Not Misuse but Progress: A Response to “Quantum Misuse in Psychic Literature”

Amit Goswami, PhD
Eugene, OR

ABSTRACT: In rebuttal to the article “Quantum Misuse in Psychic literature” by Jack A. Mroczkowski and Alexis P. Malozemoff published in this issue of the *Journal of Near-Death Studies*, I briefly present the quantum science of consciousness, provide its experimental verification, and mention some of its applications. I then briefly summarize one such application—explanation of near-death experiences. I also provide an explanation of how a macro material body such as the brain can be quantum.

KEY WORDS: quantum; consciousness; spirituality; near-death experiences; brain

In my view, a healthy debate between proponents of various paradigms is good and useful. In the spirit of that perspective, I am pleased to have this opportunity to respond to the article “Quantum Misuse in Psychic Phenomena” by Jack A. Mroczkowski and Alexis P. Malozemoff (2019) which appears earlier in this issue of the *Journal of Near-Death Studies*.

I begin this response with my main premise: Expanding the use of an existing successful theory is not “misuse”; rather, it is a standard practice of science. My interpretation of quantum physics first published in 1989 under the title “The Idealist Interpretation of Quantum Mechanics” in the journal *Physics Essays* was the first paradox-free attempt to solve the well-known quantum measurement problem by injecting consciousness and thereby expanding the scope of quantum

Amit Goswami, PhD, is Founder of the Center for Quantum Activism in Eugene, Oregon. He is also the Founding Chairman of the department of Health, Prosperity, and Happiness, University of Technology, Jaipur, India. Correspondence regarding this article should be sent to Dr. Goswami at email: info@amitgoswami.org.

physics. It was certainly not a new attempt. Even Werner Heisenberg (1930/1949) anticipated such a possibility when he tried to explain quantum measurement as a change in human knowledge about the quantum object (read the discussion in my book, Goswami [1996]). Before measurement, the object is a wave of possibilities for which only probabilities can be given. After measurement, knowledge is no longer probabilistic but, rather, is certain. Etymologically, consciousness is the vehicle with which knowledge is actualized. Hopefully, Heisenberg's meaning is clear.

The great mathematician John von Neumann (1955) formulated a sophisticated quantum measurement theory and ended up positing that the observer's consciousness has to be responsible for the measurement: collapse of the quantum possibility wave to a particle. He asserted that the mechanism of this process is conscious choice. This first attempt at crediting consciousness with a vital role in wave collapse was thwarted by the famous paradox of Wigner's friend (Wigner, 1961): If there are two simultaneous observers for the same event of measurement, who gets to choose? I solved that problem in the paper mentioned above, and I am not the only one to have done so. The Australian Physicist Ludwig Bass (1971), Berkeley physicist Henry Stapp (1993), and Rutgers physicist Casey Blood (1993) came up with basically the same solution: The choosing consciousness is not individual but, rather, is cosmic—everybody's common source of consciousness.

My solution made the departure from the conventional attempts to solve the quantum measurement problem—such as Bohr's (1972–2008) Copenhagen Interpretation and the Many Worlds Theory (Everett, 1957)—more controversial because I did not pussyfoot around the implication of this paradox-free resolution of the quantum measurement problem: It threatens to integrate science and spirituality. This is a shattering blow to the philosophy of scientific materialism that the authors of "Quantum Misuse" hold as the central dogma of science without which science cannot be done. My 1989 paper was threatening the scientific world that perhaps it can and must be done based on the primacy of consciousness. And more: Science may become better, for it can go where it could not go before.

The authors of "Quantum Misuse" touted the probabilistic interpretation as if it is the final word. If it were, no physicist ever would need to engage with the quantum measurement problem. Unfortunately, quantum theory cannot be connected with experimental data without the reduction postulate that a quantum measurement on a single object reduces it from a "coherent" superposition to a unique state.

Quantum measurement theory grew out of attempts to give a solid mathematical and philosophical basis for this reduction postulate.

My theory of conscious choice does not need the work of Gary Schwartz and colleagues (in press) to justify it—not that the latter's work is unimportant. I stated the justification clearly in my first book on the subject, *The Self-Aware Universe* (Goswami, 1993): Consciousness is lawful. Conscious choice must be made within the constraint that for a large number of quantum measurements, quantum probability calculus holds.

If scientists did not question conventional dogma and propose new paradigms and worldviews, if Copernicus did not question Ptolemy's hypothesis of earth-centrism and give humanity sun-centrism, science would not be where it is today. However, it is important also to remember the 100-year gap between Copernicus and Galileo. It takes time to change "accepted" wisdom and associated dogma.

Meanwhile, avant-garde scientists of every age vigilantly continue the expansion suggested by the new paradigm. Not all paradigm extensions or shifts work. Molecular biology is an unsuccessful attempt to expand chemistry to biology: Biology is chemistry. But the hypothesis went nowhere in providing an explanation of what life is or explaining how molecules can survive—as they must if Darwin's theory of evolution is to hold.

My three decades of research, on the other hand, has successfully expanded the scope of quantum physics and the science-spirituality integration philosophy to biology, medicine, psychology, social sciences, and spirituality. I invite readers to consult my many books on the subject.

Connoisseurs of the history of science commend the development whenever two or more problems are solved by one new theory. I will not get into the details here, but my consciousness-based solution of the quantum measurement theory successfully solves many other outstanding problems of so many different fields with one swoop. Just to mention three of these problems: the cognitive neuroscience problem called the paradox of perception—how the brain develops a self to perceive an object as separate from itself; the mind-body paradox—how a nonphysical mind interacts with the physical body; and the paradox of the living—how life can be distinguished from nonlife.

The ultimate question of success of a new paradigm of science is not critiques and rebuttals but experimental data. The theory of quantum science that my 1989 paper developed into yields two major predictions: (a) the brain has to be quantum in some profound sense;

and (b) the self that brain develops has a two-self polarity: one nonlocal and one local, the quantum self and the ego. The first prediction was experimentally verified by transferred potential experiments—the transfer of event related electric potentials from one “correlated” brain to another via quantum nonlocality. The first verification was demonstrated originally by the 1992 experiments of Jacobo Grinberg-Zylberbaum and colleagues (Grinberg-Zylberbaum, Delaflor, Arellano, Guevara, & Perez, 1992) and subsequently replicated by some two dozen researchers (e.g. Standish et al., 2004). Regarding nonlocality and information transfer, it would behoove the authors to read Phillippe Eberhard’s (1978) paper again. Eberhard’s conclusion that no nonlocal transfer of information is possible is based in the assumption that all interaction is material in nature. Conscious choice is nonmaterial in its causal origin; thus, Eberhard’s theorem does not apply. Anyway, the debate is moot. The transferred potential experiments unequivocally demonstrated that nonlocal information transfer happens.

The second prediction, the quantum self-ego, nonlocal-local polarity of the human self, is the basis of an entire successful paradigm of psychology: transpersonal psychology. My consciousness-based quantum science is the only scientific explanation of transpersonal psychology. Recent functional magnetic resonance imaging (fMRI) data unequivocally has demonstrated this nonlocal-local polarity of the human self (Goleman et al., 2008).

In my view—and hoping that the authors of “Quantum Misuse” do not take offense—much of the tunnel vision of scientific materialists—which William Blake (1982) called “Newton’s sleep” (p. 722)—comes from their lack of meditative experience of expanded consciousness. No amount of theorizing can substitute for direct experience.

The “Quantum Misuse” authors were puzzled by the concept of nonlocal memory that solves the fundamental problem of reincarnation theory: What transmigrates? The concept is based on a mathematical work that I did with physicist Mark Mitchell—then my graduate student—on electrons’ behavior when subjected to repeated measurements with memory feedback (Mitchell & Goswami, 1992). The concept of nonlocal memory has been verified by neuroscientist Karl Lashley’s (1950) laboratory experiments on rats. I was not aware of Lashley’s important work when I wrote *Physics of the Soul* (Goswami, 2001). In my most recent work (Goswami, 2017), I have mentioned it. I believe that those who take a look at this important work with an open mind will be amazed.

Finally, the authors made what I consider a legitimate gripe about

the quantum nonlocality of brain regions such as those that mediate perception. I agree that fMRI data prove nonlocality but that a theory does not exist that quantum physics and nonlocality apply to a macroscopic object such as the brain at room temperature.

It took me many years, but I now have discovered a solid scientific explanation. I cannot go into technical details; this is not the place. Following is an excerpt from my upcoming popular book, *See the World as a Five-Layered Cake* (Goswami, 2020)—edited for this scholarly venue.

Does Quantum Physics Apply to Humans?

Many biologists think that subatomic events are too small to have a practical importance. Other scientists object in the same vein: Electrons and people are not the same thing.

I believe few if any people would disagree that, ultimately, quantum physics rules all matter, both micro and macro. However, for practical purposes, it must be acknowledged that for bulk matter—the macro level—Newton’s physics approximately rules. This principle, too, is part of the quantum dynamics applied to matter; it is called the correspondence principle.

What this principle means is that at the bulk macro level, matter is still wave like, but the wave nature is much subdued, leaving consciousness with little access to alternative manifestations—and certainly with no macroscopic coherent superposition of possibilities to choose from—a phenomenon called “decoherence.” Humanity must face it: Bulk inanimate matter is largely independent of consciousness.

Living matter is different, however: It has vitality. A living body is a dynamic duo of a physical component and a vital component. The reason is as follows. Whereas the physical component gives humans hardware, it is the nonphysical morphogenetic fields, discovered by biologist Rupert Sheldrake (1981), that give humanity—and, indeed, all species—purposive vital software for organ functioning. *It is the vital component of a living organ that is quantum; the physical is quantum by association—what, in quantum physics, is called correlation or entanglement.*

To understand the concept of correlation, a little more quantum physics explanation is needed. The turning point for an understanding of quantum physics came with the 1982 experimental verification by Alain Aspect and his collaborators (Aspect, Dalibard, & Roger, 1982) of a 1935 theoretical idea of three physicists: Albert Einstein, Boris

Podolsky, and Nathan Rosen (EPR; Einstein, Podolsky, & Rosen, 1935). Fortunately, it is not necessary to understand EPR's mathematical calculations to understand their message, which is simple: If two quantum objects—waves of possibility—come close and interact, they become correlated or entangled. What this means is that they develop an unusual purely quantum characteristic of instant communication that remains intact even when they are not interacting, even when they move far away, even galaxies apart, from each other. Such instant communication is termed nonlocal.

Uncorrelated quantum objects in space and time are particles that do not have this characteristic. Such objects require signals to communicate; signals have a speed limit: the speed of light. Signals travel with a finite speed taking a finite time from one locality to another through the intervening space. Objects in space and time generally are objects with separateness.

In contrast, if the waves of potentiality are correlated, then, when they are actualized as particles, their behavior indicates that they have communicated instantly, without signals. The mechanism for such a phenomenon may at first seem mysterious. However, an explanation is that the correlation or entanglement made them into one. One does not need a signal to communicate with itself. The oneness of these seemingly-but-not-actually separate particles reflects the oneness of consciousness: Consciousness maintains its oneness even at a distance. (In "Quantum Misuse" the authors point out that in research so far, this entanglement effect has been only very short-lived—whereas the oneness of consciousness is presumably eternal/an inherent quality of consciousness. In response, I reply: The oneness of consciousness is potentially available for quantum objects of possibility; in that potential form, it is eternal. However, when this potentiality of being one is "actualized" by interaction, the effect can be temporary.)

Thus the oneness of objects in the domain of potentiality is a potential oneness. EPR provided the clue about how to actualize and thereby verify the oneness via measurements in space and time.

The vital-physical duo of living bodies are correlated quantum objects. They are one. When a person experiences a physical organ, one also experiences the movement of its correlated vital organ. The experience of this movement is called feeling. Vitality, call it the movement of vital energy, is a feeling.

I am saying vital movements are quantum; therefore, the movements of physical macro living bodies, the organs, are also quantum by virtue of correlation. In this way, by virtue of its vital connection,

every living organ—including the organ of the brain—offers macroscopic quantum possibilities for consciousness to choose from, then consciousness chooses, and then an experience is born.

Amazingly, the *rishis*—truth-seers; in English, scientists—of India 5,000 years ago intuited as much. They, too, predicted that three worlds are needed for a comprehensive understanding: the causal world of consciousness, the gross world of matter to make representations, and the subtle world to connect the two.

I will add to this one additional comment for specialists. I invite those still having difficulty accepting the principles I have described to think of the parallel situation of how a macroscopic measurement apparatus, such as a photographic film, measures an electron. As von Neumann (1955) first argued, the film although a macro object must become a coherent superposition of many positions just as the electron is. Similarly, the brain's perception apparatus, distributed all over the brain, becomes a coherent superposition of possibilities that the vital-correlate of the perception apparatus brings to it. Measurement collapses both possibility waves when consciousness chooses.

Applying the Quantum Way of Theorizing About Consciousness: An Explanation of Near-Death Experiences

Because I am writing in the *Journal of Near-Death Studies*, it is fitting that I mention how the theory of consciousness developed here fully explains near-death experiences (NDEs) in all their various facets. As readers of this *Journal* likely well know, NDEs involve the following special hard-to-accept—from a conventional science point of view—features: (a) NDEs refer to complex experiences that sometimes occur when the heart has stopped and the brain is showing no measurable electrical activity—a condition in which conventional scientists would predict that memory of complex experience is impossible (van Lommel, 2010); (b) some near-death experiencers have described autoscopic viewing of their surgery that has been independently verified by doctors, nurses, and others present during the operation (Rivas, Dirven, & Smit, 2016)—a phenomenon that further contributes to the consternation of the conventionalists; and (c) near-death experiencers present a pretty consistent picture of what they experience. This consistency throughout history and across cultures (Long, 2010) gives NDE credibility at the same time that it confounds skeptics.

The quantum theory solves the problem posed by the first feature by invoking the delayed choice phenomenon, the problem posed by the second feature by additionally invoking distant viewing phenomena of quantum nonlocality, and the problem posed by the third feature by invoking Carl Jung's (1971) discovery of the collective unconscious. Details can be found in my recent book (Goswami, 2017).

However, healthy criticism is a good thing. Upon reading a neuroscientist's critique that cognition and memory both require a live brain albeit unconscious, I realized that all of the above quantum mechanisms by way of explanation of NDEs must occur only after the brain is revived but not regained consciousness—in other words, for example, while the patient is on the operating table. In this way, NDEs are in the same category of experience as the much-reported spiritual state of *nirvikalpa samadhi*: samadhi without subject-object split. No wonder then that many near-death experiencers undergo spiritual transformation. Also, no wonder that many near-death experiencers present reports that can be legitimately described as mental imagination. Clearly, as the brain's personal memory become more and more available as the surgery progresses, the surviving subject can add imagination to the more nonlocal collective unconscious experience.

A Final Lament

The history of science is a history of violence during times of serious paradigm shifts—those that lead to a change in the worldview of people at large. Copernicus died before seeing his ideas in print, so frightened was he of the establishment and “accepted” wisdom. Galileo was imprisoned for his ideas. Giordano Bruno was burned at the stake. Thankfully, researchers and theorists do not live in such violence any more. Vestiges remain, however: Sheldrake's (1981) idea of morphogenetic fields—the root idea of my theory of vital body movements and feelings—was denigrated by the editor of the well-known journal *Nature* in an editorial (Maddox, 1981) entitled “A Book for Burning?” Although the author concluded that, in fact, the book should not be burned, he called its contents “pseudoscience” and asserted it should be placed “among the literature of intellectual aberrations.” In 1994, he elaborated:

I was so offended by it, that I said that while it's wrong that books should be burned, in practice, if book burning were allowed, this book would be a candidate. I think it's dangerous that people should be allowed by our liberal societies to put that kind of nonsense into cur-

rency. It's unnecessary to introduce magic into the explanation of physical and biological phenomena when in fact there is every likelihood that the continuation of research as it is now practiced will indeed fill all the gaps that Sheldrake draws attention to. You see, Sheldrake's is not a scientific theory. Sheldrake is putting forward magic instead of science, and that can be condemned, with exactly the language that the popes used to condemn Galileo, and for the same reasons: It is heresy. (Maddox, 2013)

I believe that it is attitudes such as Maddox's that actually belong in the Middle Ages.

To reiterate my opening statement, a healthy debate between proponents of various paradigms is good and useful. Deepak Chopra's (1989) idea of quantum healing, backed up by my ideas of using the creative process toward achieving quantum healing, is already saving hundreds, if not thousands, of lives (B. M. Hegde, MD, personal communication; Goswami & Onisor, 2019). My ideas of quantum integrative medicine, on which the teachings offered at the Quantum University in Hawaii are based, are leading to better and cheaper practices in many medical institutions in the world—for example Dr. Lodaya Hospital at Haveri, Karnataka, India—though not in the US because many leaders and members of the powerful American Medical Association think like the authors of “Quantum Misuse.” Gary Schwartz (in press) has contributed much new evidence to consciousness research that is getting traction (e.g., several chapters in Beauregard, Schwartz, & Trent, in press). I hope that those of us who hold differing views can be respectful of one another and that the authors of “Quantum Misuse” can acknowledge that those of us in consciousness research are developing a viable science even though they don't agree with it.

References

- Aspect, A., Dalibard, J., & Roger, G. (1982). Experimental test of Bell's inequalities using time-varying analyzers. *Physical Review Letters*, 49(25), 1804–1807.
- Bass, L. (1971). The mind of Wigner's friend. *Harmathena*, 112, 52–68.
- Beauregard, M., Schwartz, G. E., & Trent, N. L. (Eds.). (in press). *Expanding science: Visions of a post-materialist paradigm*. Vancouver, BC: Parammedia.
- Blake, W. (1982). Letter to Thomas Butts, 22 November 1802. In D. V. Erdman (Ed.), *The complete poetry and prose of William Blake* (Rev. ed., pp. 720–723). Berkeley, CA: University of California Press.
- Blood, C. (1993). *On the relation of the mathematics of quantum mechanics to the perceived physical universe and free will* (preprint). Camden, NJ: Rutgers University.

- Bohr, N. (1972–2008), *Collected works* (Vols. 1–13). Amsterdam, The Netherlands: Elsevier.
- Eberhard, P. H. (1978). Bell's theorem and the different concepts of locality. *Nuovo Cimento*, 46(2), 392–419.
- Einstein, A., Podolsky, B., & Rosen, N. (1935). Can Quantum-mechanical description of physical reality be complete? *Physical Review*, 47(10), 777–780.
- Everett, H. (1957). Relative state formulation of quantum mechanics. *Reviews of Modern Physics*, 29(3), 454–462.
- Goleman, D., Lipton, B. H., Pert, C., Small, G., Achterberg, J., McTaggart, L., . . . Wickramasekera, I. (2008). *Measuring the immeasurable: The scientific case for spirituality*. Boulder, CO: Sounds True.
- Goswami, A. (1989). The idealist interpretation of quantum mechanics. *Physics Essays*, 2, 385–400.
- Goswami, A. (1993). *The self-aware universe: How consciousness creates the material world*. New York, NY: Jeremy P. Tarcher/Putnam.
- Goswami, A. (1996). *Quantum mechanics*. Long Grove, IL: Waveland Press.
- Goswami, A. (2001). *Physics of the soul: The quantum book of living, dying, re-incarnation, and immortality*. Charlottesville, VA: Hampton Roads.
- Goswami, A. (2017). *The everything answer book: How quantum science explains love, death, and the meaning of life*. Charlottesville, VA: Hampton Roads.
- Goswami, A. (in press). *See the world as a five-layered cake*. Kolkata, India: Blue Rose.
- Goswami, A., & Onisor, R. V. (in press). *How to be your own quantum doctor*. Delhi, India: Blue Rose.
- Grinberg-Zylberbaum, J., Delaflor, M., Sanchez Arellano, M. E., Guevara, M. A., & Perez, M. (1992). Human communication and the electrophysiological activity of the brain. *Subtle Energies*, 3(3), 25–43.
- Heisenberg, W. (1949). *The physical principles of the quantum theory*. New York, NY: Dover. (Original work published 1930)
- Jung, C. J. (1971). *The portable Jung*. (J. Campbell, Ed.; R. F. C. Hull, Trans.). New York, NY: Viking Penguin.
- Lashley, K. S. (1950). In search of the engram. *Symposiums of the Society of Experimental Biology*, 4, 454–483.
- Long, J., with Perry, P. (2010). *Evidence of the afterlife: The science of near-death experiences*. New York, NY: HarperCollins.
- Maddox, J. (1981, 24 September). A book for burning? *Nature*, 293(5830), 245–246.
- Maddox, J. (2013). *John Maddox on Sheldrake and book burning*. Retrieved from <https://www.youtube.com/watch?v=QcWOz1xjtsY>.
- Mitchell, M., & Goswami, A. (1992). Quantum mechanics for observer systems. *Physics Essays*, 5, 526–529.
- Mroczkowski, J. A., & Malozemoff, A. P. (2019). Quantum misuse in psychic literature. *Journal of Near-Death Studies*, 37, 131–154. doi:10.17514/JNDS-2019-37-3-p131-154.
- Rivas, T., Dirven, A., & Smit, R. (2016). *The self does not die: Verified paranormal phenomena from near-death experiences*. Durham, NC: International Association for Near-Death Studies.
- Schwartz, G. E. (in press). Post-materialism and the primacy of mind versus matter: The five additive criteria test (FACT) for responsibly changing our

- minds. In M. Beauregard, G. E. Schwartz, & N. L. Trent (Eds.), *Expanding science: Visions of a post-materialist paradigm* (pp. 27–52). Vancouver, BC: Parammedia.
- Sheldrake, R. (1981). *A new science of life: The hypothesis of formative causation*. London, England, UK: Blond and Briggs.
- Standish, L. J., Kozak, L., Clark Johnson, L., & Richards, T. (2004). Electroencephalographic evidence of correlated event-related signals between the brains of spatially and sensory isolated human subjects. *Journal of Alternative and Complementary Medicine*, 10, 307–314.
- Stapp, H. P. (1993). *Mind, matter, and quantum mechanics*. New York, NY: Springer.
- van Lommel, P. (2010). *Consciousness beyond life: The science of near-death experience*. New York, NY: HarperCollins.
- von Neumann, J. (1955). *Mathematical foundations of quantum mechanics*. Princeton, NJ: Princeton University Press.
- Wigner, E. (1961). Remarks on the mind-body question. In I. J. Good (Ed.), *The scientist speculates* (pp. 171–184). London, England, UK: Heinemann.