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The significance of consciousness studies and quantum physics for researching spirituality

Abstract

The purpose of this paper is to argue that researchers interested in studying spirituality may benefit from paying attention to the phenomenon of consciousness. Despite consciousness being integral to human experience, it is largely ignored in research into spirituality. Yet there is evidence to suggest that the study of spirituality, and explorations of consciousness, have much to offer each other. My contention is that the subject of consciousness has not received much attention within mainstream social and educational research, due to the prevailing, often unconscious, influence of Newtonian science, which assumes consciousness to be an epiphenomenon of the brain. However developments in science, particularly in quantum physics, have shown that the world cannot be explained by Newtonian principles of separation and atomism. At the same time, a growing disillusionment with science has resulted in the emergence of a grassroots spirituality which challenges a materialist scientific paradigm. In science and spirituality, there is an increasing realisation of the interconnectedness of everything, with the quantum principle of ‘entanglement’ suggesting that differentiation between ‘objectivity’ and ‘subjectivity’ is an artificial one. Instead there is a meaningful relationship between experiences of consciousness in inner and outer worlds, with neither existing independently of the other. I conclude by presenting a case for developing research methods which reflect a secular spiritual world view that creates harmony between science, spirituality and our experience of consciousness.

Keywords: Secular spirituality, consciousness, quantum physics, entanglement, ontology, epistemology.

Introduction

Daniel Boorstin (1985:xv) contends that it is “illusions of knowledge”, not mere ignorance, which have always presented the greatest obstacles to scientific discovery. The claim I make in this paper is that the illusion of knowledge which has traditionally dominated academic research is the ontological assumption that matter is the primary constituent of the universe. I argue that this due to the legacy of classical Newtonian science, which instilled a materialist worldview into western culture. This worldview perceives subjective experiences of

consciousness to have emerged from matter at a late stage of a physical evolutionary process, and hence is not of ontological significance (Wallace 2010).

However, developments in quantum physics and studies of consciousness challenge this scientific paradigm in ways which may be of interest for those researching spirituality from either an academic or an experiential perspective. Although Tacey states that ‘spirituality is by no means incompatible with religion, but it is existential rather than creedal’ (2004:8), spirituality and religion have often been conflated; and because the world of scientific rationalism has historically not allowed for the existence of ‘God’ or for any transcendent reality, explanations for both religious and spiritual experiences are often claimed to be explainable through observing neuronal activity in the brain (Dawkins 2008, Hitchens 2007, Dennet 2007).

There is, though, a different worldview emerging from quantum physics (Wheeler 1994), and from a revisiting of spiritual traditions (De Quincey 2005): which is that consciousness, not matter, is the primary ‘stuff’ of the universe. That is, there is a universal Consciousness that is the source of our individual experiences; and, as the radio is the receiver rather than the originator of programmes, so the brain is the receiver of a universal Consciousness (Kelly et al 2015).

One implication of reclaiming the primacy of consciousness is that it affirms the possibility that our spiritual experiences may be manifestations of a reality whose source exists beyond matter. Studying the nature of this reality, which may be as infinite and timeless as the external cosmos, opens up the need for faculties other than our five senses, such as introspection and intuition, to be accepted as valid and meaningful methods of academic research (Wallace 2010).

In this paper, I explore what an investigation into both consciousness and quantum physics has to offer the study of spirituality; and discuss the development of research methods based on an ontology of a secular spirituality (Walach 2015) which would encourage researchers to explore in greater depth the nature of inner worlds, as a complementary and mutually influencing dimension of their exploration of external worlds.

The enduring influence of Newtonian Science on social and educational research

The main purpose of this section is to consider, from the perspective of an academic in a university School of Education, the historical influences on the development of research in

the western world, with specific reference to the shifts in significance accorded to religion and spirituality.

For many centuries, following the life of Christ, the Bible was claimed to be the source of truth in the western world. During this time, the existence of a transcendent reality was accepted in the form of a divine God, creator of all living beings (Armstrong 1993).

However the advent of science, with its methods of enquiry grounded in that which could be observed and measured, presented a major challenge to the faith-based nature of knowledge asserted by religious institutions. The work of Isaac Newton (1643 – 1727) in mathematics, optics and physics laid the foundations for what was seen to be appropriate methods for scientific inquiry. This was accompanied by an increasing realisation that there was no tangible evidence to prove the existence of a transcendent deity; and considerable evidence to support the view that the universe was made of matter, with every object reducible to elementary particles. Newtonian science viewed the universe to be operating as a machine where, however complex the final structure, its workings were always to be understood in terms of the interaction of its material parts.

Further, classical Newtonian science claimed that there were laws built into the creation of the universe which controlled how these parts related to each other. The ‘initial conditions’, which determined these laws, were present as an integral aspect of the original creation of the universe. The aim of science was to discover what these pre-existing laws were, through objective observation by an independent researcher, so that predictions could be made as to what would happen under any particular set of circumstances.

Finally, there was only ‘one real world’, which could be observed and comprehended by human beings through the five senses, and which was, in essence, physically measurable. This led to the conviction that the experience of consciousness was an emergent property of the brain, and hence was ultimately explainable by the same physical laws.

Because of the undoubted achievements of Newtonian science in generating knowledge about the natural world, the assumptions and beliefs on which it was based contributed to the creation of a positivist research paradigm. The researcher could gain knowledge using empirical methods, and interpret information through reason and logic. Emphasis was placed

on the objectivity of the researcher, with outcomes not influenced by the presence of the observer.

A major challenge to the positivist paradigm arose in response to the recognition that the subjective experiences of both the researcher, and the individual being studied, could not be directly observed, measured and quantified. An increasing number of people developed a belief that it was not possible to identify a reality that existed independently of human perception; and that which was perceived as 'reality' was in fact socially constructed (Burr 2003). Qualitative methodologies were created, based on a view that no researcher was able to gain absolute truth due to the relativity of all truth positions.

In summary, then, in the Academy, two distinct ontologies – that of objectivism and social constructivism - currently live together in a somewhat uncomfortable cohabitation, with each of these ontologies providing a foundation for a number of epistemologies and methodologies. It has been argued that the two ontological positions are mutually exclusive: one supports the idea of an objective reality, the other denies that it is possible. The methodologies associated with the first assume a world that can be broken down into component parts, measured and analysed, with results supported by quantifiable and verifiable evidence. Methodologies associated with the second aim to understand the social and cultural factors that influence individual and social behaviour.

However, there is a major factor that allows these two ontologies to remain in an uneasy truce; and that is their shared view on the role of consciousness in the universe. The presupposition that consciousness is a property of the brain assumes that when the brain dies, so does consciousness. The implication is, that if there were no living beings on this planet, there would be no consciousness. This assumption is so powerful, that it is not seen to be a necessary focus for discussion in academic research books. It is notable that in text books in which different ontologies for different research paradigms are identified and discussed (e.g. Denzin and Lincoln 2011; Bryman 2015), the issue of consciousness is not included. In positivist research paradigms, the consciousness of the individual does not influence the nature of that being researched. In interpretivist research paradigms, the subjective nature of consciousness, and the influence of this subjectivity on perceptions of reality, are assumed. However there is no debate about how consciousness is understood and defined. The

implication is that knowledge about consciousness is self-evident, and hence no analysis or discussion is necessary.

Social constructivists, then, appear to have implicitly accepted the positivists' assumption that consciousness belongs to the brain, and has no wider existence. They take for granted that the material world is ontologically primary, and the only question is whether the secondary phenomenon of consciousness is capable of perceiving reality objectively, or whether each person's consciousness constructs reality in different and unique ways. The influence of Newtonian science has been so powerful that a complete review of its ontological principles has not been seen as necessary.

In the remainder of this paper, I challenge such a limited view of consciousness, and suggest that the Academy, particularly those interested in spirituality, would benefit from exploring new epistemologies and methodologies based on an alternative ontological perspective: which is that consciousness is not merely a secondary property of the brain; but that it exists prior to the brain and hence is primary, with matter being an emergent property of consciousness; or alternatively it has equal and complementary significance as matter.

I draw on different sources to justify such an assertion: namely findings from quantum physics; and current developments in the study of consciousness. Having demonstrated that there is a strong case to support the idea that consciousness is a more significant and primary constituent of reality, I argue for the value of developing a research paradigm based on a spiritual worldview.

The rise of spirituality

The success of science resulted in a challenge to beliefs about a transcendent God, whose existence was not provable using scientific criteria to produce valid evidence. Tacey tells the story of the French scientist Laplace, who, when asked by Napoleon about the place of God in the new scientific universe, replied: "I have no need of that hypothesis" (2004:154).

However, despite the hegemony of science, and its materialist assumptions, there has been a growing interest in researching spirituality from the 1970's till the present. Rousseau

(2012:2) reports that academic engagement with spirituality, which was minimal 40 years ago, has now expanded rapidly across a range of disciplines. For example, PsycInfo, a data base for peer-reviewed literature in behavioural science and mental health, recorded 48 articles being published from 1970-79, but 7985 publications from 2000-2009.

Forman (2004) was provided with a substantial grant by the Fetzer Institute to research and describe the growth of the spirituality movement that was taking place at a grassroots level. As a consequence of speaking to several hundred people who related in some way to the term 'spiritual', he was able to identify a wide range of explanations for the growth of this phenomenon.

A major reason that was often cited was the feeling of disillusionment with science and rationality. There was recognition that, prior to the advent of science, the dominant worldview in western culture was that of a universe which had been created by a divine being, who was the source of all truth. For the past four hundred years, though, the lack of evidence to support this view had resulted in religious convictions being largely replaced by a belief that the practice of science would result in all problems and existential questions being understood and resolved (Forman 2004:126).

However, as time progressed, there was an increasing feeling that the 'the scientific, rational paradigm had "let us down"' (ibid:126). One of the respondents stated:

We are slowly...beginning to understand that the rational consciousness...is an evolutionary cul-de-sac, that our monochrome vision is at the root of many of today's countless social, economic, political and ecological problems (ibid:127).

Another expressed their view as follows:

The modern focus on objectivity and the separation of science and spirituality, taken to fullness, leaves people separate from one another. Separate from nature, and separate from the divine...Life in these times calls for an end to science as the primary means of influence and an opening of the pathways of influence to diverse ways of knowing (ibid: 128).

A further major reason discovered for the emergence of a grassroots spirituality was that, despite the fact that individuals may have become disaffected by the doctrines and rituals of different religions, they continued to have subjective experiences of a reality beyond the material for which science had no explanation. For example, one respondent said:

Though when I entered college I fell away from the church, I had this inner sense of something guiding me. The church as an institution wasn't very important to me. But this sense of something bigger guiding me was (ibid:35).

Many of those interviewed experienced spirituality as being relational in nature:

There is a connection between all things...Spirituality is an integrated, interconnected combination of people and things that join in relationship to each other to explore the gift of life (ibid:56).

Forman, in summarising the findings of the research, suggested that the rise of spirituality was characterised by a sense of an ultimate being perceived as an 'It', which replaced the idea of a 'God-figure' identified as a 'He' or 'She'. This new perception of a divine Being was:

..directly available to each and every mind and heart, no matter what social role or station we enter or where we move..... "It" is more like a hidden water table under us all that feeds and interconnects all of our wells than like a king high on his distant throne (ibid: 208).

Perspectives on the nature of consciousness and spirit were also reflected on within the great religious and spiritual traditions. Professor Ninian Smart, an academic with a lifelong interest in religious traditions, noted a common thread running through different religions which suggests there is an Ultimate being who exists beyond the cosmos, yet at the same time, exists deep within our own consciousness. He thus believed that the acceptance of religious experiences as 'real' rather than illusory, and exploring these experiences critically from a subjective perspective, was one means of creating knowledge of who we are as human beings experiencing consciousness. He stated: 'Nature makes us and we make nature.

Religion can throw light on this mysterious middle role of consciousness in our cosmos' (Smart 2000: 102).

Tacey contended that the constructed nature of scientific authority which 'killed God off in the first place' (2004:155) had been exposed. A world with no place for a divine being turned out to have no greater or less authority than the religious myth it sought to replace: "Scientism is a myth too, a myth as pernicious as any other sort of fundamentalism' (ibid: 155) However, reflecting Forman's findings, he acknowledged that there needed to be a new image of 'God', probably different to that put forward by any specific religion. Karen Armstrong also recognised this:

Throughout history people have discarded a conception of God when it no longer works for them (1993:408).

Tacey discovered that there were findings from science that encouraged a revisiting of traditional spiritual perceptions:

Today, the new sciences, particularly theoretical physics...keep telling us that there are no separate parts in the universe, that everything is in dynamic relationship with everything else.....The ancient mystical systems have always taught us that the world is a dynamic whole, that energies, vibrations, currents, and forces bind everything together in an indivisible cosmos....Ironically it is the sciences that are today making this recovery of the past and retrieval of ancient wisdom possible (ibid:223).

Once the primacy of matter has been challenged, it encourages an exploration of the relationship between physical and spiritual dimensions. As Christian De Quincey says:

Meaning, not mere mechanism, becomes the connection between beings; synchronicity, not causality, patterns these meanings and connections – and the cosmos as a whole resonates to the creative meaning of its own never-ending story, a narrative of ensouled matter and embodied experience, embracing the sublime paradox of "subjective objects", of multiplicity-in-unity (2002:263).

John Heron, echoing physicist John Wheeler (1994), has described in depth what he calls a participatory worldview:

There is a given cosmos, a primordial reality, in which the mind actively participates..... Mind and the given cosmos are engaged in a co-creative dance, so that what emerges as reality is the fruit of an interaction of the given cosmos and the way perceiving mind engages with it. Mind actively participates in the cosmos, and it is through this active participation that we meet what is other.

(Heron 1998: 236)

The main significance of these and other scientific findings for social and educational research is to question the adequacy of either an objectivist or a social constructivist ontology. The indication is that we need to develop a participatory spiritual worldview which explicitly acknowledges the possibility that consciousness does not just reside in the brain; and that our mental worlds may be equally real and complementary to the physical world in ways that are not yet recognised or understood.

The significance of quantum physics

Quantum mechanics as a branch of physics has been in existence since the beginning of the 20th century, but its implications for our understanding of reality are as little understood now as they were 100 years ago. Findings from quantum physics challenge many of the assumptions underpinning traditional science, including its certainty that matter is the primary constituent of the universe.

Quantum theory also challenges the view that an observer can exist independently of the reality she is observing. In what was termed by Bohr (1928) as the ‘complementarity principle’, reality could present both as particles and waves, with the nature of observation determining which manifests at any point in time. The double slit experiment (see <https://www.youtube.com/watch?v=Q1YqgPAzho>) shows that the consciousness of the

observer influences the behaviour of the photon, suggesting that the mental and physical dimensions of reality are inextricably interconnected in as yet unexplainable ways.

Danah Zohar was an early writer in exploring the potential connections between quantum physics and spirituality, introducing the concept of ‘Spiritual Intelligence’ (Zohar 2001). She proposed a quantum mechanical model of the brain, which saw spiritual intelligence as emerging from human expression of values, and a need for deep meaning and purpose in life. O’Murchu, also interested in the spiritual implications of quantum physics, wrote:

Zohar works on the assumption that consciousness is a property of all living systems and, in a quantum context, becomes the basis not merely for awareness, but more recently for *relationships*, an innate potential for mutual cooperation between all beings and systems within the one quantum universe.

(Murchu 2004: 36).

Zohar was particularly interested in the idea of nonlocality and entanglement, concepts used to explain the process when two particles which have been together, and are subsequently separated, continue to be instantaneously responsive to each other across space, in ways that defy our conventional knowledge of how the world works (Aspect et al 1981; Mastin 2009). It is as though each particle is experiencing a form of consciousness, and, having been in relationship with the other, ‘knows’ what is happening and is responding accordingly; again, to the complete mystification of traditional science. Zohar writes:

Quantum holism teaches us that there is no such thing as separation. Each of us is ‘entangled’ with, part of and defined by everything else in the world. Each of our thoughts, decisions and actions reverberates across the universe. Everything that we do has consequences for the whole.

<http://greatmystery.org/Faculty/DanahZohar.html>

An increasing number of those learning about quantum physics became aware that the experiments were producing findings that resonated more with spiritual traditions than with classical science. Tarnas commented:

Matter's former hard substantiality had given way to a reality perhaps more conducive to a spiritual interpretation....The principle of complementarity governing waves and particles suggested its broader application in a complementarity between mutually exclusive ways of knowledge, like religion and science. Human consciousness, or at least human observation and interpretation, seemed to be given a more central role in the larger scheme of things with the new understanding of the subject's influence on the observed object. The deep interconnectedness of phenomena encouraged a new holistic thinking about the world, with many social, moral, and religious implications.

(Tarnas 1991: 357)

It seems, then, that there are scientists, philosophers, psychologists and spiritual thinkers who consider there to be a reality that exists beyond the material; and yet the emphasis in academic research is on research methodologies which assume a material basis to reality, and do not question the nature and scope of consciousness. This is a gap in the research that I suggest needs addressing.

The nature of consciousness

De Quincey says that consciousness is "our deepest mystery and our most intimate reality" (2002:64). None of what we experience as human beings happens outside of consciousness; and yet we know little about its nature or origins. Many have tried to understand it: the experience of consciousness has attracted analysis throughout the intellectual history of the western world. For example, Leibniz (1646-1716), a contemporary of Isaac Newton, challenged the atomistic view of humanity:

Modern man has difficulty in regarding bodies as any more than dead mechanical extended entities. For Leibniz such a view would be far too narrow..... There are other modes of being besides matter: the immaterial or psychic, for example, and the spiritual. And in fact spiritual being is more real and more forceful than matter."

(Hirschberger 2008:98-99).

Immanuel Kant (1724-1804) developed the idea of ‘transcendental consciousness’, in which he included the view that knowledge initially arises from intuitive sources; and William James (1842-1910) explored in depth the phenomenon of consciousness, challenging the materialist explanation for its existence.

Despite this longstanding interest in the possibility that consciousness may exist beyond matter, this view made little impact on the developing scientific enterprise. However, consciousness remains one of the areas that scientists have had least success in investigating. Although we all experience it, it is remarkably problematic to agree a description. When consulting dictionaries, there is a circularity of definition that leaves ultimate meaning unexplained. For example, in the Oxford English Dictionary, the word **consciousness** is defined as ‘the state or faculty of being *conscious*’; conscious is ‘having internal *perceptions* or consciousness’; perception is ‘to become *aware* of, conscious of; and **awareness** is ‘the quality or state of being aware; consciousness.

Guzeldere identifies the difficulties in forming a definition:

The phenomenon of consciousness does not have clear-cut boundaries, and its complex structure does not admit any easy formulation. Even if it is in principle possible to invent a ‘consciousness monitor,’ a device that would ‘detect’ the physical signs of the presence of consciousness, no such technology is anywhere in sight, as it is not even known what exactly is to be measured.

(Guzeldere 1995: 30-31)

In other words, scientists have no explanation for consciousness. They cannot differentiate between the consciousness of an amoeba, a dog, or a human; nor have the means of telling whether or not consciousness permeates a flower or a tree.

Robert Ornstein, an early writer on the science of consciousness, started his book *The Psychology of Consciousness* with a story:

A man, having looted a city, tried to sell one of the spoils, an exquisite rug. “Who will give me 100 gold pieces for this rug?” he cried throughout the town. After the sale was completed, a comrade approached the seller, and asked, “Why did you not

ask more for that precious rug?” “Is there any number higher than 100?” asked the seller?

(Ornstein 1986: vii)

He suggested that we make the same mistake as the rugseller in our conceptions of consciousness: “We seem to set mental limits on the possible boundaries of our world and work within these limits “(ibid: vii).

There is, though, an increasing awareness of a possible connection between an expanded notion of consciousness, and spiritual experiences. For example, Professor Harald Walach, one of a growing number of international academics who are interested in developing a post-materialist science, has engaged in an extensive exploration of the relationship between consciousness and spirituality. In the next section, I introduce Walach’s (2015) analysis of different models of consciousness, which chart both historical and contemporary theories about the relationship between consciousness and matter, and provides an argument to support the idea of a secular spirituality.

A secular spirituality

Walach (2015: 71) identifies four models of consciousness: Materialism, Dualism, Idealism, and Complementarity. *Materialism* is the ontology that I am claiming is dominant in classical science, and in current social and educational research. To summarise, the core belief is that there is only one basic entity in the universe, which is matter. This develops over time, in ways that can be observed and theorised, leading to an ever-expanding body of knowledge.

The second model, *dualism*, assumes that consciousness and matter are two different substances that co-exist. Descartes, a leading philosopher in this worldview, saw ‘I’ as a thinking and feeling being who was quite separate from the inanimate physical objects that surrounded him. The main problem with dualism, as Walach clearly states, is that it ‘cannot really make clear how different entities could interact in a rational and sufficiently intimate way’ (2015:79).

Idealism is the view that consciousness is the primary property in the universe with matter derived from consciousness. Such a view has been developed philosophically since the time of Plato, with key exponents being Fichte and Hegel, and is currently being explored by physicists and others in contemporary studies of consciousness (Goswami 2012, Stapp 2011, Wallace 2010).

In the same way that materialism fails to explain how consciousness emerges from matter, idealists have a similar problem as they are unable to explain how matter emerges from consciousness. Given this equivalence in the nature of the challenge, though, and despite the strongly expressed convictions of scientific materialists, there is no incontrovertible reason why precedence should be given to materialism over idealism.

The argument I am making in this paper is that in social and educational research, equal significance should be given to research that is based on the assumption that consciousness is primary; and that in either implicitly or explicitly assuming the converse, we are artificially limiting the development of productive research methodologies which would expand the scope of the study of spirituality, trapped by an ‘illusion of knowledge’ (Boorstin 1985: xv).

Walach establishes a fourth model, which he terms ‘*complementarity*’, taken from quantum physics and used by Niels Bohr (1928) to describe the duality of particles and waves, as explained earlier in this paper. Walach stresses that in quantum physics, ‘in order to explain reality, one had to use two mutually exclusive, *maximally incompatible* descriptions for *one and the same thing*’ (2015: 80, emphasis in original). He is proposing that the notion of complementarity, which is a qualitatively new way of describing reality that has not yet reached many parts of academic research, could be a useful way of understanding consciousness and the brain.

In terms of a model of reality, Walach perceives this as ‘an ontological monism that simultaneously allows for phenomenological dualism regarding the experiences in our phenomenal world’ (ibid: 81). In other words, phenomenological experiences of mind and matter could be complementary aspects of one underlying reality; a reality that would need to be conceptualised in a very different way to our contemporary taken-for-granted view of matter.

This approach, then, would see inner phenomenological experiences, and our perceptions of the external world based on our senses, as being complementary representations of the same reality, with neither having more significance than the other. The implication of this is that, in order to gain full knowledge of our existence, an exploration of inner reality is as important as information gained from our outer experience.

Inner experiences include those which are mystical and spiritual in nature. A materialist ontology would perceive such experiences as delusional; however, an ontology which recognised the principle of complementarity would accept them as providing data about an aspect of reality that has so far been neglected within social and educational research. In developing a methodology to study both aspects of reality, William James' (1912) notion of radical empiricism may help to guide the research; that is, nothing should be included which is not directly experienced; nor anything excluded which is directly experienced.

Kelly (2015), Research Professor at the University of Virginia, provides an ontological perspective that offers the possibility of integrating a relativist viewpoint with the notion of one underlying reality which may only be sensed through the most profound inner experiences. He suggests there may be properties inherent in our cosmos that are present at the deepest levels of human nature, and can be directly accessed through mystical experiences and radically creative enterprises.

In our view the mystical domain is best conceived as **stratified in depth**, with constructivist-type influences predominating at the 'shallow' end, but diminishing in importance as we progress toward a 'deep' end populated increasingly by experiences approaching (mystical experiences).

(Kelly 2015: xix)

In discussing ideas about spirituality, it is important to note that the academic research literature is not devoid of studies which inquire into people's interest and experiences in the spiritual and the mystical; but they are usually **about** spiritual beliefs and experiences, mainly those of people other than the researcher. Such research is not grounded in an ontology that accepts inner worlds and intimations of spirituality to be representations of a consciousness that is of equal ontological significance to the physical world. Much of the research focuses

on the nature and consequence of spiritual beliefs in others. For example, Forman's (2004) work, cited in this paper, surveyed changes in spiritual viewpoints; Andresen and Forman (2000) drew on neuroscience to create cognitive models describing the effects of meditation; and Koenig (2012) investigated the impact of spiritual beliefs on both mental and physical health.

Although growing attention is being paid, by a number of academic disciplines, to the pervasiveness of spiritual beliefs and practices, there is no comparable attempt to investigate the validity of the ontological foundations of the beliefs being researched. As commented on earlier in this paper, this absence is evident when looking at mainstream research methodology textbooks in education and the human sciences, which include an overview of different research paradigms (e.g. Bryman 2016, Denzin & Lincoln 2011; Denzin & Giardina 2015; Cohen et al. 2013). None of these textbooks include an ontology that recognises spirituality or consciousness as either a primary element of the universe, or as in a complementary duality with matter. In other words, in the academic world, the idea that there might be a reality that exists independently of human life, and which can be accessed internally as well as externally, has largely been omitted from consideration; and certainly does not have equal status to research which assumes primacy of the physical world.

On the margins of academic research, though, there are signs that the hegemony of materialism is being challenged, with an opening up to scrutiny of its ontological assumptions. This is being accompanied by a recognition of the value of researchers engaging experientially with their own inner experiences, willing to explore the hypothesis that their internal world is as vast and worthy of exploration as is the physical world.

In the following section, three different methods are outlined: intuitive inquiry informed by transpersonal psychology; a 'spiritual science'; and the bringing together of science and Buddhist meditation to create a contemplative science.

Epistemological and methodological approaches to explore the inner world

Coming from a transpersonal perspective, Anderson and Braud (2011) make a significant contribution to the development of research methods which include inner experiences not

observable by an external observer. Although they do not explicitly explore the ontological basis of their work, they communicate an approach to research based on a deep interconnectedness between the individual, the collective and the global, as evidenced not only by quantum physics, but also by diverse wisdom traditions (2011: 303). They contend that research, which gives equal precedence to internal worlds, is potentially transformative for all actively involved in the research process, experienced through increased self-awareness, enhanced psycho-spiritual development, and a qualitative shift in worldview. Such transformative shifts can be recognised by “changes in one’s body, feelings and emotions, ways of thinking, forms of expressions, and relationships with others and with the world” (ibid, p. xvii).

An example of one methodology they advocate is ‘intuitive inquiry’, which is based on the belief that there are “direct and embodied ways of knowing” (ibid, 20) which are felt before coming to any intellectual interpretation of what has happened. There is a recognition that some kind of lived experience takes place before the rational mind takes over, and that it is important to connect with that initial perception. The contention is that with practice, individuals can learn to witness these perceptions, and integrate them with other ways of knowing. They argue that intuitive perception can help achieve richer forms of understanding when used to complement processes such as analytical reasoning and information gained from the conventional five senses.

There is, of course, the challenge of how such an individualised, interior view of knowing can generate knowledge that is valid for all individuals experiencing and inquiring into consciousness. Hart et al support the idea of the importance of intersubjective sharing and learning:

A dialogue among those who access the interior view is essential for the ongoing revisioning of the external standards that the changing manifestations of knowing call for. Such a dialogue can also facilitate access to, and encourage people who trust and give voice to, their own knowing (ibid: 4).

In the same book, Donald Rothberg considers the idea of a 'spiritual science', and introduces a number of methods of spiritual inquiry. One of these is what he calls 'systematic contemplation'. This is a process whereby:

The inquirer cultivates the ability to be 'present' with the phenomena of human experience in their breadth and depth, often in a primarily nondiscursive way, and commonly uses exercises and conceptual models to help initially access particular dimensions of experience. This contemplative process purportedly gives insight into the surface patterns and deeper nature of these phenomena, and potentially opens up awareness to the most fundamental spiritual insight, however this is understood (Rothberg: 2000:166).

This is a method that has been developed extensively by Dr Alan Wallace, within the Buddhist traditions. Wallace is an American scholar who has an academic background in both physics and in Buddhism. An experienced meditator, who has engaged in many dialogues with the Dalai Lama and other Buddhist scholars and monks, he has written extensively on the merits of expanding the rigorous methods of science to include the learning about reality gained by Buddhist meditators. In the process of his own enquiries, Wallace has developed a special theory of 'ontological relativity' (2010: 50). With the explicit aim of bridging the gap between science and the spiritual, he suggests that mental phenomena, although conditioned by the brain, do not emerge from it. Rather, similar to Walach's (2015) idea of complementarity, he sees mind and matter, consciousness and the brain, subject and object, as arising from a unitary dimension of reality that is more fundamental than any of these dualities.

To test his hypothesis, Wallace engaged over long periods of time in meditative practice as a technique for refining his attention and metacognition, creating the conditions necessary to examine the internal space of his mind. In a number of his publications (e.g. 2013, 2010, 2003), Wallace provides theoretical and practical guidance for bringing together the insights of contemporary physicists and philosophers, and the meditative traditions of Buddhism, to create a contemplative science that enables enquirers to observe mental phenomena, and explore the deeper reaches of the mind.

Conclusion

In this paper, I have been explaining the historical context which has led to the present position, where mainstream social and educational research in universities is informed, either explicitly or implicitly, by a materialist worldview, which assumes a person's spiritual and mystical experiences to be ontologically irrelevant. What is absent is a consideration that there may be an alternative way to view reality, but that, like the parable of the blind men who each touch a different part of an elephant, different people have differing experiences of what that reality is like.

When considering the story of the blind men, we may agree that their perceptions of what they are touching are relative, with no one of them having access to the truth of what is happening. However if they are able to find methods of curing their blindness, or if a person who is not blind arrives on the scene, then a more comprehensive understanding of the elephant will emerge.

The main point of making this analogy is to propose that we as human beings suffer from limitations in perspective, which create barriers when seeking to understand the nature of reality in its totality. Because we are not, at least at this stage of our evolutionary process, able to discover truth in its entirety, it does not mean that there is no absolute truth to be discovered. However if we are to move closer to that truth, it is important that we do not artificially limit our perspectives.

In social and educational research, a subjective dimension of qualitative research is acknowledged. What is missing, though, is a widespread interest in a structured and rigorous inquiry into the ontological reality of subjective spiritual experiences. I have argued that this omission is the consequence of the dominant intellectual paradigm which does not adequately challenge the view that neuronal activity of the brain is responsible for our experience of consciousness, and hence for all spiritual experiences.

Findings from quantum physics provide powerful evidence of the pervasiveness and significance of consciousness, leaving no justification to confine ourselves to research

paradigms based on materialist assumptions. In these times of immeasurable global dangers, we need to open up our minds to greater possibilities, and be prepared to explore ourselves and our experiences from every conceivable perspective.

In this paper, I have presented a case to support the suggestion that there would be value in academics and professionals working together to develop a spiritual research paradigm which includes a more active and primary role for consciousness. This in turn would provide a basis for re-examining the nature and significance of all spiritual experiences, allowing for the possibility that they may connect with, and potentially draw on, deeper sources of an intangible secular spiritual reality.

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