

THE QUEST FOR “LA SAPIENZA”: ROY BHASKAR’S CRITICAL REALISM AND THE SCIENCE AND RELIGION DIALOGUE

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In January of 2008, Pope Benedict XVI prepared to deliver an address at the “La Sapienza” University of Rome on the place of religion in secular societies. However, due to the objection of a number of students and professors, including the entire physics faculty, the university revoked the invitation two days before the scheduled event on January 15. As one of the spokespersons against the papal appearance, the physicist Marcello Cini sent a missive to the University Rector in which he noted “that since the time of Descartes we have arrived at . . . a partition of spheres of competence between the Academy and the Church. [The pope’s] clamorous violation . . . would have been considered, in the world, as a jump backwards in time of 300 years and more.”¹ For Cini, religion and science present, to invoke Stephen Jay Gould, non-overlapping magisteria.² Consequently, any transgression of such inviolable demarcations, any attempt to even reopen a conversation between those two domains of thinking, amounts to a regressive reactionism.³ On

¹See Paul Newall, “The Pope and the Galileo Affair,” <http://thekindlyones.org/2010/10/16/the-pope-and-the-galileo-affair/>.

I first presented a version of this article at the interdisciplinary 2013 Andrews Autumn Conference on Religion and Science. Much of the rhetorical structure and content aimed for that occasion has been preserved here. Additionally, I remain indebted to friends and colleagues whose feedback made an invaluable contribution in crafting this article: Vanessa Corredera, Karl Bailey, and L. Monique Pittman. They enable me to practice the discourse of transversality on a weekly basis.

²See, for example, Stephen Jay Gould, “Two Separate Domains,” in *Philosophy of Religion: Selected Readings*, ed. Michael L. Peterson, et al. (New York: Oxford University Press, 1996), 556.

³Of course, there were those who condemned the snubbing of the Pope, including the then Italian Prime Minister Romano Prodi who contended that “no voice should be stifled in our country” (Ian Fisher, “Pope Cancels Speech after Protest at University,” *The New York Times*, January 16 2008, <http://www.nytimes.com/2008/01/16/world/europe/16pope.html>). Or take Giorgio Israel’s response printed on the afternoon of January 15 in the *L’Osservatore Romano*. Israel, himself a professor in the department of mathematics at “La Sapienza,” argued that “it is surprising that those who have chosen as their motto the famous phrase attributed to Voltaire—‘I disapprove of what you say, but I will defend to the death your right to say it’—should oppose the pope’s delivering an address In this incident there has emerged a part of secular culture that makes no arguments, but demonizes. It does not discuss, like true secular culture does, but creates monsters” (Sandro Magister, “The University of Rome Closes Its Doors to the Pope,”

this count, the very adage of “faith and science” is oxymoronic at best and perilous at worst.

However, as one reads the text of the ill-fated address it becomes clear that Benedict’s intent was not to undermine the role of science, but rather to situate it within a broader conversation of what constitutes rationality and human flourishing.⁴ As he puts it elsewhere, there is a “necessary relatedness between reason and faith and between reason and religion, which are called to purify and help one another. They need each other, and they must acknowledge this mutual need” as they challenge each other’s pathologies.⁵ Benedict echoes similar concerns in his 2006 Regensburg address “Faith, Reason and the University” in which he proffers a sustained critique of “dehellenization,” namely, a critique of those intellectual tendencies that undermine the synthesis of faith and reason as achieved through the confluence of Christian and Greek thought. Medieval nominalism, Kant’s radicalization of Protestant antimetaphysical impulses, and Adolf Harnack’s reduction of the Christian message to humanitarian moralism are but some of the forces that have led to the subjectivization and privatization of faith. Benedict rejects such tendencies and instead calls for “courage to engage the whole breadth of reason, and not the denial of its grandeur—this is the programme with which a theology grounded in Biblical faith enters into the debates of our time.”⁶

While I am much less sanguine than the Pope about the all-round beneficence of the “hellenization of Christianity,” I side with his basic intent to articulate a positive relationship between science and religion, and in the process provide a nuanced account of the modes, scope, and responsibilities of rationality. He rightly suggests that the multilayeredness of reality calls for a textured account of cognition that evades the trappings of evidentialism, scientism, or fideism. In this article I want to elaborate on some of these intuitions via Roy Bhaskar’s critical realist theoretical framework.⁷ “Intuitions”

<http://chiesa.espresso.repubblica.it/articolo/186421?eng=y>.

⁴The ill-fated address itself was published on January 16, 2008.

⁵Joseph Cardinal Ratzinger and Jürgen Habermas, *Dialectics of Secularization: On Reason and Religion*, trans. Florian Schuller (San Francisco: Ignatius, 2006), 78.

⁶Benedict XVI, “Faith, Reason and the University: Memories and Reflections,” 2006 Regensburg Address, http://www.vatican.va/holy_father/benedict_xvi/speeches/2006/september/documents/hf_ben-xvi_spe_20060912_university-regensburg_en.html.

⁷Critical realism names a spectrum of philosophical positions ranging from various appropriations of Immanuel Kant’s transcendental idealism to different Anglo-American approaches from the 1920s onward, including the pioneering work of theologian-scientists such as John Polkinghorne, Arthur Peacock, and Ian Barbour. For helpful definitions of critical realism see John C. Polkinghorne, *Belief in God in an Age of Science* (New Haven, CT: Yale University Press, 1998), 105–9, and Ilkka Niiniluoto, *Critical Scientific Realism* (New York: Oxford University Press, 1999), 1–2. Niiniluoto lists the following types of realism: ontological, semantic, epistemological, axiological, methodological, and ethical.

is the right word here as I have in mind a certain complementarity of concerns of those two thinkers, rather than an overlap in their respective epistemological approaches. In order to streamline my discussion, I will primarily focus on Bhaskar’s critique of “epistemic fallacy,” his differentiation between the intransitive and transitive domains of science, and the idea of stratified reality.⁸ I will then conclude the article by delineating several implications that Bhaskar’s perspective carries not only for the dialogue of science and religion, but also the nature of theological inquiry in relationship to critical realism.

Reality Claims and the “Epistemic Fallacy”

To begin with, Bhaskar poses the following deceptively simple question: “What must the world be like for science to be possible?”⁹ In other words, what are the transcendental condition(s) required for someone to be able to undertake scientific inquiry? Note that by “transcendental condition” we are referring not to classical foundationalist presuppositions, i.e. some universal, indubitable epistemic postulates, but rather the necessary conditions for X—X standing for an activity, practice, etc.—to be conceivable at all.¹⁰ For example, we might ask, “What is the transcendental condition for something like speech to be possible?” Presumably, our response would point to the necessity of language in whatever form, including winking and the crooning of whales. Now, notice how Bhaskar asks what the *world*, and not the *mind*, must be like for science to work. That simple distinction carries a hefty polemical punch, one that aims, quite explicitly, at Immanuel Kant’s transcendental idealism. On Kant’s terms, as one might recall, “any inquiry of the form ‘what must be the case for ϕ to be possible,’ the conclusion, X, would be a fact about us and that ϕ must invariably stand for some universal operation of mind.”¹¹ In short, Kant reduces the transcendental question about cognition to epistemology, or rather, human subjectivity.

Notwithstanding his sympathies for Kant, Bhaskar diverges from him on this point and instead argues that questions of ontology, rather than those of epistemology, ought to frame our transcendental concerns. In so doing, he rejects the subjectivist, “idealist and individualist cast into which Kant pressed his own inquiries.”¹² That is, he forgoes the focus on the “unknowable

⁸Critical realism as it applies to Bhaskar’s thought is a contraction of two interrelated lines of exploration: his “transcendental realism” (philosophy of science) on the one hand and his “critical naturalism” (special philosophy of human sciences) on the other. See Roy Bhaskar, *Reclaiming Reality: A Critical Introduction to Contemporary Philosophy* (New York: Verso, 1989), 190.

⁹Roy Bhaskar, *A Realist Theory of Science* (New York: Verso, 2008), 13, 26.

¹⁰See Levi R. Bryant, *The Democracy of Objects* (Ann Arbor, MI: Open Humanities, 2011), 43. I am indebted to Bryant for some of the ideas and wording in this paragraph.

¹¹Roy Bhaskar, *The Possibility of Naturalism: A Philosophical Critique of the Contemporary Human Sciences*, 3rd ed. (New York: Routledge, 1998), 5.

¹²*Ibid.*, 5.

‘noumena’ or things-in-themselves which haunt Kant’s philosophy?” At the same time, he “does not dispense with them in the same way as Kant’s idealist successors did—by denying that there is a world independent of the knowledge minds may have of it.”¹³ He is interested, instead, in the ontological conditions that account for the possibility of knowledge by asking: “What must the world be like for science to be possible?”

This form of argumentation, I should add, is absolutely central to Bhaskar’s proposal. It leads him to reject the “epistemic fallacy” and its “failure to differentiate ontological from epistemological considerations.”¹⁴ Put succinctly, the fallacy names unwarranted inferences about the *being* of objects from our *knowledge* of them, in effect allowing epistemology to set the bar for what is ontologically real.¹⁵ One hears such things regularly, I suspect, when teaching undergraduate classes in philosophy, ethics, or related disciplines. For example, students will say, “There are so many different, incompatible understandings of A, therefore one true A does not exist.” In other words, they reason from the fact of pluralism to metaphysical or ethical nihilism, often couched, rather curiously and paradoxically, in some insipid language of inclusivity and empathy. A similar kind of logic can be seen, to use a more highbrow example, in the case of logical positivists and their insistence on the principle of verifiability—the claim that propositions that cannot be verified or falsified, excluding tautologies, are meaningless statements.¹⁶ Here too the order of knowledge is inverted by reducing the reality of *being* to the level of *empirical knowing*.

Bhaskar’s language of *intransitive* (ontological dimension) and *transitive* (epistemological dimension) aspects of scientific inquiry mirrors such a differentiation of ontology and epistemology. In regards to the intransitive dimension, he reminds us that “knowledge is ‘of’ things which are not produced by men at all: the specific gravity of mercury, the process of

¹³Andrew Collier, *Critical Realism: An Introduction to Roy Bhaskar’s Philosophy* (New York: Verso, 1994), 22.

¹⁴Roy Bhaskar, *Dialectic: The Pulse of Freedom* (New York: Verso, 1993), 138. On Kant and critical realism see Michael Friedman and Alfred Nordmann, eds., *The Kantian Legacy in Nineteenth-Century Science* (Cambridge, MA: MIT Press, 2006).

¹⁵Bhaskar, *Realist Theory*, 26. For a good summary of this point see Margaret Scotford Archer, Andrew Collier, and Douglas V. Porpora, “Introduction,” in *Transcendence: Critical Realism and God*, ed. Margaret Scotford Archer, Andrew Collier, and Douglas V. Porpora (New York: Routledge, 2004), 1. A similar logic is at play in Descartes’s *Discourse on Method* where we have a shift from epistemological considerations of what we can indubitably know to claims about what is essentially real and true, i.e. the mind. On this point see John Cottingham, “General Introduction,” in *Meditations on First Philosophy*, by René Descartes, edited by John Cottingham (New York: Cambridge University Press, 1996), xxx.

¹⁶Bhaskar, *Realist Theory*, 27–8.

electrolysis, the mechanism of light propagation. None of these ‘objects of knowledge’ depend upon human activity.”¹⁷ Namely,

surface appearances are only the experimental, or empirical, aspect of deeper structures and mechanisms which allow the surface appearances to be explained, and about which it is possible to gain knowledge. There is thus a fundamental ontological distinction to be made between the underlying causal mechanisms of nature and the observable patterns of events within nature, whether these are observed in the natural world itself, or under the somewhat more artificial world of the carefully controlled experiment. The underlying causal mechanisms may be said to be the intransitive object of scientific inquiry, whereas the empirical regularities are the transitive products of scientific investigation.¹⁸

Thus even if we assume, as we ought, that perceptions do not give us right representations of external reality, we should not automatically infer that we cannot say anything meaningful about it, or that correspondence theories of truth, even chastised ones, are untenable.¹⁹ As Kees van Kooten Niekerk rightly notes, conceptualizations of the world are “constrained by the character of our sensations. Our sensations permit different conceptualizations of trees and rivers, but unification of trees and rivers under one common concept would ignore many obvious differences. . . .” In other words, “sense-experience sets narrow limits to what can be accepted as faithful (or true) statements about the (mental or internal) world.”²⁰

That being said, Bhaskar rightly contends that “any adequate philosophy of science must find a way of grappling with this central paradox of science: that men in their social activity produce knowledge which is a social product much like any other”;²¹ in other words, it has to account for the transitive

¹⁷Bhaskar, *Reclaiming Reality*, 21.

¹⁸Alister E. McGrath, *A Scientific Theology: Reality*, vol. 2 (New York: T&T Clark, 2002), 213.

¹⁹For instance, see Hilary Putnam, *Reason, Truth, and History* (New York: Cambridge University Press, 1981), 73. For this reference to Putnam I am indebted to Kees van Kooten Niekerk, “A Critical Realist Perspective on the Dialogue between Theology and Science,” in *Rethinking Theology and Science: Six Epistemological Models for the Current Dialogue*, ed. Niels Henrik Gregersen and J. Wentzel Van Huyssteen (Grand Rapids, MI: Eerdmans, 1998), 57.

²⁰Niekerk, “A Critical Realist Perspective,” 57. Similarly, Murphy writes: “While concepts are human contrivances and not pictures or representations, they are shared by a real world. And *given* a stable set of concepts, we can go on to formulate sentences, most of whose criteria for acceptance (or acceptance as true) can best be described as a combination of coherence and empirical adequacy. . . . Given a stable conceptual system, truth is, in part, a function of the way the world is” (Nancey Murphy, “The Limits of Pragmatism and the Limits of Realism,” *Zygon* 28 [1993]: 354, cited in D. Paul La Motagne, *Barth and Rationality: Critical Realism in Theology* [Eugene, OR: Cascade, 2012], 47). See also Michael Devitt, *Realism and Truth*, 2nd ed. (Oxford: Blackwell, 1991), 24.

²¹Bhaskar, *Realist Theory*, 11.

dimension of knowledge. Such recognition of the theory-laden, linguistically mediated, systemically intertwined, and culturally reflective character of knowledge calls for an account of epistemic fallibilism. Again, this does not preclude the possibility of judgmental rationality about the world, i.e. the ability to provide more or less adequate approximation of what reality is *really* like.²² Philosophical approaches that refuse the very possibility of such critical adjudication—including various forms of subjectivism and anti-realist constructivism—Bhaskar describes as “endemically aporetic.”²³ In that regard, he would readily concur with Benedict’s observation that we as human beings are “not trapped in a hall of mirrors of interpretations; one can and must seek a breakthrough to what is really true.”²⁴

On Stratification and Meta-Reality

In addition to these reflections on the relationship of ontology and epistemology, Bhaskar reminds us that different disciplines—physics, chemistry, biology, sociology, and so on—have as their focus different strata of reality, each being irreducible to the other.²⁵ Reminiscent of Aristotle’s

²²Archer, Collier, and Porpora, “Introduction,” 2.

²³Roy Bhaskar, *Plato Etc.: The Problems of Philosophy and Their Resolution* (New York: Verso, 1994), 16. See also Michael Redhead, *From Physics to Metaphysics* (New York: University of Cambridge, 1995), ch. 2; John R. Searle, *The Construction of Social Reality* (New York: Free Press, 1995). For a similar assessment in the field of moral philosophy see Samuel Scheffler, “Introduction,” in *On What Matters*, by Derek Parfit, 2 vols., vol. 1 (Oxford: Oxford University Press, 2011), xxxiii. Very few philosophers, including postmodern ones, actually subscribe to the contention that *all* reality is but a linguistic construct. In fact, postmodern thought, in many of its incarnations, simply represents a more radicalized form of critical realism. Note, for example, Umberto Eco’s point: “Even though the interpreters cannot decide which interpretation is the privileged one, they can agree on the fact that certain interpretations are not contextually legitimated. Thus, even though using a text as a playground for implementing unlimited semiosis, they can agree that at certain moments the ‘play of musement’ can transitorily stop by producing a consensual judgment. Indeed, symbols grow but do not remain empty” (Umberto Eco, *The Limits of Interpretation* [Bloomington, IN: Indiana University Press, 1994], 41–2).

²⁴Benedict XVI, “Culture and Truth: Some Reflections on the Encyclical Letter *Fides et Ratio*,” in *The Essential Pope Benedict XVI: His Central Writings and Speeches*, ed. John F. Thornton and Susan B. Varenne (New York: HarperOne, 2007), 368, as cited in Ralph Del Colle, “David Bentley Hart and Pope Benedict: Atheist Delusions, the Regensburg Lecture, and Beyond,” *Nova et Vetera* 9, no. 2 (2001): 307.

²⁵For an alternative account of multi-layered reality see Michael Polanyi, *The Tacit Dimension* (Garden City, NY: Doubleday, 1996), 29–32. For this connection to Polanyi I am indebted to McGrath, *A Scientific Theology: Reality*, 219. Bhaskar notes: “A general pattern of scientific activity emerges from this. When a stratum of reality has been adequately described the next step consists in the discovery of the mechanisms responsible for behavior at that level. The key move in this involves the postulation

emphasis on the interdependence of ontology and methodology, Bhaskar points out that “only the concept of ontological depth can reveal the actual historical stratification of the sciences as anything other than an accident. For this can now be seen as grounded in the multi-tiered stratification of reality, and the consequent logic-of-discovery *that* stratification imposes on science.”²⁶ Such an ontology of stratified emergence has numerous implications, not least of which is the idea that methodology in the sciences cannot be encapsulated in *a priori* foundationalist points of departure. It is the object or strata that “determines the form of its possible science.”²⁷ It stands to reason, therefore, that “each scientific discipline demands an approach to its subject area which is determined by its own distinctive features—a notion which is encapsulated in the Greek phrase *kata physin*, ‘according to its own nature.’”²⁸

The concept of “emergent order” that Bhaskar articulates here bears similarities to the philosophical notion of “supervenience” according to which “higher-level properties supervene on lower-level properties if they are partially constituted by the lower-level properties but are not directly reducible to them.”²⁹ One simply cannot, for example, explain various forms of social interaction by looking at leptons or brain scans of the prefrontal orbital cortex.³⁰ Instead, “emergent phenomena are frequently taken to be irreducible, to be unpredictable or unexplainable, to require novel concepts, and to be holistic.”³¹ Such principle of emergence prevents one from

of hypothetical entities and mechanisms, whose reality can then be ascertained. Such entities need not be smaller in size, though in physics and chemistry this has normally proved to be the case” (Bhaskar, *Realist Theory*, 169).

²⁶Bhaskar, *The Possibility of Naturalism*, 14. For this reference to Bhaskar I am indebted to James K. Dew, *Science and Theology: An Assessment of Alister McGrath’s Critical Realist Perspective* (Eugene, OR: Wipf and Stock, 2010), 109–10.

²⁷Bhaskar, *The Possibility of Naturalism*, 3.

²⁸Alister E. McGrath, *The Science of God: An Introduction to Scientific Theology* (Grand Rapids, MI: Eerdmans, 2004), 18.

²⁹Nancey C. Murphy and G. F. Rayner Ellis, *On the Moral Nature of the Universe: Theology, Cosmology, and Ethics* (Minneapolis: Fortress, 1996), 22–3.

³⁰The pluralistic aspect in the sciences can also be seen in the tendency “towards a diversification of conceptualities, methods, approaches, paradigms, and cognitive values. A discipline like biology, for instance, is organized in historical as well as in experimental departments, and among its methods defined historical inference, morphological descriptions, chemical analysis, refinement [or critique] of the theory-structure of Darwinism, and so on. Hence, even within the natural sciences disunity has indeed become a matter of fact” (Niels Henrik Gergersen and J. Wentzel van Huyssteen, “Introduction,” in *Rethinking Theology and Science: Six Models for the Current Dialogue*, ed. Niels Henrik Gergersen and J. Wentzel Van Huyssteen [Grand Rapids, MI: Eerdmans, 1998], 3–4).

³¹Mark Bedau and Paul Humphreys, “Introduction to Philosophical Perspectives on Emergence,” in *Emergence: Contemporary Readings in Philosophy and Science*, ed. Mark Bedau and Paul Humphreys (Cambridge, MA: MIT Press, 2008), 9.

settling on any particular, all-encompassing method of investigating the different strata.³² What is needed, instead, is an allowance for polysyllabic or multileveled accounts of reality whose ontological “depth” may never be descriptively exhausted.³³

It is in this context that Bhaskar proposes his concept of meta-reality that connotes “both the idea of transcendence, that is going to a level beyond or behind and between reality, while at the same time the ‘reality’ in the title makes it clear that this level is still real, and so part of the very same totality that critical realism has been describing all along.”³⁴ That is to say, meta-reality names attempts to capture the unified nature of things, a sense of wholeness that eludes normal scientific inquiry. The evocation of transcendence here, as Bhaskar understands, is not a matter of arbitrary fiat, but rather describes the grammar of a critically astute re-enchantment of reality against various forms of modernistic or naturalistic reductionism. Of course, such turn to transcendence, and with it the discourse of the “whole” and “limits,” is not only the provenance of religion; non-theistic philosophers such as Iris Murdoch too have argued that the idea of transcendence is synchronous with both ordinary human experience and science.³⁵ “The idea of a self-contained unity or limited whole,” Murdoch writes, “is a fundamental instinctive concept. We see parts of things, we intuit whole things. . . . The urge to prove that where we intuit unity there really is unity is a deep emotional motive to philosophy, to art, to thinking itself.”³⁶

While much more could be said about Bhaskar’s particular brand of critical realism, even our limited discussion is suggestive of implications his approach might have not only for the dialogue of science and religion, but also questions of theological method. In the section to follow, I will briefly explore six such areas of interest.

³²Bhaskar, *Realist Theory*, 171. This is in contrast to Edward O. Wilson who claims that “we are approaching a new age of synthesis, when the testing of consistency is the greatest of all intellectual challenges. Philosophy, the contemplation of the unknown, is a shrinking dominion. We have the common goal of turning as much philosophy as possible into science” (Edward O. Wilson, *Consilience: The Unity of Knowledge* [New York: Knopf, 1998], 10).

³³For a helpful delineation of concept of “depth” see Iris Murdoch, *Metaphysics as a Guide to Morals* (New York: Penguin, 1993), 55.

³⁴Roy Bhaskar, *Meta-Reality: The Philosophy of Meta-Reality* (Thousand Oaks, CA: Sage, 2002), 175. For this reference to Bhaskar I am indebted to Alister McGrath, *The Open Secret: A New Vision for Natural Theology* (Oxford: Blackwell, 2008), 52.

³⁵For an excellent discussion of transcendence in contemporary thought see Regina M. Schwartz, ed., *Transcendence: Philosophy, Literature, and Theology Approach the Beyond* (New York: Routledge, 2004).

³⁶Murdoch, *Metaphysics as a Guide to Morals*, 1.

The Dialogue of Science and Religion: Some Tentative Proposals

1. Bhaskar's double entendre on epistemic *mimesis*, i.e. the idea that knowledge while pointing to reality is always somehow conditioned, entails a word of caution to both practitioners of science and theology. All forms of inquiry, as van Huyssteen points out, "share alike the groping and tentative tools of humankind: words, ideas, and images that have been handed down and which we refashion and reinterpret for our context in light of contemporary experience."³⁷ It is that recognition, in fact, that gives "science a degree of kinship with other forms of human enquiry."³⁸ Consequently, someone operating from the perspective of Bhaskar's theoretical starting point will be critical of the proverbial fact/value distinction and the implied empiricist reductionism of what constitutes "true" knowledge. Iris Murdoch rightly reminds us, for example, that "almost all of our concepts and activities involve evaluation. In the majority of cases, a survey of the facts will itself involve moral discrimination. Innumerable forms of evaluation haunt our simplest decisions."³⁹ In that sense she would concur with Nietzsche's insistence, as would I, that truth requires a "training in truthfulness." It also requires "self-critical honesty" given that the pursuit of truth leads us into a "complex and uneven terrain where influences, prejudices, doubts, histories, loves, emotions, politics, experiences all jostle for a fair hearing. There is no one systematic rationality that can accommodate all of this."⁴⁰ That applies to all forms of knowing, including science and theology.

2. Both critical realism and theological inquiry have a share in their mutual commitment to the ontological intransitivity of reality. While precluding forms of naïve correspondence theory of truth, as referential discourses they both reject the argument that descriptions of reality amount to little more than solipsistic projections or putative truth statements furtively twisted to conform to a scientist's agenda.⁴¹ After all, "theological propositions about the world

³⁷Wentzel Van Huyssteen, *The Shaping of Rationality: Toward Interdisciplinarity in Theology and Science* (Grand Rapids, MI: Eerdmans, 1999), 218.

³⁸See John C. Polkinghorne, *Scientists as Theologians: A Comparison of the Writings of Ian Barbour, Arthur Peacocke and John Polkinghorne* (London: SPCK, 1996), 4.

³⁹Murdoch, *Metaphysics as a Guide to Morals*, 26. Murdoch, in other words, contends that "facts on their own, understood as discrete pieces of data, do not constitute a neutral truth which is capable of conveying some sense of meaning or saying anything essential about the world. They are not inert but connected to value by individual (moral) judgment, an unavoidable and continuing mode of evaluation and knowledge" (Heather Widdows, *The Moral Vision of Iris Murdoch* [Burlington, VT: Ashgate, 2005], 60).

⁴⁰Giles Fraser, "On the Genealogy of Morals, Part 7: Nietzsche Contra Dogma," Cif Belief, *The Guardian*, December 8, 2008, <http://www.theguardian.com/commentisfree/2008/dec/08/nietzsche-part-seven>.

⁴¹See for example Bruno Latour and Steve Woolgar, *Laboratory Life: The Social Construction of Scientific Facts*, vol. 80, (Princeton, NJ: Princeton University Press, 1986).

concern *the same real world* as scientific statements,⁴² which in turn reminds us that Christianity, in distinction to some other religions, is unintelligible apart from its reality claims. That is why a critical realist theology—or at least a Christian theology sympathetic to the ontological intransitivity tenet of Bhaskar’s critical realism—will spurn proposals that define religion as being *only* a meaning-generating endeavor (à la Peter Berger’s “sacred canopy”).⁴³

3. While Roy Bhaskar’s critical realism provides a helpful theoretical framework for addressing the dialogue of science and religion, we need additional specificity concerning the character of rationality informing such a dialogue. In that regard, van Huyssteen’s nonfoundationalist critical realism provides invaluable suggestions. Building on Calvin Schrag, Huyssteen’s approach accords a prominent role to “transversal rationality,” i.e. a form of reasoning “where our multiple beliefs and practices, our habits of thought and attitudes, our prejudices and assessments, converge.”⁴⁴ Transversality, in other words, enables us to envision spaces of convergence hospitable to both personal convictions and interdisciplinary normative judgments informed by the criteria of “intelligibility and optimal understanding, responsible judgment, progressive problem-solving, and experiential adequacy.”⁴⁵ How this might work out in practice is a whole different issue, one that goes beyond the purview of this article. Pointing to an exciting area of exploration, however, I would suggest that much could be gained from juxtaposing van Huyssteen’s conception of rationality and Hans Georg Gadamer’s philosophical hermeneutics, particularly his notion of “fusion of horizons” (*Horizontverschmelzung*).⁴⁶ Exploring the dialectics of epistemology and hermeneutics, knowing and understanding, might open new ways for science and religion to interact in a truly transdisciplinary fashion. Ursula King shares such sentiments when she notes that

a “fusion of horizons” will lead to larger horizons, to new views and shared understanding. This fusion is also important for the dialogue between science and religion, and it is likely to be far more creative and holistic than advocating a strongly adversarial stance between these universes of discourse and knowing. . . . Fusing and expanding the horizons of both

⁴²Niekerk, “A Critical Realist Perspective,” 78.

⁴³See Peter L. Berger, *The Sacred Canopy: Elements of a Sociological Theory of Religion* (New York: Doubleday, 1967), especially ch. 1 and 2.

⁴⁴Van Huyssteen, *The Shaping of Rationality*, 136. Calvin Schrag popularized the concept of “transversal rationality” in his *The Resources of Rationality: A Response to the Postmodern Challenge* (Bloomington, IN: Indiana University Press, 1992), particularly ch. 6.

⁴⁵*Ibid.*, 12. For a good discussion of this issue see Kenneth A. Reynhout, “The Evolution of van Huyssteen’s Model of Rationality,” in *The Evolution of Rationality: Interdisciplinary Essays in Honor of J. Wentzel Van Huyssteen*, ed. Wentzel Van Huyssteen and F. LeRon Shults (Grand Rapids, MI: Eerdmans, 2006), 7–12.

⁴⁶Hans-Georg Gadamer, *Truth and Method*, 2nd ed. (New York: Crossroad, 1989), 302–7.

science and religion through creative dialogue from many perspectives could be of immense benefit for humankind.⁴⁷

4. The affirmation of transversal rationality implies additional levels of opportunity and responsibility. For one, theology must refrain from *laissez-faire* special pleadings when its specific reality claims are being questioned. I think that this needs to be stressed—particularly in the Adventist context—as there is a tendency at times to shield the authority of the Bible and privileged hermeneutical approaches from the onslaught of science by resorting to a curious type of epistemological nihilism. Not infrequently, theology attempts to insulate itself from criticism by piggybacking on those accounts that define religion as a protected domain. Such shielding comes through stratagems of subjectivization, demythologization, and “cultural-linguistic”⁴⁸ sequestering of either the Kantian, Hegelian, Wittgensteinian, or some other variety, at times bordering on the disingenuous. We cannot stress enough, therefore, that the dialogue between science and religion needs to commence with a high degree of respect for scientific inquiry and a willingness, in principle, to be corrected and changed. It is true that scientific theories are often fraught with ideological overlays, in the same way that theological interpretations are. Yet, theology ought not to hide behind the sophistry of perpetual deferment, one that implicitly claims, “We will accept scientific discoveries once or as long as they fit our doctrinal bill.” Caution and critical distance are prudent; equivocation and intellectual dishonesty are not. Niekerk is thus correct in reminding us that

theology has an interest in science with regards to the performance of its proper task. The reason is the critical realist assignment of theology. This assignment involves the task of subjecting the realist claims of particular versions of a Christian worldview to a critical assessment, and in order to do so theology has to take into account the compatibility of those claims with science. . . . [A] serious consideration of the scientific understanding of the natural world is part of the critical assignment of a theology that purports to be realistic.⁴⁹

5. A theology sympathetic to critical realism will concur that reality cannot be reduced to any particular strata or to a particular scientific method.

⁴⁷Ursula King, “The Journey beyond Athens and Jerusalem,” *Zygon* 40, no. 3 (September 2005): 538. For the reference to King I am indebted to Kenneth A. Reynhout, “The Hermeneutics of Transdisciplinarity: A Gadamerian Model of Transversal Reasoning,” <http://www.metanexus.net/essay/hermeneutics-transdisciplinarity-gadamerian-model-transversal-reasoning>. While the suggestion to explore the relationship of van Huyssteen and Gadamer is a product of my own research, I am grateful to Reynhout for directing me to important resources and possible avenues of exploration.

⁴⁸I am adapting George Lindbeck’s term here to name a canopy of fideistic approaches to religion and theology. For Lindbeck’s delineation of the concept see *The Nature of Doctrine: Religion and Theology in a Postliberal Age* (Philadelphia: Westminster, 1984), 40–1.

⁴⁹Niekerk, “A Critical Realist Perspective,” 80–1.

Of course, this raises all kinds of questions, including the place of philosophy and theology in the stratification of reality. Murphy, for example, proposes a hierarchy of sciences where metaphysics/theology ends up on top as the most generalized approach to reality. In that context, theology will be interested in accounts that point to the “depth” of reality—here variously understood as the “ground of being” or “inexhaustible mystery”—while fully acknowledging that the idea of “depth” need not be stated in theistic terms. Equally important, I believe, is the claim that theology is also horizontally related to the various strata. In that sense, “critical realism encourages a connectivist approach to theology, by insisting that its correlation with the various strata of reality be explored, both as a means of intellectual enrichment and as a matter of intellectual responsibility.”⁵⁰ Such an affirmation opens up a whole new space for a chastised natural theology, one that is demonstrative rather than prescriptive. It privileges the language of inferences, fittingness, and resonances as it probes perennial human interests in the idea of transcendent in relationship to human well-being. With that in mind, I concur with Benedict’s insistence that a principle task of philosophy and theology is to “sift the non-scientific element out of the scientific results with which it is often entangled, thus keeping open our awareness of the totality and of the broader dimensions of the reality of human existence—or science can never show us more than partial aspects of this existence.”⁵¹

6. Finally, Bhaskar’s recognition of the transitive domain and the way human cognition is shaped by individual, institutional, and cultural factors, pushes the discussion of science and religion, invariably so, into the domain of ethics. That is, the scope of the dialogue must go beyond matters of metaphysics and epistemology to include the issue of moral responsibility. The ethical dimension itself consists of two, broadly-construed layers. On the first level we are confronted with questions of *(mis)conduct* of scientific research, including matters of institutional negligence, deliberate fabrication of data, intentional omission of all known data, authorship and intellectual property, use of animals and human subjects, and so on.⁵² Now, of course, I do not mean to suggest that all such considerations somehow need a religious perspective in order to be illuminating and ethically directing. I do, however, maintain the position that some of these questions press against deeper frameworks of meaning and metaphysics. As anyone interested in the field of moral philosophy will readily admit, the moment you focus on matters of applied ethics, questions of metaphysics begin looming in the background.

⁵⁰McGrath, *A Scientific Theology: Reality*, 240.

⁵¹Ratzinger and Habermas, *Dialectics of Secularization*, 56–7.

⁵²John D’Angelo, *Ethics in Science: Ethical Misconduct in Scientific Research* (New York: CRC, 2012). He discusses issues such as institutional negligence, deliberate fabrication of data, deliberate omission of all known data, authorship and intellectual property, etc. Also see Bernard E. Rollin, *Science and Ethics* (New York: Cambridge University Press, 2006) for a good treatment of how ethics is often ignored to the detriment of science and society.

The second level, on the other hand, addresses the questions of *consequences* and *utilization*. I am reminded here of the important claim that Glenn Stassen and David P. Gushee make in their *Kingdom Ethics* where they caution about the science-technology-commerce connection that both exerts pressure on our moral sensibilities and urgently invites ethical deliberations.⁵³ To overlook the connection of science and capital is as negligent as it is naïve. I do not need to dwell here on the usual stock of ethical quandaries connected with environmental degradation, biotechnology, trans-humanism, nuclear armament, and so on. What I do want to reiterate is, however, the need for the faith and science dialogue to encompass efforts to articulate goods, norms, and judgments that are, in Hans Jonas's words, "compatible with the permanence of genuine human life."⁵⁴ It is to insist that ethics cannot be removed from the conversation table as it points to the essential task of constructing moral ontologies that account "of the meaning of our being in the world and how to orient ourselves in the world."⁵⁵ In other words, it is to reject the severance of scientific and technological development from fundamental "questions of integral human development."⁵⁶ Murphy helpfully notes:

We claim that ethical knowledge is logically related to knowledge about the way the world is as well as to knowledge of transcendent reality. Thus, ethical judgments should be affected by developments in scientific knowledge but cannot be determined by scientific knowledge alone. This is the *limited* truth in the fact-value distinction Furthermore, we claim that sciences are not "value-free"; the applied human sciences provide knowledge of means-ends relations, and choice of ends presumes judgments about the good for humanity. Since the natural sciences are dependent on the development of technology (applied science) they to are inevitably tied to the ethical realm.⁵⁷

It stands to reason, therefore, that faith practitioners concerned about science and theology ought to be supportive of organizations and efforts that seek to bring scientists and human rights advocates to the same table. (The Carnegie Mellon University Center for Human Rights Science is one such laudatory forum. It "brings together scientists and human rights practitioners committed to rigorous assessment of the state of human rights around the world").⁵⁸

⁵³See Glenn H. Stassen and David P. Gushee, *Kingdom Ethics: Following Jesus in the Contemporary Context* (Downers Grove, IL: IVP, 2003), 257–8.

⁵⁴Hans Jonas, *The Imperative of Responsibility: In Search of an Ethics for the Technological Age* (Chicago: The University of Chicago Press, 1984), 11.

⁵⁵William Schweiker, *Responsibility and Christian Ethics* (Cambridge: Cambridge University Press, 1995), 38.

⁵⁶Benedict XVI, *Charity in Truth* (San Francisco: Ignatius, 2009), 20–37.

⁵⁷Murphy and Ellis, *On the Moral Nature of the Universe*, 6.

⁵⁸"Center for Human Rights Science - Carnegie Mellon University," <http://www.cmu.edu/chrs/>.

In closing, we return to Benedict's reminder that what our civilization urgently needs is the pursuit of integrated or sapiential rationality; a kind of "cosmopolis" (Stephen Toulmin) that convincingly recaptures the mediaeval vision of "an over all harmony between the order of the heavens (the Cosmos) and the order of human affairs (Polis)."⁵⁹ As Murphy and Ellis claim, there is a great hunger today "to relate our burgeoning knowledge of the cosmos to the pursuit of human meaning, both in the sense of meaningful, fulfilling ways of life (ethics and politics) and in the sense of the quest for an understanding of ultimate reality (religion)."⁶⁰ Benedict strongly echoes this point in *Caritas in Veritate* where he warns against the instrumentalization of reason that severs scientific discoveries and technological development from matters of moral responsibility, virtue, and human rights. "When technology is allowed to take over," he argues, "the result is confusion between ends and means, such that the sole criterion for action in businesses is thought to be the maximization of profit, in politics the consolidation of power, and in science the findings of research." What is frequently overlooked is that "underneath the intricacies of economic, financial, and political interconnections, there remain misunderstandings, hardships, and injustice."⁶¹ Addressing such issues of systemic injustice and imbalance is a complicated endeavor, one that requires both different forms of advocacy and scholarly explorations. But certainly one legitimate way to pursue such a task is to strive to bring faith and reason together, to "overcome the self-imposed limitation of reason to the empirically falsifiable" and "so continually [seek to] disclose its vast horizons."⁶² The quest for *la sapienza* or wisdom is more, but certainly not less than that.

⁵⁹Murphy and Ellis, *On the Moral Nature of the Universe*, 2.

⁶⁰*Ibid.*, 2–3.

⁶¹Benedict, *Charity in Truth*, 143.

⁶²Benedict XVI, "Faith, Reason and the University."