A Proposed New Paradigm of Matter, Mind and Spirit

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This is the second of a two-part article suggesting a new theoretical model to unify physics and consciousness.

Introduction

In Part I of this article[1], I argued that it is important to expand physics to accommodate mental experiences of all kinds – normal, paranormal and spiritual – and suggested that there may already be hints that this is possible. I mentioned the possibility that quantum theory may play a role but cautioned that this is unlikely to provide a complete explanation. One probably needs a new paradigm which incorporates consciousness at some more fundamental level and underlies both quantum theory and mentality. In this part, I am going to describe my own approach to the problem. This is presented at greater length elsewhere[2] and invokes the existence of extra dimensions of the kind which are already postulated by modern physics. This proposal is unlikely to be popular with most of my physics colleagues but – even if it is wrong – it demonstrates that models bridging the gulf between science and spirituality can at least be envisaged.

Two Worlds

All of us inhabit two worlds. There is the material world, which is studied by physics and which we move around in and interact with in our normal waking state, and there is the mental world, which we encounter in our memories, thoughts and dreams. We may also occasionally encounter less familiar regions of this world in mystical experiences and altered states of consciousness. There are many differences between the two worlds and these are summarized in Figure (1). Most people would claim that the material world is external or objective or public, in the sense that it can be accessed by everybody and corresponds to some communal reality. It also obeys laws which can be investigated through experiment and 3rd person investigation, which is the usual prerequisite of science. By contrast, the mental world is assumed to be internal or subjective or private, so its contents are imaginary and do not appear to conform to laws in the same way as physical systems. They are in the domain of experience or 1st person investigation and more closely allied to mysticism.

There are various reasons to be suspicious of the dichotomy in Figure (1). The first problem is a philosophical one. Our information about the physical world comes from looking at instruments, scrutinizing data, reading papers etc., all of which involve sense perceptions, so even our experience of matter is ultimately mental. There is a subset of percepts which seem to be generated by the physical

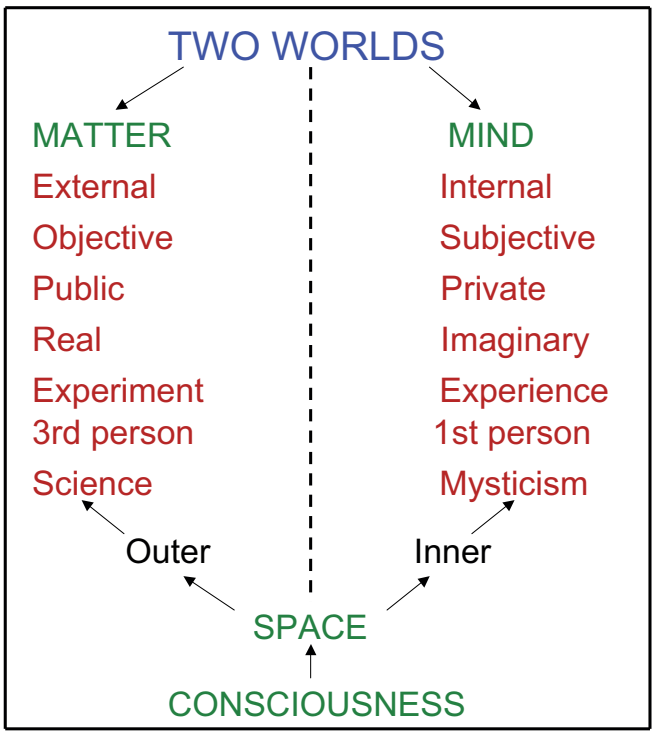

FIGURE 1. Showing how the traditional dichotomy between matter and mind may be bridged by extending the notion of space and consciousness.

world, so it is useful to distinguish between percepts of physical and non-physical origin, but percepts themselves are always mental. The interesting philosophical question concerns the relationship between the percept and the object, and whether they are as distinct as the dividing line in Figure (1) suggests. Any model which purports to unify matter and mind must address this question.

The second problem is an empirical one. The standard view that the material world is real and the mental world imaginary does not sit easily with the findings of psychical research, since these suggest that in some circumstances mental worlds may be shared (as in telepathy) or directly contain the physical world (as in clairvoyance) or even access the past and future of the physical world (as in retrocognition and precognition). Experiences of the transpersonal kind indicate that the mental world may also contain higher levels of reality which are not accessible to physical sensors at all. This suggests that one needs a

model in which the mental world takes on some attributes of externality, while the material world takes on some attributes of internality. In the words of Paul Brunton[3], 'we must learn to mentalise space and spatialise mind'.

In resolving these problems, I believe a crucial clue comes from another feature highlighted in Figure (1). For it seems that both physical phenomena and a large class of mental phenomena involve some form of space, so the description outer space and inner space might be used in this context. Descartes' distinction between *res cogitans* and *res extensa* is misleading in this respect, since some contents of mind are certainly extended. Both worlds also involve the experience of time, although the relationship between mental time and physical time is not fully understood. My proposal is that mental and physical space can be integrated into a communal space which is higher dimensional, in the sense that it has more than the three dimensions perceived by our physical sensors. This involves what I call a Universal Structure, which is a sort of higher-dimensional information space. It has a hierarchical structure, each level being associated with an extra dimension, and it unifies matter and mind in the sense that the first level of the hierarchy is physical space.

Finally, and most profoundly, there is the problem of *consciousness*, as distinct from the problem of the *contents* of consciousness. Although it is an obvious feature of the mental world, most physicists assume that consciousness is irrelevant to the material world and therefore neglect it altogether. However, once the distinction between mind and matter becomes blurred, the notion of matter as unconscious and mind as conscious makes no sense. As indicated in Figure (1), consciousness must underlie *both* worlds, so there is merely a distinction between inner consciousness and outer consciousness.

A Space for Mind

In this section I will develop the argument that a wide range of mental experiences require some form of space. In fact, one needs a *sequence* of spaces, associated with experiences which are increasingly controversial from a scientific perspective. The defining characteristics of these spaces are summarised in the table opposite and described in more detail in the subsequent discussion. This sequence will turn out to be associated with increasing dimensionality, so one is not dealing with ordinary physical space here. The aim is to produce a Grand Unified Theory of mind which accommodates *all* forms of mental experience and is analogous to the physicists' Grand Unified Theory of matter. This sounds rather pretentious, so I should stress that the term 'mind' is used here in a very restricted sense. My focus is mainly on its perceptual aspects and many other aspects (cognition, emotion, volition etc.) would need to be included in a more complete treatment.

Although the breakdown into 11 classes is somewhat arbitrary, since one could certainly merge or subdivide some of these mental spaces, the order of the sequence is significant, since it represents the transition from normal to paranormal to spiritual. Indeed, the classification of mental spaces in the table clearly relates to the classification of experiences in Figure (4) of Paper I. Spaces (1) to (4) are orthodox and studied by mainstream psychologists; spaces (5) to (7) are controversial and studied by parapsychologists; spaces (8) to (11) are mystical and studied by transpersonal psychologists. Also, while all these spaces are interconnected in various ways, we will see that they form a logical progression.

TABLE OF MENTAL SPACES

NORMAL
(1) *Phenomenal*. Generated by perception of physical space via sensors.
(2) *Memory*. Replay of images experienced through sensors in the past.
(3) *Visualisation*. Generated/controlled by imagination and creativity.
(4) *Dream space*. Like memory/visualisation space plus other elements.

PARANORMAL
(5) *Psi*. Involves direct interaction between mental and physical space.
(6) *Apparition*. Different from physical space but aspects of externality.
(7) *Threshold*. Pseudo-physical experiences on border of sleep/waking.

SPIRITUAL
(8) *OBE*. Subtly different from physical space, changed by imagination.
(9) *NDE*. Relates to OBE space but other spatial experiences involved.
(10) *Survival*. Where 'soul' dwells after death or between incarnations.
(11) *Mystical*. Various extrovertive experiences plus 'higher planes'.

Phenomenal Space

The term 'phenomenal' here refers to those percepts which are appear to be generated by the physical world via physical sensors (i.e. the only ones associated with an external reality in the standard view). Most scientists and philosophers adopt the view of representative theory, in which phenomenal space is just an internal construct of the brain (i.e. the object is primary and the percept is derivative). The alternative naïve realist view posits that phenomenal space is the same as physical space (i.e. the percept *is* the object). While advances in neuroscience now make it very difficult to uphold the latter view, recent developments in theoretical physics suggest that representative theory is also unsatisfactory – at least in its original form – since the ultimate reality revealed by modern physics bears very little resemblance to the common sense reality of classical physics. Indeed, the version of reality assumed by old-fashioned representative theory is itself a representation! As we will see, my own model regards both object and percept as lower-dimensional projections of a 4-dimensional structure, so neither is primary and the percept is not *in* the brain. This resembles the view of John Smythies[4], who regards phenomenal space as a sort of parallel universe, just as real as physical space but different. He envisages physical space and phenomenal space as intersecting hyperplanes, with their moving intersection being associated with the flow of time.

Memory and Visualisation Space

We group these together since visualisations at least partly comprise an amalgamation of memory images. The reductionist view is that all memories are stored in the brain and therefore arise from the physical world *indirectly*. On the other hand, some memories (eg. a subset of dream memories) seem to have no connection to the physical world. Also reincarnation memories (if valid) presumably do not derive from the brain and this has prompted Ian Stevenson[5] to suggest that memory images may reside in a space which extends beyond physical space. According to Jim Culbertson[6], this could be spacetime itself, since he has proposed that memory merely reflects the causal spacetime link between the original event and the brain. This corresponds to a sort of *re-experiencing* of the past, so the brain does not store the memory itself (i.e. it contains a tag rather than a trace). Since the brain is itself part of spacetime, it could still replicate the information to some degree (like a photograph) but the spacetime structure persists even when the tags and traces have disappeared.

Dream Space

Many dreams (especially lucid ones) seem to take place in a space which resembles ordinary physical space and can be just as vivid. Indeed, while dream space is clearly different from physical space, it is sometimes difficult to tell whether one is awake or dreaming. According to reductionism, dream images result from a jumbling up of images received through the physical sensors while awake (i.e. memories and visualisations). However, while dream space clearly bears some relationship to memory and visualization space, they cannot be identical, since one can still visualize something in a dream and distinguish it from the dreamscape. In fact, H.H. Price[7] has suggested that dreams exist in a different space from physical events. They are going on all the time but consciousness only occasionally accesses them. Dream space could still be private in this model but C.D. Broad[8] goes further and advocates merging individual dream spaces into a single space of more than three dimensions. This implies that dream space could be *communal* in some circumstances.

Psi Space

The term 'psi' here refers to extrasensory perception (ESP) and psychokinesis (PK), which might be regarded as the basic phenomena which underlie all psychic interactions. A reductionist explanation of psi would assume that brains can interact with each other and the physical world through some little understood physical mechanism, but I argued against this in Part I. Instead, I would infer that even percepts of non-physical origin may possess attributes of externality. For example, if I visualise a cat and somebody else 'sees' it (as in telepathy), perhaps it really exists 'somewhere', although presumably not in physical space. Likewise, one interpretation of clairvoyance might be that mental space already contains physical space in some sense. Since many psychic experiences come through dreams, there seems to be some connection between psi space and dream space. In particular, dreams may sometimes convey veridical information about the present, past or even future of the physical world, which may support Culbertson's picture of memory. In relating his model to psi, Smythies assumes that the focus of the mind is usually on the brain but that processes termed 'psi-gamma' (passive) and 'psi-kappa' (active) can also operate on the surrounding 'penumbra' [9].

Apparition Space

The standard view is that apparitions are just hallucinations with no objective reality (i.e. they do not result from external stimuli). However, some apparitions are seen by different people at different times (as in the classical ghost story) or by more than one person at the same time. There are even collective cases, where the apparition appears to be viewed from different perspectives, as though in the same space as the observers. There are also death-bed visions or 'crisis' apparitions, which may convey veridical information. One interpretation is that apparitions are indeed constructs of the mind but contain psi-mediated information content. For example, G.N.M. Tyrrell[10] suggests that collective apparitions can be explained by telepathy. Another interpretation – suggested perhaps by ghost photographs – is that apparitions exist in physical space, but the provenance of these photographs is usually questionable and most apparitions do not seem to leave any physical trace at all. The third interpretation, advocated by Frederic Myers[11] and also favoured here, is that apparitions exist in some non-physical space. Even though the percept is not produced by photons, it may still result from the brain's attempt to represent something external.

Threshold Space

There are a wide range of experiences associated with the threshold between sleep and waking which might be described as 'pseudo-physical', in the sense that they appear to take place in the physical world. These include hypnogogic and hypnopompic images and a variety of experiences (such as the 'old hag' phenomenon) associated with false awakenings and sleep paralysis[12]. While sleep paralysis has a well understood physiological basis, this does not invalidate the status of the experiences themselves, and it could be just one of a variety of altered states of consciousness which facilitate access to other levels of reality. Threshold experiences have some characteristics of apparitions but they are more intense and longer-lasting. While there is *prima facie* evidence that they are associated with the physical world, since the subjects believe they are awake and may simultaneously be aware of genuine physical events, it seems unlikely that the effects involved (eg. the sounds of footsteps, opening doors, creaking bed-springs etc.) are genuinely physical. The view adopted here is that threshold phenomena (like apparitions) involve some form of non-physical space.

OBE Space

In an OBE (out-of-body experience), the point of consciousness appears to be separated from the physical body, sometimes being associated with an astral body instead and moving around in a space which resembles physical space[13]. One view is that OBE space is just a mental construct, but with consciousness sometimes acquiring veridical information about the physical world or even causing events there through ESP and PK (cf. Tyrrell's theory of apparitions). A second view is that OBE space is the *same* as physical space. One way of demonstrating this would be to show that something actually leaves the physical body (eg. by measuring a weight loss) or to detect some influence associated with the astral body. However, the evidence for such effects is weak and OBE space anyway seems to be subtly different from physical space. A third view is that OBE space is a *duplicate* of physical space, with non-physical objects and non-physical sensors[14]. Since one may encounter higher planes in an OBE, there may even be a hierarchy of non-physical worlds. In my own model, physical space and OBE space are envisaged as different aspects of a single higher-dimensional space. The crucial distinction between the first and third viewpoints lies in whether one invokes psi to explain OBE space or OBE space to explain psi.

NDE and Survival Space

In an NDE (near-death-experience), one initially moves around in a space resembling OBE space. However, various other experiences are involved, such as the 'tunnel' effect, encounters with the 'light' and deceased love ones, life reviews and reaching some form of 'bridge', whose traversal symbolises the irreversible passage from life to death[15]. The uniformity of these experiences suggests that NDEs may involve accessing some higher reality. Jean-Pierre Jourdan[16] even claims that some NDE features (360 degree vision, seeing through objects etc.) are compatible with varying degrees of displacement in a fifth dimension. It would be natural to associate NDE space with 'survival space' (i.e. the space in which the soul is supposed to reside after death), the existence of such a space being a feature of many

versions of the survival hypothesis. For example, if reincarnation occurs, the soul is presumably located somewhere between incarnations and the experiences described in some religious texts clearly require some type of non-physical space. In the Buddhist tradition this may be connected with dream space and – since one's identity is defined by one's memories – it may also relate to memory space. If Stevenson is correct in asserting that memory space extends beyond physical space[5], then the mind is larger than the body and may well outlast it.

Mystical Space

The features of extrovertive mystical experience have been summarized by Paul Marshall[17] and include a sense of unity and immortality, a deeper sense of reality, feelings of wonder, joy and beauty, intellectual illumination etc. As with NDEs, the fact that these features are transcultural suggests access to some higher reality. It is clear that mystical experiences do not occur in physical space and occasionally a transcendence of space and time is reported. However, more often a distortion of space and time seems to be involved. Sometimes the experience is explicitly described as higher dimensional, so a major challenge in a model such as mine is to classify the different types of experience in terms of the number of purported dimensions. This approach features in the work of Michael Whiteman[18], who uses a 'reality index' to classify a range of separative experiences. Another crucial aspect is the nature of time in mystical experience: the specious present may be vastly expanded, so that one's entire life appears to be instantaneous. There might even be a state of pure consciousness or purusa, related to introvertive experiences, in which space and time cease to exist altogether[19].

Higher-Dimensional Reality Structure

In order to justify my proposal, I need to make the notion of a higher-dimensional reality more precise. If one were to ask a philosopher of the 19th century in what sense the physical world is real, he might have replied as follows: There exists a 3-dimensional (3D) space in which are localised both the sensors through which we observe the world and the physical objects themselves. Each observer has only partial information about that space because of the limitations of his sensory system. (For example, his eyes will provide him with a projection of the space which is essentially 2D.) However, the crucial point is that, given his location and the direction in which he is looking, one can always predict how he *ought* to see it. The fact that one can find a 3D configuration which predicts a set of 2D projections concordant with those which are actually presented to the different observers is what is meant by stating that the physical world is real. One may say that the physical world is a 3-dimensional structure (S_3) which consistently reconciles how everybody within that structure perceives it. The situation is depicted in Figure (2), which represents three perceptual fields (P_1, P_2, P_3) by squares and the reality structure (S_3) by a cube.

The construction of S_3 only applies at a particular time. From a Newtonian perspective, time is absolute, so the 3D structures at successive moments can be trivially patched together to incorporate the flow of time. However, Einstein's theory of Special Relativity showed that space and time are not absolute but part of a spacetime continuum. Thus a consistent picture of how different observers perceive the world requires that it be 4D, with the fourth dimension being time and material objects corresponding to world-lines. Photons travel at 45 degrees in a spacetime diagram, so the observer's perceptual field at any moment corresponds to part of his past light-cone. This is illustrated in Figure (3) with one spatial dimension suppressed. A 20th century philosopher would therefore argue that reality is a 4-dimensional structure (S_4) but the notion that the world is real because there exists a higher-dimensional structure which reconciles our perceptions of it is preserved. Indeed, the situation can still be represented symbolically by Figure (2), providing one interprets the squares as past light-cones and the cube as S_4.

It is interesting – and not generally appreciated – that the controversy between naïve realism and representative theory is largely resolved with the 4D perspective. This is because the distinction between the 3D object and the 2D percept only really arises in the Newtonian context. In Special Relativity the object and percept are merely different cross-sections of a 4D world-tube: the object is the world-tube's intersection with a hypersurface of constant time, while the percept is its intersection with the observer's past light-cone. Of course, perception is generally more complicated than this – not even visual perception is always restricted to the past light-cone and there are also non-visual modes which involve timelike signals. However, I would argue that *every* form of perception – including any natural extension of the physical sensory system (such as a telescope, microscope, TV, computer screen or virtual reality helmet) can be represented as some form of cross-section of a 4D structure. Even the brain processes involved in perception can be related to the world-lines associated with neuronal signals.

Since *both* the object and the percept are lower-dimensional projections in the 4D description, neither is primary and so the standard view of representative theory is superseded. Furthermore, while the percept is 2D in the 3D view, being just a geometrical projection, it is at least partly 3D in the 4D view because of all the extra information which can propagate from the object to the sensors via non-visual sense modes. The distinction between the 3D and 4D views may be summed up as follows:

3D view: 3D object → 2D percept.
4D view: 4D object → 3D object + 3D percept.

The 4D picture corresponds to a sort of *extended mind*, in which consciousness is associated with all the parts of spacetime to which the brain is linked through signalling world-

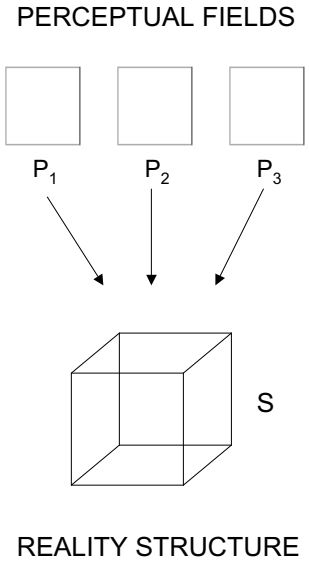

FIGURE 2. A symbolic representation of how a reality structure (3D for Newton, 4D for Einstein) reconciles the different perceptual fields (2D for Newton, 3D for Einstein) of observers within that structure.

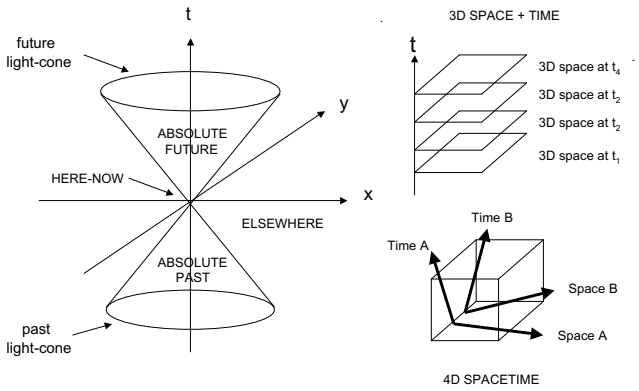

FIGURE 3: A summary of Special Relativity, showing the amalgamation of 3D space and time into 4D spacetime on the right and the light-cone structure on the left.

lines; it is not localised within the brain itself because that is just one end of the causal chain. Thus the stars are not contained within the skull – they are precisely where they appear to be, a view also advocated by Rupert Sheldrake[20] and Max Velmans[21]. In the context of physical perception, mind *is* spacetime, which is why one cannot regard consciousness as being confined to the right side of Figure (1).

This proposal is reminiscent of the 'Spacetime Reductive Materialism' model of Jim Culbertson[6], in which consciousness is contained within what he terms the 'spacetime outlook tree' of the brain. This corresponds to the complete nexus of spacetime connections between the brain and all the events it perceives at any time. So awareness is not an emergent property but an extended pattern in spacetime, with the relationship between the different observers being like a global tapestry of entanglement. However, it should be stressed that Culbertson was essentially a reductionist and never extended his model beyond the physical domain.

This approach is fine as far as it goes but it makes no reference to the other sorts of sense-data which are presented to our consciousness: mental percepts with no physical counterparts. In fact, so far we have only covered the first two of the mental spaces discussed earlier. One therefore needs to extend the definitions of reality given above to include the possibility that the other ones may also be real (i.e. communal) in some sense. This is achieved by assuming that the communal space has extra dimensions. With the addition of each dimension, the number of objects and observers incorporated increases, so one generates a hierarchy of reality structures of increasing dimensionality (S_4, S_5, S_6....). One eventually reaches a maximum dimensionality D, at which point one has extended the reality structure as much as possible. The final one (S_D) is termed the 'Universal Structure' and represented symbolically in Figure (4) by a hypercube (the 4D analogue of a cube). The lowest member of the hierarchy is just the 4D reality structure of Special Relativity (S_4), which we might regard as the 'physical' world. So one has resolved the paradox of Figure (1) by incorporating both sides in some larger 'box'.

Any percept which is contained within this structure is said to possess actuality'(a less ambiguous term than reality) and in principle all percepts could be included. One can formally regard the extra perceptual elements which are incorporated as one introduces successive dimensions as defining a sequence of 'actuality planes' (where the term 'plane' is not used in the usual 2D sense but turns out to have geometrical significance). It is implicit here that perception always involves some form of sensor which is itself associated with an actuality plane and cannot receive signals from any higher one. Figure (5) indicates a possible association of mental space with higher dimensions.

But what are these extra dimensions and how do they relate to consciousness? We have already emphasised that the Universal Structure must incorporate the ordinary time of Special Relativity. However, one also needs to assign a time coordinate to non-physical experiences and this requires that each level of the hierarchy have its own dimension of time. One therefore has a hierarchy of times $\{t_1, t_2, \ldots t_{D-3}\}$ with t_1 corresponding to the time of Special Relativity. The multi-level time perspective also relates to the problem of identity (1st personhood), since consciousness may be fragmented at one level but unitary at a higher level. From this perspective telepathy would be the manifestation of the higher dimensional connection between people, while mystical unity would reflect an even higher level of connectedness.

The next step in the argument is to identify the Universal Structure with the higher-dimensional space of modern physics. In particular, I relate it to the Randall-Sundrum version of M-theory[22], illustrated in Figure (2) of Part I, in which the physical Universe is regarded as a 4D 'brane' in a higher-dimensional 'bulk'. For if physical objects occupy only a limited part of that higher-dimensional space, it is natural to ask whether anything else exists there. Since the only non-physical entities which we experience are mental ones, and since it has been argued that all mental experiences have to exist in some sort of space, it seems natural to associate this with the bulk. However, I should stress that my proposal does not depend on M-theory itself being correct. Indeed, it preceded the brane-bulk proposal by several decades. One just needs some form of higher-dimensional model.

The final step is to formulate a theory of how the different elements in the Universal Structure interact with each other. Of course, this is a very ambitious task. The Randall-Sundrum picture confines attention to the interaction of objects on the brane, which in my language is the first actuality plane, whereas the full theory must also consider the interactions of objects in the bulk, corresponding to higher actuality planes. So not only must one provide a model for how objects on the first actuality plane interact (i.e. a complete theory of physics), one must further describe

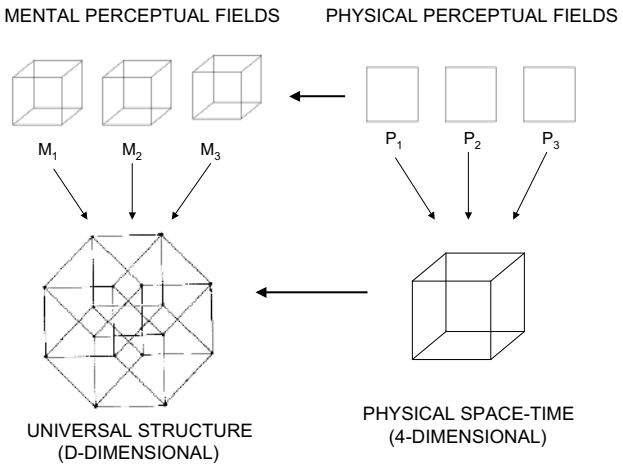

FIGURE 4. This shows how one can extend the notion of a reality structure to include non-physical percepts by generalising from a 4D structure to a higher-dimensional one.

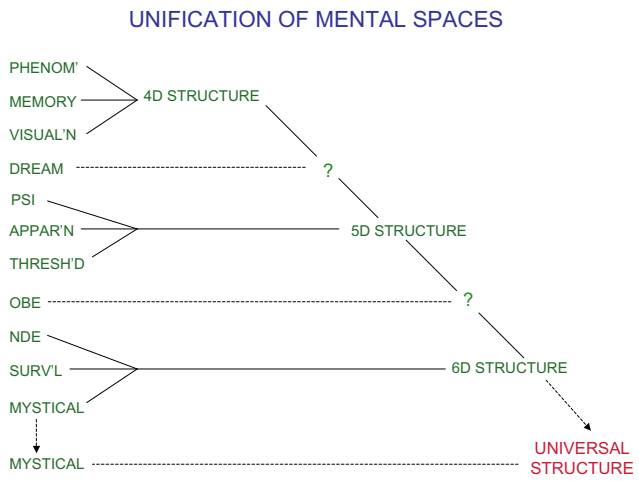

FIGURE 5. Tentative assignment of higher dimensions to different types of mental space, with dotted lines indicating uncertainty in model and 'mystical' space being divided into grades.

how objects on higher actuality planes interact. This is also necessary if one wants to extend the discussion from the passive aspects of mind involved in perception to more active ones. The model involves a formulation of what I term 'Transcendental Field Theory'. The name indicates, firstly, that all the interactions are assumed to proceed via fields and, secondly, that the fields involved are more extensive than the usual physical ones. However, there is no space to discuss this further here.

Conclusion

This article has described a new paradigm in which matter and mind are merged at a very fundamental level. The benefit of this is that physical percepts are no longer unique in representing an external reality. However, the price one pays is that the space required is not the usual physical one; it is a higher-dimensional space with a complicated hierarchical structure. Of course, associating extra dimensions with mind and mysticism is not a new idea. Henry More[23] associated spirits with an extra dimension in the 17th century, while Johann Zollner[24] and Charles Hinton[25] explored the same idea in connection with Spiritualistic phenomena in the 19th century. More recently, it has been emphasised in the work of physicists like Saul-Paul Sirag[26] and Jim Beichler[27] and philosophers like Paul Marshall[28] and David Lawton[29]. A more detailed history can be found in my *SPR Proceedings*. However, only recently has the link with physics become compelling. Although the model proposed here is not the usual type of one-level reductionist physics, it should still be classified as science and I would argue that multiple levels of reality are a vital ingredient of any model linking matter, mind and spirituality.

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