

Research Article

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Implications of postmaterialist theories of consciousness for psychiatry: towards an integral paradigm

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Abstract: Mental health professionals can help patients understand exceptional and paranormal experiences, integrate them into day-to-day life, and cope with confusion and anxiety that sometimes accompany them. However, a broader clinical perspective and specialized training in clinical parapsychology is needed. In the first part of the paper I argue that psychiatry as currently practiced is limited because it embraces a strictly materialist paradigm, emphasizes treatment over prevention, and relies principally on pharmaceuticals that are often ineffective and/or unsafe. A paradigm shift in psychiatry is taking place that will soon lead to novel concepts of energy and innovations in therapeutic approaches. In the second part of the paper I review the ongoing debate over consciousness, implications of novel understandings of energy for psychiatry, and research findings in physics, neuroscience and parapsychology that are contributing to a postmaterialist paradigm in psychiatry. I comment on an important problem in the philosophy of science called Hempel's dilemma and argue that future scientific theories of consciousness will probably encounter similar conceptual limits to those faced by current theories. Following Beauregard, Trent and Schwartz (2018) I argue that different categories of theories may be needed to adequately explain the variety of human experiences and I propose an integral paradigm that acknowledges the validity of both conventional scientific explanations and postmaterialist theories of consciousness. Finally, I discuss implications of postmaterialism for research, education and training in psychiatry.

Keywords: Postmaterialism; Consciousness; Paradigms; Psychiatry; Psychology; Philosophy of science; Near-death experience; Clinical parapsychology

1 Exceptional and paranormal experiences influence the perspectives of mental health professionals

Life stories deeply influence our beliefs, values and career choices. In addition to insights about the nature of consciousness gleaned from study, research (Achterberg et al 2005), and my work as a psychiatrist, my perspective has been shaped by direct experience. Starting in childhood 'so-called' exceptional or paranormal experiences have profoundly affected how I see the world and myself in it. I place 'so-called' in quotes because I believe 'exceptional' and 'paranormal' experiences are commonplace and constitute an important part of the 'normal' fabric of conscious experience. Although 'so called' is not inserted in front of the words 'exceptional' and 'paranormal' every time they are used in this article, the reader should understand this is implied.' Labeling such experiences 'exceptional' or 'paranormal' reflects the disjunction between widely shared human experiences and what current science and psychiatry can explain. Collectively, my experiences are ideologically open to, and able to explain, ways of knowing about myself, people and the world that go beyond the conventions and constraints of current science. Having this perspective was especially challenging during the decade taken up by medical school, internship and residency when I was required to view health and pathology through the lens of science only. During those years, Dossey's seminal book 'Space, Time and Medicine' (Dossey 1982) showed me that when medicine takes into account quantum mechanics and other postmaterialist theories, phenomena related to illness, healing, and so-called exceptional and paranormal experiences

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can be approached scientifically and with an open mind. From the beginning of my medical career, I have explored different ways of knowing about the body and mind in health and illness. This journey soon led to my work in integrative medicine, a rapidly growing subspecialty that embraces both conventional Western medicine and traditional systems of medicine.

2 How conventional psychiatry approaches individuals who report exceptional and paranormal experiences and the need for a broader framework

I have worked with many patients who report exceptional or paranormal experiences including encounters with a deceased loved one, near-death experiences, out-of-body experiences, telepathy, and precognitive dreams. Although mental health professionals are in a position to help people who are struggling with confusion, anxiety and despair that sometime accompany such experiences, conventional training does not provide the concepts and tools needed to do so. This has resulted in an enormous unmet need for understanding and care among the large numbers of individuals who are trying to cope with confusion and distress related to exceptional or paranormal experiences. A survey of clinicians, working at six mental health clinics in the Netherlands, suggests that as many as one half of mental health professionals are open to the possibility of psi, while only 1 in 5 believe they have enough knowledge to work with clients who report having exceptional or paranormal experiences (Corbeau, 2004). The disparity between the high rate of exceptional and paranormal experiences and the small number of clinicians who have the skills needed to competently care for such individuals calls for changes in post-graduate training in psychiatry and psychology.

An important role of mental health professionals is to distinguish between apparent exceptional or paranormal experiences and serious symptoms of psychopathology such as delusional beliefs and auditory or visual hallucinations that may be consistent with a primary psychotic disorder, schizotypal personality disorder, or a disturbance of perception or thought caused by a neurologic disorder (e.g., a brain tumor), adverse effects of a medication, or acute intoxication with a substance (e.g., psychedelics or stimulants). In cases where the medical and psychiatric

history point to a psychotic or neurologic disorder, intoxication with a mind-altering substance, or adverse effects of a medication, mainstream diagnostic and treatment approaches are appropriate and helpful. This reasoning informs approaches used in emergency and inpatient psychiatry aimed at ‘ruling out’ an underlying neurologic or other medical disorder or acute intoxication with a substance, before arriving at a primary psychiatric diagnosis and recommending treatment.

In cases where a primary medical or psychiatric disorder, or acute intoxication with a substance, have been ruled out by history and findings of laboratory analysis or brain imaging studies, it is important to broaden the clinical inquiry to include the possibility that symptoms of *apparent* psychosis may reflect an exceptional or paranormal experience. Significantly, research findings suggest that paranormal experiences reported by healthy individuals are seldom caused by an underlying medical or psychiatric disorder. Three studies on undergraduate psychology students who reported having paranormal experiences (Goulding 2004; 2005; Goulding and Odehn 2009) found no correlation between reports of paranormal experiences and risk of having any mental health problem. These findings suggest that individuals with high levels of ‘positive’ schizotypy (i.e., magical thinking or beliefs that are outside of cultural norms) may have better mental health than individuals with low levels of (positive) schizotypy.

Clinical parapsychology (CP) is a recently formed subspecialty that I believe will make important contributions to the theory and clinical methods of psychiatry in the coming decades. CP employs clinical techniques aimed at addressing existential questions, issues and problems that frequently arise in the wake of exceptional and paranormal experiences such as contact with spirits or deceased persons, out-of-body experiences, and near-death experiences (Kramer, Bauer & Hovelmann 2012; Rabeyron 2022). Goals of CP include helping patients to understand and interpret exceptional or paranormal experiences within their respective worldviews, and teaching them strategies for coping with confusion, anxiety and despair that often take place during or in the immediate aftermath of such experiences.

3 The limitations of contemporary psychiatry and emergence of a more inclusive paradigm

Mental illness is the pandemic of the 21st century accounting for about one-third of the world's disability due to all adult health problems (Anderson 2011) reflecting marked societal and personal suffering and enormous socioeconomic costs. Like adults, children and adolescents are also afflicted with high rates of serious mental health problems, and many do not receive adequate care (Bruha 2018).

Psychiatry as currently conceptualized and practiced is limited by incomplete understandings of the function of the brain and the nature of consciousness. Conventionally trained psychiatrists are taught to ascribe the causes of mental illness to dysregulations of neurotransmitters or brain circuits in some cases influenced by genetic risk, psychological, social and cultural issues. Although these factors influence healthy and pathological functioning, they do not provide a framework that adequately explains normal conscious functioning, pathological states and so-called exceptional and paranormal experiences. Neurotransmitter theory, put forward over half a century ago, claims that normal and pathological states of consciousness can be reduced to the mechanics of brain function at the level of discrete neurotransmitter molecules. This theory is essentially a contemporary version of *psycho-functionalism* according to which different states and functions of consciousness are *equivalent to* processes involving neurotransmitters that take place in the brain. By equating memory, cognitive functioning and emotional states with discrete processes at the level of molecules or neural networks, current psychiatry *a priori* dismisses the legitimacy of postmaterialist thinking.

In addition to the inherent constraints of the dominant materialist perspective on theory in psychiatry, available conventional treatments and models of care fail to adequately address the complex biological, social, cultural, and postulated energetic and spiritual dimensions of mental illness. In spite of decades of research and billions of dollars of industry funding, the evidence supporting conventional drug treatments of major psychiatric disorders including major depressive disorder, bipolar disorder, psychotic disorders, and anxiety disorders, is far from compelling (Fournier et al 2010; Thase 2007; Velligan et al 2009; Hermann et al 2011; Kirsch et al 2008; Ivanov & Schwartz 2021).

Finally, and of widely shared concern, many commonly prescribed psychotropic drugs cause serious safety

problems such as weight gain, neurologic disorders, sudden cardiac death, and increased suicide risk. Metabolic syndrome, an adverse effect of antipsychotics and other psychotropic drugs, is associated with significant weight gain and increased risk of diabetes and coronary heart disease (Henderson 2008). In addition to limited effectiveness and safety of psychotropic drugs, there are widely shared concerns about deficiencies in the mainstream model of care, including inequalities in the delivery of mental health services with respect to ethnicity and socioeconomic status, the lack of integration of mental health services into primary care medicine and other medical sub-specialties, and conflicts of interest in relationships between the research community and the pharmaceutical industry that influence research spending and bias reports of research findings in the academic journal literature (Sarris et al 2014).

The limitations of psychiatry call for a paradigm shift including new research methods for investigating the complex causes of mental illness and reforms in the education and training of psychiatrists and psychologists. These changes have already begun and will probably accelerate in the coming decades with the result that psychiatry will move away from almost exclusive reliance on psychotropic medications, to an *integrative* perspective that encompasses both conventional mainstream approaches and so-called *alternative* modalities. In this context 'alternative' refers to treatments other than psychotropic medications, psychotherapy, and technologies that deliver strong electrical current or magnetic fields into the brain. This more inclusive paradigm called *integrative mental health care* entails the judicious use of modalities from conventional biomedicine and non-Western healing traditions. In contrast to psychiatry as currently practiced, integrative mental health care prioritizes prevention and wellness, addresses physical, psychological and postulated 'energetic' influences on mental and emotional wellbeing, and takes into account each patient's unique genetic and biochemical individuality, cultural background, and spiritual or religious beliefs (Lake 2007; 2008).

Accumulating research findings suggest that alternative therapies including select natural products, mindfulness meditation, and 'energy' medicine are beneficial, safe and affordable approaches for maintaining optimal wellbeing, and treating symptoms of many common mental health problems such as depressed mood and anxiety, and that alternative modalities can easily and safely be incorporated into existing mainstream mental health care models (Sarris et al 2014). Large population surveys reveal that alternative approaches are widely used to self-treat a range of mental health problems (Barnes 2008). Roughly

43% of patients with an anxiety disorder (Bystritsky et al 2012), and 53% with depressed mood (Wu et al 2007) use one or more alternative therapies. It is significant that seriously mentally ill individuals who use alternative therapies to treat their symptoms perceive such treatments as improving their physical, emotional, cognitive, social, and spiritual functioning, reducing symptom severity and promoting recovery and wellness (Sirois 2008). Findings of a survey (Horrigan 2012) of integrative clinics and training programs provide evidence that integrative medicine is beginning to mature into a coherent set of values, a uniform model of care delivery, and standards of clinical therapeutics. The same survey found that integrative care is beneficial for many common medical and psychiatric disorders, and highlights depression and anxiety as among the top five health concerns for which integrative medicine is most beneficial.

The balance of this paper reviews theoretical work and research findings in physics, neuroscience, near-death studies, and parapsychology that challenge the strictly materialist perspective implicit in psychiatry as currently practiced, and invite postmaterialist thinking and innovations in clinical therapeutics.

4 The emergence of postmaterialist thinking in medicine and psychiatry

Historically, changes in the materialist paradigm underlying Western medicine have led to novel models of illness causation and commensurate advances in clinical approaches, resulting in improved reliability and accuracy of assessment findings and improved treatment outcomes. For example, novel theories based on quantum mechanics have been put forward in efforts to explain observed effects of “healing intention (HI)” on health, including both prayer and other spiritual practices. However, to date, findings remain inconclusive. It has been suggested that *intention* may be an essential underlying factor when healing takes place when patients respond to both conventional Western medical treatment and approaches used in non-Western systems of medicine (Zahourek 2004). Well-designed sham-controlled studies show that prayer and other forms of directed intention influence living systems on the scale of cellular activity and physiology (Radin 2004; Jonas 2003; Astin 2000). Beneficial effects are reported almost 60% of the time when HI only is used to treat a medical or psychiatric disorder (Astin, Harkness & Ernst 2000). However, research findings on HI are limited by methodological problems including

poor or absent blinding, data omitted from analysis, unreliable outcome measures, rare use of power estimations and confidence intervals, and the absence of independent replication (Jonas & Crawford 2003). Schlitz has argued that few if any field or laboratory studies on healing have adequately simulated or re-created conditions and factors associated with reports of healing in traditional societies (Schlitz, 2011). Two meta-analyses of non-contact healing studies in non-human biological systems and in humans revealed significant improvements in measures of well-being that were not attributable to expectation or placebo effects (Roe, Sonnex and Roxburgh 2015). However, the authors did not reach strong conclusions because of the uneven quality of many studies and heterogeneity in study designs. Reviews of theory and research literature on HI are available in Braud (Braud, 2003), Jonas & Crawford (Jonas & Crawford 2003) and Watts (Watts 2011).

Practitioners of different energy medicine techniques such as Healing Touch and Reiki, postulate the existence of so-called subtle energies independently of the human central nervous system. In this model irreducible energetic principles are postulated to interact with brain structures manifesting as different subjective states of consciousness, including *pathological* states. In this model *subtle energies* are fundamental energetic principles such as qi and prana postulated by Chinese Medicine and Ayurveda, respectively. Dossey has argued persuasively that in order to adequately explain reports of “miraculous” healing, the materialist paradigm embedded in biomedicine must be expanded to encompass postulated non-local effects of consciousness on illness (Dossey 1999, 2001).

The claims of energy medicine may be consistent with quantum field theory (QFT) applied to analysis of brain function a nascent area of research called quantum brain dynamics (QBD) (Jibu & Yasue 1995). Although a role of macroscopic quantum fields in neurophysiology or in human brain function has not been verified, there is ongoing work in this area and QFT is regarded as a legitimate conceptual framework for the analysis of fundamental relationships between the field-like properties of matter and energy at the levels of electrons and photons in both non-living and living systems (Yasue 1999; Cao 1999; Glick 2016).

In parallel with research advances that support postmaterialist theories of consciousness, recent findings show that postmaterialist beliefs have significant positive effects on health-seeking behavior. For example, individuals in developed countries who have postmaterialist beliefs are more likely to engage in proactive health-promoting behaviors and experience better health and mental health outcomes than individuals with more

conventional beliefs (Inglehart 2015). A population survey done in Switzerland found that individuals with postmaterialist beliefs use alternative medicine more often than individuals with more conventional beliefs about health (Messerli-Rohrbach 2000). A survey of women in Germany found that individuals with postmaterialist beliefs about health had fewer visits with their doctors for treating chronic illnesses and more appointments for preventive care compared to women with more conventional views (Hajek & König 2020).

5 Novel understandings of energy and implications for the future of psychiatry

Widely used treatment approaches in psychiatry employ classically described forms of energy such as electricity and magnetic fields (e.g., electroconvulsive therapy (ECT) and transcranial magnetic stimulation (TMS)). Classical forms of energy widely used as alternative treatments of mental health problems include electroencephalography (EEG) biofeedback, full-spectrum bright light exposure, music therapy, binaural sound beats, and microcurrent electrical brain stimulation. In contrast to treatments based on well described forms of energy, beneficial effects of alternative treatment approaches described as ‘energetic’ therapies may be mediated by quantum-level mechanisms, possibly resulting in both direct and subtle effects on brain function and physiology (Curtis & Hurtak 2004; Hankey, 2004). Conventional and alternative approaches that employ different forms of energy to modulate consciousness to mitigate symptoms or enhance cognitive functioning should be regarded as a central part of mental health care.

Energetic treatment approaches based on postmaterialist understandings of nature and the human body include acupuncture, homeopathic remedies, Healing Touch, qigong, and Reiki. In Chinese medicine, qi is regarded as an elemental energetic principle that cannot be explained by current science but which may have properties consistent with quantum field theory (Chen, 2004). It has been suggested that healing intention operates through nonlocal “subtle” energetic interactions between the consciousness of the medical practitioner and the physical body or consciousness of the patient (Zahourek, 2004). Practitioners of energy psychology claim that energetic techniques, including acupuncture, acupressure, and Healing Touch, achieve beneficial effects by chang-

ing the body’s overall energetic balance. Practitioners of a technique called *mind energetics* postulate that an exchange of energy is mediated through language and intention during therapeutic encounters, that influences deep-seated psychological defenses in beneficial ways (Pressman, 2004). The various techniques of energy medicine have recently been reframed as *quantum functional energy medicine* (Gonzalez 2019). In addition to the beneficial therapeutic effects of energy medicine, accumulating evidence suggests that a variety of spiritual practices play a significant role in integrative preventive medicine resulting in improved physical and mental health (Schwartz 2017).

In addition to treatment approaches based on novel understandings of energy, assessment approaches employed in non-Western systems of medicine provide evidence that illness phenomena can be characterized in terms of postulated non-classical forms of energy. Examples include Chinese pulse diagnosis and homeopathic constitutional assessment.

6 The inconclusive debate over theories of consciousness

Current science and, by extension Western medicine and psychiatry, incorporate the (often implicit) assumption that established theories in physics, chemistry and biology are able to explain all phenomena that exist, including consciousness. However, after millennia of philosophical debate and research, there is still no consensus on a *best* or *most complete* theory of consciousness or on evolutionary dynamics that could have led to the emergence of consciousness (Velmans 2012).

The inconclusive debate over consciousness is related to a more general problem in the philosophy of science called Hempel’s dilemma that takes place when deferring to physics to determine what exists (Hempel 1980). The problem consists of identifying the best physical theory to use to determine phenomena that exist or *can have existence*. There are two logically necessary approaches to solving this dilemma: relying on current physics or positing a hypothetical future theory of physics. It turns out that both approaches fail to resolve the dilemma. Deferring to current physics will render materialism false since contemporary theories in physics do not explain all observable phenomena including phenomena associated with consciousness. Trying to solve the problem by creating an inclusive theory of physics that combines relativity theory, quantum mechanics and electrodynamics will

probably lead to an inconsistent theory because of incommensurate assumptions in these theories.

Applying Hempel's dilemma to the problem of understanding consciousness scientifically suggests that future theories of physics will also not be able to reduce *all* aspects of consciousness to known or knowable physical entities or processes, resulting in inconclusive findings and the same metaphysical vagueness that characterize contemporary scientific theories of consciousness. In other words, future scientific theories of consciousness will probably encounter similar conceptual limits to those faced by current theories. Expecting fundamental new insights about the nature of consciousness to emerge from future theories of physics would be like expecting two different varieties of wine from fermenting grapes in barrels with different labels.

The problem posed by Hempel's dilemma is exemplified by the unverifiability of any particular theory of consciousness. Until now science has failed to provide compelling evidence for any physicalist theory of consciousness. This is because investigations of brain function using available technologies lack the ability to confirm postulated causal relationships between discrete structures or neurochemical processes in the brain—so-called *neural correlates of consciousness*—and *normal* or *pathological* states of consciousness. As a result, the causes of mental illness remain obscure and a multiplicity of unsubstantiated theories has been put forward in efforts to explain mental illness (Lake 2019). In view of the polarized debate between materialists and postmaterialists, it is unlikely that consensus on a single *best or most adequate theory* of consciousness will be forthcoming, at least not in the foreseeable future (Gierer 2008).

As I have argued above, although a general theory of consciousness may remain elusive for the foreseeable future, I believe that steady progress in physics and the other basic sciences, neuroscience and parapsychology will lead to deeper *scientific* understandings of mechanisms associated with *particular* perceptual, cognitive and affective states and experiences (Lake 2014). In this way, as methods and technologies of science continue to evolve novel ways of understanding and investigating the variety of conscious experiences will eventually lead to more complete explanations of particular 'ordinary,' pathological, and so-called 'non-ordinary' or paranormal conscious states.

7 Research findings in parapsychology and near-death studies call for new theories of consciousness

Despite advances in quantum theories of life and consciousness it has not been established that energetic changes at the level of sub-atomic particles or postulated quantum fields are related in *non-trivial* ways to biological processes associated with perception, memory and cognition, or that quantum-level processes are related to paranormal experiences, near-death experiences or the effects of human intention on living systems. In this context research findings in parapsychology and near-death studies are challenging conventional understandings of consciousness and leading to new insights that support a postmaterialist paradigm of psychiatry (Lake 2014; Lake 2017; Beauregard, Trend & Schwartz 2018).

There is considerable debate over the relevance of quantum mechanics to organisms, including unicellular organisms, and complex life forms capable of consciousness (Baars & Edelman 2012; Jedlicka 2017; Marais et al 2018). Research in quantum mechanics has demonstrated that simple two-particle systems of photons sometimes remain probabilistically correlated or 'entangled' over vast distances however entanglement has so far not been demonstrated to take place in more complex physical systems or in living systems. Thaheld has contributed important theoretical work in the area of biological non-locality postulated to take place when quantum-like processes manifest as entanglement between living systems (Thaheld 2003; 2005). Pizzi has reported an apparent case of macroscopic quantum entanglement between cultured nerve cells that are electromagnetically isolated (Pizzi 2004). Tressoldi has argued that verified claims of non-local perception may reflect macroscopic quantum entanglement consistent with predictions of how quantum mechanical phenomena operate in living systems (Tressoldi 2011).

In contrast to reductionist models of consciousness, theories of consciousness informed by quantum mechanics are premised on non-local or a-causal relationships between the brain and the environment (Vannini 2008; Hameroff & Penrose 2014). Findings of functional brain imaging research support that quantum physics plays an important role in mind-brain interaction (Schwartz, Stapp & Beauregard 2005). Stapp, Hameroff and Penrose have argued that microscopic quantum processes are fundamental mechanisms of brain function and make conscious experience possible (Stapp 2014; Hameroff & Penrose 2014). Other theorists have argued that pos-

tulated quantum entanglement at the level of simple two-particle systems *cannot adequately explain* the information density and rich phenomenology associated with ordinary capabilities of consciousness such as perception, cognition and memory, much less transpersonal or so-called anomalous experiences such as NDEs and out-of-body experiences (Vitiello, 2001, esp pp. 17-20). In this regard, Vitiello and Freeman have argued that quantum field theory provides more robust descriptions of complex non-linear dynamics in living systems, and may provide a more adequate framework for modeling consciousness (Vitiello 2001, esp pp 17-20; Freeman & Vitiello 2011). Findings of EEG and fMRI studies suggest that non-local correlations between electromagnetically isolated brains may be consistent with quantum-like entanglement between complex living systems (Standish et al., 2003, 2004; Richards et al., 2002; Walach 2001; Wackerman 2003; Achterberg et al., 2005).

Quantum field theory is the basis of Quantum Brain Dynamics (QBD), a theory that aims to elucidate bio-magnetic field changes in brain activity associated with different states of consciousness. QBD theory posits that symmetry-breaking in the brain's electromagnetic field caused by ionic fluxes in axonal membranes, results in the formation of sub-atomic particles which, on transitioning to a stable ground state, form meta-stable condensates that manifest as different states of consciousness (Jibu & Yasue, 1995; Yasue 1999). Reviews of psychological, neurobiological, quantum-like, and parapsychological models of paranormal experiences are available in Cardeña, Lynn & Krippner (Cardeña, Lynn & Krippner 2000), Kelly & Kelly (Kelly & Kelly 2007) and Krippner & Friedman (Krippner & Friedman 2010).

The diversity and complexity of imagery interpreted as near-death experiences (NDEs) may reflect a *multiplicity of potential neural pathways* activated in the context of physiological or psychological stresses, as well as inter-individual differences in a genetic *predisposition* to have transpersonal experiences (Lake 2016). While some features of NDEs are probably explainable by neuroscience and *take place* in 4-dimensional space-time, other features such as confirmed cases of veridical perception and other apparent paranormal experiences may be consistent with postulated non-local characteristics of consciousness mediated by quantum processes or other non-classical processes (Kafatos et al., 2015; Lake 2017). It is conceivable, though untestable using current science, that paranormal experiences may *take place* in higher order space-times. Only a single confirmed case of a NDE that takes place in the complete absence of brain function is needed to support the hypothesis that consciousness *is possible* in

the absence of a functioning brain, and to confirm that an intact fully functioning brain is *not always* a *necessary or sufficient* prerequisite for at least *some kinds* of conscious experiences including complex mental imagery typical of NDEs. Neural and postulated non-classical mechanisms associated with apparent paranormal aspects of NDEs may help explain paranormal experiences in general. From the perspective of parapsychology, the debate over the significance and ontological status of NDEs invokes two competing theories: the so-called “super-psi” hypothesis and the survival hypothesis. Based on a review of criteria denoting relative scientific merit of the respective models, Rousseau has argued that the survival hypothesis may be a more plausible explanation than the “super-psi” hypothesis. However, until now, science has failed to resolve this debate (Rousseau 2012).

8 Different types of theories may be needed to adequately explain consciousness

An adequate general theory of consciousness must take into account both ‘normal’ experiences and perceptual abilities, pathological states and so-called ‘anomalous’ perception and cognition (Lake 2014). However, a single theory may not be able to explain the variety of subjective experiences and objectively observable phenomena associated with consciousness.

Schwartz et al have proposed three types of post-materialist theories for explaining various categories of empirical evidence in consciousness research (Schwartz, 2016; Beauregard, Trent & Schwartz 2018). Type I theories regard materialist explanations as primary and necessary to explain consciousness and other ‘non-material’ yet ‘physical’ phenomena. Type II theories of mind regard postmaterialist and materialist explanations as equally valid and not reducible to each other. Type II theories are *integral* theories in that they take into account both established neural mechanisms of consciousness and postulated quantum-like mechanisms. Finally, type III theories are those in which postmaterialist theories of mind are regarded as primary, and materialist theories of mind are derived from them (Wahbeh et al 2022). Type I theories are essentially physicalist theories such as functionalism. Type II theories are dualist theories in which brain and mind are construed as two fundamentally different kinds of phenomena that interact manifesting as consciousness. Type III theories are idealist theories in which mind or con-

consciousness exists on its own side independent of the physical brain. Type III theories are basically different versions of panpsychism, the most radical type of theories which argue that consciousness is a fundamental kind of thing in the universe, and that physical phenomena including brains are derivative of consciousness or other non-material phenomena. At this time type III theories are based on strictly metaphysical assumptions about consciousness that cannot be falsified using available technologies and empirical methods. Hence, at present, type III theories do not qualify as scientific theories.

In sum, type I theories may provide explanations of pathological changes in consciousness related to brain injury and severe psychiatric illness but do not adequately explain verified claims of paranormal phenomena which may be consistent with postulated quantum mechanisms or other non-classical processes. It has not been determined whether quantum-level mechanisms associated with paranormal experiences are directly or indirectly related to brain function or take place independent of brain function. The diversity of phenomena associated with consciousness suggest that type II theories—ones that acknowledge the validity of both neuroscience and quantum mechanisms—provide an adequate conceptual framework for understanding and investigating the broad range of functional attributes and states associated with consciousness.

As already noted, the principle of parsimony (Occam's razor) may not apply to consciousness in that a single theory no matter how elegant may not be able to adequately describe or explain all phenomena associated with different attributes and states of consciousness. It is more likely that different theories of consciousness will emerge to accommodate new research findings in the basic sciences, neuroscience and parapsychology. In this way the theoretical 'landscape' in which consciousness is understood and investigated will shift between different types of theories reflecting changes in scientific discourse over time.

Accumulating research findings from well-designed studies in neuroscience and parapsychology (see above) suggest that normal, pathological or so-called paranormal states of consciousness have properties that may be consistent with conventional neuroscience explanations, non-classical theories, or—in the case of near-death experiences and other kinds of transpersonal experiences—both conventional and non-classical explanations. In other words, the three categories of theories put forward by Schwartz et al are not mutually exclusive with respect to the range of phenomena associated with consciousness. For example, current neuroscience may adequately

explain so-called 'ordinary' perceptual and cognitive capabilities such as touch, vision, hearing, olfaction, cognition, and memory. By the same token, disorders of consciousness caused by injuries to the brain or severe psychiatric disorders may be adequately *explained and explainable* on the basis of well understood neuropathological and genetic mechanisms (Montoya 2021). Although current science may be able to explain pathological states of consciousness related to brain injury and severe psychiatric disorders, a theory of consciousness informed by postmaterialist thinking may be needed to adequately explain subtle factors that influence mental and emotional wellness and manifest as *less severe* psychiatric disorders. Novel research methodologies and advances in functional brain imaging, genetics and molecular biology will be needed to further elucidate complex relationships between biological, electromagnetic and postulated quantum-level processes in the brain, and cognitive, affective or behavioral symptoms. By extension, a more complete theory of mental illness causation should *not rely exclusively* on empirical verification of strictly biological processes but should take into account non-classical phenomena, including the postulated role of quantum-level processes in human consciousness (Penrose 1994).

9 Implications of a postmaterialist paradigm for research in psychiatry

In the past 50 years psychiatric research has focused primarily on neurobiological mechanisms, drug development, and psychotherapeutic techniques. More recent research has explored lifestyle moderators of mental health, natural supplements, mind-body therapies, and energy healing techniques (Sarris 2011). In the coming decades an integral research paradigm that balances conventional neuroscience and postmaterialist theories of consciousness will lead to deeper understandings of human consciousness and important insights into complex physiological and quantum-level processes that influence well-being and mental illness. Ideally, efforts to adduce a more adequate theory of consciousness will emerge from interdisciplinary dialog between disparate epistemological perspectives including those of anthropology, psychology, neuroscience, psychiatry, transpersonal psychology, and physics (Facco, Agrillo & Greyson 2015). Such an interdisciplinary framework will help reconcile the formalisms of current science with findings of parapsychological research and the teachings of the

world's great spiritual traditions (Kelly, Crabtree and Marshall 2015).

Beauregard, Trent & Schwartz (2018) predict that a postmaterialist paradigm in psychology will 'allow for research to extend further into the potential of the mind, it would do so with an understanding of our interconnection, thereby moving forward in an ethical, holistic way.' An important consequence will be a shift away from current unethical research practices in both animal and human studies. A postmaterialist paradigm in psychology (and psychiatry) will also acknowledge psi phenomena as 'normal' aspects of conscious functioning that do not necessarily or always take place in the context of psychosis or other serious psychiatric disorders. This will broaden the current medical understanding of symptoms of apparent psychosis and help humanize the clinical practice of psychiatry. Adoption of a postmaterialist paradigm in psychiatry will lead to greater acceptance of the transformative value of religion and spirituality for maintaining mental and emotional well-being and for supporting individuals struggling with depressed mood, anxiety and other mental health problems.

Future researchers, who embrace an integral type II theory that acknowledges both neuroscience and emerging understandings of health and illness in the context of quantum mechanics, will conduct studies on postulated subtle energetic relationships between individuals that enhance well-being or cause physical and mental illness. Along these lines, Beauregard, Trent & Schwartz (Beauregard, Trent & Schwartz 2018). argue that 'more rigorous and sophisticated studies of telepathy, clairsentience ('clear-feeling'), and empathy would greatly contribute to understanding of our social bonds, and ultimately, how to improve them.' Research in cross-cultural psychology from a postmaterialist perspective will help clarify how different belief systems in Western and non-Western cultures influence health and illness. A postmaterialist paradigm will provide a bridge between research in contemporary medicine and traditional systems of medicine such as Chinese medicine, Ayurveda and Tibetan medicine leading to important insights into relationships between consciousness and health. I believe that deepening our understanding of consciousness can best be achieved through an interdisciplinary research program that fosters rigorous open-minded dialog and debate. Interdisciplinary research involving practitioners of disparate healing traditions may yield valuable insights about conventional and alternative approaches that consistently yield beneficial effects when treating patients with particular mental health problems.

10 Implications of postmaterialism for education and training of mental health providers

In North America and other industrialized world regions there are essentially two parallel systems of education and training in medicine and mental health care: conventional curricula and training programs in mental health disciplines; and curricula and trainings developed by a variety of alternative medicine specialties such as naturopathy, mind-body practices, herbal medicine, homeopathy, energy medicine techniques (e.g., Healing Touch, Qigong and Reiki), and traditional Chinese medicine (TCM). Conventional training of physicians takes 4 years, covers genetics, biochemistry, microbiology, gross anatomy, histology, pathology, and neuroscience (the so-called basic sciences) in the first two years, and intensive introductions to clinical practice of the principle medical sub-specialties, internal medicine, surgery, obstetrics and gynecology, pediatrics, and psychiatry in the last two years. Conventional medical school training provides conceptual foundations and basic clinical skills that focus on a particular sub-specialty during residency training. While conventional medical training prepares physicians to work within a particular domain of knowledge and clinical practice, it is limited in important ways. For example, few medical schools offer required or elective courses or clinical training opportunities in alternative medicine, including approaches widely used in the U.S. and other Western countries such as mind-body therapies, botanical medicine, Chinese medicine, and energy healing techniques. In the coming decades progressive reforms in medical school curricula will reflect advances in theory and research findings in the basic sciences with the result that physicians will be expected to learn postmaterialist theories and undergo training in a variety of alternative systems of medicine such as Asian medicine (including Chinese medicine, Ayurveda and Tibetan medicine), mind-body medicine and energy medicine. Parallel changes in education and training will take place in nursing schools as well as MA and PhD programs in psychology and social work.

After completing formal training, many conventionally trained physicians seek out continuing education and mentorship opportunities in alternative medicine such as traditional Chinese medicine, mind-body medicine including mindfulness-based stress reduction (MBSR), biofeedback, energy medicine and advanced training in botanical medicine. In the same way that conventional post-graduate training programs (i.e., residency) in psy-

chiatry currently incorporate training in advanced psychopharmacology, neuroimaging, psychodynamic or cognitive behavioral therapy, future post-graduate training programs in psychiatry (and psychology) will include opportunities to learn ‘energy’ medicine techniques such as Healing Touch, Reiki and medical Qigong. Finally, in order to better prepare psychiatrists and psychologists to work with clients who report spiritual crises or distressing paranormal experiences, future post-graduate training will provide opportunities to learn psychotherapeutic techniques used in clinical parapsychology.

Successful implementation of interdisciplinary education and training programs, integrating conventional psychiatry and postmaterialist ideas and clinical parapsychology approaches, will require a high level of collaboration between academic centers, professional societies and clinicians from a wide range of disciplines. The result will be the gradual transformation of the theory and clinical practice of psychiatry away from a strictly reductionist paradigm to a future psychiatry informed by an integral paradigm that incorporates the latest advances in the basic sciences and the World’s healing traditions.

11 Conclusion

Conventional Western medicine and psychiatry as currently practiced are based on a functionalist theory of consciousness that fails to adequately explain the range of normal, pathological and so-called exceptional or paranormal experiences. Consequences of the limitations of psychiatry include concerns over the effectiveness and safety of widely used psychotropic drugs and other conventional treatments, resulting in high rates of depressed mood, anxiety and other common mental health problems. In response to these circumstances medicine and psychiatry are rapidly evolving toward a truly integral paradigm and integrative models of care. While perception, memory and cognition may be adequately explained by current neuroscience, findings from physics, parapsychology and NDE research suggest that some states of consciousness may take place independently from brain function. A single theory—no matter how elegant—may not be able to adequately describe or explain all phenomena associated with different ordinary, pathological and so-called exceptional or paranormal experiences. Theories of consciousness will probably continue to evolve to accommodate new research findings in physics, neuroscience and parapsychology. A future integral paradigm in psychiatry that embraces both conventional theory and postmate-

rialist thinking will lead to new research initiatives that will better elucidate the complex causes of mental illness. The result will be a wider range of treatment approaches incorporating insights that more adequately address the biological, psychological and energetic causes of symptoms, more personalized treatments optimized to each patient’s unique biological and energetic profile, and improvements in treatment outcomes and safety. Collectively, these changes will lead to improved mental health care on a global scale, and reductions in the enormous medical, social and financial burdens of mental illness.

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