Harmony of Science and Religion – View of Reality

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As we embark on an exploration of certain essential features of science and religion, we should acknowledge at the outset that, no matter how effective the methods characterizing a knowledge system may be, they will not prove adequate in examining all of its elements. In this, we should recognize that there will necessarily be some underlying conceptions that cannot be fully explained through the application of the elements of the very system that has been built upon those conceptions. While such vital features of the knowledge system must submit themselves to the scrutiny of reason, nevertheless, they owe much of their credibility, in the final analysis, to the accomplishments of the system as a whole. In this article we will explore a few such underlying conceptions.

Inherent in the concept of knowledge is the existence of that which is to be known. The most basic premises of science and religion, therefore, are those concerned with the nature of the reality they strive to comprehend. And it is among these premises that we should first look for possible conflict or discover grounds for complementarity. There are two interrelated questions we need to ask in this respect: What do science and religion each assume about the existence of reality, and how does the knowledge each system claims to provide relate to that reality?

As to the first question, the premise most fundamental to science, upon which its entire structure is built, is the existence of order in the universe, order upheld through the operation of specific laws of nature. Further, it is accepted that this order can and does reveal itself to the human mind and that, with the aid of science, it is possible to discover the laws that govern at least the physical world, and probably some, if not all, aspects of human psyche and of the way society functions. Yet, there is no way to prove logically or to show irrefutably through observation and experimentation the truth of such a premise. In fact, there have always been schools of philosophical thought that have questioned the very existence of an "external reality"; one can go as far as solipsism and state that the entire world is the creation of one's own mind and nothing else. Philosophy, of course, may feel obliged to ask every imaginable question and explore every

possible answer. Science, on the other hand, tends to set aside what it considers fruitless speculation. It is next to impossible for a scientist to view scientific endeavor as inquiry into the figment of his or her own imagination. As far as science is concerned, the physical universe exists; the nature of the mind and its connection to the material world are open questions. The existence of order in the universe is only half of the premise under consideration. It is also assumed that the underlying order allows itself to be understood by the human mind. The existence of an intelligible order is by no means obvious, for nature, as observed by the untrained mind, shows such complexity, reveals such variability, and behaves so chaotically that immutable laws governing even some of its regular manifestations do not readily suggest themselves. What else but indomitable faith in such an order could have fueled a process that culminated in the succession of statements elaborated by Kepler, Galileo and Newton—statements that would so elegantly explain the messy observed trajectories of heavenly bodies as well as innumerable instances of motion on earth? And without such a faith, how would Einstein have been motivated to ask the kind of questions that led him to an account of space and time so far removed from ordinary human experience?

Belief in an intelligible order requires us to go beyond the world of appearances, the initial impressions we receive about the universe from our senses, and investigate what we often call objective reality, which we assume, exists independent of these impressions. And it is difficult to deny that taking such a step involves faith. In Einstein's words, ". . . those individuals to whom we owe the greatest achievements of science were all of them imbued with the truly religious conviction that this universe of ours is something perfect and susceptible to the rational striving for knowledge." Yet it would be a mistake to equate the concept of faith as employed here with blind acceptance and lack of intellectual rigor. A definition of faith given by 'Abdu'l-Bahá in the context of religious belief proves to be far more appropriate. Faith according to Him is, first, conscious knowledge and, second, practice of good deeds. It is not difficult to see that, far from representing blind acceptance, faith in the existence of order in the physical world, the laws of which the human mind can progressively understand, is conscious knowledge ever present in the practice of science. The certainty with which we hold this article of faith is not the result of fuzzy thinking or of deep-rooted psychological needs. It is a direct outcome of the extraordinary success achieved by the system of knowledge and practice we call science. An element of the

system, essential for the functioning of the system, receives its legitimacy from the system itself. Isolated from science, belief in the existence of this specific type of order would be a mere conjecture.

Religion shares this article of faith with science. The universe is real and exists within the parameters of a prescribed order. Yet the perception of order and its expression varies from religion to religion. The way miracles are understood illustrates the point in question. At least in popular belief, the followers of most religions consider miracles as acts of God, who can demonstrate His power by breaking the laws of nature. Such a belief would, as far as one can see, put religion in conflict with science. But the problem admits reasonable solutions. To begin, one can set aside numerous accounts of miracles as superstition and separate them from religion altogether. Others, more deeply rooted in religious belief, can be considered metaphors conveying profound meaning in a poetic language. And the question can always be asked: Why should the accomplishment of what at a given time is considered extraordinary be seen as breaking the laws of nature and not as wielding them in some way? The airplane flies not by breaking a law but through the operation of laws masked by the regularity that heavy solid objects tend to lie on the ground when left to themselves. Of course, in the final analysis, religion, which can build on its spiritual teachings and its tremendous transformative power, need not appeal to miracles as a proof of its validity.

This example of miracles brings to the fore the first condition that we must impose on religion if we are to be able to talk of its harmony with science. At least in relation to knowledge that can be tested against rigorous observation—this with all the complexity we have described in previous articles—religion must be willing to measure the validity of its explanations in the balance of the explanations of science. Thus, in relation to the material world and its manifestations, religion must depend on science in order to resist the human tendency towards superstition. This is not to say that scientific theories do not change. One could argue that the Christian belief in an earth-centered universe was in harmony with Ptolemy's science of the day. But once the Copernican revolution occurred, Christianity had no choice but to change its view; that it did so gradually and blemished itself on the way by acts such as Galileo's trial does not

diminish the significance of religion's ability to change certain of its beliefs when confronted with scientific evidence.

Religion, of course, is not mainly concerned with the workings of the physical universe. To the premise of an ordered and intelligible physical world, monotheistic religions add faith in the existence of a purposeful Author and of a spiritual reality to which the soul of the human being belongs. Can these assumptions be proven by reason, with or without the aid of observation? The answer is clearly negative, but then, science does not possess the tools to refute them either. Yet, just because something is not refuted by science it cannot be considered a necessary truth. We may argue that "God exists" and "There is no God" are both statements of faith. Belief in the existence of spiritual reality—not so separate from physical reality as Cartesian dualism would claim but in some way embracing it—has to be explored in the context of the totality of religion as a system, just as belief in an orderly physical world is treated in relation to science. But such an exploration cannot be undertaken haphazardly. It is necessary to understand first how sophisticated secularism can deal with that which religion considers lying beyond the world of matter. By the term "sophisticated secularism" I mean the kind of thinking that tries to understand existence through the provisions of human reason without any appeal to supernatural forces, but at the same time strives to avoid the superficiality of reductionist approaches that claim everything can be explained in terms of the laws governing the physical world as discovered, say, by physics or evolutionary biology. It is clearly outside the scope of these pages to discuss the secular worldview; such an attempt would quickly show the inadequacy of the intellectual tools at my possession. What I can do at this point is to choose a set of ideas presented by one author and provide a brief outline of these ideas, knowing that I will not be able to do them justice—this with the hope that, by raising certain issues, I can help identify a direction for future inquiry into the subject. The best candidate I know for this purpose is Thomas Nagel.

Extended Reality

A starting point for the examination of some of Nagel's thought is his account of objectivity. Objectivity is above all a method of understanding. "It is beliefs and attitudes that are objective

in the primary sense. Only derivatively do we call objective the truths that can be arrived at in this way." Thus when we use the word to refer to a certain kind of knowledge or to reality, we must remember that by "objective knowledge" or "truth" we mean that which has resulted from the application of a specific method of understanding, and by "objective reality" we mean reality that can be investigated through the application of that method. But is there any reason to believe that the reality revealed to us in this way is the whole of reality? Nagel begins his exploration of this question by introducing what he calls the physical conception of objectivity, "developed as part of our method of arriving at a truer understanding of the physical world, a world that is presented to us initially but somewhat inaccurately through sensory perception." Here is how Nagel characterizes this conception:

> The development goes in stages, each of which gives a more objective picture than the one before. The first step is to see that our perceptions are caused by the action of things on us, through their effects on our bodies, which are themselves parts of the physical world. The next step is to realize that since the same physical properties that cause perceptions in us through our bodies also produce different effects on other physical things and can exist without causing any perceptions at all, their true nature must be detachable from their perceptual appearance and need not resemble it. The third step is to try to form a conception of that true nature independent of its appearance either to us or to other types of perceivers. This means not only not thinking of the physical world from our own point of view, but not thinking of it from a more general human perceptual point of view either: not thinking of how it looks, feels, smells, tastes, or sounds. These secondary qualities then drop out of our picture of the external world, and the underlying primary qualities such as shape, size, weight, and motion are thought of structurally.

The approach described in this paragraph, when applied imaginatively as it has been in physics, generates an enormous body of knowledge about the physical universe. But, at least as expressed in the above, it cannot result in a complete understanding of reality. For one thing, it leaves behind "perceptions and specific views" and has no account of the "mental activity of forming an objective conception of the physical world"; these, of course, exist and are part of reality. Nagel aptly notes:

> Faced with these facts one might think that the only conceivable conclusion would be that there is more to reality than what can be accommodated by the physical conception of objectivity. But remarkably enough this has not been obvious to everyone. The physical has been so irresistibly attractive, and has so dominated ideas of what there is, that attempts have been made to beat everything into its shape and deny the reality of anything that cannot be so reduced.

Throughout his work, Nagel presents argument after argument against forms of reductionism built on the assumption that "a particular conception of objective reality is exhaustive of what there is." But his project aims not at eliminating the concept of objective reality. He seeks to broaden the notion of objectivity in a way that such phenomena as consciousness, reason and even values can be understood as parts of reality as it is:

> We assume that we ourselves are not just parts of the world as it appears to us. But if we are parts of the world as it is in itself, then we ought to be able to include ourselves—our minds as well as our bodies—in a conception that is not tied exclusively to our own point of view. We ought, in other words, to be able to think of ourselves from outside—but in mental, not physical terms. Such a result, if it were possible, would qualify as an objective concept of mind.

The beginning of an objective concept of mind is, for Nagel, "the ability to view one's own experiences from outside, as events in the world," and this beginning is already present in our ordinary concept of mind when we try to make sense of the idea of other minds. In doing so, we do not abandon the fact that we have a point of view, we "generalize it and think of ourselves as one point of view among others":

> The first stage of objectification of the mental is for each of us to be able to grasp the idea of all human perspectives, including his own, without depriving them of their character as perspectives. It is the analogue for minds of a centerless conception of space for physical objects, in which no point has a privileged position.

The “pursuit of a conception of the world that doesn’t put us at the center” is considered by Nagel an expression of “sophisticated realism”. However, we are reminded that reality “is not just objective reality, and any objective conception of reality must include an acknowledgment of its own incompleteness.” A general conception of reality “would have to include the qualification that the exact character of each of the experiential and intentional perspectives with which it deals can be understood only from within or by subjective imagination.” Further, it is necessary to recognize “the features of our own minds that cannot be objectively grasped” as examples of “a more general subjectivity, of which other examples lie beyond our subjective grasp as well.”

This is not the place to examine Nagle’s extensive writings or even give an account of his reasoning in, say, *View from Nowhere* and *Mind and Cosmos*, two well-known works in which he pursues systematically the search for a broader objectivity than the kind employed in the physical sciences. His expressed aim is relatively modest. He analyzes the possible features of the desired objectivity and the extended reality to which it points without ever claiming that he can make explicit the corresponding objective methods themselves, a task that, he often intimates, will only be made possible in a distant and more advanced future. In this context, he cautions the reader against scientism which, in its “most myopic” form assumes that “everything there is must be understandable by the employment of scientific theories like those we have developed to date—physics and evolutionary biology are the current paradigms—as if the present age were not just another in the series.” Aware of the dangers of anti-scientism degenerating into a rejection of science, he finds “an overdue downward revision of the prevailing intellectual self-esteem” to be essential. “Too much time is wasted,” he observes, “because of the assumption that methods already in existence will solve problems for which they were not designed: too many hypotheses and systems of thought in philosophy and elsewhere are based on the bizarre view that we, at this point of history, are in possession of the basic forms of understanding needed to comprehend absolutely anything.” He clearly believes that “the methods needed to understand ourselves do not yet exist.”

Despite this absence of the necessary methods, Nagel manages to achieve a great deal in his search; his enormous accomplishments provide us with valuable insight into the possibilities of

ways of thinking that may be able to combine "the perspective of a particular person inside the world, with an objective view of that same world, the person and his viewpoint included." Through meticulous scrutiny of a host of ideas, he manages to convince his reader of certain crucial points, three of which are of paramount importance to our exploration:

1) His challenge to physicalism, which he believes is based on "an idealism of restricted objectivity", casts serious doubt on the validity of psychophysical explanations of the mind. He graciously concedes that physicalism has behind it an impulse, not unlike his, to "find a way of thinking about the world as it is, so that everything in it, not just atoms and planets, can be regarded as real in the same way: not just an aspect of the world as it appears to us, but something that is really there." He argues convincingly, however, that it gives "distorted and ultimately self-defeating expression" to that impulse.

> Evolutionary hand waving is an example of the tendency to take a theory which has been successful in one domain and apply it to anything else you can't understand—not even to apply it, but vaguely to imagine such an application. It is also an example of the pervasive and reductive naturalism of our culture. 'Survival value' is now invoked to account for everything from ethics to language.

"The Darwinian theory of natural selection", Nagel points out, can at best explain "selection among those organic possibilities that have been generated, but it does not explain the possibilities themselves . . . These require not diachronic but timeless explanations." There is no reason to assume that existence of "minds capable of forming progressively more objective conceptions of reality" would be the result of natural selection, for if it actually were, it would undermine our confidence in its "capacity to get at the truth". How would we rely on an instrument that appeared to help a specific arrangement of a certain quantity of matter to survive, to lead us to an objective picture of reality which is to be independent of the very existence of that arrangement? "Something else must be going on if the process is really taking us toward a truer and more detached understanding of the world."

It is said, of course, that in the Darwinian picture some features of the organism are side effects of others, having survived because they had no negative effects on survival. But this is hardly an explanation of the fact that a brain selected for its ability to make an axe went on to "study astronomy, compose poetry and music, invent the internal combustion engine and the long-playing record, and prove Godel's theorem"; the relatively short time between the former and latter developments suggests that the brain was already developed to full capacity when the axe was being invented. The question according to Nagel is "whether not only the physical but the mental capacity needed to make a stone axe automatically brings with it the capacity to take each of the steps that have led from there to the construction of the hydrogen bomb, or whether an enormous excess mental capacity, not explainable by natural selection, was responsible for the generation and spread of the sequence of intellectual instruments that has emerged over the last thirty thousand years." His answer is unequivocal:

> I see absolutely no reason to believe that the truth lies with the first alternative. The only reason so many people do believe it is that advanced intellectual capacities clearly exist, and this is the only available candidate for a Darwinian explanation of their existence. So it all rests on the assumption that every noteworthy characteristic of human beings, or of any other organism, must have a Darwinian explanation. But what is the reason to believe that? Even if natural selection explains all adaptive evolution, there may be developments in the history of species that "are not specifically adaptive and can't be explained in terms of natural selection. Why not take the development of the human intellect as a probable counterexample to the law that natural selection explains everything, instead of forcing it under the law with improbable speculations unsupported by evidence? We have here one of those powerful reductionist dogmas which seem to be part of the intellectual atmosphere we breathe.

Nagel admits that "he may be thought unduly pessimistic about the capacity of physics to provide a complete understanding of reality." But he finds no reason to accept the inductive argument that today's biochemical explanations of such phenomena as heredity, growth, metabolism and muscle movement should convince us of the ultimate success of physics to explain the mind. The development of physics itself requires us to doubt such an argument. In

the case of Maxwell's theory of electromagnetism, for example, the concepts and instruments of Newtonian mechanics had proven inadequate and "new types of concepts" had to be elaborated for a new theory to emerge. This and the subsequent developments that explained phenomena at a deeper level of unity would have been impossible "if everyone had insisted that it must be possible to account for any physical phenomenon by using the concepts that are adequate to explain the behavior of planets, billiard balls, gases, and liquids. An insistence on identifying the real with the mechanical would have been a hopeless obstacle to progress, since mechanics is only one form of understanding, appropriate to a certain limited though pervasive subject matter." Nagel reminds his readers that "the difference between mental and physical is far greater than the difference between electrical and mechanical" and argues that "only if the uniqueness of the mental is recognized will concepts and theories be devised especially for the purpose of understanding it". "Otherwise", he warns, "there is a danger of futile reliance on concepts designed for other purposes, and indefinite postponement of any possibility of a unified understanding of mind and body."

2) Nagel goes far in convincing his reader of the existence of a centerless extended reality in which "the mental" exists as, say, space, time, matter and energy exist in the physical universe. This constitutes a rejection of psychophysical reductionism, a rejection which requires, in turn, a way of explaining the remarkable fact that an "arrangement of basic physical material" can have a range of mental capacities, "none of which can be accommodated by the physical conception of objective reality". Nagel expresses clearly his unwillingness to consider the existence of a soul as the "bearer of mental properties, the subject of mental states, processes, and events." His main objection to what he believes to be necessarily a kind of dualism is that "it postulates an additional, non-physical substance without explaining how it can support subjective mental states whereas the brain can't." The falsity of physicalism, for him, does not require such a substance. "Why should the possession of physical properties by the body," he asks, "not be compatible with its possession of mental properties—through some very close interdependence of the two?"

In addition to his dismissal of the soul, Nagel also argues against what he calls the "no-ownership" view according to which "mental events are not properties or modifications of

anything, but simply occur, neither in a soul nor in the body—though they are causally related to what happens in the body." His comment on such a position is revealing:

> But I don't really find this view intelligible. Something must be there in advance, with the potential of being affected with mental manifestations, if lighting a match is to produce a visual experience in a perceiver. This potential must have a pre-existing basis: experiences can't be created out of nothing any more than flames can. Of course this 'medium' might be of any kind: it might even be an all-pervading world soul, the mental equivalent of space-time, activated by certain kinds of physical activity wherever they occur. No doubt the correct model has never been thought of.

Nagel's intellectual honesty prevents him from heading down the path, trodden by so many others, of proposing definite solutions to a problem where in fact many options are open. He simply expresses his own choices and tries to analyze them to the best of his impressive ability.

> Nevertheless, I want to proceed on a less adventurous track. Because of the apparent intimacy of the relation between the mental and its physical conditions, and because of a continued attachment to the metaphysics of substance and attribute, I am drawn to some kind of dual aspect theory. This is probably due to lack of imagination, but I still want to explore the possibilities and problems of a theory of this type. Though it is probably nothing more than pre-Socratic flailing about, I believe it will be useful to see what happens if we try to think about the mind in these terms.
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> To talk about a dual aspect theory is largely hand waving. It is only to say roughly where the truth might be located, not what it is. If points of view are irreducible features of reality, there is no evident reason why they shouldn't belong to things that also have weight, take up space, and are composed of cells and ultimately of atoms. One can formulate the view by saying that the brain has nonphysical properties, but that is just a label for the position and one must be careful to recognize that it doesn't by itself increase our understanding any more than the postulation of a nonphysical substance

> does. The main question, how anything in the world can have a subjective point of view, remains unanswered.

3) Nagel takes a significant step to argue that even his extended reality does not have to exhaust reality: much of reality is beyond the scope of human understanding or even beyond entirely subjective imagination. He introduces a skepticism, not in relation to knowledge, "not about what we know but about how far our thoughts can reach":

> I shall defend a form of realism according to which our grasp on the world is limited not only in respect of what we can know but also in respect of "what we can conceive. In a very strong sense, the world extends beyond the reach of our minds."

He further explains:

> But the world is in a strong sense independent of our possible representations, and may well extend beyond them. This has implications both for what objectivity achieves when it is successful and for the possible limits of what it can achieve. Its aim and sole rationale is to increase our grasp of reality, but this makes no sense unless the idea of reality is not merely the idea of what can be grasped by those methods. In other words, I want to resist the natural tendency to identify the idea of the world as it really is with the idea of what can be revealed, at the limit, by an indefinite increase in objectivity of standpoint.

And the following distinction sheds more light on the nature of his claim:

> I am not claiming that much of what we find positively inconceivable—what we can see to be impossible, like round squares—may nevertheless be possible. Though there may be cases where our strong convictions of positive inconceivability cannot be relied on as evidence of impossibility, I assume they are rare. I am concerned here rather with the admission of possibilities and actualities which are negatively inconceivable to us in the sense that we have and can have no conception of them. (This is different from seeing

positively that no such conception could be coherent, because, for example, it would involve a contradiction.)

It is not necessary for our explorations here to go through Nagel's analysis of the merits and difficulties of alternatives as he tries to identify, describe and place mental entities in the extended reality, the existence of which he has convincingly argued. Yet the mention of one feature of his thinking in this regard seems necessary. In three consecutive chapters of *Mind and Cosmos*, Nagel looks at distinct approaches that could attempt to explain consciousness, cognition and value, once we have accepted that "conscious subjects and their mental lives are inescapable components of reality not describable by the physical sciences". He points out that "any explanation will have two elements: an ahistorical constitutive account of how certain complex physical systems are also mental, and a historical account of how such systems arose in the universe from its beginnings." The constitutive account will be either reductive or emergent, and the historical account causal, teleological, or intentional.

If "emergence" is to explain the existence of the mental, it cannot "just say that each mental event or state supervenes on the complex physical state of the organism in which it occurs". "That would be the kind of brute fact", asserts Nagel, "that does not constitute an explanation but rather calls for explanation." A higher-level theory would be needed that would "make the connection cease to seem like a gigantic set of inexplicable correlations". But such a theory, even if it can be created, would still imply that "mental states are present in the organism as a whole, or in its central nervous system, without any grounding in the elements that constitute the organism, except for the physical character of those elements that permits them to be arranged in the complex form that, according to the higher-level theory, connects the physical with the mental." This, Nagel states, seems like magic: that "purely physical elements, when combined in a certain way, should necessarily produce a state of the whole that is not constituted out of the properties and relations of the physical parts" themselves. "Dissatisfaction with an explanatory stopping place that relates complex structures to complex structures," according to Nagel, "is what underlies the constant push toward reduction in modern science". And because emergence "remains fundamentally inexplicable, the ideal of intelligibility demands that we take seriously the alternative of a reductive answer to the constitutive question—an answer that accounts for the

relation between mind and brain in terms of something more basic about the natural order". However, having said all this, Nagel moves towards emergence when he examines the operation of reason:

> In the previous chapter I explored the possibility of a reductive account of consciousness, based on some form of universal monism or panpsychism. This is modeled on the physical reductionism encouraged by molecular biology, but with an expanded metaphysical basis, in which the physical and the mental are ontologically inseparable. Although it would be a radical departure from the reigning materialist view of nature, the monism required for a reductive but not physically reductionist account of consciousness seems at least conceivable. In answer to the constitutive question, the idea that a complex subject of consciousness might be built up out of minimal protomental elements that are somehow unified simultaneously into an organism and a self has enough potential to merit consideration. Considered as an alternative to an equally speculative emergence of consciousness at high levels of physical organization, it seems relatively credible, in spite of serious problems about the mental part-whole relationship.
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> However, a reductive account of reason, entirely in terms of the properties of the elementary constituents of which organisms are made, is even more difficult to imagine than a reductive account of consciousness. Rationality, even more than consciousness, seems necessarily a feature of the functioning of the whole conscious subject, and cannot be conceived of, even speculatively, as composed of countless atoms of miniature rationality. The metaphor of the mind as a computer built out of a huge number of transistor-like homunculi will not serve the purpose, because it omits the understanding of the content and grounds of thought and action essential to reason. It could account for behavioral output, but not for understanding. For these reasons, a holistic or emergent answer to the constitutive question comes to seem increasingly more likely than a reductive one as we move up from physical organisms, to consciousness, to reason. This would mean that reason is an irreducible faculty of the kind of fully formed conscious mind that exists in higher animals, and that it cannot be analyzed into the activity of the mind's protomental parts, in the way that sensation perhaps can be.

Whatever form a final constitutive account of the mental may take, it is Nagel's choice of the teleological for the historical account that is more relevant to our exploration. He accepts that teleological explanations have "serious problems", but he considers these problems "no more serious than those of the alternatives"; he suggests that the possibility should not be disregarded. And, in fact, after looking at certain alternatives, he admits that he is drawn to what he calls natural teleology:

> I am drawn to a fourth alternative, natural teleology, or teleological bias, as an account of the existence of the biological possibilities on which natural selection can operate. I believe that teleology is a naturalistic alternative that is distinct from all three of the other candidate explanations: chance, creationism, and directionless physical law . . . [Natural] teleology would have to be restrictive in what it makes likely, but without depending on intentions or motives. This would probably have to involve some conception of an increase in value through the expanded possibilities provided by the higher forms of organization toward which nature tends: not just any outcome could qualify as a telos. That would make value an explanatory end, but not one that is realized through the purposes or intentions of an agent. Teleology means that in addition to physical law of the familiar kind, there are other laws of nature that are "biased toward the marvelous."

He explains natural teleology further in these terms:

> Natural teleology would require two things. First, that the non-teleological and timeless laws of physics—those governing the ultimate elements of the physical universe, whatever they are—are not fully deterministic. Given the physical state of the universe at any moment, the laws of physics would have to leave open a range of alternative successor states, presumably with a probability distribution over them.
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> Second, among those possible futures there will be some that are more eligible than others as possible steps on the way to the formation of more complex systems, and ultimately of the kinds of replicating systems characteristic of life. The existence of teleology requires that successor states in this subset have a significantly higher

> probability than is entailed by the laws of physics alone—simply because they are on the path toward a certain outcome. Teleological laws would assign higher probability to steps on paths in state space that have a higher "velocity" toward certain outcomes. They would be laws of the self-organization of matter, essentially—or of whatever is more basic than matter.
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> This is a frankly teleological hypothesis because the preferred transitions do not have a higher probability in virtue of their intrinsic immediate characteristics, but only in virtue of temporally extended developments of which they form a potential part. In other words, some laws of nature would apply directly to the relation between the present and the future, rather than specifying instantaneous functions that hold at all times. A naturalistic teleology would mean that organizational and developmental principles of this kind are an irreducible part of the natural order, and not the result of intentional or purposive influence by anyone.

To understand Nagel's position, we must distinguish his natural teleology from the intentional alternative and appeal to divine intervention:

> . . . for theists there is the intentional alternative: divine intervention to create life out of the basic material of the world, and perhaps also to guide the process of evolution by natural selection, through the intentional production and preservation of someof the mutations on which natural selection operates along the way. This could be combined with either a reductive or an emergent answer to the constitutive question. A creationist explanation of the existence of life is the biological analogue of dualism in the philosophy of mind. It pushes teleology outside of the natural order, into the intentions of the creator—working with completely directionless materials whose properties nevertheless underlie both the mental and the physical. If God at some point in the past constructed DNA or one of its predecessors out of its elements, that dispenses with the need for any explanation of the capacity of the elements to organize themselves in this apparently purposive way.

> That would require only that the existence of DNA be a physical possibility—in chemical space, so to speak. And if we extend the case to consciousness and reason, it would require that conscious and rational subjects supported by brains of the right kind be mental possibilities. But in the creationist picture, the natural order accounts for the physical possibility of DNA in the same way that it accounts for the physical possibility of an airplane or a telephone or a computer. Those possibilities are all explained by physics alone: it is only their actualization that involves a designer, and something analogous would be true for animal consciousness—a surprising way in which the protopsychic elements of the world can be combined. So biological and mental organization are no more part of the natural order in the creationist view than airplanes or telephones are. The laws of nature entail their possibility, but they do not explain their actuality.

Finally, it is important to note that Nagel admits, as he should, that creationism is not the only alternative open to a believer in God:

> My preference for an immanent, natural explanation is congruent with my atheism. But even a theist who believes God is ultimately responsible for the appearance of conscious life could maintain that this happens as part of a natural order that is created by God, but that it does not require further divine intervention. A theist not committed to dualism in the philosophy of mind could suppose that the natural possibility of conscious organisms resides already in the character of the elements out of which those organisms are composed, perhaps supplemented by laws of psychophysical emergence. To make the possibility of conscious life a consequence of the natural order created by God while ascribing its actuality to subsequent divine intervention would then seem an arbitrary complication. Some form of teleological naturalism should for these reasons seem no less credible than an interventionist explanation, even to those who believe that God is ultimately responsible for everything.

Nagel is not the only philosopher who tries to account for the existence of consciousness, reason and value outside the limits of psychophysical reductionism. There are other expressions of

philosophical thought that discredit the fundamental assumptions of the brand of naturalism so prevalent today as well. But one example of what I have called sophisticated secularism is sufficient for the kind of insights we are seeking into the question of complementarity between science and religion. Let us begin, then, by accepting the validity of Nagel's last statement. It is possible for a believer in God to find some form of natural teleology credible, far more credible than creationism. That would imply the operation of laws that make the appearance of the mind a likely outcome of physical evolution without any need for God to intervene in every step of the process. And why not, we may ask. As we discover the methods associated with an objectivity broader than the present "physical objectivity", we will be able to understand these laws and describe the mental at least as we do space and time. Yet, what is there to prevent us from going further and achieving more?

Standing firm in his secular position, Nagel explicitly makes a choice to stay away from belief in a soul and the continuation of individual consciousness after death. The choice made by a religious person is, however, a different one. If what is at stake is the mere introduction of the concept of a soul as an "additional, non-physical substance without explaining how it can support subjective mental states whereas the brain can't," then his objection is well taken. But there is much more to the existence of a spiritual world in which the material world is embedded as conceived by sophisticated religious thought, free of the feared mind-body duality. There are a number of questions we can legitimately ask: How far would we advance in our understanding of reality if we were to seek insights into the nature of an extended reality—and even parts of the reality that the mind alone cannot conceive—in the teachings of the Founders of great religions, this without denying the possibility of methods that would lead to some kind of objective understanding of entities such as consciousness, reason and value? Why should the only doors to understanding be those that can be opened through the application of human reason? Why cannot there be another phenomenon, more complex than anyone of us can imagine, namely revelation, which leads to other doors in ways that individual and collective reasoning power alone is not able to?

There is no justification for the assumption that the glimpses of spiritual reality offered by the revealed word would contradict reason. On the contrary, they allow it to manifest its

potentialities to a fuller degree. But, from a religious point of view, such glimpses are only available to those who are disposed towards receiving them. Rationality defined in a narrow sense does not find enough "evidence" to "prove" the validity of spiritual perception. But the problem here is with the definition of rationality and not with spiritual reality. Reason, in a broader view, needs to be illumined by the spirit of faith, which, in turn, is illumined by the Holy Spirit emanating from an Unknowable Essence, God, through revelation. Philosophers like Nagel go beyond the reductionist rationality of physicalism; the religious person can seek an even broader rationality, one that accommodates articles of faith receiving their legitimacy from an entire system of knowledge possessing impressive explanatory power: religion freed from superstition.

The powers of the human soul need to be focused not merely on the world of matter and, by extension on the nature of the mind. Religious text asks the human mind to look beyond that which it has learned from the senses and a limited use of reason, and understand reality in light of that which the soul receives through the eyes of the spirit. Thus, Bahá'u'lláh speaks of attaining the "shores of true understanding":

> The essence of these words is this: they that tread the path of faith, they that thirst for the wine of certitude, must cleanse themselves of all that is earthly—their ears from idle talk, their minds from vain imaginings, their hearts from worldly affections, their eyes from that which perisheth. They should put their trust in God, and, holding fast unto Him, follow in His way. Then will they be made worthy of the effulgent glories of the sun of divine knowledge and understanding, and become the recipients of a grace that is infinite and unseen, inasmuch as man can never hope to attain unto the knowledge of the All-Glorious, can never quaff from the stream of divine knowledge and wisdom, can never enter the abode of immortality, nor partake of the cup of divine nearness and favor, unless and until he ceases to regard the words and deeds of mortal men as a standard for the true understanding and recognition of God and His prophets.

Early in this article we stated that our examination of articles of faith concerning the reality that both science and religion set out to know must address two interrelated questions: what each

system assumes about the nature of this reality and what kind of relationship it envisions between the knowledge it generates and reality per se. Our discussion up to now has focused mostly on the first question. In the case of science, we have tried to go beyond the superficiality of physicalism and have found plausible the existence of an extended reality that the human mind can understand once the appropriate methods corresponding to a conception of objectivity broader than the physical conception of objectivity of today's natural sciences are gradually discovered. This much both science and religion can accept on faith without contradicting reason in any way. But religion extends this element of faith claiming that the phenomenon of revelation opens doors through which humanity can also get glimpses of spiritual reality. To call this reality "supernatural", as is commonly done among secular philosophers, and assume a sharp separation between the physical and the spiritual, constantly bringing up the threat of the mind-body duality, is to ignore the evolution of religious thought in humanity's journey from childhood to maturity. The inquiry we are proposing here, then, has to face the formidable challenge of describing in some detail the conception of the spiritual in the kind of discourse on religion that can run parallel to the existing discourse on science. I actually intend to say a few words about this conception, but it seems best to include the relevant comments in other articles that would address the second question posed above on how scientific knowledge and religious knowledge are related to a reality that includes the physical with all its complexity but extends beyond it. What needs to be said at this point is that if there is substance to spiritual reality, then there is ground for arguing some kind of complementarity between science and religion based on the nature of that which is to be known.