

WHAT IS SCIENCE-ENGAGED THEOLOGY?

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Is there a journal less likely than *Modern Theology* to devote a special issue to the natural sciences? When we were in grad school, we would have said, “No and I hope they never descend to that. You see, *Modern Theology* does *real* theology.” Real theology, we thought, should always be queen of the sciences. We had picked up the fads of our generation, and one such fad was the idea that whenever scientists were invited to the theological table, then theology would automatically assume a subservient position. But then we came across Kenneth Surin’s founding editorial in *Modern Theology* that promised to study “theology in relation to history and culture . . . and the natural and social sciences.”¹ How did this square with the rest of the journal’s bold vision?

We were not able to piece it together until later. What we were picking up on, however—without quite sensing the significance—was theology’s “new boldness.”² That was Kathryn Tanner’s phrase in her essay reflecting on *Modern Theology*’s first twenty-five years. Tanner was not alone. In the twenty-fifth anniversary issue of the journal, several former editors and current editorial board members recounted some version of the same outlook. No longer were theology’s options constrained by modernity; it was time to proclaim a pox on both houses—those too ready to culturally accommodate and those too ready to culturally repudiate.

What should replace the tired options of modernity varies, depending on whom you ask. For George Lindbeck, theology should be understood as a cultural-linguistic grammar—because the old options, which looked like opposites (experiential-expressivist and cognitive-propositionalist), were in fact fighting on the same side. For Stanley Hauerwas, theology should take the form of ecclesial practices of resident alien Christians—because the old options, which looked like opposites (Democrats and Republicans), were in fact members of the same family squabbling over who had jurisdiction of the kitchen. For Kenneth Surin, theology was defined as whatever would

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¹ Kenneth Surin, “Editorial,” *Modern Theology* 1, no.1 (October 1984): 2.

² Kathryn Tanner, “Shifts in Theology over the Last Quarter Century,” *Modern Theology* 26, no. 1 (January 2010): 39.

help young scholars combat Margaret Thatcher's neoliberal *blitzkrieg* (his word)—because the old options, which looked like opposites (Schleiermachiian accommodators and Barthian repudiators), were in fact embroiled in a civil war fighting with the same weapons. But perhaps the leading champion of theology's new boldness in the pages of *Modern Theology* has been Radical Orthodoxy, which challenges the dominance of the social and natural sciences, with their pretense of neutral rationality, as characteristic of modernity's eclipse of theology.

Given that "new boldness" has been a signature trademark of *Modern Theology* from its inception, one might think that a special science issue such as this one is out of place. It might, that is, until one considers the publication of Peter Harrison's Gifford Lectures, *The Territories of Science and Religion* (2015).

Harrison's ostensible argument in *Territories* debunks the long-standing conflict thesis propagated by John William Draper and Andrew Dickson White according to which "Religion" and "Science" are locked in inevitable battle, an assumption grounded in the premise that the Bible is meant to be read literally and, by that logic, Christians are committed to the proposition that God created the world 6000 years ago, that the sun revolves around the earth, and so on.³ Historians of science have long known that Galileo's and Darwin's stories are more complicated than this caricature. Nonetheless, the conflict thesis persists in certain circles (e.g., Richard Dawkins's Twitter account). Harrison's argument, however, explores the conflict thesis further and has fascinating implications for theology.

Imagine, Harrison says, that you hear about a battle fought in the middle ages between Israel and Egypt. The stories must be false since those countries did not exist in the middle ages.⁴ If someone defends the veracity of these stories by saying, "On the contrary, the pyramids and the Second Temple ruins did exist back then," it would not help their case, because even if an army from the pyramids attacked an army from the Temple ruins, naming those armed forces the Egyptian and Israeli armies would be profoundly misleading. So goes Harrison's argument. "Science" and "Religion" could not possibly be in conflict until the nineteenth century at the earliest, because, until then, their definitions as distinct entities had not yet been developed. Even if there were battles between forces that bore similarities to post-Darwin "Science" and post-Christendom "Religion," the anachronism of those terms greatly confuses the matter. What Harrison's argument offers theologians is a language with which to rethink how our senses, and the tools extending and systematizing them, count as a legitimately theological source—because the old options, which looked like opposing and mutually exclusive positions (e.g. Ian Barbour's typology of conflict, independence, dialogue) in fact occupy the same territory.

In recent years, two streams of thought within academic theology have developed which take their cues from Harrison. The first, mostly made up of senior scholars, is associated with the major players of Radical Orthodoxy (John Milbank, Simon Oliver, Catherine Pickstock, et al.) but headed by Paul Tyson, a younger colleague of Harrison himself. The second is associated with a series of research grants based at the University of St Andrews. Among other endeavors, this second stream led to the creation of this special issue, to which we invited primarily junior scholars to contribute.

³ John William Draper, *History of the Conflict between Religion and Science* (1875); Andrew Dickson White, *A History of the Warfare of Science with Theology in Christendom*, 2 vols. (1897).

⁴ Peter Harrison, *The Territories of Science and Religion* (Chicago, IL: University of Chicago Press, 2015), 1.

In identifying what these two streams share, we cannot do better than Tyson:

The present literature on science and religion tends to be dominated by three genres: a conflict genre, according to which science and religion are locked into a relationship of perennial opposition; a disentangling genre in which science does one sort of thing and religion does another; and a synthetic genre. . . . While on the face of it these approaches could hardly be more divergent, in fact they share a common commitment to the idea that "science" and "religion" are valid, trans-historical categories that capture more or less perennial features of human culture. If it is true that science and religion, albeit in various guises, have been the chief lenses through which the world has been interpreted, then posing the question of how they relate to each other makes good sense. But what if it is not true?⁵

Indeed, to put it more positively, what if Harrison's thesis is right? What if the modern sense of "Religion" is underdetermined and the modern sense of "Science" is far too general to be helpful?⁶

How can Harrison's conclusions be incorporated into a new iteration of theological thought? One idea is that "we can initiate a much more fruitful discussion if we begin by questioning these two basic categories [Science and Religion] that frame and delimit the current conversation about how to interpret the world," as Tyson's project sets out to do.⁷ In other words, we can get to the bottom of the stories in which those terms have their purchase by focusing on narrative—i.e., by recounting moments at which the boundaries of each were in flux (e.g., should natural philosophy count as science? should magic and alchemy count as religion?). This is a promising way of using history to continually destabilize modernity's disciplinary boundaries, highlighting the ways in which scientific theories are already engaged in metaphysical and theological debates and that scientific inquiry can be a form of spiritual devotion. Call this approach *theology-engaged science*.⁸

A second idea, what this special issue sets out to do, is to study narrowly-focused theological questions that are already entangled with scientific theories and findings. We call this, inversely, *science-engaged theology*.

Science-engaged theology identifies where theologians are already employing or presuming a certain picture of the empirical world, whether they consciously acknowledge it or not. Almost all the contributors in this special issue have identified an unacknowledged or underacknowledged concept within current theological debate that is already entangled in empirical claims (e.g., Massmann on the notion of gift, Leidenhag on the concept of purpose, Whelan on natural order, and Zahl on the idea of social relationality). We call such entangled questions *theological puzzles*. We hope that by bringing these puzzles to light theologians will be able to move more slowly in both critical and

⁵ Paul Tyson, "Introduction: After Science and Religion?," in *After Science and Religion*, eds. Peter Harrison, John Milbank and Paul Tyson (Cambridge: Cambridge University Press, forthcoming).

⁶ What Harrison says about *religio* and *scientia* bears a close analogical relation to what Bill Cavanaugh argued years ago about *religio* and *status* in the so-called wars of religion. See William T. Cavanaugh, "A Fire Strong Enough to Consume the House: The Wars of Religion and the Rise of the Nation State," *Modern Theology* 11, no. 4 (October 1995): 397-420.

⁷ Paul Tyson, "Introduction."

⁸ See Peter Harrison, "Conclusion," in *After Science and Religion* eds. Peter Harrison, John Milbank and Paul Tyson (Cambridge: Cambridge University Press, forthcoming).

constructive engagement with the relevant area of empirical research. As Alvin Plantinga writes, “The world as God created it is full of contingencies. Therefore we do not merely think about it in our armchairs, trying to infer from first principles how many teeth there are in a horse’s mouth; instead we take a look.”⁹ This could well serve as a motto of this special issue.

By invoking Plantinga here, it might appear that we are endorsing the view that theologians must “submit their claims to the new tribunal of ‘the scientific method.’”¹⁰ This is not what we intend for science-engaged theology, for at least three reasons. First, this would be to abandon the “new boldness” of theology, about which Tanner writes, and risk collapsing theology into religious studies. The boldness of science-engaged theology, far from being fragile and defensive, is confident enough to go to natural scientists with empirical questions from whom they seek to learn and receive. Second, this scientific picture of theologians waiting for scraps from the scientists’ table assumes that theological ideas and scientific findings are easily disentangled or that disciplines exist in hermetically sealed bubbles, akin to the way different university departments sometimes occupy separate floors of the same building—living in close proximity to one another but rarely interacting. Scientific findings, no less than doctrinal expression, both presume and require interpretation. As such, and third, this picture gives the false impression of science as an *authority* over theology. Rather, we think the natural sciences are better conceived of as a *source* for theology alongside Scripture, tradition, reason and experience. Indeed, the natural sciences might be thought of within the source of experience, albeit a type of experience that is interpreted (like Scripture), constrained by a standardized method of public enquiry (like reason), and subject to falsification and amendment (as a kind of tradition).

But how different is our focus on theological puzzles from the usual suspects studied within the so-called “Science and Religion” debate—e.g., arguments for the existence of God, the reality of an immaterial soul, Darwinian evolution, and special divine action? An overreliance on these stock examples, which serve as archetypes, has plagued the intersection of Christian theology and natural science for far too long. This line of inquiry has proven to be a trap to the extent that it has supplied the hooks (conflict *or* harmony *or* nonoverlapping magisteria) upon which to hang the false narrative. Consequently, most of us are at pains to imagine how to think about these stock examples *apart from* relying on “Science” and “Religion” as “trans-historical categories.”¹¹ This means that we must, on occasion, keep the grand methodological questions of what separates “Religion” and “Science” in the background. We do this not because method is unimportant, but because method and content always go hand-in-hand. Oftentimes a method will open-up new roads of inquiry. But when this leads to a dead end, then we must ask new types of questions and reflect upon methodology afterwards. Perhaps if we study different examples, a different narrative will emerge. Hopefully so. At least, it will be worth finding out.

In addition to new puzzles, a few of our contributors reflect on the methodological aspect of their investigations. Where this happens, a surprising conformity appears. Their methodology is more often than not driven by theological doctrine or commitments rather than either philosophical or scientific insights (e.g., Tanton’s use of the

⁹ Alvin Plantinga, “Methodological Naturalism?,” *Origins and Design* 18 (1997). Online: <https://www.arn.org/docs/odesign/od181/methnat181.htm>.

¹⁰ Tyson, “Introduction.”

¹¹ Tyson, “Introduction.”

doctrine of divine accommodation; Zahl's excursus on psychological and biblical studies). Independent of that, a wide variety of schools of theological thought is also represented among our authors—ranging from an association with Radical Orthodoxy (Davison), to dialogue with partners in analytic theology (Visala), to contributions from scholars of Barth (Massmann) to Aquinas (Whelan).

In this issue, we have collected eleven different examples, none of which assume that "Science" and "Religion" are trans-historical categories. Instead, the articles exemplify how theologians can employ scientific theories and findings in constructive and concrete theological debates, while acknowledging that the concepts, ideas, and interpretations currently offered by natural science are already laden with theological influences and philosophical assumptions. The opening sentence from our first contributor, Andrew Davison, sets the tone for many of the articles that follow: "Theologians are used to thinking about how *words* stretch across different uses, not least across the widest of all differences, between creature and creator." Davison's article is about analogy, so it is hardly surprising that it concerns the ways in which words or concepts are entangled. (In this context, we mean words whose meanings derive from multiple fields of inquiry in ways that cannot be fully understood without considering all of these disciplinary approaches.)

Theologians are used to this. For example, first-year students of Aquinas learn that diets and dogs can be healthy, but not in the same sense. Unfortunately, as Davison observes, not every scholar gets the point. Among scientists, some who appear to need it most know it least. For example, when computer scientists say, "My AI system learns . . . thinks . . . remembers," are they appreciating what medieval theologians would call the problem of univocity, equivocity, and analogy? Not quite. At least, that is Davison's starting point. He introduces a way to understand analogical predication, mostly via Aquinas, Cajetan and Suárez. Some distinctions only come to light when we have another example of analogy like AI systems to add to the one that theologians know best—namely, creature and creator. It is worth noting that Davison's article straddles the two post-Harrison streams, theology-engaged science and science-engaged theology, which makes sense given the origin stories of each recounted above: in the past, Davison has been involved with both the St Andrews project and projects within Radical Orthodoxy.

Similar observations are made throughout a number of later articles in this issue concerning words or concepts that, as Davison puts it, stretch across different uses. Sometimes, in order to understand the various uses, you need to be acquainted with some scientific subdisciplines; sometimes you need to be an expert. If the Vatican teaches that "only bread with gluten is consecratable" or "only males are ordainable" (as it does), then at the very least the terms "bread", "gluten", and "male" are entangled concepts: not to be fully understood apart from learning at least some sacramental theology *and* biology. Our second article asks such a question about the word "remember."

As theologian Joshua Cockayne and psychologist Gideon Salter write, Israel is commanded to *remember* enslavement and the church is commanded to *remember* Jesus. But they ask, how might the command to remember be obeyed, particularly as no one alive today was present at the original events? There are multiple ways to remember. Is remembrance recollection or reminiscing? Moreover, is it the sort of thing you can do as a group, such as appears to occur in liturgy? Using psychological studies, Cockayne and Salter introduce the concepts of episodic memory, mental time travel, and procedural memory to help elucidate what the Bible and church tradition might have had in mind.

One of the ways to interpret the Cockayne and Salter article is to see liturgies as “technologies” for spiritual formation. Sarah Lane Ritchie offers a similar insight. She begins her article by asking, “Why do some people effortlessly experience God and others do not, no matter how much they may desire to?”—essentially restating the problem of divine hiddenness, but with a twist. Suppose, as seems increasingly likely, that human brains are so malleable that whether God remains hidden to you is variable according to effort and practice, and thus is, in some sense, amenable to human control. With the aid of scholars working in the cognitive sciences, she argues for the theological coherence of prayer, fasting, music and other liturgical acts as “spiritual technologies” that can be employed in faith to pursue a theological belief.

Following the section on Technology is a section on Humans. Here, Tobias Tanton studies the doctrine of divine accommodation. If, as the doctrine holds, God adapts God’s words and actions to be understandable to humans, we need to know what humans are capable of understanding. Or maybe better, *how* do humans understand? One recent answer from embodied cognition, a paradigm in the field of cognitive science, is the conceptualization hypothesis, which suggests that human concepts and symbols are grounded in sensorimotor states. Tanton uses Athanasius’ *De Incarnatione* to argue that this does not make all human concepts of God *prima facie* idolatrous. His argument provides at least one way to begin to answer the question about divine accommodation. There may be other viable starting points, but Tanton’s avoids the accommodation of the *ex post facto* kind espoused by Justin Martyr, who deployed it to circumvent apparent contradictions by saying, in effect, “Oh, God only said *that* because if God tells it like it is, we would get the wrong idea.” This sounds less like divine accommodation and more like theological “retconning”—the literary device of retroactive continuity used primarily in science-fiction. Instead, Tanton argues, we can give a more comprehensive account of the incarnation if we understand it epistemologically.

Simeon Zahl’s central argument is similar to Tanton’s, except his target is the doctrine of justification. In his article, he argues against the “individualism vs. communalism trope” prevalent in Pauline studies. Zahl points out that social relationality—according to scientists in the field of social cognition—does not work like the trope imagines it. Zahl’s essay is a good example of how constructive systematic theology, engaging with Susan Eastman’s *Paul and the Person*, can draw on historical-critical study of the New Testament and social psychology.

Aku Visala takes a somewhat different approach from the others in this section. He starts with findings in recent cognitive sciences on the topic of free will and works his way *back* to theological sources to show that what theologians think of as “the debate about free will” is, in fact, an assemblage of many separate questions that the tradition, perhaps ill-advisedly, has bundled together. He points to examples of theologians whose work has engaged free will debate carefully, such as Augustine scholar Jesse Couenhoven, as well as those, like Martin Luther, who handle the subject rather less carefully. What we see clearly in both Zahl’s and Visala’s essays is how engagements with relevant areas of scientific research do not automatically settle theological debates or provide clear-cut answers, but rather how they can be used to help reveal false dichotomies or clumsy assumptions with which theologians sometimes reinforce and deepen their dogmatic trenches.

Bethany Sollereeder catalogues in her essay three schools within Christian theodicy: classical, practical, and anti-theodical. Using psychological studies of resilience in pain,

she introduces what she calls “compassionate theodicy.” Sollereider argues that none of the former three schools pay sufficient attention to the *person* in pain, not even anti-theodicyists like Kenneth Surin, Terrence Tilley, and Dorothee Sölle who see classical theodicy as a dalliance by leisured philosophers who write just-so stories that silence the voices of sufferers.

Our final grouping of articles is called Plants and Animals. Mikael Leidenhag argues that biological teleology, long derided by adherents of the “Religion and Science” conflict myth, is in fact another entangled concept. Using new research in the field of organismic biology—a field in which researchers do not shy away from questions of teleology—Leidenhag contends that theologians ought to affirm what he calls “intrinsic teleology.” He points to ways that this concept is already crucial to some Catholic, Protestant, and Orthodox doctrines.

Alexander Massmann’s article brings together different theological schools of thought on the question of grace. *Modern Theology* has previously played a part in enriching this debate with perspectives rooted in the Anglo-Catholic tradition, enlivening the discussion with observations about reciprocal gift-giving in cultural anthropology. Massmann extends the discussion between disciplines by drawing on the biological study of animal behavior. Christians appear to agree that God’s salvation is a gift, but what is a gift in the first place? Should *sola gratia* mean what it was taken to mean in, say, sixteenth-century Wittenberg or Geneva? Despite important differences, there are nonetheless significant similarities in how human beings and non-human animals engage in reciprocal exchanges. From a theological perspective, that says something important about creation. Yet Massmann’s article does not impose the logic of empirical studies onto theology, as if academic disciplines were involved in a tug-of-war with one pulling the other into its own territory. Theologians, particularly those in the Protestant tradition, may not only learn something helpful in this discussion, but Protestantism also has its own contribution to make to the larger theological debate about reciprocity and gift.

Matthew Whelan offers a fascinating study of insects. As a theologian also trained in agroecology, a scientific field that incorporates principles governing natural ecosystems, Whelan argues that these principles operate somewhat like natural law does. Catholic social teaching, of course, draws on natural law and Whelan develops several parallels between agroecology and social teaching on this basis. Nonetheless, this leaves social teaching with a puzzle. Like agroecology, Catholic social teaching’s account of natural law appeals to a natural-ecological order with principles for tilling and keeping. But it overlooks the entanglement of that appeal with empirical claims about the world, as well as its practical implications for agriculture. One consequence is that Catholic social teaching fails to deal adequately with the constitutive role of death in the natural order. Hoping to help social teaching, and all of us, out of the puzzle, Whelan turns to biological control, an agroecological approach to the management of insect herbivores (“pests”), as well as the agricultural practices of the Cakchiquel people of the Guatemalan highlands.

We close with Daniel Pedersen’s essay as a kind of book end to the opening article by Davison. We noted that Davison fits somewhere between the streams of theology-engaged science and science-engaged theology. Pedersen’s theological puzzle, by contrast, is a forceful, *doctrinal* challenge. If primatologists are right in one of their relatively well-established findings (i.e., evolved dispositions), does it undermine the justice of

damnation? Pedersen suspects that it does. Along the way, he refers to some of the same sources on free will that Visala introduced in his article.

As a sort of coda to this special issue, we invited Peter Harrison, Jonathan Jong, and Carmody Grey to provide a set of outsiders' replies from the disciplines of history, science, and systematic theology respectively. Since Harrison's work has been so influential to our thinking, we were interested in learning whether the content of our special issue is concordant with his image of theology. A second voice is that of Jonathan Jong—an experimental psychologist, originally from Malaysia—whose work engages with traditionally spiritual topics (e.g., mortality). He is also an Anglican priest. Since Jong has previously criticized theologians for sometimes misusing scientific studies to make religious associations, we invited him to scrutinize these articles. Our final voice is that of Carmody Grey, a Roman Catholic theologian who has examined the intersection between Radical Orthodoxy and the life sciences. We asked her to hold us accountable in our embrace of theology's "new boldness."

In writing this introduction, and consequently rereading the submissions, we noticed four recurring hallmarks of successful theological puzzles in science-engaged theology, that is, four ways to use empirical findings as a source for theology without falling into some of the pitfalls that Harrison identified. First and above all, in science-engaged theology, the relevant disciplines are not "Science and Religion," so-called, but biology and liturgy, or ecology and stewardship, etc. The more specific we can get about the theological doctrine and the scientific theory or study, the better. A good example is Tanton, whose article does not propose to "have a conversation between science and theology." He simply argues that to answer a theological question—what does the doctrine of divine accommodation mean?—he needs to know a bit of cognitive science.

Second, the authors of these articles largely consider products of the subdisciplines as *tools* by which we can (imperfectly and partially) garner understanding. Third, there are *many* different ways to do theology, including different approaches to science-engaged theology. In all of them, the most successful inquiries occur when theologians are upfront about the questions they ask. Above, we intentionally used the word "puzzles." Everyone knows what it is to solve a puzzle—or to fail to solve it. We should aspire to be similarly upfront in theology, never stating our goal vaguely and imprecisely as "doing theology."

This is something that Solleder exemplifies in her article on theodicy. She poses two specific, generative, theological questions: "Is there a logical contradiction between God's omnipotence and goodness and the presence of suffering?" and "What is the best way to help a Christian parent grieve her lost child?" But in taking them together she shows that a sound answer to each question differs in important ways. Trying to solve the second (helping the parent) with an appropriate answer for the first (clarifying the possible contradiction), and vice versa, results in confusion. To be sure, there are *lots* of legitimate forms of theological inquiry. What matters crucially, however, is ensuring that our success conditions match our mode of inquiry.

Fourth, at least half of our articles focus on particular terms, which we have called "entangled concepts." By describing concepts thus, we do not mean merely to point out a significant semantic overlap, as we once saw promoted on a book's back cover: *Recent theology and quantum physics show that relationality is key!* This approach seems to imagine that the key term, "relationality," is self-evident and univocal. But nor should we overreact and assume equivocity, that theology and quantum mechanics can *a priori*

have nothing to do with one another. Instead, the language of relationality has a history in which the study of God and the study of creation have played a part and continue to do so. The meaning of such concepts within the various subdisciplines can therefore neither be assumed to be the same, nor assumed to be understood as if they operated in a sanitized separation from one another; instead, such concepts intermingle and interact, requiring careful investigation into both disciplines in order to fully understand their meanings.

Throughout this special issue, we have aspired to fulfill one of the hopes for the future of *Modern Theology*—a hope identified by a former editor of the journal, James Buckley:

I am not sure that *Modern Theology* has done as well with two of Surin's other promises; namely, conversation and debate over theology in relation to "culture" . . . and in relation to "natural sciences." I know there have been articles *on* these. More importantly, many articles have used "arts" and "sciences" *in* the course of advancing arguments about sundry theological topics. But I would have to read or re-read such articles to develop a clearer profile of what the conversation and debate looks like in *Modern Theology*. This will be an important topic for the future.¹²

It may seem presumptuous to claim that the future is here, but we are convinced that there are some grounds for thinking that the set of essays that follows marks an important, if modest, contribution to doing theology with new boldness—which has been a hallmark of *Modern Theology* from its inception.¹³

¹² James J. Buckley, "Ruminations on *Modern Theology*," *Modern Theology* 26, no. 1 (December 2009): 23.

¹³ Our thanks to the current editors of *Modern Theology*, Jim Fodor and William Cavanaugh, for their support, as well as to Jon Kelly and Micah Perry for research and editorial assistance.