

# GOD, CONSCIOUSNESS, SCIENCE: CONVERSATIONS

BY SUKESH MOTWANI

**As** philosophers born in an age where Science is leading the pursuit of answering questions to do with life, creation and the nature of reality, it becomes incumbent upon us to keep alive the sense of wonder at the underlying order and harmony in the workings of the universe. The search for 'truth' and 'meaning' has driven philosophers, scientists and religious thinkers alike... so would it really be presumptuous to qualify this search as one to do with the ultimate mystery, the enigma of God? This article looks at this enigma by reproducing interesting conversations on the interplay between scientific pursuits and spiritually based ideas from renowned scientists and writers. It sets out to show how rationalists and scientists do concur albeit in different ways, that there is an invisible force that animates all of us and determines the laws of nature and the universe at large. Furthermore, this invisible force is currently beyond tangible parameters of definition or measurement. Simply put in the revered words of Einstein: "Human beings, vegetables or cosmic dust, we all dance to a mysterious tune, intoned in the distance by an invisible piper."

It is said that Einstein couldn't help but be in awe when contemplating the mysteries of eternity, of

life, of the marvelous structure of reality. Max Planck one of the greatest theoretical physicists, concurred on this in a more definitive way by declaring that there can never be any real opposition between science and religion for one is the complement of the other. He concludes that science cannot solve the ultimate mystery of nature because in the end, we ourselves are a part of the mystery that we are trying to solve! Indeed it is not by accident that many of the greatest thinkers of all ages are deeply religious. It seems that any serious and reflective person must realize that the religious element in his nature must be recognized and cultivated.

"Everyone who is seriously involved in the pursuit of Science," Einstein wrote to a little girl who asked him whether scientists pray, "becomes convinced that some spirit is manifest in the laws of the universe, one that is vastly superior to that of man." Carl Sagan seconded, "The notion that science and spirituality are somehow mutually exclusive, does a disservice to both. The science-spirituality 'debate' is unwinnable, and it leads us astray. To insist that science and religion speak the same language, or draw the same conclusions, is to miss the point of both pursuits of cohesive knowledge and underlying truth. To create a competition between them, in

terms of relevance and rightness, is self-defeating. Together they shall animate the twenty first century with new vigor. This will happen whether their practitioners are in dialogue or not."

"If we ever reach the point where we think we thoroughly understand who we are and where we came from," Carl Sagan wrote in his timeless meditation on science and religion, "we will have failed." It's a sentiment that dismisses in one fell Saganesque swoop both the blind dogmatism of religion and the vain certitude of science — a sentiment articulated by some of history's greatest scientific minds. Even when the likes of Copernicus, Kepler and Newton struggled against bitter religious resistance against their revolutionary ideas, they believed that their discoveries would and should widen human comprehension of the nature of God. Their reasoning: the more we understand the world around us in all its intricacy, the better we would understand the mind of its maker. Einstein approached Science itself with a religious awe, as the physicist Freeman Dyson tells us. As a young colleague of Einstein's at Princeton, Dyson saw him become more philosophical as he grew older, leaving behind a rich body of reflection on the 'mind' and 'superior spirit' of the cosmos. Einstein liked to imagine Buddhism as the religion of the future, capable of embracing the best of scientific and spiritual approaches to life.

The world of Science enlivens one's understanding of God, and of religion. For example, the scientific puzzle of whether light is a particle or wave, was resolved by Paul Dirac, with the unexpected, seemingly illogical conclusion, that it is both. And here is the key that made the discovery possible: how we ask the questions affects the answers that we arrive at. Light appears to be a wave if you ask it a wave-like question and it appears as a particle if you ask it a particle-like question. This is a template for understanding how contradictory explanations of reality can be simultaneously true. The religious impulse is animated by questions of purpose: what

does it mean to be human? Where do we come from? Where do we go from here? How to be of service to one another, and to the world? As both immunologist Esther Sternberg and cardiologist Mehmet Oz realized, the scientific core of western medicine cannot resolve, or even really address, the vulnerability of human life, the inevitability of death, or our ordinary and persistent struggles for meaning in between.



Consider the perfect opening line of Reinhold Niebuhr's theological classic *The Nature and Destiny of Man*. "Man has always been his own most vexing problem." One can hear this as succinct diagnosis of Einstein's dismayed observation that twentieth century weaponry and technology was like a razor blade in the hands of a three year old. One cannot lead an examined life without noticing that all of our grandest objectives - political, economic and scientific - are inevitably complicated by the inner drama of the human condition.

In this spirit, Einstein came to understand his contemporary, Mahatma Gandhi, and prophets such as Jesus, Moses, and the Buddha as spiritual teachers, but also as geniuses — "geniuses in the art of living...more necessary to the sustenance of global human dignity, security and joy than the discoveries of objective knowledge".

The wise physician and author Sherwin Nuland, although not religiously devout, finds his drive in

St. Augustine's words about the reverence for the human physical experience:

"Men go forth to wonder at the heights of mountains,  
the huge waves of the sea,  
the broad flow of the rivers,  
the vast compass of the ocean,  
the courses of stars:  
and they pass by themselves without wondering."

That fascinating and vital discomfort between science and religion is precisely what physicist Alan Lightman, one of today's finest science essayists, explores in *The Accidental Universe: The World You Thought You Knew*. In the foreword, Lightman recounts attending a lecture by the Dalai Lama at MIT: "one of the world's spiritual leaders sitting cross-legged in a modern temple of science." He heard a talk about the Buddhist concept of *sunyata*, translated as emptiness — the notion that objects in the physical universe are vacant of inherent meaning and that we imbue them with meaning and value with our minds. Lightman adds, "As a scientist, I firmly believe that atoms and molecules are real (even if mostly empty space) and exist independently of our minds. On the other hand, I have witnessed first-hand how distressed I become when I experience anger or jealousy or insult, all emotional states manufactured by my own mind. The mind is certainly its own cosmos. As Milton wrote in *Paradise Lost*, "[The mind] can make a heaven of hell or a hell of heaven." In our constant search for meaning in this baffling and temporary existence, trapped as we are within our three pounds of neurons, it is sometimes hard to tell what is real. We often invent what isn't there. Or ignore what is. We try to impose order, both in our minds and in our conceptions of external reality. We try to connect. We try to find truth. We dream and we hope. And underneath all of these strivings, we are haunted by the suspicion that what we see and understand of the world is only a tiny piece of the whole. Science does not reveal the meaning of our existence, but it does draw back some of the veils.

This tension between internal and external reality is also what lies at the root of the age-old tension between science and religion."

At another occasion, Lightman argues against the notion that science is the religion of our century: "If science is the religion of the twenty-first century, why do we still seriously discuss heaven and hell, life after death, and the manifestations of God? Biologist Nancy Hopkins manipulates the DNA of organisms to study how genes control the development and growth of living creatures. Does that make it seem like modern science has now pushed God into such a tiny corner that He, or She, or It, no longer has any room to operate in — or perhaps has been rendered irrelevant altogether? Not according to surveys which show that more than three-quarters of Americans still believe in miracles, eternal souls, and God. Despite the recent spate of books and pronouncements by prominent atheists, religion remains, along with science, one of the dominant forces that shape our civilization. Our little group of scientists and artists finds itself fascinated with these contrasting beliefs, fascinated with different ways of understanding the world. And fascinated by how science and religion can coexist in our minds."

Lightman asserts that there are things we take on faith, without physical proof and even sometimes without any methodology for proof. We cannot clearly show why the ending of a particular novel haunts us. We cannot prove under what conditions we would sacrifice our own life in order to save the life of our child. We cannot prove whether it is right or wrong to steal in order to feed our family, or even agree on a definition of right and wrong. We cannot prove the meaning of our life, or whether life has any meaning at all. For these questions, we can gather evidence and debate, but in the end we cannot arrive at any system of analysis akin to the way in which a physicist decides how many seconds it will take a one-foot pendulum to complete its swing. The previous questions are questions of aesthetics, morality, and philosophy. These are questions

for the arts and the humanities. At any moment in time, every scientist is working on, or attempting to work on, a well-posed problem, a question with a definite answer. But for artists and humanists definite answers don't exist to all interesting and important questions. Indeed, this tolerance for the unanswered — and possibly the unanswerable — is not only at the heart of creativity and the secret of happiness, but also, Lightman argues, the essence of faith — "Faith, in its broadest sense, is about far more than belief in the existence of God or the disregard of scientific evidence. Faith is the willingness to give ourselves over, at times, to things we do not fully understand. Faith is the belief in things larger than ourselves. Faith is the ability to honor stillness at some moments and at others to ride the passion and exuberance that is the artistic impulse, the flight of the imagination, the full engagement with this strange and shimmering world."

V. V. Raman (emeritus professor of physics and humanities at the Rochester Institute of Technology and author of *Truth and Tension in Science and Religion*) states that Hinduism, which has kept an awareness and practice of art as life-giving at the very centre of daily lived spirituality, has historically avoided a point counterpoint between science and religion. Raman says that in the Hindu world there was a clear understanding of what constitutes religious knowledge on one hand, and what may be called intellectual, analytical, secular knowledge on the other. Just as he would call the science-religion debate in the west as that of cognitive dissonance, he would call this debate in Hinduism, an experiential consonance wherein it is possible to look at some things from a logical and analytical framework which is what Science provides, and to distinguish that from another level of experience in the world, which comes from what may be called deep involvement. He feels that one of the unfortunate consequences of the sciences is the addiction to rationality. As he sees it, knowledge conveyed by art and poetry and beauty is not

irrational, but it is transrational, and as critical in human life as rationality. He uses the analogy of a sonnet. Logic can analyze it powerfully in terms of structure; the human spirit will plumb it for meaning. He juxtaposes shared elements of both science and religion to explore the complementarity of these two realms of human endeavor. When Pascal wrote his famous statement, "*Le coeur a ses raisons que la raison ne connaît point*" - the heart has its reasons which reason doesn't understand - those are ways by which the enlightened thinkers and visionaries understood that the world is far too complex for us to really rigidly put everything under the strait jacket of reason.



A great majority of scientists believe that a complete and final set of laws governing all physical phenomena exists and that we are making continual progress towards the discovery of those laws. That belief is part of the central doctrine of Science. Let us turn to religion. In his landmark study of religion, *Varieties of Religious Experience* (1902), Harvard philosopher William James described religion in this way: "Were one to characterize religion in the broadest and most general terms possible, one might say that it consists of the belief that there is an unseen order and that our supreme good lies in harmoniously adjusting ourselves thereto." So religion and spirituality are therefore fundamentally personal and subjective experiences which distinguishes them from science. Let's assume that it can be broadly

classified as two kinds of knowledge in religion: the transcendent experience and the content of sacred religious books, such as the Old Testament of Judaism, The New Testament of Christianity, the Koran of Islam and the Upanishads of Hinduism. The transcendent experience - the immediate and vital personal experience of being connected to some unseen divine order - is beautifully described by a clergyman in James's book: "I remember the night and almost the very spot on the hilltop, where my soul opened out, as it were, into the Infinite and there was a rushing together of two worlds, the inner and the outer. It was deep calling unto deep - the deep that my own struggle has opened up within being answered by the unfashionable deeply without, reaching beyond the stars. I stood alone with Him who had made me, and all the beauty of the world, and love and sorrow and even temptation. I did not seek Him, but felt the perfect union of my spirit with His..." The extremely personal and immediate nature of the transcendent experience described here is what gives it power and force. This experience is ultimately beyond analysis. The truth and power of it lies in the subjective experience itself. Qualities of that experience cannot be quantified or measured like readings on a voltmeter, and thus cannot be transferred to others."

Another perspective on the nature of reality from an idealist's point of view (from *The Presence of the Sacred* by Sima Sharma, featured in a book called *The Song of the Spirit*): "The materialist respects material nature as substance or energy. To him Reality reveals the laws and principles that pertain to matter and phenomena. To the idealist the phenomenal world is just an appearance and the Idea already is the Reality: the universe conforms this to his individual experience and reveals coherent answers. But each, materialism and idealism, taken to the extreme to exclude each other, devalues cosmic experience and human life, leaving the human being deeply divided. A chasm opens up between the world of facts and the truth of experience...Where humanity stands today, this split

in our psyche is actually felt. We have intimations of the interconnectedness of all things - thought with life, and life with phenomena and matter. What we are left with is an intuition of wholeness but an experience of fragmentation."



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In his own way, the revered Dalai Lama talks about bringing this subjective experience within the ambit of science in his book *The Universe in a Single Atom* where he is advocating methods for the convergence of science and spirituality. In the scientific processes applied to study consciousness, he feels that when we listen to a purely third person 'objective' account of mental states, whether it is a cognitive psychological theory, a neurobiological account or an evolutionary theory, he feels that a crucial dimension has been left out - which is the subjective experience of the individual. He asks whether we can envision a scientific methodology for the study of consciousness whereby a robust first person method which does full justice to the phenomenology of experience, can be combined with the objective perspective of the study of the brain. And this may lead not only to greater understanding of consciousness but also to a better understanding of the dynamics of the human mind and its relation to suffering.

New theories in neuroscience suggest consciousness is an intrinsic property of everything, just like gravity. That development opens a world of opportunity for collaboration between Buddhists and neuroscientists. "The heart of consciousness," says neuroscientist Christof Koch, "is that it feels like something. How is it that a piece of matter, like my brain, can feel anything?" In 2013, Koch, one of the world's leading experts on consciousness, and the Dalai Lama debated neuroscience and mind for a full day. They had different approaches. Koch offered contemporary scientific theories on the subject, and His Holiness countered with ancient Buddhist teachings. Yet, at the end of their discussion, the two thinkers agreed on almost every point. "What struck me most was his belief in what we in the West call 'panpsychism' — the belief that consciousness is everywhere," says Koch. "And that we have to reduce the suffering of all conscious creatures." Panpsychism, the idea of universal consciousness, is a prominent thought in some branches of ancient Greek philosophy, paganism, and Buddhism. And it has been largely dismissed by modern science — until recently. In his work on consciousness, Koch collaborates with a researcher named Giulio Tononi. Tononi is the father of the most popular modern theory of consciousness called Integrated Information Theory (IIT). Tononi's theory states that consciousness appears in physical systems that contain many different and highly interconnected pieces of information. Based on that hypothesis, consciousness can be measured as a theoretical quantity, which the researchers call phi.

But beyond the physical brain, scientists have barely begun to develop an understanding of mind — or consciousness — itself. On the other hand for thousands of years, Buddhism associates the mind with sentience. The late Traleg Kyabgon Rinpoche stated that while the mind, along with all objects, is empty, unlike most objects, it is also luminous. In a similar vein, according to IIT, consciousness is an intrinsic quality of everything. And yet it only

appears significantly in certain conditions — like how everything has mass, but only large objects have noticeable gravity.

In his major work, *Shobogenzo*, Dogen, the founder of Soto Zen Buddhism, went so far as to say, "All is sentient being." Grass, trees, land, sun, moon and stars are all mind, wrote Dogen. "I was confronted with the Buddhist teaching that sentience is probably everywhere at varying levels, and that inspired me to take the consequences of this theory seriously," says Koch. With more research, Koch and Tononi could better test consciousness, to prove scientifically that all beings are sentient. Meanwhile, Buddhists around the world are constantly working to develop an understanding of the mind. Traleg Rinpoche said that analytical methods can only go so far toward understanding the mind. Instead, he says, by resting his or her mind and contemplating it, a meditator can develop an understanding of the nature of mind and how it relates to everything else.

Based on the above conversations, one believes that the enigma of God is the most beautiful and alluring question that is worth pursuing from every perspective, every available mode of inquiry. There is no distinction between the spiritual and physical universes, no distinction between the inner and the outer, between the subjective and the objective, between the miraculous and the rational. And all the same paradoxically speaking, many others would need such distinctions to make sense of their spiritual and scientific lives. ★★★

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