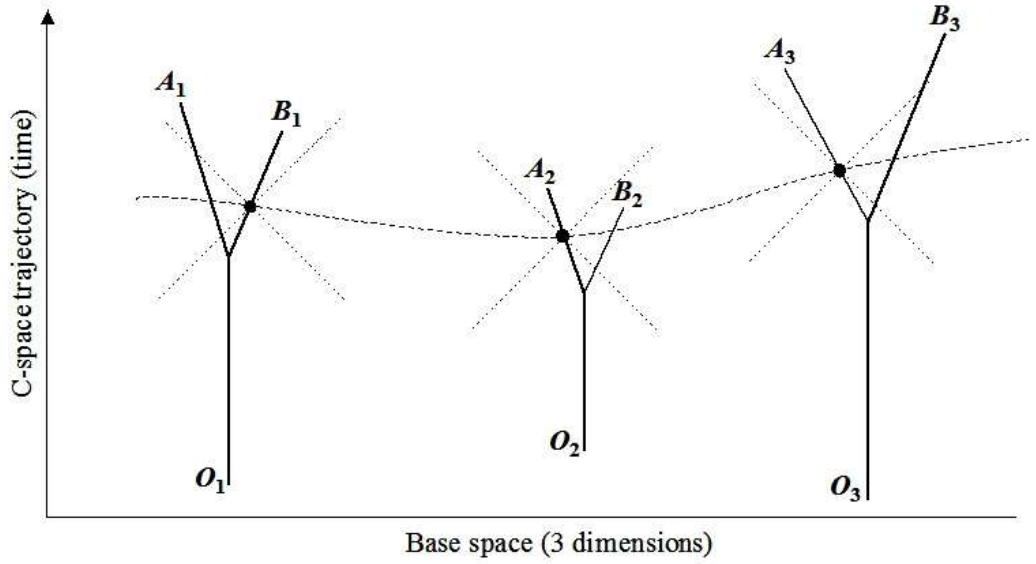

Figure 5: The same three token minds taken some time after they have made their choices. In this case the choice is B_1, A_2, A_3, one of a possible eight.

In figure 5 we are shown the choices made by the nonmaterial minds to be B_1, A_2 and A_3 respectively. This could just as easily be interpreted as the one of eight possible choices, (B_1, A_2, A_3), taken by the collective mind. This choice represents the next location in C-space,

occupied by the collective mind, after the one indicated in figure 4. In this way the path taken by a universal mind, in C-space, may be defined. However, a fourth distribution model exists where individual minds are more loosely connected.

A model occupying an intermediate position between the MMV at one extreme and the UMV at the other was first proposed by Hemmo and Pitowsky (2003). Known as *weak nonlocality* it has features similar to the SMV where nonmaterial minds are discretely separated in C-space, but are connected by loose mental (nonmaterial) links that still allow independent navigation through space-C governed by normal physical laws. These authors claim that direct connections between minds can be inferred from the physics governing related experiments, meaning that Albert and Loewer's model is invalidated. More recently however, Felline and Bacciagaluppi (2013) have shown that the physics of any experiment cannot infer purely mental connections and therefore does not invalidate the MMV. However, they also show that weak nonlocality cannot be ruled out either. If nonmaterial connections, as described here or in the UMV, are present then they are not normally appreciated at a conscious level, and should the affected subjects become conscious of them, they could account for psi phenomena such as telepathy or mediumship. To more clearly define the boundary between conventional and anomalous phenomena, we need to consider potential faculties of nonmaterial minds in relation to normal sequences.

3.3 Normal sequences in context

We have based our experience of normal life in terms of a formally defined sequence of configurations. All of the models summarised here are fully compliant with the definition of a normal sequence. This is the first constraint listed below. There are two additional constraints (2 and 3) that define our normal experience of life. The second comes in two forms, which we designate strong and weak. The weak form forbids direct conscious interaction between minds, whereas the strong version denies any kind of direct contact. The third constraint denies the ability of nonmaterial minds to carry their own memories. Essentially these constraints deny any faculty of nonmaterial minds that are not required for the experience of normal life. All of the following constraints appear sufficient to define normal life as we experience it (Austin, 2020[a], section 12.1).

Definition: Normal constraints

1. Minds follow normal sequences in C-space.
2a. Minds do not interact with each other directly (strong form: SMV, MMV) or
2b. minds do not directly interact at a conscious level (weak form: UMV, weak nonlocality).
3. Minds do not carry memories independently of matter.

Once accepted, then we can say that any violation of these constraints would be regarded as anomalous. For example time-slips, scene changes, OBEs and NDEs violate constraint 1 because in these cases nonmaterial minds experience discontinuous or otherwise anomalous sequences of configurations. Other types of psi phenomena may be classified according to which combination of the constraints is violated. In the next section we consider only time-slips and scene changes, which appear to be more easily defined under the localisation of consciousness hypothesis than other psi phenomena.

4. Time-slips and scene changes

Time-slips are events where witnesses experience what appears to be a sudden displacement into an earlier time. These experiences appear very real to the point where people really do believe they have travelled in time. Moreover, when these events do take place multiple witnesses can be involved, and this only serves to strengthen the conviction that the experience was *real*. Given the lucidity of these experiences they also appear to be correspondingly rare. A related phenomenon known as a scene change is where witnesses find themselves in unrecognised surroundings not necessarily related to a particular period, and it seems that time-slips are a subcategory of scene changes. The rarity of these events prompts the question of whether such experiences are real, and if so, in what sense? The examples that follow should not be taken as an endorsement of their veracity; the rational for this section is to indicate how well these cases fit into the localisation of consciousness hypothesis.

Amongst physicists it is well known that general relativity admits closed loops in space-time. However, research has shown that such causality violations require matter that does not satisfy certain energy conditions (Hawking, 1992). In physics the idea that matter can travel in time is quite a silly notion simply because it is already extended in time–material objects have age. However, just as material objects are endowed with momentum in three-dimensional space, in relativity this concept is extended to space-time where matter can have a temporal component of momentum, which we know as energy. And an important condition placed on energy is that it is always positive–i.e. biased in the future time direction. In 1992 Stephen Hawking proved that closed time loops requires *exotic matter* having a negative energy component that points in the past direction. In other words it seems that we need a causality violation in order to create one. Moreover Flanagan and Wald (1996) have indirectly shown that the macroscopic quantities of exotic matter required to displace human sized material objects back in time are at best most unlikely. For me this convincingly closes off physical time travel as an explanation for the time-slip phenomenon.

Notwithstanding the elimination of physical time travel as a solution, time displacements by the mind appear to be allowed by the principle of localisation. Any point in C-space is defined solely by the configuration of matter and fields that it represents. Almost any matter configuration, no matter how absurd, is physically allowed as a starting point for a normal sequence of events. All that is required is the configuration itself and the direction of momenta for all elementary particles involved, the associated evolution equations that we refer to as the *laws of physics* do the rest. For example, we can imagine a three-dimensional configuration of matter corresponding to a street in Victorian England with consistent surroundings encompassing the rest of the known universe. Now imagine a facsimile of your body in twenty first century attire with all the knowledge and experience of a life up to your present, positioned somewhere on that street. If C-space is objective then such a configuration must exist. To experience a corresponding time-slip all that would be needed is for your nonmaterial mind to somehow latch onto this configuration, thereby generating a discontinuous jump from your present situation to the scene just described.

Although this scenario is allowed by the principle of localisation, it is just as likely that the whole experience is hallucinatory. If this were the claim then its supporters would need to explain where all its information content comes from, especially in cases involving multiple witnesses. In our view a middle ground explanation is more likely where your mind, for whatever reason, becomes conscious of past configurations at a particular location. As mentioned towards the end of section 2, the wave function encapsulating the physical world appears to be replete with *ridges of high probability* orientated to the local time direction. And this leaves open the possibility that the nonmaterial mind can somehow *feel* its way back along the *timeline of history*. Given the possibility that the wave function branches in the local future direction, like a tree from trunk to canopy, then it is equally possible that the timeline of history from any point in C-space is unique, at least up to a limiting point in the past. In this way the past at a particular base space location somehow becomes transparent to the mind of an individual occupying that place in the present. The main question is: what generates the mental state required for the mind to apparently perceive past events as has been reported?

Although we cannot answer this question yet, one tantalising clue is that time-slips seem to be location specific. This suggests unusual environmental conditions classified under any of the three headings:

- Electromagnetic
- Vibrations and infrasound
- Gasses and vapours

One location, where alleged repeated time-slip events have been reported, is at the northwest end of Bold Street, Liverpool, in the UK. The full list of time-slip reports is too numerous to be related here. So we provide brief descriptions of five cases including one from Bold Street. But we begin with a case where two couples driving through France in 1979 appear to have stayed in a hotel around 80 years earlier. This case is variously referred to as the *vanishing hotel* or the *Montélimar Time-slip*.

4.1 The vanishing hotel

This case concerns two married couples driving through France on their way to a holiday in Spain during October of 1979. For many years to follow Len and Cynthia Gisby, and Geoff and Pauline Simpson, were bewildered and disturbed by their experience. This particular case featured in an episode of the UK TV channel ITV's paranormal documentary series *Strange but True?* which aired in 1995. To break up their journey they decided to stop for the night in the region of Montélimar in France. They initially tried the nearby Ibis Motel, but on discovering that they had no vacancies, decided to look elsewhere.

After a short search they discovered a cobbled road with old-fashioned buildings and advertisements for a circus. They found a hotel with vacancies, which appeared very antiquated. There were no lifts or telephones. Doors to the rooms had no locks, just catches, and the windows were unglazed relying only on shutters to repel the elements. The bedding was rather dated too, there were no pillows only bolsters, and the sheets were fashioned from

calico–an unbleached, coarse woven cotton, though not as course as denim or canvas. Despite their rather outdated appearance, the rooms were clean and well kept, so the Gisbys and Simpsons decided to stay for the night.

The next morning they had breakfast during which they saw three people enter the foyer, a woman wearing an old fashioned long dress and button boots, and two French police officers in what appeared to be uniforms that would not look out of place at the turn of the twentieth century. Even stranger was the size of the bill when they checked out, being around a tenth of what they expected to pay. Notwithstanding the strangeness of the place they decided to break their journey there on the way back from Spain two weeks later. The problem was, try as they did, they could not find it. The cobbled road was still there as was the circus advertisements, but the hotel was gone. It was as though a little piece of the turn of the century, just large enough to accommodate the hotel, briefly intruded into the French landscape of 1979.

The strangest thing of all was when they developed their holiday photos. They searched for the photos taken at the hotel, but they could not find them. Checking the negatives revealed that not only were the relevant photos missing, there was no gap in the film where they should have been. The two frames between which they expected to find *hotel* photos were adjacent to each other. So according to the physical evidence, the photos they recalled taking at the hotel, were never taken.

We assume that the subjects are honest about their experience. First considering the physical aspects only, the question relates to how their brain states evolved during the event. This was an unusually long experience, so the fact that they would have felt rested and well fed upon leaving the *hotel* demands explanation. Could they still feel that way if they had been sitting trancelike in their car over night? If not then they must have stayed somewhere while some environmental factor, because all four subjects reported a similar experience, caused their memories to later recall what appeared to be a late nineteenth century experience. Either way it is safe to say that some external factor caused their experience, but the trail is far too cold now to determine what environmental condition was at work. Certainly something left them with memories of what appeared to be a bygone age. This is where psychology and neuroscience should be able to contribute. Could an environmental disturbance affect four separate individuals and cause their brains to construct very similar narratives? Maybe if they were in close proximity and reacting to the same mental cues. Also, what about nonmaterial minds?

For our hypothesis, nonmaterial minds have no bearing on physical states, e.g. memories, dynamic neural processes etc. Brain based memories partly define locations in C-space therefore minds experience them as they pass through those locations. A configuration where the Gisbys and Simpons are occupying a hotel around the year 1900, but with memories of life up to October 1979, exists in principle as a location in C-space, albeit a very low probability one. A similarly low probability configuration is on a branch emanating from somewhere in October 1979 where the Gisbys and Simpsons have memories of spending a night in a hotel in around 1900. If they are honest then we are living on that branch now, hence the reports. Their minds could have dilated in such a way as to come into contact with

that *earlier* configuration while remaining anchored in 1979. It is most unlikely that that earlier configuration is on our timeline. This is because no evidence of mysterious visitors at around that time has been unearthed or is ever likely to be.

This does raise other questions such as why the hotel staff apparently did not react to these strange people showing up in a vehicle so completely unfamiliar. Their 1970s fashion would have been seen as very odd also, as would the currency with which they paid their bill. It is almost as though they are used to getting visitors from all ages. These maverick worlds such as they are do exist according to the proposed model. They are just locations in C-space, and given any objective space, it makes no sense to say that particular locations do not exist. It is just that they are highly improbable. This does admittedly leave many unanswered questions. However, it seems that one specific question can be answered. That is how they came to have no photographic evidence of their experience. The answer is that those photos were not taken with the camera they possessed in 1979, they were taken with an identical camera that they had during their stay at the hotel. These must be distinct because they are on separate timelines.

If the claims of the last paragraph seem a bit of a stretch then they probably are. And some aspects of this case could have a more mundane explanation. What has been related above is certainly possible within our hypothesis, but it is possible that where they stayed existed in October 1979, with a re-enactor's event taking place. However, this still leaves the question as to why the two couples could not find this establishment on their way back two weeks later. If we assume that such a building could be demolished with little trace in the intervening two weeks then their inability to find it again could just be a case of unfortunate timing. Assuming the couples' honesty about the photos and their absence on the film, it is difficult to see how a more exotic explanation could be avoided. My own view is that this case likely consists of a mixture of mundane and exotic elements. Staying with the French theme we next consider the case of two female scholars visiting the estate of Versailles at around the time that the Gisbys and Simpsons allegedly slipped back to.

4.2 The Versailles incident

This incident, also known as the *Trianon adventure*, concerns the experiences of two English female academics, Charlotte Anne Moberly (1846-1937) and Eleanor Frances Jourdain (1863-1924) on the 10th August 1901. Both of these women were from well-educated backgrounds, their fathers both being well-respected clergymen. In 1886 Charlotte Anne Moberly became Principal of St Hugh's College, Oxford. Eleanor Jourdain, the sister of art historian Margaret Jourdain and mathematician Philip Jourdain, attended school in Manchester. After the incident Eleanor Jourdain became Vice Principal of St. Hugh's College, but before Joudain was appointed to this role it was decided that the two women should get to know each other better. Jourdain owned property in Paris where she tutored English children, so it made sense for Moberly to stay with her.

On the date in question as part of several trips, the two women decided to visit the Palace of Versailles. They travelled there by train and it appears that upon touring the Palace they were unimpressed. They therefore decided to explore the grounds of the Versailles estate. Using a Baedeker guidebook they headed for the Petite Trianon, a small château within the grounds.

On the way they reached the Grand Trianon but found it was closed to the public. The two women became lost after missing a turn to the main avenue, *Allée des Deux Trianons*, and passing this road they had inadvertently missed their destination. They noticed a woman shaking a white cloth out of a window in one of a number of cottages, and also saw a deserted farmhouse with an old plough lying close by.

At this point they described an intensely depressed feeling coming over them, they saw some men they believed to be palace gardeners who directed them to go straight on. Moberly described the men being dressed in curious dull green long jackets and tricorn hats. Jourdain noticed a cottage with a woman holding out a jug to a girl in the doorway. Jourdain described the scene as a *tableau vivant*, a living picture similar to Madame Tussauds waxworks. Moberly did not observe the cottage but also felt the atmosphere change. She is claimed to have wrote

Everything suddenly looked unnatural, therefore unpleasant; even the trees seemed to become flat and lifeless, like wood worked in tapestry. There were no effects of light and shade, and no wind stirred the trees. (Castle, 1995, p194).

They reached the edge of the wood close to the *Temple de l'Armour* where they saw a man seated close to a garden kiosk, wearing a cloak and a large shady hat, Moberly described his expression as dark and odious. Jourdain noted that his face appeared marked by smallpox, his complexion was dark and his expression described as evil though unseeing. She described a feeling of repugnance as she passed him. The references for this description are sketchy but appear to be from the Moberly and Jourdain papers stored in the Oxford University Archive in the Bodleian Library (Moberly and Jourdain, 1782-1925). Later a man described as *tall… with dark eyes, and crisp curling black hair under a large sombrero hat* came up to them, and showed them the way to the *Petite Trianon* (Farson, 1978, p20).

They then crossed a bridge, eventually reaching the gardens in front of the palace. Moberly noticed a young lady who, while sketching on the grass, turned and looked back at them (Iremonger, 1957, p130). She described the lady as wearing a light summer dress and a shady white hat. At first Moberly thought this fair-haired lady was a tourist, but on closer inspection realised that her dress was extremely old fashioned. Moberly came to believe that she had encountered Marie Antoinette as she would have looked just prior to the French revolution. This description is very reminiscent of a famous portrait of Marie Antoinette, *Chemise a la Reine* painted by Élisabeth Louise Vigée Le Brun (1755-1842) sometime between 1783 and 1789. MacKenzie (1997, p52) mentioned another portrait by Adolf Ulrik Wertmüller (1751-1811) from which Moberly may have recalled her likeness. Jourdain apparently did not notice this lady (Iremonger, 1957, p181). After this they were directed to the main entrance where they joined another party of visitors. After touring the house they had tea at the *Hotel des Reservoirs* before returning to Jourdain's apartment.

After leaving Versailles, Moberly and Jourdain did not discuss the incident for about a week. Moberly had written a letter to her sister and asked Jourdain if she thought Petite Trianon was haunted, Jourdain replied in the affirmative. They compared notes three months later and upon further researches had found that the Tuileries palace had been besieged on the 10th

August 1792. The palace guards had been massacred and the monarchy was abolished six weeks later.

They subsequently visited Versailles on a number of occasions and each time failed to retrace the path they took on their first visit. In particular it was noticed that both the kiosk and the bridge that they crossed to reach the main gardens, were no longer there. The bridge was shown on an old historical map of the Trianon gardens that was unearthed in 1903, but was not shown on more up to date maps or guides (Iremonger, 1957, p197). In an effort to find a down to earth explanation they wondered if they had stumbled into a period dress party that was often held in the grounds. Their enquiries found that nothing was booked for the date in question (Farson, 1978, p22). They eventually published their findings in a book, *An Adventure* in 1911, under the pseudonyms Elizabeth Morison and Frances Lamont. The claim that they had encountered Marie Antoinette caused a sensation and they thought that the man by the kiosk could be identified as Comte de Vaudreuil, a friend and acquaintance of Marie Antoinette. A review of the book in the Proceedings of the Society for Psychical Research concluded that the authors had misinterpreted a sequence of normal events. The true identities of the authors were not made public until 1931.

Notwithstanding the lack of a record for a period fancy party on the 10th August 1901, Philippe Jullian (1967, p140) offered a normal explanation in his biography of the decadent French poet Robert de Montesquiou. Montesquiou who lived nearby often threw parties in the grounds where many of his friends dressed in period costume. It is quite possible, according to Jullian, that Moberly and Jourdain had encountered one of these parties. Michael Coleman (1988) put forward an alternative normal explanation based on his examination of two published versions of the ladies' accounts. He concluded that much of their account had been considerably embellished well after the events described and many of their literary sources described as unreliable (Coleman, 1988).

However, there does not seem to be any satisfactory explanation of the nonexistent bridge shown on a historical map that would not be found for another two years. An exotic explanation of the events as described is certainly possible in our hypothesis, and to be a likely explanation for the missing bridge. Their nonmaterial minds could certainly have viewed configurations approximating local events in the late eighteenth century. However, the only thing that we can be sure of is that Moberly and Jourdain appear to have emerged from their experience possessing memories inconsistent with their expected normal biographies. The implied cause of such experiences could equally be due to misinterpretation or confusion. An extraordinary but normal explanation suggests a process whereby memories of exotic experiences were somehow implanted into the brains of subjects by a process beyond our current understanding. Both of these explanations are not in conflict because they concur on what physically happens. While the former speculates on the dynamics of nonmaterial minds during the process, the latter merely describes the physical emergence of *memories* that they later report. Important questions still remain about what environmental factors could trigger this type of event? A full explanation of these experiences is likely to be a combination of the exotic and the mundane, especially given that the experience was prolonged. Versailles in the early twentieth century certainly appears to be a place that

attracts re-enactors and those with a penchant for dressing up, and it is known that such events, both scheduled and unscheduled did take place.

4.3 The Kersey case

This is the second case that was discussed at length by MacKenzie (1997). It concerned three 15-year old Royal Navy cadets, William Liang, Michael Crowley, and Ray Baker, who were stationed at HMS Ganges, Shotley, Suffolk, and were in class 262, Rodney Division. In the autumn of 1957 they were dispatched on a map reading assignment as part of a weekend survival exercise. This straightforward hike would take in the picturesque Suffolk village of Kersey. They were ordered to report back what they had seen within five hours. However, although it was accepted by the training staff that the boys had reached Kersey, it was obvious that things had not gone quite as expected.

As the cadets approached the village they became aware of an eerie strange silence, the church bells had stopped ringing, there was no autumn birdsong and no wind to rustle leaves causing them to drop from the trees, as might be expected for that time of the year. The trees appeared to cast no shadows and ducks stood quiet and motionless near to a stream that crossed the road. Everything just seemed lifeless. The village appeared deserted as might be expected for a Sunday morning in 1957 especially in the rural heart of England. However, there seemed to be a complete lack of any signs of modernity such as telegraph poles and streetlights, even a few parked cars might be expected, but there were no familiar twentieth century features. Indeed the houses on the High Street looked like ragged, timber-framed hovels that had been hand built.

They approached one of the nearer buildings and pressed their faces against grimy old windows. What they saw indicated that it was a butcher's shop of some kind. This is how William Liang recalled it for Andrew MacKenzie,

There were no tables or counters [in the shop], just two or three whole oxen carcasses which had been skinned and in places were quite green with age. There was a green-painted door and windows with smallish glass panes, one at the front and one at the side, rather dirty-looking. I remember that as we three looked through that window in disbelief at the green and mouldy green carcasses… The general feeling certainly was one of disbelief and unreality… Who would believe that in 1957 that the health authorities would allow such conditions, as responsible citizens would have reported them. (MacKenzie, 1997, p7).

They peered through the windows of another house only to see an uninhabited property in a similar dilapidated condition. They could see no furniture, decorations or possessions. Despite seeing no one, there was still the overwhelming and hostile feeling of being watched. Liang who led the group put it this way,

It was a ghost village, so to speak. I experienced an overwhelming feeling of sadness and depression in Kersey but also a feeling of unfriendliness and unseen watchers which sent shivers up one's back. (MacKenzie, 1997, p8).

It was almost as if we'd walked back in time. I can still feel the uneasiness, fear and depression we felt in 1957. I wondered if we'd knocked at a door to ask a question who might have answered it? It doesn't bear thinking about. (MacKenzie, 1997, p9).

None of the boys were familiar with the area, Liang was from Perthshire on the East side of Scotland, Crowley was from Wiltshire in the South West, and Baker was a cockney. This fact made it easy for the petty officers in charge of their training to establish that they had reached Kersey as intended. Despite this, there was still a measure of scepticism at the boys' descriptions. So what did actually take place? If we are conditioned to reading similar reports, such as the Versailles case for example, one might be tempted to believe that the boys had temporarily been transported back to an earlier time. So let us try to examine some of their testimony to see how consistent such a claim might be.

For about two years up until 1990 Liang and MacKenzie corresponded by letter, since at the time Liang was living in Australia. In 1990 Liang flew back to England in order to help MacKenzie with his investigation of the case. They revisited Kersey and found that the property identified by the boys as a butcher's shop was a private residence in 1957 and had been right through to 1990. However, enquiries revealed that the house dated to around 1350, and strangely had been a butcher's shop at least as early as 1790.

To cut a long story short, attempts were made to establish the date of the village that the boys experienced. They did not see a church tower although it could have been under construction. This sets the latest year of their visit to 1481. Another clue comes from the observation of small windows glazed with a greenish glass. For small villages like Kersey in the fifteenth century glazing was very rare and was normally confined to urban centres. However, it was known that Kersey was enjoying a boom in cloth making during the fifteenth century. So the appearance of glazed windows was certainly possible, but still unlikely in the premises of a local trader. Even so this would seem to rule out seeing the village as it was in the previous century. The lack of furniture and other possessions in properties was not uncommon during the fourteenth century (Yarwood, 1979). Possessions were often stored in baskets. The same could also apply in the following century. Taking everything into account the most likely point in time of the boy's visit would be in the range 1420-1460 (MacKenzie, 1997, p20). The mound where the church tower is now located was, according to Liang, heavily wooded, so if it was at a suitably early stage of construction it would not have been seen.

That said it is still possible for the boy's experience to be inconsistent with history. Indeed painted doors are certainly questionable, but the localisation of consciousness hypothesis still allows this. It appears that they did not interact with the locals, had they done so their visit would have created its own inconsistency. Moreover their very presence is sufficient to render their experience outside of our history, unless there is something in the records to suggest a mysterious visitation. Apart from their *presence*, no inconsistency has been detected. So if they were off the historical timeline, as seems likely, it may not have been by much. Similar comments could be applied to the Versailles case. The presence of three twentieth century naval cadets in the mid-fifteenth century, as a configuration of matter, certainly exists in C-space. However, a more likely exotic explanation might be more akin to *temporal remote viewing*, where the three cadets would not have been visible to any fifteenth

century inhabitants. Their possible visibility to twentieth century locals however, could explain the feeling of hostility and hidden watchers. As in all cases like this, the burning question is what caused their abrupt change in mental state and the experiences that followed?

4.4 Bold Street, Liverpool, UK

One Saturday in July 1996 an off-duty policeman and his wife visited Liverpool city centre on a shopping trip, we only know them as Frank and Carol since no other details were supplied. The couple split up not far from the junction of Ranelagh Street and Bold Street. Carol went directly to Dillon's bookshop, where they agreed to meet back. Frank proceeded to HMV on Ranelagh Street to purchase a CD. About twenty minutes later he was strolling up an incline in the direction of Bold Street when he noticed his surroundings go quiet. Frank saw that the street was cobbled where it had not been before and people around him were dressed in attire that better fitted the 1950s period. Suddenly he was startled by a loud horn from a box-van with the name *Caplins* emblazoned on its side. Upon approaching where he had agreed to meet Carol, he noticed a large clothing store with the name *Cripps* above its two entrances where Dillon's bookshop should have been. He also noticed a young woman in her early twenties approaching the clothing store wearing tight jeans and a green sleeveless top and carrying a bag branded *Miss Selfridge*, a brand not known in the 1950s. She entered the store apparently thinking it was a new clothing shop, and Frank followed. Just as he entered it suddenly reverted to the interior of a bookshop. Asking the woman, whom he followed, whether she saw what he had, her response seemed very confused, thinking she had entered a newly opened clothing shop. With that she just walked out.

The time that Frank briefly occupied was within living memory and enquiries soon revealed that Cripps were indeed at the location during the late 1950s and early 1960s, which were later occupied by Dillon's and then by Waterstones bookshop. It was also noted that the firm Caplins was contemporary with Cripps. As far as can be established, the only source for this incident was a local paranormal investigator Tom Slemen who, it seems, interviewed the couple. Further evidence for a persistent anomaly is indirect *vis-à-vis* the large number of reported incidents in this area.

Taking the claims seriously, the displacement of localised nonmaterial minds 40 years back in time would explain what Frank and the young woman experienced. Supporters of more mundane explanations would need to explain how two people could have a similar experience coincidentally. As far as is known the young woman has never been tracked down and interviewed as part of any ongoing investigation. And unfortunately we are not at a stage yet where misinterpretation or confusion by witnesses can be ruled out, factors that should always be considered as part of any investigation.

4.5 Phantom houses

The four cases just discussed are classified as time-slips due to the perception of time displacement on the part of witnesses. However, as mentioned earlier, the time-slips are part of a larger category of anomalous events referred to as *scene changes*. This is where a witness encounters a scene incompatible with existing memories or records, and may not be

perceived as being of a different point in time. In the vast majority of such cases the scene witnessed includes a building of some kind. These are referred to as phantom or *spectral* houses (MacKenzie, 1997, p71). Such scenes are often encountered when witnesses are travelling and subsequently mention what they have seen. These cases come to light when witnesses subsequently attempt to locate the property in question and fail even after a diligent search. One such case involved School teacher, Miss Ruth Mary Wynne (29) and her 14 year old pupil, Miss Evelyn Allington, who in October 1926 encountered a large Georgian house while walking between Rougham, four miles from Bury St Edmunds, and Bradfield St George. The two women did not walk that route again until late February or early March of the following year. Despite extensive enquiries they were never able to locate the Georgian property they had previously seen, for details see MacKenzie (1997, pp71-6; Grove, 2018, pp5-11).

MacKenzie attempts an explanation based on the theory of the late Prof. HH Price, a former president of the SPR and Wykeham Professor of Logic at Oxford. Price speculates that once mental images come into being they have a tendency to persist and are not dependent on the mind for their continuance. It is therefore speculated that property developers or wealthy landowners for example, could visualise a planned development as viewed from a certain point, either a road or a public footpath, and for some reason, due say to financial constraints or the death of a key individual, the property was never built. It is this imagined image, which could possibly be picked up by subsequent travellers at that point (MacKenzie, 1997, p127).

The problem with this explanation is that, although it seems to be quite close to the mark, it is still a little vague, in particular there is no speculation on how and where such an image might be stored. However, I think we can do a little better with our localisation hypothesis. It is certainly possible that someone with the means to fulfil such a development does indeed encounter difficulties resulting in a planned project not being realised. If there is a relatively high probability either way of development going ahead or not then the property must exist somewhere in C-space. Moreover in C-space terms, the *counterfactual* timeline where the property was developed would be very close to ours. If the displacement of minds across C-space, especially on the part of those with sufficient sensitivity, does explain the time-slip phenomena then it is not unreasonable for those with similar faculties to encounter features in the landscape that are not on our timeline. In this hypothesis there is no need for those images to be stored anywhere because the actual properties in question do exist, they are just not on the C-space path we call history.

5. Conclusions

The localisation of consciousness hypothesis provides a consistent picture of the world that we, as nonmaterial minds inhabit, without the need to invoke any unspecified mysterious elements. Moreover it offers a provisional context and *thinking tool* for the study, specification and classification of certain psi phenomena. In particular, the hypothesis allows us to define normal sequences of events, thus enabling a clearer demarcation between normal and psi events. The causal closure of physics for example, which is a prerequisite for the hypothesis, allows us to rule out a large number of unusual physical events as anything psi

related. Such phenomena are often misinterpreted as poltergeist or psychokinetic activity, but could be the result of unusual sources of vibration in the immediate vicinity. This is particularly true when, for example, the phenomena in question are captured on physical recording media. However, as a formal scientific theory, it is far from complete. The main reason for this is our total lack of knowledge regarding nonmaterial minds and their distribution throughout C-space (or space-C), where some of the possibilities are discussed in section 3.2.

Of all psi phenomena, time-slips and scene changes appear to be easily described in terms of the theory. Their interpretation as a simple discontinuity in an otherwise normal sequence, suggests a *purity* of the phenomenon, which may be one reason for its rarity. And where multiple witnesses are involved such events are especially rare. An important question that remains relates to the trigger for time-slip, or any other psi events. Two important clues, the involvement of multiple witnesses in some cases and the location specific nature of the phenomena, strongly suggest and environmental factor. Unfortunately as far as is known, there has to date been little progress in this direction.

An area worthy of investigation is the northwest end of Bold Street, Liverpool, which could be repeatedly scanned for vibration and/or electromagnetic spectra, initially focussing on the sub-50 Hz band. This may be a likely cause of the experiences, but difficulties will arise if the actual cause is intermittent. If it is established that neither vibration nor electromagnetic fields are causing the phenomena then another possibility is the emission of unusual gasses or vapours that can affect mental states. Either way, while reports of such phenomena in any area persist, then there is a need for an appropriately funded investigation if concrete answers are to be sought.

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