
TRANSCENDING THE SEVEN LIMITATIONS

Does Mind Extend into the World at Large?—The Evidence of Nature Mystical Experience

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Introduction

The Scientific and Medical Network has long been interested in the possibility that consciousness and mind reach beyond the brain into the world at large. In this talk, I shall look at evidence for this intriguing possibility from a somewhat neglected source, mystical experience of the natural world, a subject I've been researching on and off for several years. To give you a preliminary sense of these experiences, let me read an account of a comparatively mild but nonetheless profound experience recounted by the poet and William Blake scholar Kathleen Raine. One quiet evening, Raine was looking at a hyacinth placed on the table where she would write her poetry:

... abruptly I found that I was no longer looking at it, but was it; a distinct, indescribable, but in no way vague, still less emotional, shift of consciousness into the plant itself. Or rather I and the plant were one and indistinguishable; as if the plant were a part of my consciousness. I dared scarcely to breathe, held in a kind of fine attention in which I could sense the very flow of life in the cells. I was not perceiving the flower but living it. I was aware of the life of the plant as a slow flow or circulation of a vital current of liquid light of the utmost purity. I could apprehend as a simple essence formal structure and dynamic process. [...]

The experience lasted for some time—I have no idea how long—and I returned to dull common consciousness with a sense of diminution. I had never before experienced the like, nor have I since in the same degree; and yet it seemed at the time not strange but infinitely familiar, as if I were experiencing at last things as they are, was where I belonged, where in some sense, I had always been and would always be. That almost continuous sense of exile and incompleteness of experience which is, I suppose, the average human state, was gone like a film from sight. (Raine, *The Land Unknown*)

The account mentions some commonly reported features, such as unity, enhanced attention and perception, livingness, special luminosity, and also a sense of familiarity, as if the condition reflected a natural but forgotten state. Before taking a closer look at this kind of experience and how it might provide evidence for the “extendedness” of mind in the world, I should say something about what it means for mind *not* to be present in the world at large.

Confinement of mind to brain

There is a view, not uncommon in modern times, that consciousness is *generated* by the brain – not merely *conditioned* or *altered* by the brain, but *produced* by it, *created* by it. Although itself empty of consciousness, it is believed that *matter*, when organized into suitably complex structures and processes, as found in human and animal brains but perhaps also in the artificial brains of sufficiently advanced computers, can generate (1) simple conscious awareness and (2) mind both conscious and unconscious, including the knowing, thinking, feeling and willing aspects of experience. It follows that if there were no brains – biological or artificial – there would be no consciousness, and that if a brain shuts down, the consciousness it supports will vanish. In this respect, the brain is like an electric lamp that emits light: switch off the lamp, and the light goes out; switch off the brain, through concussion or death, and the glow of consciousness is extinguished.

Now if conscious awareness and mind are indeed generated by the brain and only by the brain – created moment-to-moment by material processes – it would also seem to follow that they are *confined*, *restricted*, *limited* to the brain. So we have here two conjectures or postulates:

1. We have what could be called the **Generation Postulate**: Conscious awareness and mind are *generated by* the brain and only by the brain.
2. We have its consequence or corollary, the **Limitation Postulate**: Conscious awareness and mind are *limited to* the brain.

These two postulates are part of an understanding of the mind–body relation that could be called Neuroscientific Materialism, according to which consciousness, experience, mind are derivative things, generated by and causally dependent on the operation of neurobiological processes in brain and body.

Let’s look a little more closely at what the second conjecture, the Limitation Postulate, implies. It’s possible to distinguish several ways in which consciousness and mind could be

regarded as 'limited' to the brain, and here I have listed *seven* of these, although perhaps others can be distinguished too:

1. Limited Location
2. Limited Perception
3. Limited Knowledge (or better, Limited Cognition, which would have the advantage of including memory)
4. Limited Emotion
5. Limited Self-concept
6. Limited Body-concept
7. Limited Will/Action

Limited Location means that a mind, in so far as it has a place in the physical world, is restricted in its operations to brain sites, or, more strongly, is literally located in the brain, being spatially and temporally confined there, inseparable from brain-matter, even identical with it, as in those materialist mind-brain identity theories of several decades ago, which reduced mind to certain brain-states and therefore physically located mind within the skull. In this sort of theory, mind *cannot* detach itself from or extend out from the brain because it is part of the brain.

As for the other six limitations:

Limited Perception and Limited Knowledge mean that it is only through sensory input to the brain and cognitive processing there that we can perceive and know the world.

Limited Emotion means that emotional feelings require a brain, are embedded in the neurology and physiology of the organismic body.

Limited Self-Concept means that the sense of self is supported by and significantly determined by biological underpinnings. Without the brain and organismic body, there would be no sense of self.

Limited Body-Concept means that what we consider to be our bodies is heavily dependent upon and constrained by the brain's interpretation of sensory input from the body and its motor control of the body.

Limited Will/Action means that our decision-making, our willing, is brain dependent, and that any action on the world takes place only through the output of signals from brain to body.

All these conjectures look pretty reasonable at first sight. After all, everyday conscious awareness and mental capacities do indeed seem to be heavily dependent on the brain, nervous system and organismic body.

However, there are some problems. The root conjecture itself – the Generation Postulate – is suspect on *philosophical grounds*. It is difficult to understand how a purely material brain can generate something so very different from itself as experience. How does one get from a purely material brain-state to a vivid splash of green or the flavour of strawberry? This, of course, is the classic *mind–body problem*, the *hard problem* of consciousness. There is therefore good reason to consider alternative philosophies that acknowledge a close link between mind and brain but which *do not* make experience a mere product, epiphenomenon or emergent property of the brain. It turns out that in some of these alternative philosophies, mind is not necessarily restricted to the brain and may have a presence beyond it in the natural world. These philosophies put the experiential qualities back in the world. More on this later.

The evidence of exceptional phenomena

As well as philosophical considerations, we can take note of various kinds of *exceptional phenomena* that seem to undermine the Generation and Limitation Postulates. Let’s quickly remind ourselves of some of the evidence.

Postulates	Counter-evidence: Paranormal Phenomena
Generation	Near-death experience (NDE): persistence of mind during brain shutdown?
1. Limited Location	Out-of-body experience (OBE): in both non-traumatic circumstances & NDEs
2. Limited Perception	
3. Limited Knowledge	
4. Limited Emotion	
5. Limited Self-Concept	Past-life experience (PLE), Post-mortem survival
6. Limited Body-Concept	
7. Limited Will/Action	Psychokinesis (PK), Direct mental interaction with living systems (DMILS), Psychic healing

First, the Generation Postulate is called into question by some contested data from the study of near-death experience. The Pam Reynolds case is probably the most celebrated example. Very briefly, Reynolds was subjected to a medical procedure called *hypothermic cardiac arrest* so that an aneurysm could be removed from her brain. This procedure, which involved close monitoring of her vital signs, required that her heart be stopped and the blood drained from her brain. Yet despite the apparent brain shutdown, shown by a flat EEG and no brainstem response, Reynolds reported a near-death experience that included some verifiable observations about what was going on around her in the operating theatre. Although the case is intriguing, it may not provide watertight evidence for the continuation of consciousness during clinical death if the verifiable events occurred not during the core shutdown period but before and after, when Reynolds was under a general anaesthetic and therefore when her brain was still functioning to some extent.

Exceptional experiences also raise challenges for the various Limitations I have outlined. For instance, out-of-body experiences can give the impression, rightly or wrongly, that the centre of consciousness is not fixed in the body but may wander outside it. So-called extrasensory perceptions, such as telepathy, clairvoyance and precognition, give the impression that we can perceive and know the world, and have access to the emotional states of others without using the bodily sense-organs. Past-life experiences and mediumistic evidence for post-mortem survival may suggest that self and personality have some degree of continuity beyond the dissolution of brain and body, and that perhaps consciousness continues in association with some new or subtler bodily form. And then there are the ‘mind-over-matter’ phenomena, such as psychokinesis, distant mental interaction with living systems, and psychic healing, in which mind seems able to act on the world through unconventional means.

Of course, all these phenomena are highly contested, some more than others, and tend to be dismissed by mainstream scientists as implausible or even impossible. But an attractive feature of some paranormal phenomena is that they can in principle support very specific, testable knowledge claims, even though in practice complications intervene, such as small effects, difficulty of replication, and so forth. But if some paranormal phenomena were convincingly established as genuine beyond all reasonable doubt, would it follow that consciousness extends into the world at

large? Perhaps yes, perhaps no. We would have to consider whether the unconventional mode of access to the world was indeed due to consciousness beyond the brain or resulted instead from some as yet poorly understood, non-sensory but purely physical mode of communication between brain and world, perhaps based on quantum physics.

But I don't want to dwell any further on paranormal phenomena, for they have been extensively discussed, and many of you probably know a lot more about them than I do. Rather I want to focus on the evidence of another, related type of exceptional phenomenon, mystical experience of the natural world, which isn't so easily testable, but which can give a very powerful impression that consciousness does indeed extend into the natural world and perhaps has been there all along.

Mystical experiences of the natural world

Exactly what constitutes a mystical experience is a subject of debate, but twentieth-century scholars of comparative mysticism commonly took one or more of the following to be defining features:

A sense of ...

- (1) profound, intuitive knowledge
- (2) profound unity, oneness, wholeness
- (3) direct contact with deeper realities

For example, one textbook definition of mystical experience by Robert Ellwood includes the reality and unity features, but doesn't specifically mention the *noetic quality*, the sense of profound, intuitive knowledge:

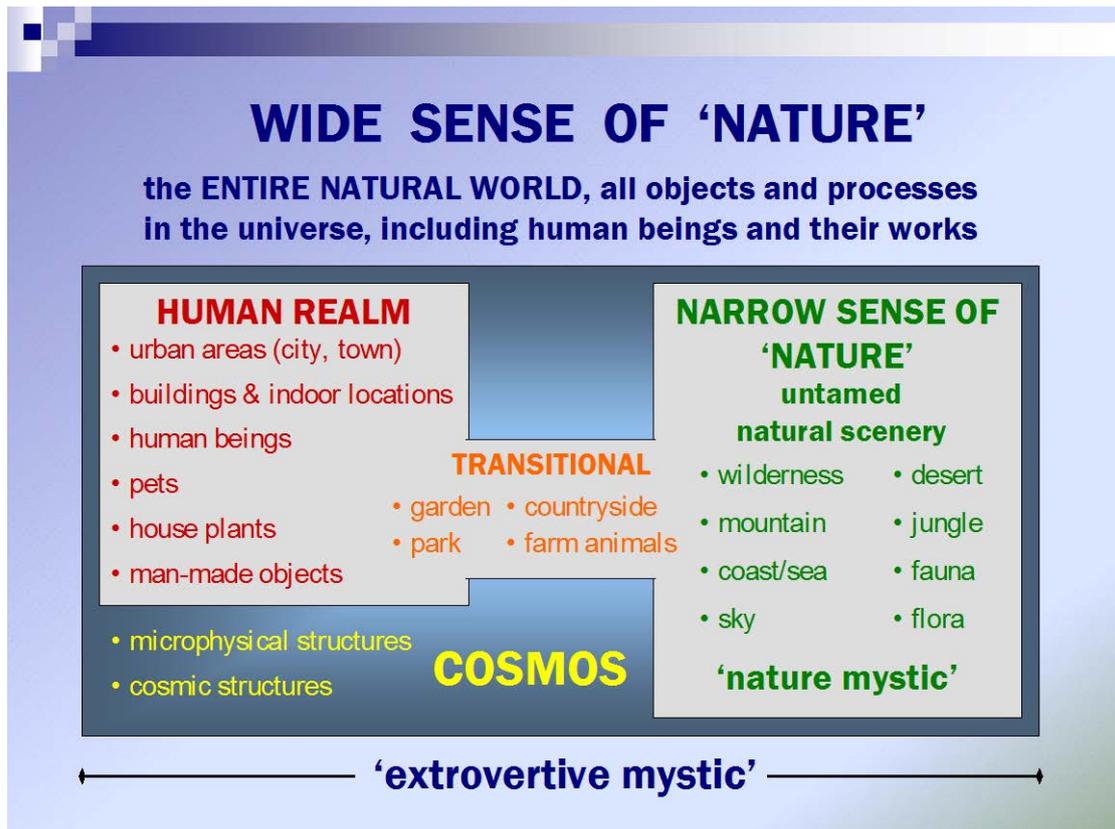
Mystical experience is experience in a religious context that is immediately or subsequently *interpreted* by the experiencer as a direct, unmediated encounter with ultimate divine reality. This experience engenders a deep sense of unity and suggests that during the experience the experiencer was living on a level of being other than the ordinary. (Ellwood, *Mysticism and Religion*)

Amongst the various types of mystical experience that are commonly identified, there is one in which the profound knowledge, unity and sense of contact with reality involve the natural world. The mystic may feel united with the world as a whole or with particular objects in it, and may discern a unity and interconnectedness within the world. It may seem as if everything is known and understood, including what existence is about, the meaning of it all. It can seem as if, at long last, the world is seen as it *really* is, in its true nature.

Following the philosopher W. T. Stace, I shall call this type of experience *extrovertive*, which literally means ‘outward-turning’, that is, mystical experience turned towards the natural world. Stace contrasted it with inward-directed or *introvertive* mystical experience, which he took to be a consciousness completely *empty* of contents, no sensation, no conceptualization, no feeling, just a *pure consciousness*. Extrovertive experience has been given several names over the years, some of which I list here:

- extrovertive mystical experience
- nature/natural mystical experience
- cosmic consciousness
- panenhenic mystical experience
- unifying vision
- oceanic feeling
- unitive mystical state

There are some points to make about extrovertive experiences. First, when I say that they are mystical experiences of *nature* or the *natural world*, I use these terms in a very broad sense to mean the entire universe or any of its contents, as illustrated in the diagram here. So, by nature I mean not only ‘nature’ in the narrow sense of untamed wilderness, mountains, coast, sky, but also the human domains of city, town and village, and all that these include, and of course human beings themselves, in so far as they are taken to be part of the universe. Nature in this comprehensive sense also includes those immense stretches that we don’t ordinarily perceive because they are too small, too large, or too far away, or aren’t perceptible to us for some other reason.



A second point I want to make is that mystical experiences of the natural world *do not necessarily take place amid beautiful or awe-inspiring nature scenery*, amid 'nature' in the narrow sense. They aren't confined to the 'communing with nature' type of experience we might associate with William Wordsworth and the Romantics. Certainly, very many extrovertive experiences do take place in beautiful nature scenery or in the transitional zone of countryside, park and garden, but the circumstances are far more varied. I list here some of the situations in which the experiences have been known to occur:

scenic nature - a quiet state of mind - concern, compassion, love - psychological distress - thinking about profound matters - spiritual practices - literature, music, art - childbirth - near death - sleep - sex - anaesthetics & psychedelics - mental & physical illness
(Marshall, *Mystical Encounters with the Natural World*)

Notice how varied the circumstances are, including calm states of mind induced by natural beauty and meditative techniques, compassionate and loving states of mind, but also distressed states. In fact, I wouldn't be surprised if the second most common

circumstance, after scenic nature, is psychological distress, including depression, existential unrest, recent bereavement, and prayers for help in moments of crisis. The two sometimes go together: a tense psychological state in combination with exposure to nature may lead to a mystical expansion.

Third, extrovertive mystical experiences *can be quite varied*, some very simple, others quite complex in development and showing many exceptional features. For instance, a simple one might involve just unity with the immediate surroundings, a feeling of elation, and perhaps a special light that suffuses objects, whereas a more complex one might develop through several stages into, say, a vision of cosmic scope, all-encompassing love, the sense that everything is known and understood, and the feeling that time has been transcended. I've listed some typical characteristics on this slide, although the list is by no means comprehensive:

unity with/of world - self-transcendence - deep knowledge - all-inclusive love - heightened beauty - bliss, peace - altered time-sense - reality/realness - life, animation - sense of presence - increased attention - enhanced perception - luminosity - body feelings
(Marshall, *Mystical Encounters with the Natural World*)

The evidence of extrovertive mystical experience

But let's now get to the heart of the matter and look at how some of these extrovertive characteristics may suggest that consciousness and mind are not confined to the brain. Extrovertive experiences bring mental *expansions* that seem to transcend the *limitations* I've described.

Limited location

Consider first Limited Location, according to which consciousness is spatio-temporally tied to, limited to, or fixed in the organismic body, or more precisely the brain.

Well, in extrovertive experiences, it can seem that consciousness expands into the world at large, into the immediate environment or even into the cosmos as a whole, sometimes encompassing its full temporal as well as spatial extent. In the Kathleen Raine example, there was a gentle sense of unitive expansion, when Raine's

consciousness seemed to incorporate the hyacinth, but there are far more dramatic examples too. For instance, a woman described her mental expansion as follows:

It was as though my mind broke bounds and went on expanding until it merged with the Universe. Mind and universe became *one within the other*. Time ceased to exist.

It was all one thing and in a state of infinity. It was as if, willy-nilly, I became directly exposed to an entity within myself and nature at large. (RERC No. 001481, from the archive of the Alister Hardy Religious Experience Research Centre)

Sometimes the unitive expansion also seemingly involves a *displacement* of the centre of consciousness outside the body. I'll give a couple of examples. In the first case, consciousness seemed to exit through the top of the head:

One afternoon while I was at home alone, just relaxing, I started thinking about the universe, how big it must be, perhaps never ending. I was wondering about that. How could something never end? Suddenly, it was as if a funnel was in the top of my head and my consciousness went out into it, spreading wider and wider as it went. This went on for quite some time until I suddenly realized that I was conscious of everything that is, and that I was part of it all. Then I became aware of it from a different aspect. I was everything that is. (RERC No. 004764, in Maxwell and Tschudin)

Clearly, this out-of-head shift of consciousness wasn't just a standard out-of-body experience, for it brought mystical unity with the universe, a cosmic expansiveness. The same is true of an experience that befell an eight-year-old girl:

It was a hot summer evening. I lay on the lawn in the back garden trying to get cool. The sun had almost set and I watched the planets appear. Suddenly I felt my head swelling. It seemed to increase in size until it contained the whole world: all the stars too. Everything that had ever happened or would happen was within myself. I was in my eighth year at the time, so knew little of history and nothing of religion. I saw many things, events I later learned about, also much I have as yet been unable to discover from any physical source. After what seemed untold ages I became aware of my mother telling me to come inside. There was a brief glimpse of my body lying on the grass with my mother bending over it. Then I was awake feeling very bewildered. It was some time before I recovered. (Case 27, Raynor C. Johnson, *Watcher on the Hills*)

A couple of things to note about this experience. First, again it seems to have involved a translocation of the centre of consciousness into the environment, with the girl seeing her body lying on the grass. Second, the consciousness expansion seems to have had a temporal as well as spatial dimension, for the girl found that she now included in herself all events, everything that had happened and would happen. This spatio-temporal inclusiveness of extrovertive experience is indeed occasionally reported, all times and places seeming to exist together in an eternal moment.

Limited perception

The eight-year-old girl's experience takes us to the next two Limitations, Limited Perception and Limited Knowledge. The expansion of consciousness – childishly and rather charmingly expressed as a 'swelling of the head' – was accompanied by what seems to have been an enhanced seeing and knowing – the girl says that she *saw* many things past and future, including events she later learned about.

By far the most commonly reported type of perceptual expansion in extrovertive experience is visual, an expanded seeing, although there is the occasional mention of a more general perceptual enlargement, involving the other modalities, including sound and taste as well as colour, sometimes in a state of synaesthetic fusion. In extrovertive experiences, visual transformations, if they occur at all, do not necessarily bring an expansion. For instance, there might just be a special luminosity, say a glow of things or the presence of a diffuse light. On the other hand, there can be visual extensions in which the mystic seems to see *into* the objects with which they have become united, as perhaps in the Kathleen Raine example, when she seemed to see the flow of liquid light in the hyacinth. To the extrovertive mystic, it can seem as if they are seeing into the structures and processes of nature, at cosmic, macroscopic, microscopic or submicroscopic levels. One of the best known examples, if this qualifies as mystical, is the one described by Fritjof Capra in the preface to his bestseller *The Tao of Physics*:

I 'saw' cascades of energy coming down from outer space, in which particles were created and destroyed in rhythmic pulses; I 'saw' the atoms of the elements and those of my body participating in this cosmic dance of energy; I felt its rhythm and I 'heard' its sound ...

The most dramatic examples of perceptual expansion are those in which the mystical unity seems to bring visions of cosmic proportions, as in this example from David Spangler, recounting an experience he had at the age of seven:

As if a curtain were drawn aside, I had a visual impression of the universe, a great wheel of stars and galaxies, suffused with the golden glow of billions of suns, floating in a sea of spirit. It was as if I were seeing as this presence saw, and for one instant we were as one. In that instant, it was as if I were one with everything that existed, every atom, every stone, every world, every star, seeing creation not from some great distance but from the inside out as if it were my very body and being. (Spangler, *Emergence*)

In summary, extrovertive experiences challenge the assumption of Limited Perception by bringing perceptual expansions, especially visual, that range from minor extensions into the immediate environment to perceptions of cosmic extent.

Limited knowledge

As for Limited Knowledge, a very prominent feature of extrovertive experience is its noetic quality, the sense of profound knowledge and understanding, not obtained discursively through the usual drawn-out thought processes, but directly, immediately, intuitively. The expansive knowledge can seem all-encompassing, as if conferring a kind of general omniscience, expressed in such phrases as ‘I knew everything’ or ‘all was known’. But the noetic quality isn’t just knowledge: there’s also understanding and insights into the meaning of existence, life, and suffering. Unfortunately, it often happens that all this knowledge and understanding recedes as the experience comes to an end, leaving only a faint memory. But some specific insights are sometimes retained, such as the realization of the unity, order, harmony, interconnectedness and life of the world, and the supreme importance of love. These are what R. M. Bucke called the *intellectual illuminations* of cosmic consciousness. Very occasionally there are insights into spiritual evolution and reincarnation, and a not-uncommon insight concerns the ‘all-rightness’ of the world: despite all the evidence to the contrary, everything is OK deep-down and is proceeding as it should.

Limited emotion

Does extrovertive mystical experience challenge the Limited Emotion constraint of Neuroscientific Materialism? The challenge isn't quite as clear as in the previous categories, but perhaps there are some indications. Apart from emotions that arise during the experiences as personal *reactions*, such as gratitude, surprise, wonder, fear, relief, it's possible that some are *intrinsic*, such as the powerful feeling of bliss, as if this were a basic feature of the world. The same might go for the deep rapport or empathy that goes hand-in-hand with the expansive unity and knowledge, with all creatures understood to be like oneself, brothers and sisters in the struggle of life. This empathic insight can have a long-term impact after the experience, encouraging one to be more alert and responsive to the suffering of others.

A closely related emotional expansion involves *love*, although it doesn't occur in all cases. It's possible to have the great knowledge and vision of extrovertive experience without the expansive love, but there are some impressive cases in which a love is discovered that seems to be fundamental to oneself and the world. For instance, one woman reports:

the kitchen and garden were filled with golden light. I became conscious that at the centre of the Universe, and in my garden, was a great pulsing dynamo that ceaselessly poured out love. This love poured over and through me, and I was part of it and it wholly encompassed me.

So, in summary, there may be mystical indications of emotion beyond the brain and body, intrinsic to the world as a whole, but this area needs further investigation.

Limited self-concept

As for the Self-Concept Limitation, the evidence of mystical experience is in one respect in accord with Neuroscientific Materialism, by exposing the everyday sense of self as something constructed, as not truly fundamental. It can seem as if one's everyday, individual self has melted away or has been put in its proper place. The unitive transformation of self-boundaries, the all-encompassing knowledge and love, can expose the everyday self-concept as built around partial understandings and feelings, and a false sense of separation from the world. This discovery can be quite a

relief, bringing as it does a liberation from the tyranny of one's little self, with its anxieties and demands, but it can also be quite disturbing if one isn't prepared for it, as seems to happen particularly in mystical openings aggressively facilitated by some psychedelic drugs.

However, despite the shedding of self that mystical experiences can bring, there are some ways in which the experiences can suggest a continuity or existence of self beyond the neurobiological confines of the brain and body. For one thing, mystical experiences very occasionally appear to bring knowledge of past and future lives, adding to the parapsychological evidence for some continuation of self and personality beyond the brain and body of one lifetime. At a grander level, extrovertive mystical experiences sometimes give the impression that a deeper centre of self has been reached, a higher self endowed with the expansive perception, knowledge, bliss and love. Thus Warner Allen, in his cosmic mystical experience, felt that the riddle of life had been answered, like remembering an old forgotten secret. And this secret was the discovery that he was not in essence the 'I' that he had thought he was. Rather there were two selves. This notion of two selves, a lower and a higher, is of course a rather old idea, to be found in a number of religious traditions.

But is there really a self-concept, an I-ness, beyond the brain intrinsic to the world at large, or is it just a case of the familiar, little self-concept enlarging itself for the cosmic stage? Amongst religious traditions, there are different opinions, Buddhism for the most part taking the view that selfhood isn't a basic feature of reality. Again, this is an area that needs further study.

Limited body-concept

The sense of self-expansion can go hand-in-hand with a sense of body-expansion. The normal identification with the limited psychophysical organism is loosened, with the sense of body seeming to expand into the environment and perhaps achieving cosmic proportions. If one feels unified with other things or with the cosmos as a whole, then one's body-concept may well change too. For instance, to quote the David Spangler passage again:

In that instant, it was as if I were one with everything that existed, every atom, every stone, every world, every star, seeing creation not from some great distance but from the inside out as if it were my very body and being. (*Emergence*)

The universe is felt to constitute a cosmic body. Some of the finest expressions of this theme are to be found in the writings of the seventeenth-century poet and mystic Thomas Traherne. For instance:

You never enjoy the world aright, till the sea itself floweth in your veins, till you are clothed with the heavens, and crowned with the stars. (*Centuries of Meditations*)

But again, we have to ask whether there is really an intrinsic body-concept associated with mind in the world-at-large or whether it's a case of the former body-concept being projected onto a bigger stage.

Limited action

Another uncertainty concerns the final limitation on my list, Limited Action. I noted earlier that some exceptional phenomena, such as psychokinesis and psychic healing, may – if genuine – demonstrate that mind can act on the world through non-conventional means. But is there any comparable evidence from extrovertive mysticism? I have to admit that this is not a question I've looked at in my research to-date. I don't think this is purely due to negligence on my part; I think it's probably because most accounts of extrovertive experience do not raise the issue. I wonder if this is because the everyday willing, action-oriented self is usually set aside in the mystical state, a setting aside that is generally a prerequisite for the state to occur. William James called this the *passivity* of mystical experience, the abeyance of will. For the most part, individuals caught up in spontaneous mystical experiences won't be in a position to exert their wills and act on the world. But this isn't to rule out the possibility of some non-conventional influence on the world taking place in connection with mystical experience, such as healing activity. And I should mention that there is a sense in which a greatly expanded sphere of activity can be a feature of mystical experience, through unity with what is felt to be a deeper power, self or divinity in and behind the world.

The Seven LIMITATIONS	Paranormal Counter-evidence	Mystical Counter-evidence: The Seven EXPANSIONS
1. Limited Location	OBE	Unitive expansions of consciousness; OBE-like displacements from body
2. Limited Perception	ESP, etc.	Expanded perceptions, especially visual
3. Limited Knowledge		Expanded knowledge and understanding
4. Limited Emotion		Unitive empathy, all-inclusive love, and intrinsic (?) bliss
5. Limited Self-Concept	PLE, etc.	Discovery of greater self; sense of continuity of lives
6. Limited Body-Concept		Expansion of body-sense
7. Limited Will/Action	PK, etc.	Unitive alignment with activity and will of higher self? Healing?

To summarize, this brief survey has highlighted some mystical expansions of mind that do on the surface contradict the limitation postulates of Neuroscientific Materialism. In the above slide, I've added the mystical counter-evidence to that provided by paranormal phenomena.

Should we take these mystical expansions seriously? Of the ones I've listed, the most open to examination are the perception and knowledge expansions. If mystics really do have special access to the world, then any relevant insights they report should agree with what scientists have discovered, shouldn't they? Now it just so happens that there is a sub-genre of science-spirituality literature devoted to the possibility that scientists and mystics have, through their different methods, arrived at common insights into world structure and process. I have already mentioned the most famous representative of this literature, Fritjof Capra's *The Tao of Physics*, which was partly inspired by Capra's own unusual experience. This sort of literature has been heavily criticized by scientists, historians, and scholars of mysticism for a variety of reasons, and it is true that it has suffered from some problems. One of my own concerns is that the literature rarely engages with the actual data of mystical experience; rather, the parallels are drawn between modern science and *religious*

philosophies, philosophies that are not necessarily greatly indebted to mystical insights. It can be difficult or impossible to tell to what extent the doctrines of so-called mystical philosophies derive from mystical experience or from philosophical speculation. Another problem is that we don't really know how close modern science has come to unravelling the secrets of nature. If there's still a long way to go, then genuine mystical insights into structure and process may have very little common ground with the incomplete, provisional and possibly deeply flawed theories of contemporary particle physics and cosmology.

But I don't want to sound too pessimistic about the possibility of fruitful science–mysticism interaction. I think that useful work can be done in the field if pursued tentatively and with careful attention to the scientific, philosophical and mystical complexities, and by looking *more* at detailed accounts of *mystical experience* than at religious philosophies in which any mystical content may have become buried in philosophical and cultural accretions.

More could be said about this, but I want to address another matter. How to *explain* extrovertive mystical experiences? What is going on when mystics have those apparent expansions of perception, knowledge, emotion, self and body? Perhaps the experiences can be successfully explained in a way that does *not* require any special contact with the world at large. There would then be no challenge to Neuroscientific Materialism and no point in drawing connections between mystical insights and modern scientific discoveries.

Explanations

Several explanations of extrovertive mystical experience have been put forward over the past hundred years or so, and some do indeed attempt to explain the experiences in terms of conventional human biology and psychology, without supposing that any transpersonal contact with the world takes place.

For example, Sigmund Freud had an explanation of this type. He speculated that the feeling of 'being one with the external world as a whole' – 'the oceanic feeling' – is a vestige of early infantile thinking. When adults have feelings of unity with the world, they have got in touch with the remnants of an early ego-state in which the infant has not yet conceptually separated itself off from the rest of the world and therefore thinks that it includes everything. Freud admitted that he had no personal

acquaintance with the oceanic feeling, and his explanation suffers from a lack of appreciation of the range of extrovertive characteristics. The theory just deals with a basic sense of inclusive unity, without addressing more complex unities, such as the interconnective unity that is sometimes reported. And it has nothing to say about some key extrovertive characteristics, such as the expansions of perception and knowledge, and the appearance of luminosity.

In more recent years, the two most prominent explanatory approaches to mystical experience have been the *neuropsychological* and the *constructivist*. Several theorists have turned to neuropsychology to explain mystical characteristics, but in the main they haven't looked specifically at the extrovertive type and therefore haven't addressed it very well. Neuropsychological theories often give the impression that it is enough to make links between changes to brain functioning in mystical states and the experiential features. One of the better known explanations of this type comes from Eugene d'Aquili and Andrew Newberg. They suppose that in mystical and meditative states a certain part of the brain – called the Orientation Association Area (OAA) located in the posterior superior parietal lobe (PSPL) – becomes starved of sensory stimuli but nevertheless continues working. This area apparently supports our sense of spatial orientation. But starved of sensory input, the area no longer detects any self-boundaries, and as a result the self is reinterpreted as lacking boundaries and intimately connected with everything. Although this explanation could conceivably have some relevance for meditative and mystical states in which sensory stimuli have been shut out, it's not very appropriate for the many extrovertive experiences that *do not follow from an exclusion of sensory input*. And again we have to ask: why are there extrovertive expansions of *perception* and *knowledge*, including cosmic visions, in some cases? What's happening in the brain that would create a sense of omniscience, and bring specific insights, love, luminosity, and visions of the cosmos?

The second popular, contemporary approach is psychological and social, rather than neuropsychological. This is the *radical contextualist* or *constructivist* approach, of which Steven Katz has been one of the leading exponents since the late 1970s. According to radical contextualists, mystical experiences are products of religious and cultural conditioning. They claim that all experience is heavily conditioned by what has been learnt, and mystical experience is no exception. Mystics learn to have their experiences by being immersed in the doctrines and practices of their religious traditions: Christian mystics learn to have Christian mystical experiences, Buddhist

mystics learn to have Buddhist mystical experiences, and the two sorts of experiences will therefore be very different. This kind of explanation is very much in keeping with influential currents of thought in the social sciences from the 1960s, which emphasize psychological and social constructivism, and cultural relativism. Again, like the neuropsychological theories, this approach has not usually been applied specifically to extrovertive mystical experience, although there have been exceptions.

But the radical contextualist approach does not work very well for extrovertive experiences. For one thing, the constructivist requirement that mystics be thoroughly conditioned and trained by their religious traditions in order for them to have the experiences does not ring true for extrovertive experience, which is often spontaneous, in the sense of coming out of the blue with no prior reading or engagement in meditative practices. The experiences are often entirely novel, the subject having had no suspicion that such experiences take place and no knowledge of what they are like. This is further emphasized by the fact that minimally enculturated young children also have the experiences.

In fact, it seems much more likely that extrovertive experiences follow from a *deconstruction* or *deconditioning* of ordinary experience. Many of the circumstances in which the experiences take place - such as the peaceful state of mind or rapt attention encouraged by natural beauty, relaxation, deep concern for others, love-making, drugs, illness - suggest a disruption, an interruption, of the thoughts and emotions around which our everyday experience is structured. Anything that can lessen or interrupt these conditioning concepts and emotions, especially the sharp self-other, subject-object, knower-known distinctions, seems capable of encouraging unitive experiences.

This idea can be taken a step further if we suppose that the psychological factors and brain processes that normally condition our experiences act as filters that ordinarily shut out much of reality, letting through only a trickle into our everyday perceptions. But when the filters open up a little more, we begin to apprehend the world in finer detail and with greater clarity and depth, and perhaps access previously excluded perceptions and knowledge. This *filter theory* has more often been applied to parapsychological experiences, but it has also been used to explain mystical experiences, most famously by Aldous Huxley in his book *The Doors of Perception*, in which he described experiences under mescaline and discussed the idea of psychological and cerebral reducing valves shutting out and letting in Mind at Large.

In modern thought, the idea goes back to the end of the nineteenth century, to William James, Frederic Myers, Henri Bergson, and others.

One interesting implication of filter theory is that paranormal and mystical phenomena may have a common underlying basis. They may not be properly distinct phenomena and perhaps should be studied together, not separately in different disciplines as has usually been the case. For instance, it's possible that the knowledge-acquisition abilities attributed to telepathy, clairvoyance and precognition are watered-down, mediated forms of the great spatio-temporal expansions of knowledge and perception exhibited in some extrovertive mystical experiences. Perhaps in extra-sensory perceptions the filters are opened only slightly, with little information coming into consciousness, whilst in mystical experience the gates are flung wide open.

Filter theory is obviously at odds with the postulates of Neuroscientific Materialism. In filter theory, consciousness is *not generated* by the brain and is *not limited* to the brain. Rather, consciousness exists more widely and is merely channelled and constricted by the brain. Thus, the Limitation Postulate is radically transformed by filter theory: whereas the Limitation Postulate says that conscious awareness and mind are limited *to* the brain, filter theory says that they are limited *by* the brain, a small change of preposition but a big change in understanding. Both approaches give the brain an important role, as the evidence indeed suggests it has, but they understand this role in very different ways. In Neuroscientific Materialism, the brain creates consciousness; in filter theory, the brain limits and modifies consciousness, selecting those contents that will be of immediate utilitarian and survival value.

Mind–body philosophy

Filter theories are underdeveloped at present, having given little detailed attention to the workings of the filter mechanism or to the nature of the consciousness - the Mind at Large - on which the filter works. Philosophically, there are various ways in which consciousness or experience can be made more pervasive. For instance, *dualism* has had some popularity amongst students of the paranormal because it gives mind some independence from the brain and therefore might be able to support mind–brain separation in out-of-body experiences and post-mortem survival. However, in addition to its philosophical difficulties, dualism isn't very attractive from the perspective of

extrovertive mystical experience, which speaks so strongly of the *unity* or *nonduality* of mind and world. There are three alternative mind–body philosophies that, unlike dualism, do make experience integral to the world.



- 1. *Neutral Monism***
Mind & Matter are derivative
- 2. *Dual-Aspect Monism***
Mind & Matter are equal aspects
- 3. *Idealist Monism***
Mind is primary, Matter is derivative

First, there is *neutral monism*, which says that both mind and matter are complexifications of a more basic, underlying, neutral substrate. This substrate is said to be ‘neutral’ with respect to mind and matter, but it is usually portrayed as consisting of elementary experience or sensation, and therefore is actually rather closer to mind than to matter. Historical representatives include Ernst Mach, William James and Bertrand Russell.

Second, there is *dual-aspect monism*, which maintains that everything, from the smallest to the largest, has both a material and a mental aspect. Historically, it’s associated with Spinoza in the seventeenth century and Gustav Fechner in the nineteenth.

Third, there is *idealist monism*, which says that mind is primary, and matter is derivative, thus reversing the materialist position. For metaphysical idealists, such as Bishop George Berkeley in the eighteenth century, in some way or other the world exists as the contents of mind or minds.

In my opinion, neutral monism isn’t a very attractive candidate metaphysics for understanding extrovertive experience because it depicts the universe as composed,

for the most part, of low-grade bits of experience. This doesn't fit well with those expansive extrovertive experiences that seem to reveal that one's higher mind has been there all along, waiting to be discovered or rediscovered, a coming-home to expansive consciousness, perception, knowledge and feeling. In contrast, both dual-aspect theory and idealism are able to support this possibility by making advanced mind integral to the world at large.

Of these two metaphysical options, I'm drawn to idealism because I think that dual-aspect theory doesn't really get to grips with the mind-body problem, with its hazy notion of two distinct yet joined aspects, mind and matter. Dual-aspect theory, in my opinion, uncritically takes over the dualist separation of mind and matter, albeit without taking them to be two distinct substances. Rather they are viewed as two distinct aspects or properties of one substance. Idealism doesn't make this compromise to dualism and views matter as neither a distinct substance nor aspect, but as fundamentally subordinate to mind. Historically, idealisms, such as the one advanced by Berkeley, have not grappled effectively with scientific insights into matter, such as atomic theory, and this is perhaps one reason why idealism lost ground in the early twentieth century, in competition with philosophical approaches that did pay more attention to the physical discoveries of the period, such as relativity and quantum theory.

My own view is that there is a form of idealism that may well provide a suitable metaphysical backdrop to both modern physics and extrovertive mystical experience. I'm referring to idealism developed along the lines suggested by Leibniz's metaphysics of monads, according to which the world consists of a plurality of whole experiences, of total perceptions. This philosophy has intriguing resonances with the relativity and holism of modern physics, and it is also readily adapted to make sense of expansive mystical experiences of the natural world. If, as the philosophy maintains, the universe exists as a plurality of whole experiences, then it is not such a great leap of imagination to suppose that under special circumstances these whole experiences can be accessed, bringing vast expansions of perception, knowledge and the other mental features. So when mystics report profound knowledge, expansive perceptions, wholeness, completeness, all-inclusive love, a sense of contact with reality, it is possible that they have *not* regressed to infantile thinking or fallen victim to some neuropsychological aberration. It is possible that they have made contact with

the world as it really is, an experiential whole, a total experience encompassing all times and places.

Whether or not one finds this suggestion plausible, extrovertive experiences remain a challenge to conventional thinking. They contradict many of the limitations that Neuroscientific Materialism imposes on mind, but they have so far not received any convincing naturalistic explanation, an explanation that deals adequately with the *full* range of experiential characteristics. Mystical experiences of the natural world, along with the paranormal phenomena to which they are probably related, should give us pause for thought because they raise the possibility that conscious awareness and mind are not limited to the brain and *really do 'extend' into the world at large.*

