

The End of Quantum Reality: A Conversation with Wolfgang Smith

By Samuel Bendeck Sotillos

Wolfgang Smith [b. 1930] is a scholar and researcher in the fields of mathematics and physics, yet he is also a writer on theology, metaphysics, and religion. Because of his rare qualifications in both scientific and theological disciplines, he is able to write with great authority on many topics of concern to religious and scientific scholars today. He graduated at age eighteen from Cornell University with a B.Sc. in mathematics, physics, and philosophy. Two years later he obtained an M.Sc. in theoretical physics at Purdue University, following which he joined the aerodynamics group at Bell Aircraft Corporation. Smith was the first to investigate the effect of a foreign gas on aerodynamic heating, and his work on the effect of diffusion fields provided a key to the solution of the re-entry problem for space flight. He received a Ph.D. in mathematics from Columbia University and has held professorial positions at M.I.T., U.C.L.A., and Oregon State University until his retirement in 1992.

Professor Smith has published extensively on mathematical topics relating to algebraic and differential topology; yet since his youth he has had a deep interest in metaphysics and theology. Following a period of study under the tutelage of Swami Nikhilananda [1895-1973], he traveled extensively in India to deepen his acquaintance with the Hindu tradition, and spent time in the company of Sri Anandamayi Ma [1896-1982], one of the great spiritual luminaries of the twentieth century. His thought presents a unique encounter between contemporary science and the universal and timeless wisdom that is neither of the East or West. It was after returning to his Catholic roots that he took up his vocation as an author, and has written numerous books: *Cosmos and Transcendence* (1984), *Teilhardism and the New Religion* (1988; republished

as *Theistic Evolution*, 2012), *The Quantum Enigma* (1995), *The Wisdom of Ancient Cosmology* (2003; republished as *Ancient Wisdom and Modern Misconceptions*, 2013), *Christian Gnosis* (2008), *Science and Myth* (2010), *Unmasking the Faces of Antichrist: Interview with Dr. Wolfgang Smith* (2017), *In Quest of Catholicity: Malachi Martin Responds to Wolfgang Smith* (2016), *Rediscovering the Integral Cosmos* (with Jean Borella, 2018) and *Physics and Vertical Causation* (2019).

Wolfgang Smith is the Founder of the Philos-Sophia Initiative Foundation. In January 2020, a full-length film was released on the life and work of Professor Smith, entitled *The End of Quantum Reality* (Producer: Richard DeLano; Director: KTEE Thomas). This interview, which was conducted at Wolfgang Smith's home in Camarillo, California on November 29, 2019, focuses on the long-awaited release of this epochal film and Professor Smith's legacy.

Samuel Bendeck Sotillos: If you were asked to give a brief synopsis of your film, *The End of Quantum Reality* how would you articulate this for audiences unfamiliar with your work?

Wolfgang Smith: What we hope to accomplish is to deliver the audience from an erroneous worldview imposed upon us in the name of science, and in so doing deliver them from a chronic state of schizophrenia which is a consequence of this worldview.

Physics has long claimed—on supposedly solid scientific grounds—that all things are simply composites of so-called fundamental particles. What we have proved—on the basis of quantum theory itself—is that such is not in fact the case: the world in which we live, and move, and have our being does *not* in fact reduce to mere particles! This means that the world we normally perceive by means of our five senses is not after all illusory, as we have been taught to believe since the Enlightenment.¹

SBS: You have accomplished a remarkable feat in exposing the fundamental errors of contemporary science in an unparalleled fashion. Your findings fundamentally challenge the presiding ideology of our times and are considered “heretical” because they deconstruct the ideology as idolatry. How did this insight or process occur?

¹ Editor: Later in this interview, Professor Smith elaborates on the ontological discrepancy between the *corporeal* and the *physical* realms, pointing to the necessity for a realignment of physics with traditional metaphysics.

WS: First of all I should say that, due to the circumstances of my life, I had an advantage over my colleagues. For in consequence of extended travel in remote parts of the globe, particularly in the Himalayan regions of India and Nepal, I had contact with living spiritual traditions which enabled me to break out of the limited *Weltanschauung* of our day. I learned to look at the world in a very different way. I thus enjoy the incomparable advantage of having been, to some degree at least, set free from the prevailing *Zeitgeist* which so stringently determines the way we view the world. I think this may well be what enabled me to arrive at certain insights which others, perhaps far better informed than I, were unable to perceive.

SBS: You speak of our time as “a singular moment in history” and make a connection between the “quantum reality problem” and a four-century arc of history René Guénon [1886-1951] has termed “the reign of quantity,”² which appears to be reaching its end. Can you please expand upon this important idea and discuss the relevance of the French metaphysician René Guénon upon your work?

WS: It was really René Guénon who made me realize how strange our contemporary *Weltanschauung* is in that it pretends to reduce all objective reality to the category of *quantity*. Guénon made me realize that *quantities* are correlative to *qualities*, and that whereas quantities derive from below, metaphysically speaking—that is to say, from the side of *materia*—qualities derive from above: from the side of *morphē* or *form* in the Aristotelian and Platonist sense. So that was a major rectification that proved to be a *sine qua non* for unraveling the enigma of the quantum world.

I first encountered the legacy of René Guénon in a Hindu monastery: I happened to wander through the library and came upon one of his books. I became very interested. Upon my return to the West I made it a point to acquire his books, and there ensued a period, lasting more than a year, during which I was absolutely immersed in the study of Guénon’s writings. And that has undoubtedly had a profound impact upon my thought. Guénon helped me to grasp what authentic metaphysics is about. In the modern West we have in effect forgotten what metaphysics is, due to the impact of philosophers like Immanuel Kant

² See René Guénon, *The Reign of Quantity and the Signs of the Times*, trans. Lord Northbourne (London, UK: Luzac & Company, 1953)

[1724-1804] and his successors. We have forgotten what philosophy in the true sense—and metaphysics above all—is by right. René Guénon was a master in that regard. He has not only introduced me to what might be termed the perennial metaphysics, but has enabled me then to look on contemporary civilization from an authentic metaphysical point of vantage. And this is really the starting point of my serious work. Being enabled thus to look upon contemporary civilization from this point of vantage gave me a decisive advantage over other people concerned with these issues. So I am deeply grateful to René Guénon for this crucial inspiration.

SBS: You make a remarkable point that will come as a great surprise to many: namely, that there is very little empirical evidence for Einsteinian physics. You specifically refer to his theory of special relativity, and people are generally unaware that his formula $E = mc^2$ has nothing to do with the theory of relativity. Nowadays Einstein [1879-1955] is regarded as one of the greatest minds of the twentieth century; and as you have yourself perceptively noted, the world itself has in a sense become “Einsteinian.” The idea that he could have been wrong is virtually inconceivable to the contemporary mindset. Can you please explain?

WS: Well, I am glad you raised this question, as it touches upon a very important issue. I must admit that until a few years ago, I was among those who regarded the physics of Albert Einstein—in its main affirmations, at least—as sacrosanct. I was amazed therefore to find that this proves not to be the case. In the first place, as you have mentioned, it turns out that the famous formula $E = mc^2$ which Einstein derived from his special theory of relativity, is in fact implicit in the classical Newton-Maxwell physics, and actually appeared in the journal literature prior to the advent of Einsteinian relativity: Einstein himself admitted the fact in a book published in 1950 [*Out of My Later Years*]³—but by then the harm had been done: the whole world, just about, had been converted to Einsteinian relativity largely on the strength of this fateful formula. Moreover, when I began thus to look more critically into Einsteinian physics, I discovered—to my great surprise—that there were experiments, dating back to 1913, which appeared to falsify the theory, while it turns out that experimental findings which are said to support it proved, on closer scrutiny, to be problematic. It appears there

³ See Albert Einstein, *Out of My Later Years* (New York, NY: Philosophical Library, 1950)

is not a single experimental result which unequivocally substantiates Einsteinian relativity.

For example, if you take the famous 1918 solar eclipse observations which are said to have corroborated the relativistic bending of light rays in the vicinity of the Sun, suffice it to say that these results are very far from a clear-cut verification of the general theory. For one thing, there are other possible explanations for the observed deflections: for example, the presence of an atmosphere around the Sun. Moreover, the numerical data appears not to match up that accurately with Einstein's predictions. On closer examination, thus, it appears that Einsteinian physics has not in truth been adequately vetted.

What is more, over the past decades a great number of predictions based upon Einstein's theory have actually proved false: the annals of particle physics, in particular, bear witness to this fact. Yet the most striking example of failure is the Einsteinian astrophysics, the celebrated Big Bang theory, which has been taught in our schools as the "scientific" account of how the world came to be. Well—unbelievable as it may seem to the thus indoctrinated mind—the scientific fact is that measurements of the CMB or Cosmic Microwave Background, obtained by the Planck satellite launched in 2009, have definitely disproved this Big Bang scenario, without so much as a possibility of redress. It would take us too far afield to go into the particulars. Suffice it to say that the Planck data has revealed the existence of a global axis in the CMB which flatly contradicts the very assumptions of Einsteinian astrophysics. My point is that once you step out from the ranks of Einsteinian believers to take a critical look, the cracks in the Einsteinian edifice become readily apparent. For my part I am persuaded the theory has in fact been disproved, and that its effect on physics as a whole has been disastrous.

SBS: A central dogma of the modern world is evolutionism. Could you please speak to this dogma in both its Darwinian form, and what has come to be known as "theistic" evolution?

WS: Regarding Darwinian evolution, the fact is that in 1859, when Charles Darwin [1809-1882] proposed this idea, it could perhaps be seen as a possible scientific theory, something that could conceivably be true for the simple reason that we had as yet very little knowledge of biology. In the mid-twentieth century, with the discovery of DNA, this deficit has ceased. By the time one discovered the genome—these

vast and incredibly complex structures existing in every nucleus of every living cell—Darwinism became virtually inconceivable. And as a matter of fact, in 1998, when William Dembski [b. 1960] published his remarkable theorem concerning the production of so-called complex specified information (CSI), and proved with mathematical certainty that *natural causes*—that means what I call “horizontal causation”—*cannot produce complex specified information*, the Darwinist hypothesis became henceforth untenable: that mathematical theorem has disproved Darwin’s conjecture once and for all. There is absolutely no getting around this fact. With mathematical certainty we can now say that natural causes could not have produced living organisms because the *Dembski theorem proves this to be impossible*: the tons of complex specified information contained in the nucleus of every cell of a living organism simply cannot be produced by natural causes.

Of course, as we know from Thomas Kuhn’s [1922-1996] groundbreaking work [*The Structure of Scientific Revolutions*], a scientific theory is not immediately cast out once it has been disproved. Kuhn has demonstrated, I think convincingly that such is not the case. Once a theory has attained the status of a paradigm, it is not abandoned until an alternative has been discovered. In the case of Darwinism, this implies that the theory will be with us for quite some time!

As regards theistic evolution—the ingenious notion that God Himself intervenes occasionally to make Darwinist evolution work—I think it is safe to say that we owe this remarkable notion to the imaginative powers of a charismatic Jesuit named Teilhard de Chardin [1881-1955]. He came up with the idea and promulgated it convincingly through the genius of his writings, which—though bereft of both scientific and theological merit—have been persuasive enough to convert major segments of the intelligentsia, especially in the Catholic world. I think it is safe to say that Teilhardism played a major role in the Second Vatican Council and its aftermath, championed as it was by leading figures such as Henri de Lubac [1896-1991]. Since that time, the Teilhardian doctrine of theistic evolution seems to have acquired the status of a dogma upheld by the Vatican establishment and large swathes of the Catholic intelligentsia.

What then, exactly, does theistic evolution affirm? Well, we know that the Darwinian mechanism—mutations plus “natural selection”—does not suffice to change one species into another. What the theistic

evolutionists say is that God weighs in to make the difference: God functions as a *deus ex machina* who, at the critical moment, gives a little push to the Darwinian process to produce an authentic morphogenesis. And as I have pointed out in a recent article [“Evolutionist Scientism: Darwinist, Theistic, and Einsteinian”]⁴ God actually does a little bit more: He manages namely to effect what Teilhard himself terms “the automatic suppression of origins,” which accounts supposedly for the fact that there are no intermediary forms between distinct species or genera to be found in the fossil record. It appears that once God enters the process, just about any difficulty can be readily resolved “by divine omnipotence.”

Yet the cheers that went up from behind the ramparts proved to be premature: in the sober light of day Teilhardism proves to be no more than a conjunction of specious science and absurd theology. It is astounding—and tells us something about the state of our civilization—that a theory so obviously defective as “theistic evolution” could have captured the admiration of an intellectual elite.

SBS: You declare that science needs to return to its metaphysical and spiritual roots, that it needs to relinquish its present materialist premises. The question arises: is it possible to reconcile sacred science—which is supra-temporal and supra-spatial, where wholeness or unity precedes division—with modern science, which not only is materialistic and preoccupied with what can be measured and empirically validated by the five senses, but rests on a fragmented ontological as well as epistemological foundation? And if that reconciliation is not possible, how are we to proceed with this re-foundation of science as it is known today?

WS: The first thing that needs to be understood is that physics—by its very nature, its foundational structure—is based upon the idea that *the whole is the sum of its infinitesimal parts*. This is, of course, an invalid assumption. The amazing thing, however, is that—invalid as it may be—the science that ensues from this assumption (namely physics) does have a remarkable efficacy in enabling us to explain numerous phenomena.

The wonder—from my point of view—is that this power springs from an assumption that is ontologically spurious inasmuch as, generally speaking, *wholes do not reduce to the sum of their parts*. A whole is

⁴ Wolfgang Smith, “Evolutionist Scientism: Darwinist, Theistic, and Einsteinian,” (November 26, 2019), this article can be accessed at: <https://philos-sophia.org/evolutionist-scientism/>

generally more than the sum of its parts; and in fact, parts are normally defined with respect to the whole. The marvel—given this fact—is that physics does have a remarkable sphere of application: that it can in fact “*show great signs and wonders that might deceive even the elect.*”⁵

Yet the scope of physics is in truth very limited: this is something which will be coming to light in the near future: there is no question about that. In fact, in my last book [*Physics and Vertical Causation*] I have made it a point to explain that physics is perforce “the science of the inorganic,” which means that even the simplest living organism—an amoeba say—is incomparably more than “the sum of its parts,” and cannot in truth be understood, therefore, on the basis of physics alone. There are presently discrepancies in biology which physics cannot explain. It appears that with the discovery of the genome and the molecular structures found in the nuclei of living organisms, biology has entered a stage of development in which this ontological discrepancy between a biological organism and the physical mechanisms associated therewith can no longer be ignored. We are today on the verge of discovering that physics—so far from being “the science of everything”—is in truth *the science of the inorganic*, which is to say that even the simplest living organism transcends its scope.

SBS: Your work demonstrates in a convincing manner the dead end of contemporary science and emphasizes a shocking and alarming idea for many, enunciated by the American physicist Nick Herbert [b. 1936] in 1985 when he wrote: “One of the best-kept secrets of science is that physicists have lost their grip on reality.”⁶ For many, science (or rather scientism) is a *Weltanschauung*, a totalizing worldview akin to a belief system or ideology rather than an empirical discipline based upon facts. This ideology asserts, in a nutshell, that modern science is the sole arbiter of truth, that only through its epistemology can truth and reality be known. Can you please speak to the corresponding implications of the disclosure that “physicists have lost their grip on reality”?

WS: This fact—the loss of that “grip”—is going to become more and more evident in the proximate future, the decade or two to come. For one thing, it is becoming ever more widely recognized that fundamental

⁵ Matthew 24:24

⁶ Nick Herbert, “Physicists Losing Their Grip,” in *Quantum Reality: Beyond the New Physics* (New York, NY: Anchor Books, 1987), p. 15.

physics, for at least the last fifty years, has been a succession of failures. For example, the Large Hadron Collider in Geneva, the biggest and most expensive piece of scientific equipment ever built by man—with a tunnel boasting a twenty-seven kilometer circumference and a price tag of so many billions—has so far failed to disclose the existence of the very particles for which it was built: the so-called “supersymmetry” particles. This was going to be the next stage in the exploration into the foundations of matter, based upon so-called string theory. I think most physicists have by now come to the realization that this was a grand mistake: a misbegotten attempt to integrate Einsteinian gravity into quantum physics. This is one of the great failures of theoretical physics in the past decades.

I spoke a few minutes ago about the breakdown of astrophysics: the fact that the Big Bang model of the universe, which for many decades was regarded as the definitive description of the universe—from its stipulated origin some 14 billion years ago to the present—has just been literally exploded by the discovery of an axis in the CMB. We find ourselves thus at a turning point, or more precisely, on an arc of human history which began some four hundred years ago with Galileo and Descartes which is now approaching its end. What stands at issue—and is beginning to falter—are the premises of the so-called Enlightenment, the notion namely that the objective world reduces to pure quantity, and can therefore be understood with exactitude by the methods of physics. It reduces to the beguiling idea that the whole is no more than the sum of its parts. And that worldview—that ontological fallacy—is now undergoing a *reductio ad absurdum*.

With the advent of quantum theory it began to emerge that physics deals in reality—not with the world as such—but with a certain substratum of the world, what we might call *the quantum realm*, which strictly speaking, does not actually exist! As the great physicist Werner Heisenberg [1901-1976] put it, these so-called quantum particles constitute something “midway between being and nonbeing, which as such are reminiscent of Aristotelian *potentiae*.” And needless to say, this recognition came as a complete shock to the physics community: having at long last reached what was supposed to be “rock bottom”—the realm of the long-awaited “Democritean” atoms—they encountered instead Aristotelian *potentiae* “midway between being and non-being”!

On a technical level, the impasse assumed the form of the so-called “measurement problem”: the seemingly inexplicable fact that when we measure a quantum system, it experiences an instantaneous discontinuity known as “the collapse of the wave function.” Physicists have been laboring to explain this phenomenon—or better said, perhaps: explain it away—for well-nigh a century, but apparently without success. And the reason for this failure is actually not far to seek: the so-called collapse of the wave-function is indicative of the fact that physics does not take us all the way. The point is that the measuring instrument does not reduce to a quantum system: an ontological discrepancy between what I term the *corporeal* and the *physical* realm—the perceptible world in which we live, and move, and have our being, and the world as conceived by the physicist—has come to light.

It emerges that only half the world—ontologically speaking—can be described in quantitative terms: the “sub-existential half” namely, consisting of “Aristotelian *potentiae*.” It turns out that physics, by its very *modus operandi*, is restricted to a sub-corporeal domain “midway between being and non-being” as Heisenberg realized long ago. The problem is that the rank-and-file physicist is simply incapable of grasping this fact! Nor is the physics establishment ready to make any such admission. History is bound to run its course—yet the die has already been cast. Whatever the pundits of our day may think or say, what René Guénon has characterized as “the reign of quantity” is presently nearing its end.

SBS: Scores of popular books have been published, such as *The Tao of Physics* (1975), *Fabric of the Universe* (1976), *The Dancing Wu Li Masters* (1979), *Other Worlds* (1980), *Taking the Quantum Leap* (1981), *The Cosmic Code* (1982), *In Search of Reality* (1983) and many others, calling for a new physics or scientific paradigm. Some might argue, or assume, that your work is not new, but simply a continuation of these works. How would you respond to this? And how might you differentiate your work from these other theories?

WS: Actually, the fact is that my work is the very opposite of the genre you are alluding to. Of the six books you name, I have only read three: *The Tao of Physics*, *The Dancing Wu Li Masters* and *The Cosmic Code*. The problem with these publications is that they take the teachings of contemporary physics, along with their pseudo-philosophical underpinnings, to be a kind of gospel truth. In other words, their acceptance of

physics is completely uncritical: they buy into the pseudo-philosophy, the scientific assumptions that are habitually mistaken for scientific facts. They do not distinguish between scientific fact and scientific fantasy, but lump it all together following the pundits of our day. There are those among them, moreover, who speak reverentially of ancient wisdom schools, and go so far as to claim that modern physics has rediscovered age-old truths—when in fact they eviscerate that ancient wisdom by reducing it in effect to the quantitative domain.

Fritjof Capra [b. 1939], for example, claims to connect the scientific *Weltanschauung* of contemporary physics with the Hindu teaching of Vedanta and related doctrines of the East, such as Taoism, all of which he equates somehow with the discoveries of contemporary physics. But stimulating to the imagination as all this may be, it takes us actually into a fantasy land. In a word: I totally reject just about every facet of what Fritjof Capra has to say along these lines. First of all, as I said, his understanding of contemporary physics is deficient in that he does not distinguish between the hard empirical facts and the pseudo-philosophy; and secondly, he then lowers these doctrines of the East—“bastardizes” them, better said—by reducing them in effect to a mishmash of misbegotten scientific ideas. I would very much urge everyone to keep a safe distance from books of this kind because they are bound to confuse and mislead the unwary.

SBS: Many people would be interested to see what you think of the work of the American theoretical physicist David Bohm [1917-1992], and how it might align with or differ from your own outlook?

WS: Well, first of all, concerning his theory of “hidden variables” I am personally persuaded that it constitutes a fundamentally erroneous approach. David Bohm wanted to reinstitute a kind of Laplacian determinism by postulating particle trajectories determined by differential equations of motion as the underpinning of physics at large. And I must say that the way he accomplished this is absolutely ingenious and brilliant in the extreme. In fact, the most illustrious physicists of the time would have declared up and down that what Bohm was attempting to do was simply impossible: and he did it! But the question is: what is the significance of this work, what does it accomplish, or prove?

First of all, I do not think that Bohmian physics enables one to solve any actual problems which cannot equally well—and in fact more

simply—be solved by the methods of standard quantum mechanics. The reason, however, why I consider Bohmian physics to be “dangerous” is that it encourages a return to the classical notion of actual particles, following actual trajectories in accordance with given differential equations: in other words to prequantum physics. Bohm seems to suggest that he has succeeded in extending the prequantum physics into the quantum realm: but this is simply not the case. Formally he may perhaps have done so; yet in reality the so-called quantum phenomena—such as Heisenberg uncertainty—remain unalterable. The world of classical or Newtonian physics has disappeared, never to return: why then labor to retain the now outmoded formalism?

I am persuaded that Bohm did want to “turn back the clock”: that he intended his formalism to be interpreted ontologically, and thus to testify that the quantum world is made up of actual particles, following actual trajectories, in accordance with the differential equations of his “hidden variables” theory. And the fact is that this is utterly misleading. It attempts to undermine and set at naught the ontological implications of quantum mechanics, which state that in truth *there is no such thing as an actual particle*, nor a well-defined trajectory of such. Particles and trajectories simply do not belong to the quantum realm, which means, in the words of Heisenberg, that we are dealing with “Aristotelian *potentiae*” as distinguished from what I term *corporeal* entities. Moreover, when one of these so-called quantum particles is actualized, at that very instant the Schrödinger equation is superseded—“re-initialized” as the physicists say. The fact that in the Bohmian formalism there is no corresponding discontinuity constitutes, to my mind, not a merit, but a fatal flaw: an indication that the Bohmian formalism is not natural, not authentic, but contrived. For it is needful that the act of measurement produce such a discontinuity: the ontology demands as much.

All that is basic to an ontological understanding of quantum mechanics is somehow hidden and denied in the Bohmian formulation. Bohm seems to persuade his followers that in quantum mechanics we are still dealing inherently with the classical world, in which Democritean particles move according to differential equations from A to B, and all is predictable, deterministic and inherently Newtonian. But that is obviously not the case.

On the other hand, I must commend David Bohm for the fact that he seems to have grasped the ontological idea of *wholeness* as something over and above a mere assemblage of parts. In quite a few of his later writings he speaks to this issue in a way which makes it clear that he had become wary in regard to the reduction of the whole to its infinitesimal parts. As I have pointed out earlier, mathematical physics as such is actually based upon that premise. Physicists—with very few exceptions, if any—take this for granted, and it is not true: the whole is *more* than the sum of its parts. And sooner or later that fact must show up in the form of inexplicable discrepancies of some kind; and at that point physicists will be forced to recognize the limitations of their discipline. The notion that physics is potentially “a science of everything” is infantile. On the contrary: the very power of physics springs from its limitation! I made it a point in my last book [*Physics and Vertical Causation*] to argue that this is precisely why physics does not in fact apply with adequate precision to living organisms, the fact being that a living organism is a corporeal entity endowed with a so-called substantial form commonly referred to as its “soul.” That is where the organic, properly speaking, enters the picture; and physics cannot reach there. Now, I think David Bohm was beginning to sense the fact that there are “effects of wholeness” which do not comport with the accustomed “laws of physics.” For example, he realized that what is termed “nonlocality” in quantum theory is an effect of wholeness. In this regard he outdistanced Albert Einstein, who never could come to terms with the phenomenon of nonlocality: “*spukhafte Fernwirkungen*” or “spooky action at a distance” he called it derisively. The point is that Bohm did better: he recognized that there exist orders of phenomena indicative of *wholeness* which cannot be understood in the customary reductive framework. Apparently, he was persuaded that adaptations within physics itself could account for these effects—which may be true up to a point—but, in any case, he had emancipated himself from the simplistic reductionism of the Einsteinians.

Let me make one more comment: David Bohm had a long-lasting friendship with an Indian ascetic named Krishnamurti [1895-1986], and I surmise it may be from him that he received the idea of “wholeness” as something over and above the sum of its parts: certainly that idea is basic in the context of Indian thought. One senses that Bohm was by

nature “mathematical” or “quantitatively oriented” in the extreme, which is to say that the aforesaid notion of “wholeness” appears somewhat as a “foreign element” in this thought. And even though the notion enriched his later thought and gave rise to some deep and fascinating observations, Bohm did not fully convert to a “holistic” outlook: if he had, he would have never proposed his theory of “hidden variables.”

SBS: There has been a growing movement to reconcile the doctrine of non-duality, as found across the religious and spiritual traditions of the world, with contemporary science; yet this attempt appears to have very little discernment as to what constitutes authentic spirituality and what is actual science. Do you have any thoughts on this question?

WS: I could not agree more strongly with what you say! The bona-fide idea of non-duality—*advaita* in the Vedantic sense—is something very high and exceedingly esoteric, which really, in my opinion, does not lend itself to academic dissemination. It is something, first of all, that calls for a special aptitude and a rigorous training to approach seriously. By the time you have a course or a conference with the words “*advaita* Vedanta” in its title, what you have is not Vedanta at all but a lot of confusion. I see these attempts to bring the “wisdom of the East” into our contemporary discourse as a desecration of something that is inherently sacred. We must recall that the term Vedanta—the word literally means “the end of the Vedas,” which are the sacred scriptures of India antedating the Old Testament—refers to teachings meant for ascetics who have renounced the world in search of Ultimate Reality: in quest of nothing less, thus, than God Himself! This is nothing for ordinary folks, busy with the things of this world, to dabble with. If anyone really wants to know about *advaita*, let him go to India, find a qualified guru, and spend some years preparing himself to receive these teachings. But let me pass on what I myself have learned in that regard: when it comes to *advaita*, the word for ordinary mortals such as we are, is “hands off.”

SBS: You present the notion of *vertical causation* and its different degrees as differentiated from *horizontal causation* which operates “in time” and is contingent upon the unfolding of temporal events. What does this distinction mean for contemporary science and the recovery of the integral cosmos?

WS: Well, what I term “horizontal” causation is a causality effected by a transmission through space and time. Something is moving through

space which has an effect upon other things: and that is *horizontal* causation. And that is the causation with which we normally deal in physics. However, the remarkable thing is that when it comes to the measurement of a quantum system, a transition takes place from what I call the *physical* to the *corporeal* level; and inasmuch as a transition between two distinct ontological planes cannot but be instantaneous, the causality involved in that act of measurement cannot be horizontal. The measurement of a quantum system thus brings into play a vertical act of causation. And this is how I first came upon the existence of vertical causality.

Yet simple as the aforesaid recognition may be, the notion of vertical causality seems generally to be a hard thing for the contemporary physicist to swallow: it appears that Albert Einstein is not alone in his antipathy to so-called “spooky action at a distance.” But once this antipathy—which I surmise is based on prejudice—has been surmounted, it becomes comparatively easy to discern the action of vertical causality in countless phenomena spanning many sciences. To give one major example: the 1998 theorem of William Dembski to the effect that horizontal causality cannot produce complex specified information or CSI—which I have already cited in connection with Darwin’s theory—proves to be a fertile means of discovering vertical causation: all one need do is point to the production of CSI, and *voilà*: there we have—indisputably—an effect of vertical causation! What I am speaking to you at this moment is a case in point: to the extent that I am not just reproducing what I or someone else has said or written, but am actually “composing” new text, I am in truth producing CSI: and that is something horizontal causation cannot accomplish. One discovers ultimately that vertical causation is in fact primary: that it operates throughout the integral cosmos and has power to override horizontal causality. At the risk of scandalizing everyone, let me point out that the discovery of vertical causation opens the door to the rediscovery of the ancient traditional sciences, such as astrology and alchemy, which have long been viewed as “pre-scientific” superstitions. Take astrology in particular: it constitutes the polar opposite of physics, for whereas physics operates exclusively with horizontal modes of causation, astrology for its part operates—again exclusively—with vertical causality. Admittedly present-day astrologers may well imagine the planet Jupiter, say, acting upon us through the intervening vistas

of space by way of some mysterious radiation—but this would only show that they do not understand the science they purport to apply. The fact is that astrology functions not through horizontal modes of causation—not through transmissions across millions of miles—but instantaneously through vertical causality. Not until one has broken the grip of the post-Cartesian *Weltanschauung* can one catch so much as a glimpse of the traditional sciences, which in certain respects are more powerful and more efficacious than our own.

SBS: You also make a key differentiation that many people may not be familiar with regarding the *physical* and the *corporeal* reality. Can you please explain these ideas, and why they are important?

WS: The world in which we live and move and have our being is corporeal. The chair I am sitting on is corporeal, the desk on which I write is corporeal, and so is my own body. What makes a corporeal object, however, is a corresponding *form*: a *substantial* form, to put it in Scholastic terms. You have *materia* and *forma*, matter and form; and corporeal reality is produced by a union of two. The form of a corporeal object, called its substantial form, is what makes it a substance, what gives it *being*.

Now the *physical* universe is simply the world as conceived by the physicist. It is purely quantitative, and is described by differential equations. With the advent of quantum theory, however, it was discovered that this world *does not in truth exist*: unbelievable as this may sound, this is the conclusion at which one inevitably arrives, like it or not. The so-called particles of the quantum realm are not actual “Democritean” atoms, but something “midway between being and nonbeing,” to quote Heisenberg again. What differentiates corporeal entities from sub-corporeal quantum stuff—as one might guess—is none other than a substantial form, from which it receives corporeal being. To speak in iconic terms derived from hylomorphism, you could say that corporeal nature comes *from above*, whereas the physical—what the physicist is dealing with—derives *from below*. And this is what renders the contemporary worldview so lethal: it reduces the higher to the lower, which is to say that it turns things upside-down.

SBS: It is through a metaphysical point of view informed by the sapiential traditions of the world that you uphold that we can “return, at last, to the real world.” What does this mean, as most people would

assume that our current experience of the phenomenological world is real? However, this is not the case as you conclude. Could you please elaborate on this idea?

WS: Since the advent of the Enlightenment, the educated strata of society, at least, have been taught to believe that “the real world” is none other than the world of the physicist, made up of atoms, which we now know to be made up of quantum particles. And this means that the world in which we actually live, and move, and have our being—the world in which the grass is green, for instance—constitutes some kind of subjective illusion: a world consisting of *res cogitantes* or “things of the mind” as Rene Descartes [1596-1650] has famously put it. But the fact is that such is not actually the case, and that as of the twentieth century, physics itself tells us so, if only we learn to listen! It turns out—*on the basis of physics itself*—that this world in which we find ourselves—where the grass is actually green—so far from being a *res cogitantes*—is indeed none other than “the real world.”

SBS: While your work aims at resuscitating the integral cosmos through sacred science which is rooted in metaphysics, it likewise appears to facilitate a paradigmatic framework for what the great art historian of the twentieth century, Ananda K. Coomaraswamy [1877-1947], has termed traditional or perennial psychology.⁷ Do you see your work additionally assisting in a refoundation of psychology or the “science of the soul” as it too is in crisis and at an impasse? I wonder if you would agree with these observations.

WS: It is inevitable that what I have termed “a return to the real world” will impact every kind of science, not excluding psychology to be sure. I should add, however, that what I have termed “the rediscovery of the real world” has led in fact to the rediscovery of what in traditional parlance may be termed the “integral cosmos,” which proves to be tripartite [consisting of the corporeal, the intermediary or psychic, and the archetypal or spiritual domains]. Now I mention this in connection with psychology, because the rediscovery of the integral cosmos puts psychology on an ontological basis which it has never had in modern times. The point is that the middle or “intermediary” stratum of cosmic

⁷ See Ananda K. Coomaraswamy, “On the Indian and Traditional Psychology, or Rather Pneumatology,” in *Coomaraswamy, Vol. 2: Selected Papers, Metaphysics*, ed. Roger Lipsey (Princeton, NJ: Princeton University Press, 1977), pp. 333-378.

reality consist of an ontological domain subject to the condition of time *but not of space*: and that is precisely the *psychic* realm, which is the domain of “psychology” in the full authentic sense of the term.

SBS: If you had any final reflections or thoughts as to what you like viewers of the film to walk away with what would this be?

WS: I think what I would like viewers of the film “to walk away with” could hardly be expressed more clearly than as a “return to the real world” in the sense of a *rediscovery*. I would say to the audience: You have been taught to believe that the universe is made of “quantum particles”—that your wife, your husband, or your child is ultimately no more than an aggregate of such particles. And of course, you did not fully believe this—how could you, and yet remain human? And so you were divided within yourself—half this, half that. In a word, you were condemned to an irreversible state of schizophrenia.

And then I would share with them the good news. You need be divided no more, I would say. The world you perceive—replete with its colors, the fragrance of flowers and the songs of birds—is not after all a *res cogitans*: you can henceforth hug your child, knowing for certain that it is real! In a word, *you can be human* once again. And as if that were not enough: you can, once again, *tread the ancient and ballowed paths of your fathers*, confident they will lead you to a blessed end.

SBS: Thank you so much for taking the time out of your busy schedule to meet with me to discuss and clarify many of these important insights. I hope that your film reaches wide audiences as it is extremely valuable and significant to the times that we live in.