

Consciousness, Spirituality, and Postmaterialist Science: An Empirical and Experiential Approach

Gary E. Schwartz

Abstract

Consciousness and spirituality are inherently experiential processes. The definition of “spirituality” ranges from (1) personal opinions regarding the meaning of life and being part of something greater, through (2) experiences of transcendental states and oneness, to (3) beliefs regarding the existence of spirit, life after death, reincarnation, angels and guides, and some sort of omnipresent infinite intelligence and power. Academic psychology has typically taken a materialistic view toward consciousness and spirituality; both are interpreted as neurobiological processes shaped by genetics and developmental and cultural factors. However, as reviewed in this chapter, contemporary consciousness research provides emerging proof-of-concept evidence suggesting that (1) mind is separate from brain, (2) spirit and soul are comparable to energy and information that persist in the vacuum of space, (3) people can receive intuitive information that is accurate and useful in their individual and collective lives, and (4) physical and psychological health can be fostered by active loving spiritual processes. The evidence points toward the emergence of a postmaterialist paradigm in psychology and science in general.

Key Words: consciousness, spirituality, materialism, postmaterialism, the mind–brain relationship, the Big Five, parapsychology, survival of consciousness, continuity of consciousness, spirit, soul, information, energy, intuition, energy healing, spiritual healing, angels, guides, infinite intelligence, God

When Kepler found his long-cherished belief did not agree with the most precise observation, he accepted the uncomfortable fact.
He preferred the hard truth to his dearest illusions;
that is the heart of science.
—Carl Sagan

Do not bite my finger; look where I am pointing.
—Warren McCulloch

Introduction

The broad title of this chapter—“Consciousness, Spirituality, and Postmaterialist Science: An Empirical and Experiential Approach”—was suggested by the editors. It provides a unique opportunity for the author and readers to explore the relationship between empirical research and theory

in consciousness and spirituality and to integrate them with real-life experiences.

Consciousness is inherently an experiential process (Tart, 2009); it is only witnessed directly by the person having the experiences. The same applies to spirituality (Walsh, 2000). Whether we define “spirituality” as (1) a set of personal opinions about the

meaning of life and/or as being part of something greater, (2) experiences of transcendence and/or feeling a sense of oneness with everything, or (3) beliefs about the actual existence of a greater spiritual reality, including spirits, life after death, reincarnation, angels and guides, and/or some sort of omnipresent and omnipotent intelligence, they all involve conscious processes.

The scope of this chapter, as proposed by the title, invites us to examine contemporary consciousness research as it relates to spirituality and postmaterialist science, from both an empirical and experiential point of view. It turns out that research on the cutting edge of consciousness science points strongly to the possibility that (3) some sort of larger spiritual reality actually exists (Schwartz, 2011; Tart, 2009). In light of this possibility, the emerging proof-of-concept research has profound potential implications for the field of psychology as a whole. It also has significant potential implications and applications to virtually all aspects of human life. This chapter integrates state-of-the-art proof-of-concept research and theory on consciousness and postmaterialist science as it relates to the existence of a greater spiritual reality, with examples of real life applications.

The chapter focuses on “proof-of-concept” research primarily because much of the research is in its early stages. Given the nature of the topic—that is, the possible existence of a greater spiritual reality and its relationship to consciousness—the research is inherently controversial, at least as viewed by conventional psychology, neuroscience, and mainstream science in general. However, the collection of proof-of-concept research findings, when considered as a whole, not only demonstrate the feasibility of conducting large-scale systematic research in this area, but it illustrates the promise of this research for increasing our understanding of human nature (and nature in general) as well as evolving our behavior as a species.

The chapter begins with the fundamental “mind-brain” problem—is consciousness a by-product of brain function, or is it separate from the brain? It illustrates how mainstream theory in electronics and electrical engineering, combined with state-of-the-art empirical research addressing the survival of consciousness (SOC) after death hypothesis, point to the serious possibility that *consciousness as a process is ultimately separate from the brain*. Included is a discussion of the challenge of determining whether consciousness has intention, and whether evidence of intention is observed in afterlife research. The

theoretical question of the potential existence of “spirit” and “soul” is examined in light of parallels involving energy and information.

The chapter then examines the possibility that people can intuitively receive information from “spirit” that is potentially accurate as well as useful in real-life situations. Research is reviewed on medical intuition, and examples are provided involving the author and his research staff that illustrate how “spirit-assisted” intuition can be practiced in daily life.

The relationship of spirituality to health is examined next from the theoretical possibility of “spirit-assisted” healing. Exemplary proof-of-concept research and observations are reviewed that illustrate how psychology and medicine are being potentially expanded and advanced in this area.

Finally, the chapter looks to the future and considers some of the profound implications for psychology and society that stem from the possibility that this emerging vision of consciousness and spirituality is valid. The implications range from experimental designs, through alternative interpretations of psychological and neuroscience data, to new postmaterialist applications in technology and education. The concept of “self-science” is explored as an emerging paradigm for integrating contemporary consciousness and spirituality research and fostering “evidence-based spirituality” in daily life.

Materialism and the Mind-Brain Problem

Mainstream psychology, neuroscience, and science in general typically adopt a materialistic view of nature and the universe. Materialism is the belief that (1) what is real is physical matter, that (2) only matter exists, and that (3) everything that happens in nature and the universe can be understood and explained in materialistic terms (Tart, 2009). In psychology this belief is expressed in terms of the relationship of mind and brain; consciousness is assumed to be a by-product or “epiphenomenon” of brain function (e.g., an emergent property of neural networks). Note that a materialistic interpretation of the mind-brain relationship precludes the possibility that a greater spiritual/nonmaterial reality could, in principle, exist.

There is no question that adopting a materialistic perspective helped science historically break away from the constraints and biases (including censorship) of various religious institutions. Moreover, scientific methods based upon materialistic philosophy have been highly successful in not only increasing our understanding of nature and the universe

but also in obtaining greater control and freedom through advances in technology. It is understandable how materialism became the cardinal assumption in mainstream science.

Not surprisingly, when the assumption of materialism is questioned today, it typically evokes confusion and criticism, if not consternation, by conventional scientists. The history of materialism is comprehensively reviewed, and seriously challenged, in Tart's (2009) visionary and controversial book *The End of Materialism*. A distinguished researcher at the frontiers of consciousness science, Tart reviews what he calls the "Big Five" areas of "anomalous" consciousness research—often labeled as parapsychology—which together question the foundation of a simple materialistic perspective. The five areas are as follows:

- (1) Precognition, the ability to predict the future. The information sometimes comes as a vision, a mental flash, or a dream.
- (2) Telepathy, often called mind reading or mind-to-mind communication. It literally means "distant feeling."
- (3) Clairvoyance, the ability to perceive remote places, objects, or people. In science it is typically referred to as "remote viewing."
- (4) Psychokinesis, the ability to move objects with the power of mind only.
- (5) Healing, spiritual practices (often equated with energy) that may afford gradual relief from pain or sickness and may sometimes bring about a sudden "miraculous" healing.

Space precludes reviewing the substantial body of replicated research in each of these five areas that together strongly justify Tart's sweeping conclusion. What is important to recognize here is that a large body of methodologically sound research exists in these five separate areas and serves as a compelling challenge to the conclusion that consciousness can be explained solely as a by-product of brain processes.

A sixth area of research—on the possibility of SOC after physical death (Braude, 2003; Fontana, 2005; Schwartz, 2002, 2005, 2011; van Lommel, 2010)—is emerging that potentially provides "proof" that materialism is in error, and that some sort of a postmaterialist paradigm is called for. The word "proof" is used here intentionally because *if* the findings from this emerging research are valid—the word *if* is important here—then an essential core prediction of the materialistic premise will have been effectively disproved.

The logic is as follows: If the brain is solely responsible for the existence of consciousness, then when the brain dies, consciousness should die. There are no ifs, ands, or buts to the logic; this is an essential, even absolute, prediction of materialism. It follows that if empirical SOC research documented that consciousness continued after physical death, the materialistic interpretation would be resoundingly refuted.

Before we review contemporary SOC research, it is helpful to examine how psychology and neuroscience routinely come to the conclusion that consciousness is created by the brain, followed by the compelling logic that clearly explains how this assumed-to-be-true conclusion is actually (and ultimately fatally) flawed.

Does Consciousness Require a Brain?

There are three types of experimental evidence that together seem to point to the conclusion that consciousness is created by the brain. The word "seem" is emphasized here because careful examination of the totality of evidence, when viewed from the perspective of electronics and electrical engineering, reveals how the evidence is actually *as consistent with the explanation that the mind is separate from the brain as it is with the explanation that the mind is created by the brain*. Unfortunately it is not widely appreciated by mainstream scientists that the three experimental approaches used to investigate mind–brain relationships do *not*, by themselves, require a materialistic conclusion—and they are wholly consistent with a nonmaterialistic (postmaterialist) explanation.

The three kinds of evidence are as follows:

1. *Evidence from recordings*—Neuroscientists record brain waves (via electroencephalograms [EEGs]) using sensitive electronic devices. For example, it is well known that occipital alpha waves decrease when people see visual objects or imagine them.

2. *Evidence from stimulation*—Various areas of the brain can be stimulated using electrodes placed inside the head or magnetic coils placed outside the head. For example, stimulation of the occipital cortex is typically associated with people experiencing visual sensations and images.

3. *Evidence from ablation*—Various areas of the brain can be removed with surgical techniques (or areas can be damaged through injury or disease). For example, when areas of the occipital cortex are damaged, people and lower animals lose aspects of vision.

The generally accepted—and seemingly commonsense—neuroscience interpretation of this set of findings is that visual experience is created by the brain.

However, the critical question is whether this *creation of consciousness* explanation is the *only* possible interpretation of this set of findings. The answer is actually no. The three kinds of evidence are *also consistent with* the brain as being a *receiver of external consciousness information* (Schwartz, 2002, 2005, 2011).

The reasoning is straightforward and is illustrated in electronics and electrical engineering. Though it is rare to discuss an electronics example in the context of a psychology monograph (especially one focused on religion and spirituality), it turns out to be prudent and productive to do so here.

Consider the television (be it analog or digital). It is well known—and generally accepted—that televisions work as *receivers* for processing information carried by *external* electromagnetic fields oscillating in specific frequency bands. Television receivers do *not create* the visual information (i.e., they are *not the source* of the information) —they *detect* the information, *amplify* it, *process* it, and *display* it.

Apparently it is not generally appreciated that electrical engineers conduct the same three kinds of experiments as neuroscientists do. The parallel between the brain and the television is essentially perfect.

1. *Evidence from recordings*—Electrical engineers can monitor signals inside the television set using sensitive electronic devices. For example, electrodes can be placed on particular components in circuits that correlate with the visual images seen on the screen.

2. *Evidence from stimulation*—Electrical engineers can stimulate various components of the television using electrodes placed inside the television set or magnetic coils placed outside the set. For example, particular circuits can be stimulated with specific patterns of information, and replicable patterns can be observed on the TV screen.

3. *Evidence from ablation*—Electrical engineers can remove various components from the television (or areas can be damaged or wear out). For example, key components can be removed and the visual images on the screen will disappear.

However, do these three kinds of evidence imply that the *source* or *origin* of the TV signals is *inside* the television—that is, that the television *created* the signals? The answer is obviously no.

It should be clear how this basic logic—as applied to television receivers—can equally be applied to neural network (brain) receivers. The three kinds of evidence (correlation, stimulation, and ablation) only allow us to conclude that television sets—as well as brains—play some sort of *role* in visual experience. The truth is that the three kinds of evidence, by themselves, do *not* tell us whether either television sets or brains:

(1) “self-create” the information internally—the materialist assumption, or

(2) function as complex receivers of external information—which allows for both survival of consciousness after death and a larger spiritual reality.

In other words, the three kinds of evidence, by themselves, do not speak to (and do not enable us to determine) whether the signals—the information fields—are:

(1) coming from *inside* the system (the materialistic interpretation applied to brains),

or

(2) coming from *outside* the system (the interpretation routinely applied to televisions).

It follows that *additional kinds of experiments* are required to distinguish between the “self-creation” versus “receiver” hypotheses.

Experiments on the SOC hypothesis with skilled research mediums provide an important fourth kind of evidence that can neither be predicted nor explained by the self-creation (i.e., materialism) hypothesis, but it can be predicted and explained by the receiver hypothesis (Schwartz, 2002, 2005, 2011).

It should be noted that in physics, external electromagnetic fields are not labeled as being “material” per se. These fields do *not* have mass (e.g., they do not have weight) and are invisible; they are described by a set of equations that characterize an as-yet-unexplained property of the “vacuum” of space (which may be empty of “mass” but is actually full of energy and information).

Contemporary Experiments on Survival of Consciousness

The SOC hypothesis has been investigated for more than 100 years. Gauld’s (1984) book, *Mediumship and Survival: A Century of Investigations*, provides a comprehensive review of this research up to the early 1980s.

Though much of this research was conducted in England, influential research was also conducted in

the United States, most notably by William James, the father of experimental psychology. James investigated a number of mediums—individuals who purportedly receive information from deceased individuals—especially Mrs. Piper (see Blum, 2007; Gauld, 1984).

Contemporary research has been conducted in the Laboratory for Advances in Consciousness and Health (formally the Human Energy Systems Laboratory) at the University of Arizona (reviewed in Schwartz, 2002, 2005, 2011).

The early experimental designs were mostly single blinded; the medium was blind to the identity of the sitters (e.g., Schwartz & Russek, 2001; Schwartz, Russek, & Barentsen, 2002; Schwartz, Russek, Nelson, & Barentsen, 2001). Some exploratory experiments designs were double blinded; not only was the medium blind to the identity of the sitters, but the sitters were blind to the identity of their personal readings (Schwartz, 2002). This was accomplished by not allowing the sitter to hear the readings when they occurred. The sitters later received transcripts of their personal readings as well as the readings of others, and they blindly score all the information.

Also, some experiments were double-blinded in that the medium was blind to the identity of the sitters and the experimenter was blind to information regarding the sitter's deceased loved ones (Schwartz, 2002; 2005).

The most recent experimental designs were triple blinded; for example, the research assistant who received the transcripts, and interacted with the sitters, was blind to which readings were associated with which sitters (e.g., Beischel & Schwartz, 2007).

All of the experiments (single, double, or triple blinded) eliminated visual cues. Depending upon the study, the medium and sitter were in the same room, separated by a screen, or the medium and sitters were in separate locations, separated by hundreds or thousands of miles of distance, and the readings were conducted by phone (and even e-mail).

Some experiments eliminated auditory cues. Depending upon the study, the medium may have spent the first 10 minutes attempting to receive whatever information she or he could get about the sitter in the room, but the medium was not allowed to ask questions, and the sitter was not allowed to speak (termed the "sitter silent condition"), or the medium conducted the reading in his or her own home and conveyed the information via the

Internet, and the sitter, located in a different state, did not know when the reading had taken place.

All information—including initials, names, historical facts, physical descriptions, and personal descriptions—were typically scored, item by item, using a 7-point scale, from -3 (a complete miss) to $+3$ (a complete hit). In some experiments the sitters scored more than a thousand items.

A growing group of research-oriented mediums ($n = 15$) who (1) claimed high success rates in their private practice of mediumship, (2) were interested in the science of mediumship and typically donated their time, and (3) recognized the risks involved (for example, they knew that if they were caught cheating, they would be exposed) have participated in as few as one experiment or as many as eight experiments. A larger group of research-oriented sitters (approximate total $n = 50$) who (1) experienced one or more significant deaths of loved ones, (2) were interested in the SOC hypothesis for personal and/or scientific reasons and typically donated their time, and (3) agreed to spend the many hours necessary to score the transcripts, sometimes under sitter-blinded conditions, have participated in as few as one experiment or as many as four experiments.

Space precludes presenting a detailed review of these experiments here (they are reviewed in Schwartz, 2002, 2005, 2011). Briefly, the average accuracy (counting only $+3$'s as hits, a conservative estimate of accuracy per experiment) has ranged from 40% to 80% for actual readings compared to 10% to 40% for control readings. Sitters have varied widely in how readily mediums obtain information about their deceased loved ones; the range for individual sitters' readings is from 0% (very rare, but observed on a few occasions) to 100% (also rare, but observed on a few occasions).

The totality of the experiments effectively rules out potential conventional psychological explanations of (1) fraud, (2) "cold reading" techniques used by fake mediums (psychic entertainers) to coax information from sitters, (3) visual, auditory, and olfactory cues, (4) sitter rater bias, (5) vague, general information, (6) statistical guessing, and (7) experimenter effects.

The totality of the experiments also essentially rules out one potential anomalous (i.e., paranormal) explanation: the possibility of telepathy (or mind reading) by the medium of the sitter's mind. For example, in numerous experiments research mediums obtained information that the sitter did *not* know, which was subsequently confirmed by relatives or friends living hundreds or thousands of

miles from the sitter and the medium. And in triple-blinded experiments, the experimenter (the proxy “sitter”) was blind to information about the sitter; hence, the mediums could not have been reading the mind of the proxy sitter (experimenter) to obtain the accurate information they received about the sitter’s deceased loved ones.

Schwartz has concluded that when the findings are viewed collectively as a whole, the simplest and most parsimonious explanation of the data (Ockham’s razor) —including “dazzle shots” of remarkably specific and unique pieces of information that may be unknown to the sitter—is the SOC hypothesis.

Schwartz et al.’s findings have been independently replicated in Scotland (Roy & Robertson, 2001, 2004) as well as by researchers at the University of Virginia (Kelly & Arcangel, 2011). At the time this chapter was written, a complex quintuple-blind experiment was being carried out by Dr. Beishel and colleagues at the Windbridge Institute.

Is The Emerging Evidence Proof of Survival of Consciousness?

Though this collection of experiments, taken together, point strongly to some sort of nonconventional mechanism of information reception on the part of the mediums, they do not establish the *source* of the information.

Various authors have written about alternative possible paranormal explanations—sometimes called “super-psi” —that might be imagined to possibly explain these observations (e.g., Braude, 2003). The most speculative is the notion that mediums somehow retrieve information about the deceased that was presumably left, and continues to exist, in the “vacuum” of space—in physics this is termed the “quantum hologram” (also the “zero-point field”). The implication here is that although the information continues to exist, it is “dead information.” In other words, the speculation presumes that the information is not “conscious” and therefore does not indicate the presence of a living, conscious mind.

Schwartz (2002, 2005, 2008, 2011) has pointed out that in astrophysics it is assumed that photons of light emitted by distant stars continue to travel in the vacuum of space long after a given star has “died.” The foundation of astrophysics is based on the assumption that photons in the vacuum of space do not significantly lose their information. The patterns of star light as witnessed in a dark night sky, or as sensitively recorded with contemporary low-light

CCD cameras, are presumed to reflect the *accurate history* of star light traveling for millions or billions of years.

It is well established that the human body as whole, and each of its individual organs and cells, reflect and emit super-complex patterns of photons that also travel out into space and continue to do so. This fact has been documented by super-sensitive spy satellites in space that can not only see humans on Earth but record other frequencies of photon emission that identify individuals, including infrared and ultraviolet frequencies of light. Like the information from star light, the photonic information reflected and emitted by biological systems is presumed to be nonliving and nonconscious.

Interestingly, the information received by research mediums does *not* appear to be “dead.” Mediums do not describe the process of receiving the information as if they are watching a movie or reading a book. *They describe the information retrieval process as being dynamic, interactive, often surprising, and even sometimes confrontational. In other words, the information seems like communication with a living person.*

The information appears as if it is “intentional.” Various authors have described instances where the information evidences compelling qualities of intentionality (reviewed in Fontana, 2005; Gauld, 1984); however, no laboratory research to date has examined this observation systematically.

Schwartz and colleagues have begun to examine the apparent intentional nature of SOC communications. Schwartz (2011) has reviewed a set of compelling case examples, some observed in the context of double-blinded laboratory experiments that provide significant proof-of-concept observations, which individually and collectively support the intentionality hypothesis. The combined evidence points to the experiential as well as empirical nature of this work.

Integrating Experiential and Empirical Approaches to Survival of Consciousness

In one example, Schwartz (2005) explains how immediately after Susy Smith, a famous lay scientist and author of 30 books in parapsychology and SOC had died (e.g., Smith, 2000), information was received by mediums that continued for months. Schwartz came to know Ms. Smith well before she died. Though the information received could not be explained by conventional psychological mechanisms (e.g., fraud, rater bias, sensory leakage), the information per se did not rule out possible “super-psi” explanations.

A particular research medium participated in a private personal exploratory investigation with Schwartz (reported in Schwartz, 2011). The medium conducted long-distance readings by e-mail 5 days a week for more than 10 weeks; the medium lived more than 1,000 miles from Tucson. The medium was kept blind to Schwartz's activities, including his travel schedule. The medium was requested to contact Ms. Smith in the mornings on Mondays through Fridays and ask her two questions: (1) what had Ms. Smith witnessed Schwartz doing in the previous 24 hours, and (2) what did she see happening within the next 24 hours that might be memorable or meaningful for Schwartz.

The accuracy of the information received (scored by Schwartz using the procedures described previously) averaged around 80%. Though the information appeared to be communication-like in nature, and though this is a necessary condition for inferring intentionality, it is not by itself sufficient to establish intentionality, and Schwartz was well aware of this fact.

Then, something completely unexpected happened that proved to be scientifically propitious as well as productive. Schwartz was on the East Coast, meeting with a woman whose younger sister, a surgeon, had recently died of brain cancer. The older sister asked Schwartz to meet with her parents who were Holocaust survivors and were grieving the death of their younger daughter.

In the car on the way to the parents' home on a Saturday morning, the sister shared how she wished she could have had a compelling reading with a gifted psychic who could convince her that her younger sister was okay and still with them. Schwartz recounted how in the car he thought about how fortunate he had been for having received over 50 evidential (i.e., accurate) readings with a medium via e-mail, and he secretly wished this family could have had a similar experience with a medium.

The next morning, Schwartz received an unexpected and surprising e-mail from the medium. She apologized for e-mailing him on a Sunday, but she explained that something strange had happened. She had been driving on Saturday morning when purportedly Ms. Smith showed up unannounced in the car, accompanied by an unknown deceased woman, and Susy insisted that the medium do a reading on the mystery woman ASAP. The medium claimed that she pulled over to the side of the road and, as allegedly requested, did a reading with the unknown woman. The medium carefully wrote down the information; Ms. Smith then supposedly instructed her

to e-mail the information to Schwartz, who presumably would know what to do with the information.

Schwartz wondered whether the unknown woman allegedly read by the medium could be the deceased sister. Mustering his courage, he called the older sister. He explained the strange circumstances of the unexpected and surprising e-mail reading and asked her whether she would be willing to score the information. Schwartz read her the information, item by item, over the phone. The scoring took about an hour. The sister's scoring of the accuracy of the e-mail reading was greater than 80%. Both the sister and Schwartz were moved by the spontaneity, timing, and accuracy of this apparent "spirit-initiated" reading.

What actually convinced Schwartz that this might be a genuine reading was a highly specific and novel piece of information regarding eagles. The medium claimed that the deceased sister wanted her family to know that she loved eagles, and that eagles were important to her life. Sobbing on the phone, the older sister explained the following: (1) her deceased sister had indeed loved eagles; (2) she collected statues of eagles, (3) that instead of her ashes being present at the memorial service, one of her deceased sister's favorite eagle statues was displayed, and (4) the song "Fly Like an Eagle" was selected to be played at the service. To prove this to Schwartz, the older sister later mailed him a VHS video tape of the service verifying these facts.

At this point Schwartz had witnessed hundreds of research readings, and he knew that at no time had a medium ever spontaneously brought up information about an eagle. Moreover, he realized that what he had just witnessed was extraordinary—the possibility that one deceased person could intentionally bring a second deceased person to a medium. Moreover, in this instance not only was the medium blind to the identity of the second "mystery" deceased person, but the medium was blind to the possibility that this could happen in the first place. A very unusual and compelling set of circumstances

This unexpected observation inspired the creation of what Schwartz called the "double-deceased" research paradigm. He further realized that double-blinded experiments could be designed using this "spirit-mediated" double-deceased research paradigm. As described in Schwartz (2011), collaborating with a second scientist on the East Coast, they conducted a dual-location, double-blinded, double-deceased proof-of-concept personal exploratory experiment, and obtained promising positive results.

Space precludes discussing additional proof-of-concept observations (1) where the deceased appear to have “minds of their own,” as well as (2) various ways in which the spirit intentionality hypothesis can be operationalized and put to experimental test (see Schwartz, 2011). What is important to recognize here is that not only can such research be designed and conducted, but that intentional-like spirit behavior can be observed and appreciated in real-life situations (as well as in the laboratory). In fact, Schwartz illustrates how innovative proof-of-concept experimental paradigms are being suggested by sophisticated deceased individuals who seemingly are participating in current SOC research.

On the Scientific Meanings of the Words “Spirit” and “Soul”

When the author was a graduate student at Harvard University in the late 1960s, words like “consciousness,” “thoughts,” “feelings,” and “mind” were generally considered to be taboo. This was the era of the emerging shift from behaviorism to cognitive psychology. The “C” words (“cognition” and “consciousness”) were perceived as being controversial (if not illusory) and often denigrated if not dismissed.

However, by the late 1990s, the zeitgeist had radically changed. Cognitive psychology, cognitive neuroscience, and cognitive-behavioral therapy were well established in universities worldwide. Moreover, a growing set of universities, such as The University of Arizona, were creating Centers for Consciousness Studies; and the topic of consciousness was on the road to becoming mainstream.

Meanwhile, during the same time period “S” words like “spirit” and “soul” were generally considered to be taboo. Even in 2011 (the year this chapter was written), despite increasing research on the psychology of religion and spirituality, words like “spirit” and “soul” are generally frowned upon (and words such as “angels” and “guides” typically evoke even stronger negative reactions).

If (1) materialism is an incomplete description of nature and the universe, and if (2) “nonphysical” concepts like energy (including fields) and information are necessary for a more complete and accurate portrayal of nature and the universe, then (3) it is useful to consider how the spiritual terms “spirit” and “soul” may relate to the scientific concepts of “energy” and “information.”

Schwartz (1997) proposed that the concepts of spirit and soul have a curious and potentially fundamental parallel with the concepts of energy and

information. In physics, energy refers to the capacity to do work and overcome resistance. Energy reflects power, force, vibration, vitality. Interestingly the term “spirit” is often associated with life, vitality, passion, strength, conviction. Note that by definition, the existence of energy is *inferred* from its effects on matter (for example, the force of gravity is *inferred* from the observation that objects fall to the earth, or that planets are observed to revolve around stars); the existence of spirit is also *inferred* by its effects. Take together, the terms “spirit” and “energy” both share an implicit (i.e., inferred) sense of the capacity to act and have effects on things.

In physics, information refers to patterns, form, nonrandom sequences, structure, and complexity. Interestingly, the word “soul” is often associated with person, identity, the essence that describes something about the person, and memory.

Stimulated by the apparent parallels of (1) spirit with energy, and (2) soul with information, Schwartz (1997) wrote a science-based spiritual poem, which expresses these parallels. The first few stanzas of this science-based spiritual poem introduce the core parallels; the stanzas are included at the end of this chapter to honor the experiential side of consciousness and spirituality.

Though drawing an energy and information distinction between spirit and soul is useful heuristically and potentially theoretically, scientists and laymen alike typically use the spirit and soul synonymously. In keeping with the overarching theme of consciousness and spirituality in this chapter, the term “spirit” is being used broadly here to refer to (1) potentially living minds of deceased beings, as well as (2) purportedly higher level beings (e.g., hypothesized angels, guides, and the Source).

The author understands that some readers may experience the words “spirit” and “soul” negatively, a response not unlike his reaction to raw oysters. Briefly, the author never developed a taste for raw oysters. Quite the contrary, to him oysters appear slimy and goey, and they make him gag. However, just as the author finds it significantly easier to write about oysters than to actually eat them, he is inviting the reader to merely think about the concepts of spirit and soul—and not necessarily swallow them.

If Spirits Exist, Can They Play a Practical Role in Daily Life?

Let us imagine for the moment that future controlled laboratory research on SOC continues to generate positive evidence consistent with the continuity of consciousness hypothesis. Furthermore,

let us imagine that future innovative experimental designs will document the presence of intentionality (including properties of thinking, information processing, memory, decision making, choice, having preferences, the capacity to withhold information, and even giving false information). Finally, let us imagine that the future research justifies the conclusion that consciousness is in some sense similar to the light from distant stars in that the organized energy and information continues to exist long after the brain has died—not only consisting of accurate information but of conscious intentionality as well.

If Spirit exists, and if the claims of well-researched and genuine (not fraudulent) mediums are to be considered, then it will be prudent for scientists to keep an open mind about the possibility that numerous so-called paranormal capabilities—including Tart's (2009) Big Five—may be mediated by spirit assistance to various degrees. This could be called the “spirit partnership” hypothesis (it is sometimes also called the sacred partnership hypothesis; Schwartz, 2011).

One example of purported spirit assistance is the controversial area of medical intuition. Medical intuition is a form of clairvoyance (third on Tart's list) as applied to medical diagnosis. There is a long history of claims of medical intuition, including the beliefs and practices of ancient Greek physicians, shamans throughout the world, healers in India, and Edgar Cayce in America. In more recent times exploratory research has been conducted on medical intuitives, including practitioners of therapeutic touch, Silva Mind Control, and Mind Dynamics in Sweden. However, no double-blinded studies had been conducted to evaluate the purported accuracy of diagnosing illnesses using medical intuition.

To address this gap, Attig and Schwartz (2006) conducted a double-blind experiment using seven practicing medical intuitives. The study involved 20 pairs of congestive heart failure patients (10 males and 10 females) and their respective spouses; the spouses (who did not have congestive heart failure) served as matched controls. As a result of counterbalancing for the sex of the patients, the average age of the patient and control groups was comparable.

A cardiologist collected medical data on the patients with congestive heart failure as well as on their spouses. As anticipated, given the consequences of congestive heart failure, on the average the patients (males and females) were found to have a significantly greater number of other medical conditions (in addition to congestive heart failure) than their respective spouses (females and males).

The medical intuitives (who lived in various states across the country) were asked to provide medical diagnoses for all subjects; hence, the medical diagnoses were made from a distance. The intuitives were given only the subjects' names, dates of birth, gender, and the city and state in which they lived. They were kept blind to the patient selection criteria (i.e., they were not informed that the patients had been selected for congestive heart failure). Complete data were available on 19 pairs for scoring. Undergraduate students were trained to count the number of diagnoses given to each subject by each intuitive. Two cardiologists rated the likelihood of a diagnosis being congestive heart failure for each diagnosis given by the intuitives. Both groups of raters were blind to which subjects were patients versus controls.

The results for the undergraduate raters revealed that on average the intuitives gave significantly more medical diagnoses to the subjects who were originally diagnosed by the cardiologist as having congestive heart failure (the patients) than to the subjects who did not have congestive heart failure (the controls). Moreover, the cardiologists rated the patients as significantly more likely to have the diagnosis of congestive heart failure—based on the symptoms reported by the medical intuitives—compared to the controls.

This proof-of-concept experiment documented that for this relatively small sample ($n = 7$) of skilled medical intuitives, clairvoyant/remote-viewing diagnoses could be made in patients versus controls that were significantly greater than chance. Though the experiment validated the primary claims of the medical intuitives that they could make statistically accurate diagnoses, the study does not address the secondary claims made by a majority of the medical intuitives that they were able to achieve this degree of accuracy because of the active assistance of their “spirit guides.”

Medical intuitives typically believe in spirit assistance, and many claim that the spirits provide most if not all of the information. Of the seven intuitives, the one participant who had the greatest accuracy (a high school-educated grandmother) claimed that she received much of her information directly from the deceased Edgar Cayce (whom she affectionately referred to as “Eddie”) as well as other alleged spirits and angels.

Their life histories are revealing and potentially meaningful. One intuitive explained that early in her medical intuitive training, she was diagnosed with breast cancer. She went to numerous oncologists

who confirmed the diagnosis and recommended a double mastectomy. However, her “guides” insisted that she did not have cancer. She ultimately decided to ignore her guides’ persistent advice and chose to undergo the surgery. To her shock and dismay, subsequent laboratory examination of her tissues revealed that her intuitions (allegedly from her guides) were correct; she did not have cancer. Her surgery had indeed been unnecessary. The critical question arises, Was this merely a chance occurrence, a lucky guess, or did it involve spirit assistance as claimed by the intuitive? It is not possible to reach a conclusion based on a single case.

The author has witnessed a number of highly visible medical intuitives practice their art; one of the most visible is Mary Occhino on her popular daily Sirius XM radio show. Ms. Occhino provided medical diagnoses as well as medical predictions that are often uncannily accurate and later verified to be true. Moreover, listeners regularly called into Ms. Occhino’s radio show recounting instances where their alleged spirit guides have helped them in everyday situations ranging from selecting the right book to read, to avoiding a life-threatening car accident. Ms. Occhino claims that the reason that she is personally able to be so accurate is because of the skilled and dependable assistance of her spirit guides; her show is aptly called “Angels on Call.”

Understandably, mainstream academic psychology has been reluctant to examine such controversial claims closely and put them to experimental test. Speaking metaphorically, the actual process of designing and conducting such research would be for many psychologists like eating oysters would be for the author.

However, *if* (1) medical intuition is a genuine phenomenon (the key word here is “if”), and *if* (2) their explanation for the mechanism of how it works involves an active partnership with spirits (again, “if”), then (3) the implications for the science of consciousness and spirituality, psychology, and science in general, is sufficiently substantial as to warrant serious consideration. We will return to this challenging issue at the end of the chapter.

Potential Applications of Consciousness and Spirit to Healing

One of the most controversial of all claims in religion and spirituality involves reports of spiritual healing and associated “miracles.” Throughout recorded history, certain individuals—including shamans and medicine men and women, the most notable healer being Jesus of Nazareth—purportedly

had extraordinary healing powers that they attributed to their ancestors, angels, or the Great Spirit/God/the Sacred (etc.).

In contemporary complementary and alternative medicine, spiritual healing is typically considered in the context of “energy” healing, a less controversial and more physical/materialistic phrasing (and reframing) of the phenomenon. A growing body of research in complementary and alternative medicine, including double-blinded experiments, documents that energy/spiritual healing sometimes has measurable basic as well as clinical effects (reviewed in Schwartz, 2008; Tart, 2009).

Mainstream psychologists and physicians generally assume (incorrectly so) that if significant healing effects are actually observed, that they must be due to expectancy and belief (i.e., placebo effects). There is a large body of research in psychophysiology and mind-body medicine documenting how the mind of the patient can affect his or her physiology and healing (Schlitz, Amorok, & Micozzi, 2004). However, the totality of the research that specifically addresses energy and spiritual healing indicates that expectancy and belief effects, though important, *cannot fully account for the effects observed.*

For example, Baldwin and Schwartz (2006) conducted a controlled animal experiment investigating the effects of a Japanese spiritual energy healing technique (Reiki) on microvascular inflammation and leakage in the capillary beds of the guts of noise-stressed rats. Noise stress has been shown to produce significant increases in (1) the number of leaks and (2) the size (areas) of leaks, measured microscopically in the rat’s capillary beds. In these studies the microscopic analyses of the tissues samples were conducted blindly by the technicians (i.e., the samples were not identified in terms of experimental conditions).

The Baldwin and Schwartz (2006) study included four groups of animals:

1. No noise controls
2. Noise alone
3. Noise plus Reiki
4. Noise plus Sham Reiki

The duration of the experiment was 21 days per group. For the Noise plus Reiki group, skilled Reiki practitioners visited the laboratory each day and performed Reiki healing. They did not touch the animals or the cages; the healings were done silently.

For the Noise plus Sham Reiki group, research assistants who had no background in healing and

no intention to heal were taught to mimic the hand movements of the Reiki practitioners.

Both groups were videotaped; it was not possible by watching the recordings to discern who the true versus sham practitioners were. Using this experimental design, the question of possible belief and expectancy effects (on the part of the rats) was not relevant and therefore could be ruled out.

Though compared to noise alone, the presence of the sham practitioners was associated with a small decrease in both the number and size of the stress-induced leaks; the decreases were not statistically significant. However, the presence of genuine Reiki treatments was associated with substantial and statistically significant decreases in both the number and size of the stress-induced leaks. The findings comparing true versus sham practitioners were replicated three times.

Again, similar to Attig and Schwartz's (2006) experiment on medical intuition discussed previously, the Baldwin and Schwart (2006) experiment only demonstrates the presence of an effect; it does not address the potential mechanism (s) of the effects. Though the experimental design rules out conventional explanations of the findings (most notably placebo effects), the design does not make it possible to determine whether any portion of the observed effect can be attributed to spirit assistance per se (as apposed to the consciousness and energy of the practitioner per se).

Nonetheless, the practitioners insist that they are being assisted by ancestors, spirit guides, and the "Source" (they use many different terms, from Universal Intelligent Energy to Divine Mind and God). The question becomes, Can their spirit-assistance claim be addressed experimentally?

The answer in principle is yes. For example, Schwartz (2011) described a proof-of-concept experiment that tested the claims of a spiritual energy healer that a deceased physician was present in his healing sessions and provided assistance. The healer claimed that when the spirit physician entered the healing, his hands became warm. The healer further claimed that sometimes the deceased physician showed up earlier in the session, and other times late in the session. This precise claim was tested experimentally.

With the aid of a skilled research medium, Schwartz requested that the medium contact the deceased physician, and together they would decide whether the spirit physician would show up (1) early or (2) late for a given healing session. The healer, who was kept blind to this decision, would

then conduct an energy healing session and record whether his hands warmed up (1) early or (2) late in the session. Schwartz was also kept blind to the alleged decisions. After ten sessions—five purportedly when the deceased physician would enter early, and five when he would enter late—the data were unblinded and analyzed. The results revealed that the match between the medium's alleged decisions with the deceased physician regarding early versus late, and the hand warming times recorded by the healer concerning early versus late, was 100%.

Presuming that (1) fraud was not involved in this experiment, and that (2) this was not a spurious or chance finding, explanations other than spirit assistance can still be imagined. For example, one could speculate whether it possible that the healer somehow read the mind of the medium (who was located over a thousand miles from the healer). In principle, the answer could be yes; however, future research could be conducted to test directly whether the healer could actually read the mind of the distant healer.

Note that even if the spirit-*presence* hypothesis were ultimately established, the question would still remain: Did the presence of the spirit actually play a *healing role* in the recovery of the patient? Again, this is a question that can be addressed in future research. What is important to recognize here, at this early proof-of-concept stage of research, is that challenging questions such as these can be raised and carefully addressed in future research.

Proof-of-concept observations can sometimes be made in the laboratory of one's personal life. Schwartz (2011) recounted a personal experience where he was suffering from a severe flu, and on three separate occasions he was unknowingly given distant healing by a person who practiced a divine-focused spiritual healing tradition. He was not told when the healings would be provided; in fact, he did not even request that healings be offered (and he was not aware that they were being provided). There were three significant moments in his recovery: (1) when his fever broke after 5 days, (2) when his persistent coughing broke a few days later, and (3) when his severe coughing reappeared, and then broke. To his surprise, each significant moment in his healing happened to have been preceded, within an hour, by an essentially secret distant spiritual healing session. One such pairing (a secret healing preceding symptom relief) could have been a coincidence; two such pairings might have been a coincidence as well. However, the replicated occurrence of three separate and precise pairings suggests that more than coincidence was taking place.

It is one thing to read about an experiment in a publication (or even to conduct such an experiment); it is another thing to experience the phenomenon in real life. The fact that Schwartz happened to be thoroughly blind to the occurrences and timings of the healings speaks to the possibility that a genuine spiritual healing effect was occurring. This personal scientific account demonstrates how blinded spiritual healing experiments (with appropriate human subjects consenting) can be carried out in the future.

Conclusion

There are special moments in the history of science when major conceptual breakthroughs occur. They are sometimes called paradigm shifts or changes (Kuhn, 1996). Classic examples of paradigm changes include the shift in thinking that (1) the Earth was *flat*, to the Earth being *spherical*, that (2) the Sun revolved around the Earth, to the Earth revolving around the Sun, that (3) matter was *solid and fixed* (how we conventionally experience it), to matter being mostly “*empty space*” and *dynamically probabilistic* (quantum physics), and (4) the vacuum being “*empty*,” to space being *filled with invisible energy and information* (the zero-point field).

Major advances linking zero quantum physics (and other more innovative and visionary physics) with consciousness and spirituality is capturing the imagination of contemporary researchers (Goswami, 2001; Radin, 2006), and some of the core underpinnings of the materialistic worldview are being seriously challenged if not disproved. Visionary scientists (as exemplified in this Handbook) are beginning to explore what science might look like from a postmaterialist perspective.

As Schwartz (2011) illustrates, new advances in technology (including the recording of patterns of cosmic rays as well as individual photons of light) are making it possible to address the presence and effects of a greater spiritual reality. A recent paper documents how a super-sensitive silicon photomultiplier system can be used to monitor the presence of spirit and potentially serve as a communication device (Schwartz, 2010). Though the idea of technology advancing to the point of creating a reliable spirit-communication device—what Schwartz playfully calls the “soul phone”—might sound like science fiction, the history of science reminds us of countless instances where what was once viewed as science fiction became science fact.

If there is a greater spiritual reality, and if consciousness is the key to it, then psychology will need

to revise and expand its vision of (1) what is mind, (2) how does mind operate, and (3) what are its limitations and potentials. Just as the television set is required to receive and convert the external electromagnetic field signals into viewable information and energy that can be processed by human beings, the brain as a receiver may be needed in a parallel fashion.

Interestingly, the hypothesis that the brain might serve as a receiver (as well as a transmitter) of information and energy for consciousness has an illustrious history. The brain-receiver hypothesis was seriously entertained by William James, the founding father of American psychology; Wilder Penfield, a distinguished Canadian neurosurgeon who mapped consciousness and the brain; and Sir John Eccles, a British neurophysiologist who won the Nobel Prize in Medicine for discoveries involving the neuron. These luminaries may have had the correct thesis (van Lommel, 2010).

Future Directions

If the mind is not limited to the brain per se, but it extends into space and can operate independently of the brain (Kelly et al., 2009; Schwartz, 2011; van Lommel, 2010), then the nature of the scientific method needs to be carefully reexamined. It is possible that the beliefs and expectations of the experimenter may sometimes directly influence what they discover, regardless of their specialty (Radin, 2006). Researchers may be “participant-observers” in what they are investigating, even at a fundamental quantum level (termed the Heisenberg uncertainty principle). Additional experimental control conditions will need to be designed and employed. For example, in postmaterialist science even physics and chemistry experiments may need to manipulate (or at least monitor) the beliefs and expectations of technicians.

Moreover, if minds other than those of the experimenters can directly influence the physical world—that is, the spirit-assistance hypothesis—then we may need to take spirit-assisted mechanisms into account to better explain and predict certain laboratory findings. Many seemingly anomalous phenomena in physics, chemistry, biology, and psychology may be predictable and explainable by taking into account hypothesized spirit-assisted processes.

Also, improving healing and health may require that processes involving spirit and soul be addressed and included as part of diagnosis, treatment, and prevention. This not only includes the possibility of spirit-assisted healing, but the idea that healing may

require a broad collaboration between the physical and the spiritual, including so-called past-life information. The emerging frontier research in consciousness and spirituality should serve to encourage scientists to *resist the inclination to simply dismiss or denigrate such ideas* (what Tart calls “scientism”); instead, a more “agnostic” and cautiously open-minded approach is indicated if psychology, and science in general, are to advance with responsibility and integrity. This chapter was written following the framework suggested by Warren McCulloch: “Do not bite my finger; look where I am pointing.” The strong version of this open-minded philosophy is expressed in Carl Sagan’s quote that introduces the chapter: “This is the heart of science.”

Unfortunately, the politics of science promises to make progress difficult. Conventional funding agencies, as well as mainstream scientific journals, are strongly materialistic. They are typically threatened by the serious possibility that their core assumptions will need to be expanded and revised. University politics for promotion and tenure require acceptance by the mainstream.

Meanwhile, the public is increasingly becoming interested in matters of consciousness and spirit. This is evidenced by numerous successful televisions—documentaries, reality shows, and fictional series—spanning parapsychology, mediumship, “ghost hunting,” angels, and spiritual healing. Support from the private sector appears to be necessary to foster and promote future research in this area.

In closing, it should be remembered that certain discoveries in consciousness and spirituality, by their very nature, can only be made by individuals directly experiencing them. Adding the scientific method to daily life becomes a prudent and effective practice (Walsh, 2000). When the scientific method is integrated with everyday activities, life becomes a living laboratory of personal exploration and evolution.

Schwartz (2011) illustrates how “self-science” can fruitfully be employed in discovering a wide variety of spiritual phenomena, including developing one’s intuitions and charting complex patterns of events (called synchronicities). Self-science can foster the development of evidence-based spirituality as a practical consequence of a postmaterialist paradigm. Let us close with the first four stanzas of Schwartz’s (1997) poem “Soul as Information, Spirit as Energy”:

What, pray tell, are Spirit and Soul?
 Are they one and the same?
 Are Soul and Spirit a functional Whole?

Derived from a common Name?
 Or is it the case that Soul and Spirit
 Reflect two sides of a coin:
 Where Soul reflects the Information that fits?
 And Spirit, the Energy that joins?
 Is Soul the story, the Plan of Life?
 The music we play, our score?
 Is Spirit the passion, the Fire of Life?
 Our motive to learn, to soar?
 Soul directs the paths we take,
 The guidance that structures our flow.
 Spirit feels very alive, awake,
 The force that moves us to grow.

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