



Seeking a New Paradigm of Matter, Mind and Spirit

Bernard Carr

This is the first part of a two-part article providing a new understanding of physics that encompasses rather than excludes consciousness, arguing that a real Theory of Everything has to include mind and spirit.

The Missing Jewel in the Crown of Physics

Physics might be regarded as the queen of the sciences and there can be no doubting its remarkable success in coming to understand the material world from the smallest scales of particle physics (M-theory) to the largest scales of cosmology (the Multiverse). In particular, it has revealed a remarkable unity about the Universe, with everything being made up of a few fundamental particles which interact through four forces which are now thought to be part of a single grand unified interaction. Indeed, the history of physics might be seen as the progress in our understanding of this unification. It is even claimed that the end of physics is now in sight, in the sense that our knowledge of the fundamental laws and principles governing the Universe is nearly complete and that we are close to obtaining a 'Theory of Everything' (TOE). So the rationalist, reductionist, materialistic approach of the physical sciences appears to have been triumphant!

Another success of physics has been to explain the development of the dazzling array of increasingly complex structures in the 14 billion years since the Big Bang. This is encapsulated in the image of the Uroboros, shown in Figure (1), with the four forces corresponding to links between the microscopic domains (on the left) and the macroscopic ones (on the right). I've described the Uroboros in a previous SMN presentation¹ – indeed I wrote my first article about it in the *Network Review* 20 years ago – so I won't discuss it further here. I will only emphasize that the point at the top (where the very large meets the very small) corresponds to the Big Bang, while the point at the bottom (human beings) corresponds to the culmination of complexity – at least here on Earth.

However, Figure (1) also reveals a missing jewel in the crown of physics. For among the remarkable attributes of human beings are consciousness, mind and spirit. It is also striking that the Uroboros can be used to represent the expansion of consciousness through scientific investigation to ever larger and smaller scales. So it is curious that these attributes are almost completely neglected by science and indeed judged to be without significance. The mainstream view is that consciousness has a purely passive role in the Universe, minds are just the froth generated by billions of neurons, and spiritual evolution is a delusion. In fact, most

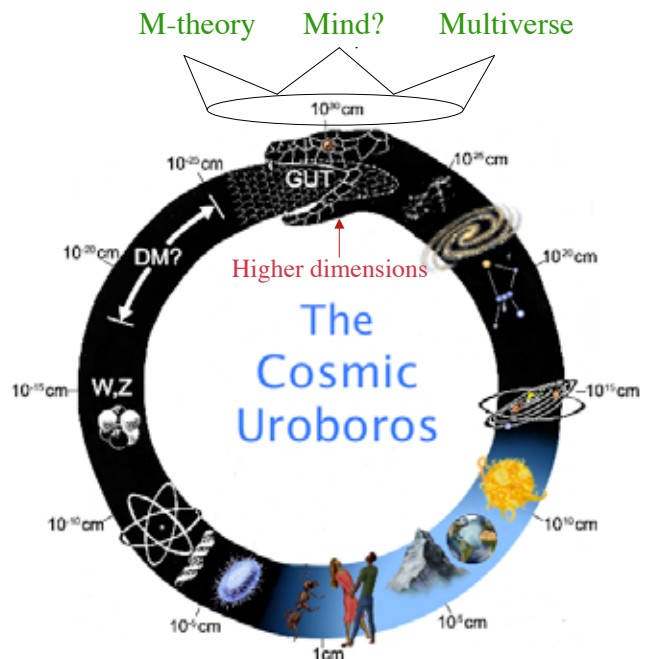


FIGURE 1. This shows the hierarchy of scales of structure in the Universe, with the size changing by a factor of 10 for each minute. Mind may enter where the head meets the tail at the top and extra dimensions may also play a role here.

scientists assume that the study of such topics is beyond their remit altogether because science is concerned with a '3rd person' account of the world (experiment) rather than a '1st person' account (experience). They infer that the focus of science should be the objective world, with the subjective element being banished as much as possible. This goes back to the Cartesian divide between *res extensa* (the domain of science) and *res cogitans* (the domain of God) in the 17th century.

Yet it seems profoundly unsatisfactory that the contents of our mental world (i.e. thoughts, memories, dreams, altered states of consciousness etc.) are neglected by science. After all, these comprise roughly half the contents of our consciousness and even our experiences of the material

world (i.e. our ordinary sense perceptions) are ultimately mental. So the claim that physics is close to a theory of everything seems a rather hollow one. It is therefore easy to sympathize with the linguist Noam Chomsky² when he asserts that 'physics must expand to explain mental experiences'.

One could, of course, maintain the validity and value of mental experiences in their various forms but just regard them as being beyond science. That is certainly a view which some mystics – and perhaps some members of the SMN – would take. However, as a working scientist I find this attitude rather defeatist and certainly at odds with the SMN attempts to bridge the gulf between science and mysticism. For science assumes that the world is governed by natural laws and – given the success of the enterprise so far – it seems plausible that mental and spiritual experiences are also subject to such laws. Our aim should therefore be to demonstrate that natural law can be extended to include these areas and not to throw the ball back into the court of the 'supernatural'. One expects science to have some limits but one does not know what they are in advance and the lesson of history is that one should try to push its frontiers forward as far as possible,

But how feasible is it that physics can accommodate consciousness and associated phenomena? Clearly physics in its classical mechanistic form cannot achieve this, since there is a basic incompatibility between the localised features of mechanism and the unity of conscious experience. However, the classical picture has now been replaced by a more holistic quantum one, and some people have argued that this *can* include consciousness. For example, studies of quantum phenomena convinced Louis de Broglie³ that 'the structure of the material Universe has something in common with the laws that govern the workings of the human mind', while John Wheeler⁴ inferred that 'mind and Universe are complementary'. However, quantum theory does not actually *explain* mind – it just hints that it may have a role to play in physics. Besides, since nobody understands quantum theory anyway, it seems unsatisfactory to merely replace one mystery by another one. So some new, deeper paradigm is probably required that will explain *both* consciousness and quantum theory. Thus Roger Penrose⁵ anticipates that 'we need a revolution in physics on the scale of quantum theory and relativity before we can understand mind'. Some other developments in physics, such as the Anthropic Principle, also suggest that consciousness may be a fundamental rather than incidental feature of the Universe. I reviewed some of these developments in my earlier SMN contribution¹. However, we need more than that; we require a physical paradigm which incorporates mind explicitly.

Parapsychology: the Thorn in the Crown

The most compelling argument that physics must expand to accommodate mind (at least for those who accept the data) comes from the parapsychology (which here I take to be synonymous with psychical research). This suggests that there can be a direct interaction between mind and the physical world, as opposed to the indirect one which is channelled via the brain (and also not fully understood). If this is true, then a final theory of physics *must* take account of mind and consciousness. But what sort of physics is required and would it be the kind that mainstream science would recognize as legitimate?

Some forms of psi – a general term for psychic phenomena – might conceivably be amenable to a reductionist brain-based explanation. Telepathy, for instance, might derive from some unknown signalling process between two brains, while psychokinesis (PK) and clairvoyance might depend on some little understood exchange of energy between the brain and its physical environment. However, apart from various technical objections, these sorts of explanation seem unlikely because psi also involves other types of phenomena which would appear much less amenable to a brain-based explanation: for example, near-death experiences (NDEs)⁶, out-of-body experiences (OBEs)⁷, death-bed visions (DBVs)⁸, the evidence for survival of bodily death⁹ and the whole domain of mystical experience¹⁰. These are examples of the sort of 'rogue' phenomena which Ed Kelly et al.¹¹ argue support the Bergsonian view that the brain is a filter of experience rather than a generator of it. So the sort of physics we want is probably not of the usual reductionist kind.

The attempt to extend physics to accommodate psi is the remit of what is sometimes termed 'paraphysics', although this term is not ideal because it is now tainted by its New Age associations. This is in contrast to 'parapsychology', which is more concerned with the psychological aspects of the paranormal. Such an extension engenders antipathy from both physicists (who are sceptical of the reality of psi) and psychical researchers (who are generally wary of attempts to explain it in physicalistic terms). Hence the 'thorn' in the heading above. An important factor in both these antipathies is the status of reductionism (i.e. the notion that the sciences form a hierarchy with physics at the base). Physicists see psi as a threat to reductionism, while psychical researchers see physicalistic explanations of it as a threat *from* reductionism. However, I believe this antipathy is misconceived and that a new paradigm – involving a radically different sort of physics, which I call 'hyperphysics' – will eventually reconcile psi and physics and throw light on each of them. Indeed, the fact that physical reality has turned out to be so far removed from common-sense reality has led some people to suggest that there might *already* be room for the sort of phenomena studied by parapsychology. In the words of Arthur Koestler¹²: 'The unthinkable phenomena of extra-sensory perception appear somewhat less preposterous in the light of the unthinkable propositions of modern physics'. However, my own view is that we need to go well beyond the present paradigm.

Quantum theory – already alluded to in the context of consciousness – is the aspect of modern physics most often invoked to explain psi. Since quantum theory completely demolishes our normal concepts of physical reality (eg. objects instead of being localized are smeared out as waves), it is not surprising that some paraphysicists have seen in its weirdness some hope for explaining psi. The most concrete realisation of the quantum approach is Observational Theory¹³, according to which consciousness not only collapses the wave function but also introduces a bias in how it collapses. Another approach exploits the non-locality of quantum theory, as illustrated by the famous EPR paradox¹⁴. An atom decays into two particles, which go in opposite directions and must have opposite (but undetermined) spins. If at some later time an experimenter measures the spin of one of the particles, the other particle is forced instantaneously into the opposite spin state, even though this violates causality. Dean Radin¹⁵ claims this quantum 'entanglement' – now experimentally verified up to the scale of macroscopic molecules – is fundamental to psi. He regards elementary-particle entanglement (EPR), bio-entanglement (neurons), sentient-entanglement (consciousness), psycho-entanglement (psi) and socio-

entanglement (global mind) as forming a continuum, even though the evidence for entanglement after the first step is controversial. If the Universe were fully entangled like this, he argues that we might occasionally feel connected to others at a distance and know things without the use of the ordinary senses.

Although quantum theory is likely to play some role in a physical model for psi, my own view is that a full explanation will require a paradigm shift which goes beyond it. One ingredient of the new paradigm must surely be consciousness, since this is a common feature of most psychic phenomena, although psi may also operate unconsciously and some people argue that it is a general feature of life. Another ingredient may be a transcendence of space and time. Although some people reject physicalistic models of psi precisely because of this feature, such transcendence already arises in physics itself in the context of quantum gravity, the long-sought unification of relativity and quantum theory. Indeed, it is possible that quantum gravity will itself turn out to have some connection with consciousness⁵. An example of this might be the holographic model of David Bohm¹⁶, in which there is a greater collective mind with no boundaries of space or time. However, it should be cautioned that the literature in this area comes from both physicists themselves and non-specialist popularizers, so some discrimination is required in assessing these ideas¹⁷.

The final (and in my view most important) ingredient of the new paradigm may be the invocation of higher dimensions. The notion that there could be extra dimensions beyond the three revealed by our physical senses has already been proposed by physicists trying to explain certain aspects of the material world. For physicists no longer adopt the simplistic view that space is 3-dimensional (as posited by Newton) or even 4-dimensional (as posited by Einstein). A unified understanding of all the forces which operate in the Universe suggest that there are extra 'internal' dimensions. This approach was pioneered in the 1920s by Theodor Kaluza and Oscar Klein, who showed that a fifth dimension can provide a unified geometrical description of gravity and electromagnetism, providing it is wrapped up so small that it cannot be seen; this is the Planck distance of 10^{-33} cm, the smallest scale that appears in Figure (1).

Subsequently it was discovered that there are other subatomic interactions and recent unification theories suggest that these can be explained by invoking yet more wrapped-up dimensions. For example, superstring theory suggests there could be six and the way they are compactified is described by what is called the Calabi-Yau group. There were originally five different superstring theories but it was later realized that these are all parts of a single more embracing model called 'M-theory', which has seven extra dimensions. In one particular variant of M-theory, proposed by Lisa Randall and Raman Sundrum¹⁸, one of the extra dimensions is extended, so that the physical world is viewed as a 4-dimensional 'brane' in a higher-dimensional 'bulk'. The development of these ideas is illustrated in Figure (2). We do not experience these extra dimensions directly – their effects only become important on the smallest and largest scales, as indicated by the arrow at the top of Figure (1) – so it is clear that our ordinary senses reveal only a limited aspect of physical reality. However, I will argue in my follow-up article that these higher dimensions may also be relevant to mental and spiritual experiences.

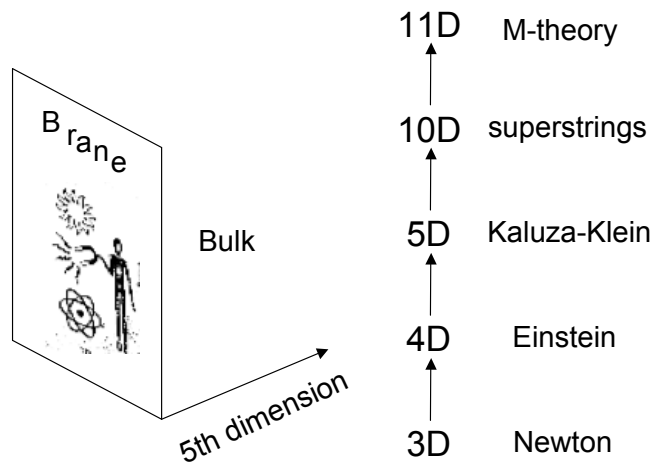


FIGURE 2. The sequence of extra dimensions entailed in the unification of physics. They are usually assumed to be compactified but one dimension is extended in brane theory.

Parapsychology as a Bridge between Science and Spirituality

The importance of parapsychology from an SMN perspective is that it sits in the middle ground between science and spirituality. It is allied with science because of its methodology and its attempt to find a theoretical framework for psi; it is allied with spirituality because this provides relevant anecdotal evidence and because psychic experiences are part of the more general class of transpersonal experiences. It therefore offers a bridge between them. Of course, being on a bridge is not always comfortable – parapsychologists tend to be criticised by scientists for being too mystical and by mystics for being too scientific and I suspect the SMN contains critics in both these camps. However, building this bridge must surely be part of the New Renaissance which the SMN so enthusiastically champions. In fact, as illustrated in Figure (3), there are really *two* bridges: one between science and parapsychology and the other between parapsychology and spirituality. The nature of these bridges (and the associated tensions) is somewhat different but the SMN is an almost unique organisation in that its breadth of interest spans both of them. A major strut of the first bridge is parapsysics and the causes of the tensions involved here have already been discussed above. I will therefore only focus on the second bridge in the rest of this article.

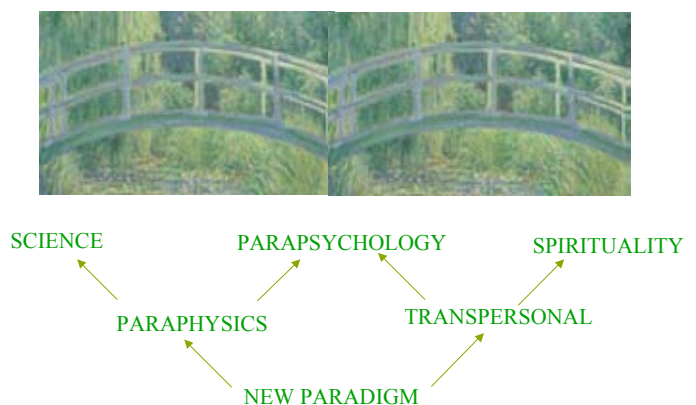


FIGURE 3. This shows the crucial role of parapsysics and transpersonal psychology as struts in the two bridges linking science, parapsychology and spirituality.

It is clear that many experiences have both a psychical and spiritual element. This link is studied explicitly in transpersonal psychology, the subject founded by William James, which focuses on experiences which go beyond the personal into the religious and mystical domains. Researchers in this area have always been interested in the paranormal; indeed Mike Daniels¹⁹ explicitly lists the phenomena studied by both parapsychologists and transpersonal psychologists. So transpersonal psychology might be regarded as the main strut of the right-hand bridge in Figure (3). However, the two groups are interested in different issues and therefore use different methodologies. The first group is interested in those aspects of an experience which provide evidence for the paranormal, while the second group is interested in those aspects associated with transpersonal development. For example, St Teresa of Avila's levitations are of interest to psychical researchers because she was defying gravity but to religious experience researchers because she was in a state of mystical ecstasy.

The link between paranormal and religious experiences is made clear in Figure (4), which classifies a wide range of experiences, and the people who have them, according to their frequency and impact. This derives from a diagram originally used by Radin but I have expanded his version to include *normal* mental experiences, because there is also a challenge accommodating these in the scientific worldview. Indeed, even sceptics of the paranormal might regard explaining normal mental experiences as a legitimate challenge. At the bottom left of Figure (4) (in the domain of the normal) are the mundane experiences which are studied by mainstream science. In the middle (in the domain of the paranormal) are the less common experiences, which are amenable to scientific study but whose existence is highly controversial. At the top right (in the domain of the spiritual) are the very rare, profound experiences, which are generally considered to be beyond the remit of science, although nobody doubts that they happen.

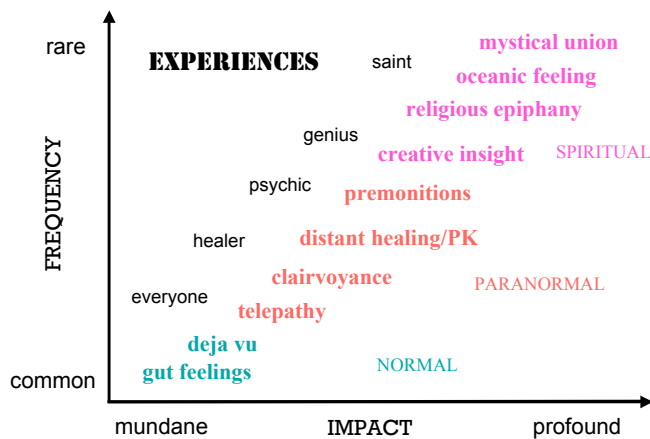


FIGURE 4. This classifies a range of normal, paranormal and spiritual experiences according to their frequency and impact.

These considerations make it clear that it is very artificial to consider paranormal experiences in isolation from the other ones. Although the impacts of the three classes of experiences are different – normal and paranormal ones transform the individual, whereas spiritual ones transform the world – it is clear that they form a continuum. So we surely need an extension of physics which accommodates all forms of mental phenomena, and the sting in the tail for reductionism would be if the model required to explain the normal ones also entailed the reality of the paranormal and spiritual ones. Despite this argument, there are various

tensions between parapsychology and spirituality. It is important to understand these tensions because they also prevail to some degree within the SMN.

Why the Antipathy from the Spiritual Side?

- Although most spiritual paths involve the development of some form of psychic powers, these are usually regarded as a distraction and not an end in themselves. Thus in Eastern traditions, meditators are warned of the dangers of being seduced by siddhis and urged to renounce these in order to attain further spiritual development. In the Christian tradition, psychic phenomena are sometimes even regarded as demonic in origin.
- Although scientific methodology can be applied to the study of religious experience, as shown by the work of the Alister Hardy organisation, there is presumably a limit to how far this type of investigation can be taken. Sufficiently advanced mystical states are usually assumed to be ineffable and therefore not amenable to rational analysis at all. Indeed, for the spiritual practitioner, religious experience appears to be inhibited by intellectual activity, so scientific probing is discouraged.
- Religious people tend to distinguish experiences which contain a divine element from those which do not, and so sometimes look down on paranormal experiences as insufficiently spiritual. Transpersonal psychology certainly recognises a gradation of phenomena. In particular, it distinguishes between prepersonal experiences (which are primitive or magical and arise before the sense of self develops) and transcendental ones (in which the self is transcended but not destroyed). However, experiences are assessed by their consequences as well as their content, so ones usually labelled paranormal (such as an OBE) might sometimes be spiritual, while others usually labelled spiritual (such as prayer) may not be. Certainly Ken Wilber²⁰ regards psychic experiences as a gateway to transpersonal ones.

Why the Antipathy from the Parapsychological Side?

- Parapsychologists tend to strip psychic experiences of their spiritual aspects and are sometimes uncomfortable even discussing such aspects. Since science already regards psi as being too mystical, this is perhaps a natural defence reaction for a group that it striving to establish its scientific legitimacy. Religious feelings may have been important for some of the founders of the Society for Psychical Research but they are probably not important for most parapsychologists nowadays.
- Since much of the evidence for psi involves 1st person experience, science's preoccupation with the 3rd person account of the world is also problematic. In as much as parapsychology originated in the 1940s, when psychology was dominated by behaviourists, perhaps this is not surprising. Also, while there are various ways in which researchers may try to familiarise themselves with psi (meditation, different forms of psychic training, visiting mediums etc.), many prefer to maintain a separation between themselves as the experimenter and the psychic as the 'guinea pig' who is being probed. *Becoming* a guinea pig might entail losing one's scientific objectivity.

- In most laboratory experiments, ESP is not studied in the dramatic form in which it occurs in everyday life – where emotion and personal factors are so crucial – but in a rather drab form (eg. involving card-guessing) where one does not even know which hits are due to ESP. Similarly, PK is not studied in its dramatic ‘macro’ form (apports, materialisations, poltergeists etc.) but in its barely detectable ‘micro’ form (influencing random event generators etc.) where it is not even clear which part of the target is being influenced. And precognition is not studied in its natural setting of prophetic dreams but in the form of presentiment effects which occur just a fraction of a second before the stimulus and are barely perceptible. All these examples reflect the general dichotomy between laboratory research (where psi is weak but under controlled conditions) and fieldwork (where psi is strong but anecdotal and harder to substantiate). This is essentially a distinction between conscious and unconscious psi.

Signs of Bridge-building

Fortunately, there are now signs that the tensions are being overcome; indeed in some respects both sides have always supported each other.

- Spirituality helps parapsychology by providing evidence for psi. Accounts of psychic events can be found in nearly every religious tradition. For example, some of the biblical miracles in both the Old Testament²¹ and New Testament²² involve fairly obvious analogues of the sort of processes studied by modern-day parapsychologists. The Patanjali yoga sutras²³ promote an awareness of deep levels of awareness, called ‘samadhi’, and also provide a psi-conducive theoretical framework.
- Spirituality may also help science through ‘clairvoyant’ insights into the nature of reality. Many ideas in religious philosophy seem to have presaged discoveries of modern science. For example, one can draw interesting analogies between current ideas and those found in Taoism²⁴, the Kabbala²⁵ and Theosophy²⁶. In the Buddhist tradition, information about the world is supposed to come through three distinct channels: religious revelation (brahma), rational metaphysics (reason and speculation) and clairvoyance. The Buddha himself claimed to use clairvoyance and remarked that ‘one cannot discern nature by pure reason, one needs experience and observations as well’. Many of the clairvoyant revelations of Buddha and his disciples are recorded in the Visuddhimaga²⁷. It is not easy to assess these claims but, if clairvoyance exists, I do not see in principle why it should not be used in this way.
- Several key figures (e.g. the late Arthur Ellison²⁸) have stressed that one needs to encourage an ‘inside’ as well as ‘outside’ view of psi, and certainly some parapsychologists are interested in spirituality, as evidenced by an influential book edited by Charley Tart²⁹. In fact, despite the low esteem accorded to experience by science, many parapsychologists are interested in psi because of some initial experience.
- Parapsychologists now appreciate the importance of experiments having ‘ecological validity’. Modern researchers therefore tend to use more psi-conducive states of consciousness (ganzfeld), encourage their subjects to train (meditation), use specially selected participants (creative ones) and employ stimulating targets (those involving emotional arousal). They also recognise that the mind-state and interactions of the participants is important, as reflected in the growing appreciation of the importance of the ‘experimenter’ effect.

- The rising status of transpersonal psychology within psychology is another positive sign. This rise began in the 1960s but culminated in 1996, when the field became a recognised subject area of the British Psychological Association. However, transpersonal psychology has experienced the same sort of internal tensions as parapsychology. Just as the latter has split into the laboratory and field approaches, so the former has fragmented into the Transpersonal Psychology and Consciousness and Experiential Psychology sections (the latter avoiding the term ‘transpersonal’). Nevertheless, both groups are interested in similar issues and both regard parapsychology as providing relevant data.
- We have seen that parapsychology supports spirituality by suggesting that there may be a component of mind which goes beyond brain function. Of course, sceptics tend to dismiss experiences involving this component as illusory but all experiences are valid *per se* and the fact that there is conformity across so many different cultures suggests that psychic and spiritual experiences may involve access to some ‘higher’ reality. Indeed, perhaps the prime message of psychical research is that the standard one-level reality of materialism does not describe the world completely.

Looking Ahead

Science should aim to provide a unified description of matter, mind and spirit, thereby aspiring to a true Theory of Everything. This article has stressed that this requires the construction of two bridges and both of these involve parapsychology. Indeed, as illustrated in Figure (5), psi is at the centre of a hierarchy of connections between parapsychology and parapsychology, physics and psychology, matter and mind, and science and mysticism. The most important aspect of such a unification is that it should involve a theoretical framework which accommodates mental phenomena of all types, as well as physical ones. A follow-up article will describe my own particular approach to the problem, which has been described at length in a recent SPR Proceedings³⁰. As hinted in Figure 1, this involves an extension of physics which associates mental experience with higher dimensions. However, it should be stressed that the considerations of the present article are independent of any particular model.

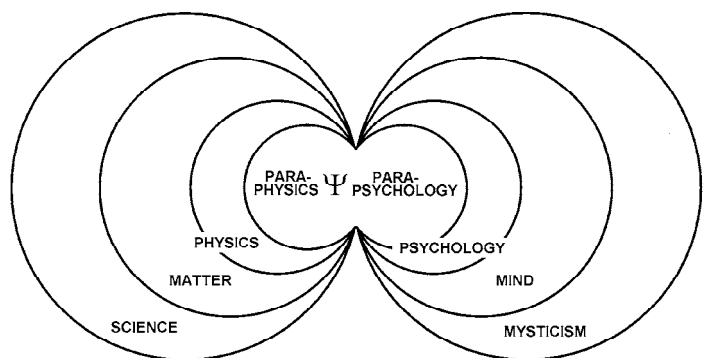


FIGURE 5. Psi as the link between a hierarchy of complementary disciplines.

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*Professor Bernard Carr is Professor of Mathematics and Astronomy at Queen Mary University of London. His professional area of research is cosmology and he has recently edited a book entitled **Universe or Multiverse?** He also has a long-standing interest in the relationship between science and religion, and especially in psychical research, which he sees as forming a bridge between them. His ambition is to develop an extension of physics which can accommodate mind, consciousness and spirituality. He has just become Chairman of the Scientific and Medical Network and is a former President of the Society for Psychical Research.*



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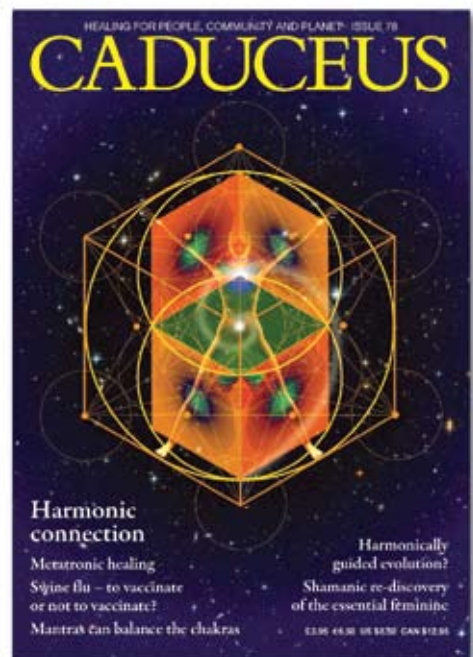
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