

# Concerning the Spiritual in Twentieth-Century Art and Science

Mike King, 2017 (1998)

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## Abstract

A recent proliferation of writings on the spiritual by scientists suggests that this may be an appropriate time to re-evaluate the spiritual in twentieth-century art. This paper looks at three artistic groupings: Kandinsky and the Bauhaus, the American Abstract Expressionists, and the contemporary electronic arts, and traces the influences of some spiritual movements on them. The paper then turns to spiritual in modern science, observing that quantum theory has been the main starting point for many physicists to write about God. The question is examined as to whether science at this juncture is more receptive to the spiritual than the arts; whether art can mediate between science and the spiritual, and whether the spiritual is antecedent to both arts and science.

**Keywords:** art, physics, spirituality, Roger Lipsey, Theosophy, Anthroposophy, Coomaraswamy.

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## Introduction

*What are you doing young man?  
Are you so earnest, so given up to literature, science, art, amours?  
These ostensible realities, politics, points?  
Your ambition or business whatever it may be?*

*It is well – against such I say not a word, I am their poet also,  
But behold! such swiftly subside, burnt up for religion's sake,  
For not all matter is fuel to heat, impalpable flame, the essential life of the earth,  
Any more than such are to religion.*

Walt Whitman, 1852 (Starting from Paumanok, v.8)

... *twentieth-century art conceived ideals that in their religious dimension would have been recognizable to Meister Eckhart and in their workshop dimension to Leonardo.*

Roger Lipsey, 1988

The title of this paper comes from Kandinsky's *Concerning the Spiritual in Art*, and by expanding it to include science one is clearly attempting to cover a rather large area of human endeavour. To narrow this down only two of the possible three relationships between art, science and the spiritual will be investigated: that between the spiritual and art and that between the spiritual and science (the interaction between the arts and sciences is well-documented in *Leonardo*, for example). The focus will be on investigating the observation that science, towards the end of the twentieth century, appears to be more receptive to the spiritual than the arts. This may come as a surprise, but one might reflect that in recent years one of the few papers in *Leonardo* that explicitly dealt with the spiritual introduced Buddhism via physics.<sup>1</sup> An additional motivation for investigating the three disciplines together is a growing intuition that science, or to be more precise, scientists, are often in need of the artistic or poetic vision in order to engage with the spiritual. Too often the scientist assumes that religion is about asking questions about the fundamental nature of existence: this is *one* possible response to existence, but the artist makes another type of response – an intuitive one, which may have a closer affinity to the spiritual impulse.

Art and science seem to *complement* each other; they propose few mutually antagonistic areas of thought, unlike the boundaries between art and the spiritual, and the boundaries between science and the spiritual. It is implicit in the title of this paper, and in the Whitman quote above, that the spiritual is somehow antecedent to both the arts and sciences. This assumption guides much of the discussion here, but will be returned to later to see how reasonable such an assumption is.

## The Spiritual: some definitions

The 'spiritual' is one of the trickiest areas of human understanding to taxonomise, or in any way in which to make definitions that can be universally understood. It is even harder when trying to find reliable terms that might be meaningful to both artists and scientists, but without an attempt we will make no progress. Hence I shall use a simple categorisation which I hope will be useful: a distinction between the *religious*, the *occult* and the *transcendent*. For the purposes of this paper then, the 'spiritual' will be a broad term that covers these three distinct areas. The 'religious' is intended to convey traditional and organised religious spirituality such as Christian, Islamic, or Buddhist; the 'occult' an esoteric preoccupation with such matters as the paranormal, reincarna-

tion, clairvoyance and disembodied beings; and finally the 'transcendent' as dealing with a shift in personal identity from the physical and temporal to the infinite and eternal, or with mystical union, or with *nirvana*.

Clearly the boundaries between the religious, the occult, and the transcendent (as used here) are blurred, and also value-laden in different ways for different communities. They are also crude in that within them one needs much finer distinctions, for example between the religiousness of Christianity or Hinduism; between the occultisms of William Blake or Rudolf Steiner, and between the transcendences within Buddhism or the work of Krishnamurti, to give just a few examples. For now it is hoped that these terms (which will be used in the rest of this paper in this specific way) will give us a basic tool with which to begin probing the spiritual in art and science.

## The Spiritual in Modern Art

Where art of previous centuries reflected mainstream religious concerns, and indeed for much of history could hardly be separated from religion, the 20th century strikes out on its own. This was not a sudden departure of course, in that the 19th century laid the groundwork for the change: Romanticism replaced God with nature as subject matter for painters, and Nietzsche summed up the cultural shift in the words of his imaginary Zarathustra: 'Could it be possible? This old saint has not yet heard in his forest that *God is dead!*' This is not to say that Christian thought is not present in Western art in the twentieth century; one only has to think of the example of Gaudi, the Spanish architect, for example (see Figs. 1 and 2). However, artists who are 'conventionally' religious have probably become the exception in this century, rather than the norm.



**Fig. 1** The Spanish architect Gaudi used an articulated model of a cathedral suspended upside down to help in its design. This could also be seen as an attempt to capture the spiritual sense of 'grace', that is, whatever stands in opposition to 'gravity' (I have borrowed these terms from the philosopher Simone Weil). (Photo courtesy of Aplicaciones y Reproducciones Mas).



**Fig. 2** Gaudi's Expiatory Church of the Sagrada Family embodies a conventional religious form of spirituality while breaking many architectural conventions. (Photo: F. Catalia-Roca)

Examining the spiritual in modern art becomes a difficult undertaking, perhaps for two reasons. Firstly, when we leave the conventional religious spirituality we are left with the less widely understood occult and transcendent spiritualities. Secondly, an art which does not generally deal with the old religious symbols of crucifixion and so on, and is often dealing with abstractions or even the totally abstract, may not immediately be perceived to have a spiritual dimension. This is compounded by the writings of the twentieth century artists, or perhaps by the lack of them. For even where the spiritual is central to a piece of modern art, it may be entirely conveyed in a *visual* language, and the scholars of science and theology are not trained in the visual. Conversely the artist is generally not widely read in the spiritual, and may be unaware of resonances across cultures and epochs with his or her work, and may indeed be innately suspicious of possible restraining influences in spiritual traditions or movements.

The 20th century has seen the development and promotion of alternative forms of spirituality, some of which have had a significant impact on modern art. The key movements in Europe at the beginning of the century include Theosophy, founded by H. P. Blavatsky and H. S. Olcott, Anthroposophy, founded by Rudolf Steiner, and the work of G. I. Gurdjieff and P. D. Ouspensky. All three movements had explicit teachings on the arts, though Steiner and Gurdjieff made the arts more central to the lives of their students than Theosophy, which focused on the preparation for the new World Teacher (a conflation of the second coming of Christ and the Buddha). There is not space here

to even introduce the teachings of these three movements, other than to say that all three have an occult leaning (as defined earlier); Gurdjieff and Theosophy share some transcendental elements, and Anthroposophy and Gurdjieff include strong Christian themes.

In examining the spiritual in 20th century art we are indebted to art historian Roger Lipsey for some ground-breaking work. One of the premises of his work (and based on Mondrian and Kandinsky's thinking) is that the arrival of the *abstract* in modern art allowed a new exploration of the spiritual. He is also clear that Theosophy was amongst the important spiritual influences of the time. Roger Lipsey is well-known for his work on the late Ananda Coomaraswamy, an authority on religious art of previous eras. Lipsey's book *An Art of Our Own – The Spiritual in Twentieth-Century Art* is a thorough and fascinating updating of Coomaraswamy's interests into the 20th century, starting with Kandinsky's *Concerning the Spiritual in Art*. However the tension between the spiritual and artistic is immediately present in the choice of title, for it comes from a quote from Brancusi:

In the art of other times there is a joy, but with it the nightmare that the religions drag with them. There is joy in Negro sculpture, among the nearly archaic Greeks, in some things of the Chinese and the Gothic ... oh, we find it everywhere. But even so, not so well as it might be with us in the future, if only we were to free ourselves of all this ... It is time we had an art of our own.<sup>2</sup>

The 'all this' we need to free ourselves from, and which 20th century Western artists and writers *have* done so thoroughly is the religious baggage of previous centuries. In modernism and later art movements the 20th century *does* have an art of its own, but Lipsey is interested, as we are, in where the spiritual lies within it. If the modern artist rejects traditional religion, what is the source of the spiritual? In the first decades of the century the answer, using the terminology of this paper, is in the *occult*. In particular it is in the occult teachings of Theosophy and Anthroposophy. The work of G. I. Gurdjieff may also have played its part (it seems likely that Brancusi for example met Gurdjieff, and may well have absorbed some of the influences of his school). We also find that the transcendent is a strong influence. Using Brancusi as an example again, we find that one of the books to have the greatest influence on him was Jacques Baccot's 1925 translation of the thirteenth century Tibetan Buddhist *The Life of Milarepa*.

Lipsey's introduction asks of course what the spiritual is, and what in particular it might be in art. He says: "All of this duly noted, *spiritual* remains an old-fashioned word of vague meaning. Yet it is this word that Kandinsky seeded into twentieth-century art, and apart from any individual, it still speaks. It requires a positive response from us."<sup>3</sup>

Lipsey points out that many intellectuals of his generation were profoundly influenced by the inevitable conclusion of 19th century religious failure: "Beyond, there may be a void: whole sections of modern literature address the perception of a profoundly unwelcoming void. The generation of which I am a part explored the void at the earliest possible age, under the influence of Existentialist literature. We sat on park benches trying to validate Sartre's compelling description of metaphysical nausea ..." <sup>4</sup> The void is a key concept in the spirituality of the transcendent, particularly in Buddhism, but is deeply problematic in the West, particularly to the artist. While Lipsey does not explore this much, he does draw an interesting metaphor from Sufi thought; the contrast between "eyes of flesh," which perceive only the material world, and "eyes of fire," which perceive only the spiritual. He goes on: "For such eyes nothing is lonely matter, all things are caught up in a mysterious, ultimately divine whole that challenges understanding over a lifetime. ... *eyes for art* strike a balance between these sensibilities." <sup>5</sup>

The early part of Lipsey's book traces some of the spiritual developments on the artists of the twentieth century. He focuses on Theosophy and Anthroposophy, but only mentions the work of Ouspensky (a close associate of Gurdjieff's) in the section on Kasimir Malevich, saying: "Suprematism can be viewed in part as an artist's response to the world-view and implicit challenge of *Tertium Organum*." <sup>6</sup> This major work of Ouspensky's was produced before he met Gurdjieff, but many of the preoccupations in it carry over into his later work. Its influence may well have been most noticeable amongst Russian artists.

The strength of Lipsey's work is in its thoroughness and insight into the lives, concerns, and work of 20th century artists. However, his notions of the spiritual are not fine-grained enough to deal with the subtlety of the phenomenon, especially given the difficulties outlined earlier. In this essay, by starting with the crude boundaries of religious, occult and transcendent, I hope to point a way to build on Lipsey's work and take it further.

The influence of Theosophy on Piet Mondrian and Wassily Kandinsky, plus the spiritual interests of Johannes Itten, contributed to making the *Bauhaus* a focus for the spiritual in the 1920s. Steiner's and Gurdjieff's work had no comparable outlet in Europe, but in fact various forces conspired to diminish the spiritual aspect of the Bauhaus. It lay at the heart of twentieth century Modernism, and was founded by Walter Gropius in 1919 in Germany, and, considering the interests of many of those involved, could have developed into an artistic version of Plato's or Ficino's Academies. (Ficino founded a Renaissance 'academy' based on his translations of Plato and Plotinus; it had something of a 'cultish' overtone.) It is generally considered that the first world war and the Russian Revolution turned the current of idealism (sparked by Theosophy et al.) from the spiri-

tual in the direction of the social. At best this swing had a democratic impulse, but the materialistic emphasis of socialism, and the drift towards fascism in Germany, put paid to the spiritual aspirations of many of the Bauhaus artists (it was closed by the Nazis in 1933).

Johannes Itten was employed by Gropius in the early years to teach at the Bauhaus but eventually left as directions changed. Lipsey comments:

He [Itten] viewed the Bauhaus as a "secret, self-contained society" with spiritual goals. In his classes, he offered students the opportunity to practice relaxation, breathing, and concentration exercises intended, as he later wrote, "to establish the intellectual and physical readiness which makes intensive work possible." ... Itten precipitated the crisis of 1922 by embodying the esoteric and romantic aspects of the Bauhaus so militantly that he threatened to sever the school from its moorings in mainstream society.<sup>7</sup>

Itten himself made the following comments about the spiritual underpinning of his work in *Design and Form*, one of the coursebooks to emerge from teachers at the Bauhaus:

I had studied oriental philosophy and concerned myself with Persian Mazdaism and Early Christianity. Thus I realised that our outward-directed scientific research and technology must be balanced by inward-directed thought and forces of the soul.

... It is not only a religious custom to start instruction with a prayer or a song, but it also serves to concentrate the students' wandering thoughts. At the start of the morning I brought my classes to mental and physical readiness for intensive work through relaxing, breathing, and concentrating exercises. The training of the body as an instrument of the mind is of the greatest importance for creative man.

... Besides relaxation, breathing is of the greatest importance. As we breathe, so do we think and so is the rhythm of our daily life. People of great, successful accomplishments always have a quiet, slow and deep breath. Shortwinded people are hasty and greedy in thought and action.<sup>8</sup>

These extracts show much of Itten's thinking and character, and the reactions to them may illustrate the problem that artists have with the explicitly spiritual. The library copy of *Design and Form* from the Arts faculty of my university has a simple pencilled comment in the margin close to the last point made in this extract: 'Suspicious'. Others have concluded that the Mazdaznan experiment was a disaster, and it is true to this day that spiritual practices are rarely part of the curriculum in mainstream art colleges. ('Mazdaznan' is a derivation of Mazdaism, better known in the West as Zoroastrianism,

a religion the main prophet of which was the historical Zarathustra, a man quite unconnected with Nietzsche's imaginary figure of the same name).

Let us turn back now to Kandinsky's *Concerning the Spiritual in Art* as a turning point for Modernism. It was published in 1911, and was deeply influenced by Theosophy. Kandinsky had 'snapped up' a copy of *Thought Forms* (a work by the Theosophists Annie Besant and Charles Leadbeater purporting to show pictures of the 'auric' form of thoughts and emotions) in 1908 and joined the movement in 1909. Kandinsky's *Improvisations* series from around 1916 is considered to be directly influenced by the illustrations in *Thought Forms* (see figs 3, 4 and 5).



**Figs. 3 and 4** The first two pairs of images show illustrations from Besant and Leadbeater's *Thought Forms*, while the third picture is one of Kandinsky's *Improvisation* series, *Improvisation 33 (Orient I)*, 1913. Many of his *Improvisations* paintings are assumed to be influenced by Theosophical ideas.





**Fig. 5** One of Kandinsky's Improvisation series, *Improvisation 33 (Orient I)*, 1913. Many of his Improvisations paintings are assumed to be influenced by Theosophical ideas.

Kandinsky himself only devotes a few paragraphs to Theosophy in his book, apparently quoting from Blavatsky's *The Key to Theosophy*:

Theosophy, according to Blavatsky, is synonymous with *eternal truth*. "The new torchbearer of truth will find the minds of men prepared for his message, a language ready for him in which to clothe the new truths he brings, an organization awaiting his arrival, which will remove the merely mechanical, material obstacles and difficulties from his path." And then Blavatsky continues: "The earth will be a heaven in the twenty-first century in comparison with what it is now," and with these words concludes her book.<sup>9</sup>

Kandinsky shows in *Concerning the Spiritual in Art* the seeds of the spiritual dilemma that makes the appearance of the spiritual in the arts so fitful in the 20th century: the apparent *hierarchical* nature of it. In the chapter called 'The Movement of the Triangle' he likens society to a triangle with those few spiritual or artistic geniuses at its apex, and, as one goes down, a greater and greater number of artists of lesser and lesser value; the triangle moves upwards, thus representing 'progress'. This image fits well with Theosophy, but with the rise of socialism after 1917 it exposes an elitist view of art that sat uncomfortably with the new order. The shock of the first world war must also have shaken the faith of men like Kandinsky in Blavatsky's prediction of a heaven in the 21st century, and in the later Bauhaus years he tempered the spirituality of his ear-

lier period to fit the more materialistic and machine-oriented aspirations of his students.

Piet Mondrian was only briefly at the Bauhaus, but was just as deeply influenced by Theosophy as Kandinsky. A triptych of Mondrian's called *Evolution* is an example of this period (it is the dominant piece amongst similar work hidden in the Gemeente Museum, unshown), and has been criticised for its 'new-age' look (see Fig. 6). His later and better-known work continued to explore one of the Theosophical themes, that of geometry.



**Fig. 6** Mondrian's *Triptych*. This painting is rarely shown, and is cited as an example of the impact of Theosophy on Mondrian's work. (Copyright 1998 ABC/Mondrian Estate/Holtzman Trust)

Paul Klee was another teacher at the Bauhaus for a time, and shared with Kandinsky a friendship with Thomas de Hartmann, musician and close collaborator with Gurdjieff. Kandinsky met de Hartmann between 1908 and 1912, before de Hartmann met Gurdjieff in 1916, and for whom both he and his wife gave up everything. Klee's notebooks, like those of many artists, do not reveal the kind of spiritual preoccupations that we find in those of a contemporary spiritual teacher like Krishnamurti for example, and I have not found so far any mention of Gurdjieff, Ouspensky, or even de Hartmann.<sup>10</sup> Lipsey comments:

Paul Klee (1879-1940)—Swiss-born, mature in art by 1914, Bauhaus master in the great years of the institution, renowned for works of originality, wit, and depth—is the au-

thor of one of the century's few unerring statements on the spiritual in art. With Kandinsky's *On the Spiritual in Art* and Brancusi's aphorisms, Klee's 1924 lecture "On Modern Art" is all one need know to be certain that twentieth-century art conceived ideals that in their religious dimension would have been recognizable to Meister Eckhart and in their workshop dimension to Leonardo.<sup>11</sup>

The last sentiment in this passage, concerning Eckhart and Leonardo, could be seen as an aspiration at the heart of this essay. However, I think Lipsey is a little optimistic, particularly in respect of Klee's 1924 lecture, which makes no direct reference to the spiritual at all. I suspect that the spiritual in Klee's work has to be approached via the work itself, and I have no suggestion at this point for an easy method for so doing.

The second influential group of 20th century painters that drew heavily on spiritual influences in one form or other was the group known as the American Abstract Expressionists. Coming to prominence after the second world war, they included Jackson Pollock, Mark Rothko, Barnett Newman, Ad Reinhardt, and many others. A cursory glance at the writings of these artists leave one again in doubt as to the extent of any *explicitly* spiritual references in their writings, but overall there is strong evidence for a spiritual concern running through their work. Lipsey is similarly hesitant, though not sceptical. His comments revolve around an exhibition called "The Spiritual in Abstract Art: 1895-1985" (Los Angeles, 1986; Catalogue Editor: Maurice Tuchman) in which the last two paintings, one by Ad Reinhardt and another by Mark Rothko had the most impact on him. Lipsey says: "These works at once 'settled' the exhibition, brought it home; one could feel again that there *is* a modern spiritual, and these works demonstrated it." <sup>12</sup> We are presented here with a quite understandable subjectivity, shown again in this quote from Lipsey: "Although Barnett Newman (1905-1970) took keen interest in traditional spiritual ideas, possessed a sense of scripture, and contributed cogently to the endless murmur of conversation among American artists of the period, he never succeeded in giving eloquent pictorial form to his insights." <sup>13</sup> Lipsey could be referring to a series of Newman's paintings called the 'Stations of the Cross', which contain variations on vertical lines and delineations, and which are not easily accessible as spiritual in content. The spiritual nature of Rothko's work may be more obvious, and was first endorsed by the creation of a 'Rothko Chapel' in 1960 by the Phillips Collection in Washington DC, where a group of his paintings was arranged in such a way as to encourage the visitor to contemplation or meditation. Fig. 7 shows one of Rothko's well-known colour-field pieces, and Fig 8 his donation to the Tate Gallery in London.



**Fig. 7** Rothko's *Three Reds* painted in 1955. A painting like this, with no awkward associations with the occult, presents the clearest example of Lipsey's thesis that abstract art represents a new departure in the art of the spiritual. (Copyright 1998 ARS, NY, and DACS, London)

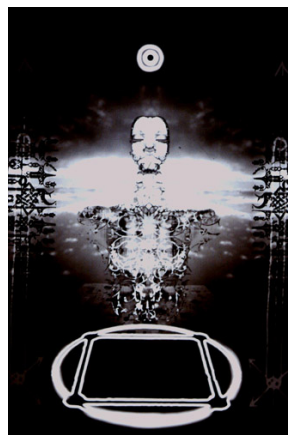


**Fig. 8** The Rothko room in the Tate Gallery, London. Many who are not normally inclined to the 'spiritual' are affected by these pieces and seek out works that have a similar presence.

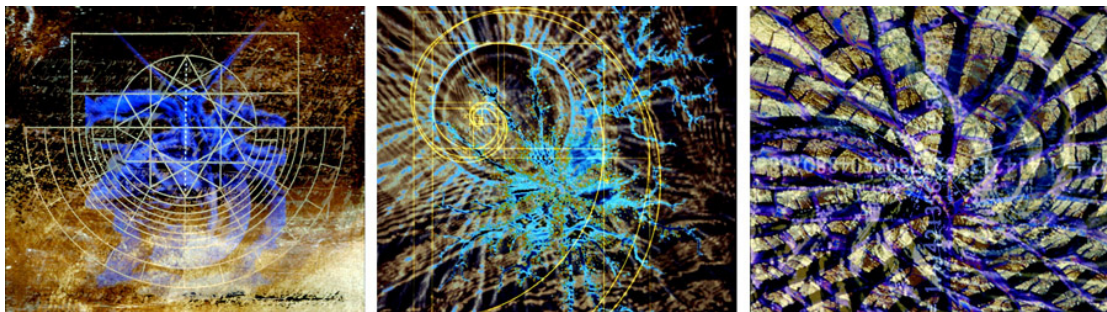
We should not be discouraged however either by the difficulties in pursuing the spiritual in the writings of the artists, nor by our subjective responses to their art. I believe that our whole conception of the spiritual can be fruitfully softened and expanded by the visual arts: much more work is needed to understand it, that is all. The American

Abstract Expressionists have a spirituality that is firmly in the transcendent category (as defined in this essay); the mainstream religious is only nodded at, and the occultism of the earlier part of the century has vanished. Lipsey points out that Ad Reinhardt for example was a friend of Thomas Merton, read Coomaraswamy, attended Suzuki's talks on Zen Buddhism, and was literate in Buddhism, all of which point to the transcendent rather than the occult.

The third group of artists and practice looked at here include the electronic arts and the virtual territory that they inhabit: cyberspace. Figs 9 and 10 show examples of computer art from students at London Guildhall University with an explicitly spiritual component.

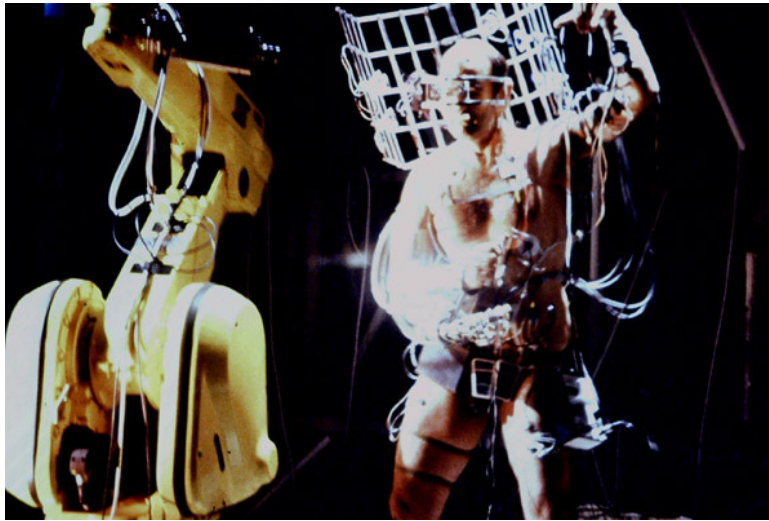


**Fig. 9** *State* by Jason Cook. Cook's work is influenced by modern dance culture and cyberspace icons. The term state is a Sufi one (Sufis are an Islamic sect), and is used in opposition to station; the first is involuntary, while the second is to be attained.



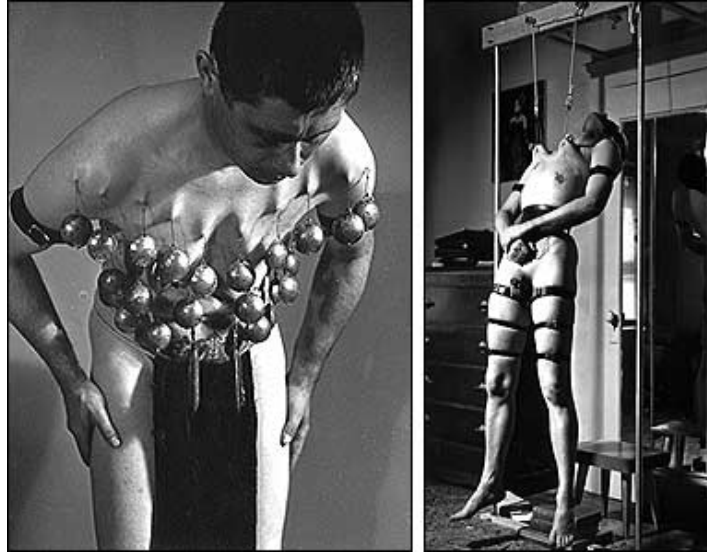
**Fig. 10** *Tribute to Pythagoras* by Christine Hübner. The series deals with the Pythagorean ideas of spirituality and geometry, while using the modern technologies of computer graphics in the production of the imagery. (Images courtesy of Christine Hübner.)

The transcendent may be present again, in a transcendence of the biological organism; many indeed speak of a post-biological world, or of 'obsolescence of the body'. This is the theme of the work of performance artist Stelarc. This Australian artist works with mechanical and electronic devices that provide an interface to computer-controlled movements of his own body, prostheses, and industrial robots: he uses his own muscles to send or amplify their movements to control mechanical systems, and in turn allows computer-mediated control over his own body via electrical impulses of about 40V (see fig. 11). His visually stunning performances raise all kinds of questions regarding transcendence of the body, surrender of personal will, and the acceptance of pain. In interview however he is rather wary of the direct spiritual implications of his work; even though he practised yoga for twenty years he does not want direct parallels to be drawn, and one can only respect this.



**Fig. 11** Stelarc: *Event for Anti-Copernicus*, 1985. Although Stelarc's work has continued to push the frontiers of our understanding of the interface between body and mind, as mediated through technology, this early image captures much of the intellectual probing and visual drama of his current performances. (Photo courtesy of Stelarc.)

It is worth comparing the work of Stelarc with that of Fakir Musafar. He is another performance artist, working without electronics, but is less reticent than Stelarc about the spiritual – indeed he criticises Stelarc for his silence on this area. Musafar's work turns us back to the occult (as defined here): it has its roots in out-of-body experiences, shamanism, and fetishism. (See fig. 12)



**Fig. 12** Fakir Musafar: *Suspension* 1964. Musafar's work also challenges our assumptions about the body and spirit, in particular the issue of pain in religion and art. Why do both artists and religionists undertake voluntary physical sufferings in the pursuit of their ideals?

An overwhelming spiritual experience at the age of seventeen (after fasting and a form of self-immolation) led to a conviction that he had lived before in a completely different culture and time, and that the erotic and bodily were deeply linked to the spiritual. He comments:

That beautiful experience colored my whole existence. From that day on I wanted everyone to have that kind of liberation. I felt free to express life through my body. It was now my media, my own personal "living canvas," "living clay." It belonged to me to use. And that is just what I have done for the past thirty years. I learned to use the body. It is mine, and yours, *to play with!* I wrote a poem after the experience. It said:

Poke your finger into Red,  
 Feel the feeling through.  
 And when the feeling is no more,  
 Feel no-feeling too! <sup>14</sup>

Musafar is significant as an artist who occupies the spiritual territory of the *fakir* (usefully defined for us in the work of G. I. Gurdjieff <sup>15</sup>), that is one who's path is through the body rather than through mind or heart. The transcendent implications in his poem, and the occult nature of his out-of-body experiences reminds one again that we cannot apply these categories too strictly however.

Whether the spiritual in cyberspace will have its emphasis on the transcendence of the body, or more on the collectivisation of mind and consciousness is yet to be seen. There is considerable interest in the ideas of Teilhard de Chardin (a Jesuit priest and palaeontologist) in connection with the Internet; in particular his idea of the “noosphere.” The work of Roy Ascott may be the most relevant here: he is a pioneer of cybernetics and telematics in art, and in a recent presentation at the Tucson II “Towards a Science of Consciousness” conference wrote:

We are moving towards the spiritual in art in ways in which Kandinsky could hardly have imagined. Telepresence will be accompanied by telepresence, and cybernetic systems will integrate with psychic systems, mutating into what could be called cybernetics. A noetic infrastructure is forming within the telematic domain which could lead to a spiritual awakening.<sup>16</sup>

From the electronic arts we now conveniently move to an examination of the spiritual in science.

## The Spiritual in Modern Science

As mentioned in the introduction, one of the motivations of this essay was a curiosity about a strange phenomenon: the recent willingness of scientists to write about God as if an outcome of their science. Books (mainly by physicists) have appeared in the last four years with titles such as *The Mind of God*, or *The God Particle*, or with subtitles such as *Science, Religion and the Search for God*, or *Modern Cosmology, God, and the Resurrection of the Dead*. Many more are also in print that relate science, usually the ‘New Physics’ that arises from quantum mechanics, to spirituality. It is a reasonable assertion today to say that the *subjective* entered science with quantum mechanics (this is enshrined in a minimal kind of way in what is known as the Copenhagen Interpretation). Whether the *spiritual* does or does not is a question that is highly debatable; the writer Ken Wilber denies it (see below) while a more cautious approach may be to suggest that it gave the scientists the first real excuse to talk about the spiritual. In addition to the approaches based purely on quantum mechanics there is another approach, called the *anthropic principle*, which finds wider evidence for the central role of human existence or consciousness in the structure of the universe.

Though many scientists, through the confrontation with quantum theory and other developments in the “new” physics, were having to re-evaluate science itself, and in many cases found parallels in religion or mysticism, it was the physicist Fritjof Capra who first brought the parallels to popular attention in 1975 with his book *The Tao of Physics*. Gary Zukav, trained in the liberal arts rather than physics, followed with *The Dancing Wu Li Masters* in 1979. Both books are good introductions to the “new” phys-



ics, and to the parallels with mysticism, but neither authors have the kind of depth-exposure to the spiritual that Ken Wilber (discussed below) has. If we relate the works of Capra and Zukav to our simple taxonomy of the spiritual, then the parallels they draw are mainly to the transcendent, with references here and there to the occult.

Ken Wilber wrote his first book *The Spectrum of Consciousness* in 1973, while a graduate student. He has been a prolific and maverick author since that point, spanning the spiritual, the scientific, and the psychological. His reading in the spiritual is broad and deep, and as a result gives a much subtler interpretation of the parallels between physics and mysticism than offered by Capra and Zukav. Indeed it may be just their work that he is complaining of in this quote in his preface to *Quantum Questions*:

The theme of this book, if I may briefly summarize the arguments of the physicists presented herein, is that modern physics offers no positive support (let alone proof) for a mystical worldview. ... It is not my aim in this volume to reach the new-age audience, who seem to be firmly convinced that modern physics automatically supports or proves mysticism. It does not. But this view is now so widespread, so deeply entrenched, so taken for granted by new-agers, that I don't see that any one book could possibly reverse the tide.<sup>17</sup>

Wilber wishes to tread a more delicate path than either the New-Ageists or the conventional scientist who compartmentalises. His work is more engaged with the psychological or psychoanalytical than is directly relevant to this paper, but he presents us with an interesting possibility for the integration of seemingly opposing fields (the spiritual, the artistic, the scientific) through his concept of *levels* of consciousness. His idea is that the apparent contradictions are merely there because one is debating phenomena related to one level at a level that is inappropriate to it.

Wilber's *Quantum Questions* is a good source of the writings of some of the key scientists on the spiritual this century, perhaps as useful as Lipsey's *An Art of Our Own* is on the spiritual in art. However, in the ten years since Wilber's work science and the spiritual have generated a quite new debate, bringing physics and mainstream religion together.

John Polkinghorne, theoretical physicist and recently ordained into the Church of England, has written for many years on science (with the emphasis on quantum theory) and religion. His premise is that both are "an enquiry into what is." Although his book *Reason and Reality* includes a chapter called "Quantum Questions," he seems unaware of Wilber's book of the same name and the main proposition in it. Polkinghorne argues for a form of "complementarity." For example, both theology and science are con-

cerned with the origins or genesis of the universe and life; for both this becomes a legitimate enquiry, and the traditionally “exclusive” accounts can in fact be accommodated by seeing them as complementary to each other while appropriate to differing contexts of human activity. Valuable as Polkinghorne’s work is, it restricts itself to a narrow band of congruence between science and religion: that of the “enquiry” leading to explanation. (The main problem with this is that it cannot touch on the devotional; for the devotee, whether ecstatic or sober in their love of the divine, cannot be said to be pursuing an enquiry, more that of a relationship.) For Polkinghorne *revelation* is the religious equivalent to the scientific procedure that leads from enquiry to explanation, but in the work of Paul Davies revelation is mistrusted.

Paul Davies is a British-born physicist currently working in Australia. He won the Templeton Prize for Progress in Religion in 1995. This prize, worth \$1m, has previously been awarded to Mother Teresa, Alexander Solzhenitsyn, and Billy Graham, and went to Davies in recognition of his work which includes *God and the New Physics* and *The Mind of God* (a reworking of the former title, some nine years later). The title of the latter book comes from the last sentence in another famous modern physicist’s book, *A Brief History of Time*, by Stephen Hawking. The Templeton Prize, larger than any prize in physics, is given to a living person who has shown “extraordinary originality” in advancing humankind’s understanding of God or spirituality.<sup>18</sup>

Davies’ spiritual interests lie clearly in the religious category, according to the definition in this paper. There is little of the occult or transcendent, and his reading in theology, though broad for a scientist perhaps, is limited compared to that of Ken Wilber for example. What is it then that has made his books best-sellers, and attracted the Templeton Prize? Davies is a *scientist* with no faith in the supernatural, as this quote shows:

I have always wanted to believe that science can explain everything, at least in principle. Many nonscientists would deny such a claim resolutely. Most religions demand belief in at least some supernatural events, which are by definition impossible to reconcile with science. I would rather not believe in supernatural events personally.<sup>19</sup>

Davies books introduce the new physics (relativity and quantum theory and their more recent developments) in a lucid style, with a running commentary on the theological implications. He takes a very different route to Capra and Zukav, by dealing with mainstream (Christian) theological problems, and even seems a little hostile to Oriental thought:

The popularity of "holistic science" in recent years has prompted a string of books, most notably Fritjof Capra's *The Tao of Physics*, that stress the similarity between ancient Eastern philosophy, with its emphasis on the holistic interconnectedness of physical things, and modern nonlinear physics. Can we conclude that Oriental philosophy an theology were, after all, superior to their Western counterparts? Surely not.<sup>20</sup>

Even though his later book concludes with a brief section on mysticism, Davies avoids it on the whole, and perhaps this is his popular appeal: a dialogue with mainstream Western religion. He provides an update, via the new physics, on the arguments for the existence of God, most of which looks even less convincing than in the days of the old physics. He makes a nod at some of the metaphysics emerging from "new" physics, including the anthropic principle and holism, but is not that enthusiastic about straying from "proper" or reductionist science. However his position is weakly anthropic, as the closing section in *The Mind of God* suggests:

What does it mean? What is Man that we might be party so such privilege? I cannot believe that our existence in this universe is a mere quirk of fate, an accident of history, an incidental blip in the great cosmic drama. Our involvement is too intimate. The physical species *Homo* may count for nothing, but the existence of mind in some organism on some planet in the universe is surely a fact of fundamental significance. Through conscious beings the universe has generated self-awareness. This can be no trivial detail, no minor byproduct of mindless, purposeless forces. We are truly meant to be here.<sup>21</sup>

This might be mildly encouraging to the conventionally religious person, but in fact Davies is not in favour of religion at all, as the closing remarks in his previous work show:

I began by making the claim that science offers a surer path than religion in the search for God. It is my deep conviction that only by understanding the world in all its many aspects – reductions and holist, mathematical and poetical, through forces, fields, and particles as well as through good and evil – that we will come to understand ourselves and the meaning behind this universe, our home.<sup>22</sup>

Is conventional religion so desperate that it is grateful that scientists even bother to write about God? When mostly the argument is against the very concept? And to the tune of \$1m? This is not to denigrate Davies's work, merely to emphasise that there is a strange phenomenon here. We can of course point to Davies's very limited exposure to the religious in all its forms, and also to pick up on a point in the last paragraph quoted above: let us indeed have the poetry.

Frank Tipler, another physicist and author of *The Physics of Immortality*, represents an extreme reaction of the scientist to the spiritual possibilities of his discipline. The outrageous suggestions in his book have provoked the reaction that he should be “defrocked” of his PhD. However, I think the book is an important landmark, and should not be ignored – in fact it might make a useful touchstone for a modern liberal education: its breadth and challenge need a broad educational base from which to mount any attack on its central thesis.

Tipler’s ideas can be summarised as follows: modern cosmology predicts the elimination of biological life as we know it, either through the “heat death” (lack of energy in fact) in an ever-expanding universe, or its consumption in the inferno of the “big crunch” (the final singularity of the universe as it contracts again). In any case organic life on Earth has only some billions of years to go before the Sun wipes it out. However, the anthropic principle discussed above requires that life (consciousness) is central to the cosmos, and therefore the future evolution of it must be such as to ensure its existence (in some form or other) for eternity. From this premise Tipler deduces that we shall all be resurrected by God to live for ever in the far future: what’s more he claims to have the scientific “proof” for the existence of God and our immortality. Here is the conclusion to his book:

The Omega Point Theory [the name is taken from Teilhard de Chardin's writings] allows the key concepts of the Judeo-Christian-Islamic tradition now to be modern physics concepts: theology is nothing but physical cosmology based on the assumption that life as a whole is immortal. A consequence of this assumption is the resurrection of everyone who ever lived to eternal life. Physics has now absorbed theology; the divorce between science and religion, between reason and emotion, is over.

I began this book with an assertion on the pointlessness of the universe by Steven Weinberg. He repeats this in his latest book, *Dreams of a Final Theory*, and goes on to say “... I do not for a minute think that science will ever provide the consolations that have been offered by religion in facing death.”

I disagree. Science can now offer *precisely* the consolations in facing death that religion once offered. Religion is now part of science.<sup>23</sup>

To show that his premises lead to his (startling) conclusions, Tipler has to make a number of radical assumptions along the way. Firstly, life, including the personality of every person that ever existed, can exist as a digital simulation; secondly that robot “probes” can colonise the universe (thus disseminating digitally encoded life) and engulf the universe with intelligence *before* its collapse has gone too far; third that this intelligent life can engineer the final collapse in an asymmetrical way (harnessing the

features of chaos theory) in order to provide huge amounts of usable energy; fourthly that this collective intelligence (called the Omega Point) will be benign enough to collect all possible data regarding each one of us and initiate our eternal simulation on vast computers; and finally that the last infinitesimally small period of time before the final singularity will feel “subjectively” to us like an eternity.

Each of these major assumptions then requires another group of assumptions to make them work: for example that colonisation of the universe will be achievable through matter/anti-matter engines (no-one knows at this point how to build one), and that mind is *computable* so that we can be “uploaded” into computers (Roger Penrose, for one, disagrees with this <sup>24</sup>). Our resurrection then depends on the fact that living persons now (and in the past) can be photographed billions of years in the future from the light-rays bouncing off the edge of the universe, and that will give the Omega Point sufficient information to run an *exact* simulation of us, preferably choosing us in our prime. Tipler does recognise that there could be a practical difficulty with this (we cannot even photograph an entire *planet* even within *our own galaxy* at the moment, not even as a spot of light), so he suggests instead that the cosmic computer could reconstruct us all knowing that we are “completely defined” by the four billion-odd genes in our bodies. This would unfortunately mean resurrecting an inconceivably large number of people who never existed, but Tipler can be generous: he has already shown that the Omega Point has infinite computing power at its disposal.

As if all the scientific odds were not stacked against his theory (putting it charitably), Tipler also has to show that various religious and cultural attitudes to immortality are wrong. The most important of these are eternal recurrence and reincarnation, both of which require lengthy discussions through philosophy and religion to dispose of.

Tipler supplies a Scientists Appendix to *The Physics of Immortality*, which he claims proves mathematically various elements of his theory. His strategy, if one were inclined to the cynical, is to argue very tightly and scientifically small points, and then make huge (but downplayed) leaps between them, thus stringing together some plausible science in the service of an implausible conclusion. It is an enjoyable read however, and it deserves a refutation.

While I believe that the anthropic principle deserves a place in modern thought, it is undermined in this work by Tipler's obviously emotional attempt to avoid his own, and others', mortality. The really interesting part of his work, and of a growing number of other scientists, is their willingness to use (some would say hijack) the language of religion. In terms of the categories of spirituality developed above, it is religious rather than occult or transcendent.

## Conclusions

While it is clear that *something* is happening in the sciences with an explicit reference to the spiritual, and that no such large-scale detectable phenomenon is happening in the arts, it may be premature to assume that science is more receptive to the spiritual than the arts. The development of quantum theory *has* brought science up against the brick wall of the subjective, and from there a path to the spiritual is certainly possible, if not inevitable. We also see a continual, if less obvious, engagement with the spiritual in the arts of this century, starting with Kandinsky and the Bauhaus, through the American Abstract Expressionists, and into the modern electronic arts. One might say that the *equivalent* event in the arts of this century to the discovery of quantum theory in physics has been the development of the abstract in art. However the beginnings of abstract art coincided with an explicit concern with the spiritual, whereas the impact of quantum theory has taken roughly fifty years to emerge from the Copenhagen Interpretation to the popular spirituality of Capra and Zukav. We have seen also that artists write diffusedly, if at all, about the spiritual: it has to be found directly in their work. Modern scientists on the other hand have taken to writing profusely about the spiritual.

In both the arts and sciences there are however considerable tensions and antagonisms to the spiritual. Perhaps the mutual antagonism between science and religion is precisely because of an instinct that (as Polkinghorne puts it) both can be *an inquiry into what is*. To the extent that science and religion compete to give us a rational account of the universe and its origins there will probably be no reconciliation: the efforts of Polkinghorne, Davies, and Tipler are not always convincing. The work of Tipler is also a clearly predatory move on the territory traditionally considered religious. There are also clear antagonisms in the arts concerning the spiritual; mainly from the free-thinking artist's spirit against the perceived tyranny of organised religion (Brancusi's "nightmare").

The considerable recent writings on spirituality by scientists is an important phenomenon however and deserves further study. The impulse arises from, or was released by, quantum theory, but it is hard to see how a real *synthesis* between science and religion may emerge. A sympathetic complementarity would however be a great step forward in bringing the scientific and religious communities together, though the danger has to be recognised that some scientists are merely trying to appropriate the territory of the spiritual with little real sympathy for it. While contemporary artists write little about spirituality, it seems that the spiritual is an important undercurrent of influ-

ence in the arts. Whether this entered with abstract art, or merely changed the nature of the influence from being main-stream religious to occult and transcendental needs clarification.

What of the idea, stated at the beginning of this essay, that the spiritual is antecedent to both science and art (as Whitman would have it)? The anthropic principle allows that *consciousness* at least is on an equal footing with matter, but some spiritual traditions place it as antecedent to matter, while most of science places it as an emergent property of matter. To say that the spiritual is antecedent to science is therefore not easily or widely supportable. However, it is easier to assert that the spiritual may be antecedent to art.

There may be a fruitful line of enquiry as to whether the arts can successfully mediate between science and the spiritual. Lipsey's quote from the Sufis regarding 'eyes of flesh' and 'eyes of fire' may be relevant: perhaps the artist is best attuned to move from one to the other during the course of his or her work. One might also suggest that science needs the poetic in order to allow a better understanding of the spiritual, and that the religious needs the poetic to avoid the dogmatic and reactionary.

### Appendix: note to fig 10

*Tribute to Pythagoras* by Claudia Hübner. The first image (*Beginning – Past*) is related to the Egyptian idea of Nun, the primordial vibrational field (Nada in India). Concentric vibrational waves span outward from innumerable centres and their overlappings (interference patterns) form nodules of trapped energy which become the whirling, fiery bodies of the heavens. The second image (*Middle – Present*) relates to the square root of two, the geometrical function which represents the universal metaphor of the **root**. It represent the principle of **transformation** which goes on in every passing moment as well as in the long aeons of evolutionary cycles. The transformative moment is all that really exists, the phenomenal worlds are a transitory reflection. The third image (*End/Beginning –Future*) relates to the word – pure vibration – which give rise to the fractioning of unity which is creation. "The Universe is nothing but the Divine uttering his own name to himself." This emitted sound, the naming of God's idea, is what the Pythagoreans called the **Music of the Spheres**.

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## References

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- <sup>1</sup> Boreham, Dominic, "The Conceptual Framework of my Computer Assisted Drawings: Reflections on Physics, Buddhism and Transactional Psychology", in *Leonardo*, **25**, No. 2 (119-127) 1992.
- <sup>2</sup> Lipsey, Roger, *An Art of Our Own - The Spiritual in Twentieth-Century Art*, Boston and Shaftesbury: Shambhala, 1988, p. 244

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- <sup>3</sup> Lipsey, Roger, *An Art of Our Own - The Spiritual in Twentieth-Century Art*, Boston and Shaftesbury: Shambhala, 1988, p. 7
- <sup>4</sup> Lipsey, Roger, *An Art of Our Own - The Spiritual in Twentieth-Century Art*, Boston and Shaftesbury: Shambhala, 1988, p. 8
- <sup>5</sup> Lipsey, Roger, *An Art of Our Own - The Spiritual in Twentieth-Century Art*, Boston and Shaftesbury: Shambhala, 1988, p. 17
- <sup>6</sup> Lipsey, Roger, *An Art of Our Own - The Spiritual in Twentieth-Century Art*, Boston and Shaftesbury: Shambhala, 1988, p. 143
- <sup>7</sup> Lipsey, Roger, *An Art of Our Own - The Spiritual in Twentieth-Century Art*, Boston and Shaftesbury: Shambhala, 1988, p. 202
- <sup>8</sup> Itten, Johannes, *Design and Form, the Basic Course at the Bauhaus*, London: Thames and Hudson, 1964, p.11
- <sup>9</sup> Kandinsky, Wassily, *Concerning the Spiritual in Art*, New York: Dover Publications Inc, 1977, p. 13
- <sup>10</sup> Paul Klee's diaries appear to go only from 1898 to 1918, see: Klee, Paul *The Diaries of Paul Klee*, Berkeley, Los Angeles, London: University of California Press, 1964
- <sup>11</sup> Lipsey, Roger, *An Art of Our Own - The Spiritual in Twentieth-Century Art*, Boston and Shaftesbury: Shambhala, 1988, p. 174
- <sup>12</sup> Lipsey, Roger, *An Art of Our Own - The Spiritual in Twentieth-Century Art*, Boston and Shaftesbury: Shambhala, 1988, p. 326
- <sup>13</sup> Lipsey, Roger, *An Art of Our Own - The Spiritual in Twentieth-Century Art*, Boston and Shaftesbury: Shambhala, 1988, p. 301
- <sup>14</sup> Musafar, Fakir, 'Body Play', in ( Adam Parfrey, Ed.) *Apocalypse Culture*, Portland, Oregon: Feral House, 1990, p. 105
- <sup>15</sup> Ouspensky, P.D. *In Search of the Miraculous - Fragments of an Unknown Teaching*, Arkana, 1978, p. 44
- <sup>16</sup> Ascott, Roy, 'Noetic Aesthetics: art and telematic consciousness' in *Consciousness Research Abstracts*, proceedings of the "Tucson II" conference (Journal of Consciousness Studies) University of Arizona, p.171
- <sup>17</sup> Wilber, Ken, *Quantum Questions - Mystical Writings of the World's Great Physicists*, Boston and London: Shambhala, 1985, p. ix
- <sup>18</sup> *Guardian*, March 9th 1995
- <sup>19</sup> Davies, Paul, *The Mind of God*, London: Penguin 1993, p. 15
- <sup>20</sup> Davies, Paul, *The Mind of God*, London: Penguin 1993, p. 78
- <sup>21</sup> Davies, Paul, *The Mind of God*, London: Penguin 1993, p. 232
- <sup>22</sup> Davies, Paul, *God and the New Physics*, London: Penguin 1990, p.229
- <sup>23</sup> Tipler, Frank J. *The Physics of Immortality - Modern Cosmology, God and the Resurrection of the Dead*, London: Macmillan, 1994, p. 338
- <sup>24</sup> Penrose, Roger, *Shadows of the Mind - A Search for the Missing Science of Consciousness*, Oxford University Press, 1994