

A SCIENTIST'S PERSPECTIVE ON SCIENCE-ENGAGED THEOLOGY

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On the face of it, a psychologist is an odd choice for a representative of *science*; as psychologists, our scientific credentials are oft-disparaged, sometimes even by ourselves, only half-jokingly. But it turns out that the scientific work with which this particular cadre of theologians has found meet to engage fits mostly within my disciplinary remit. Truly, in at least this way, this is not our grandparents' science-and-religion, focused as that was on the physical and biological sciences. Instead, these theologians have taken as their new sources research in the cognitive, affective, and social sciences on such things as episodic memory, social emotions, and the evolution of cooperation and conflict. The diversity of theological subject matter covered in this special issue is also a welcome change from what Perry and Leidenhag rightly identify as the "usual suspects" like the existence of God, the immaterial soul, and special divine action.

It is the notion of *engagement* that piques my interest here. These theologians want to do something with some scientific theories or discoveries, use them in some fashion to some theological or philosophical end. The way Perry and Leidenhag imagine it, science is to be a *source for* theology—rather than an *authority over* theology—and specifically as a source of experience in Wesley's famous quadrilateral. The trouble is that experience, reason, tradition, and scripture have never been co-equal partners, and each can serve as authority as well as source, depending on the norms of the Christian community in question. In practice, experience has been the runt of this epistemological litter. This is perhaps because personal experience is thought to be too subjective, too variable and incommensurable from person to person; it might feature as inspiration, but not justification. However, as Perry and Leidenhag note, science presents a different kind of experience that is, in principle—like reason, scripture, tradition—available for public scrutiny. Absent some fantastical mind-reading technology, we will never have access to one another's experiences of divine revelation, but we can, with some training, check the fossil record or see the moons of Jupiter or solve the Einstein field equations.

Given that this is the kind of experience that science at its best provides, do Perry and Leidenhag want science to be more authoritative than they let on? Perhaps this is more like a return to the medieval metaphor of the two books than to Methodism's innovation

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on Anglicanism's three-legged stool. To be sure, science will always require interpretation, but so does scripture, and the desire to interpret science assumes that it is in some sense authoritative. Christians do not typically bother interpreting the *Bhagavad Gita* or the *Tao Te Ching* in their constructive theological work; what these texts say makes no substantive difference to Christian doctrine. The relationship between Christian doctrine and the contents of the Bible might be complicated, but the former would look quite different if we simply imagined the latter away. The relationship between scientific discoveries and theories—that is, our best and therefore authoritative descriptions and explanations of things in the natural world—is bound to be complicated too, but this comparison with scripture suggests an evaluative criterion.

There is a little game I like to play when reading work that alleges to be science-engaged theology: I imagine away the scientific theories and discoveries mentioned in the work, and try to work out what theological difference that makes. This helps me to ascertain whether the science is playing a substantive or merely a superficial role. The kind of difference I am looking for can be something like the difference that premises make to conclusions in valid arguments, or—fittingly enough—it might be like the difference hypothesized observations make to scientific theories. I am not very fussy about *how much* difference the science should make to the theology, nor am I fussy about precisely how the difference is made. Perhaps the science constrains the theological possibilities; perhaps it provides empirical evidence that adjudicates a dispute; perhaps it exacerbates or dissolves a challenge to some Christian doctrine. There are also various ways in which the science makes no difference. For example, claims that some scientific theory or discovery is “consistent with” some theological position are too weak to be interesting. Equally uninteresting is any whiff of the old preacher's trick of saying, after recounting some anodyne personal anecdote, “and doesn't that rather remind us of Jesus?” That which makes for bad preaching also makes for bad theology, science-engaged or otherwise.

If science is approached as an authoritative source of facts and theories to be interpreted, then this is a reasonable criterion for identifying substantive engagement. But there are other senses in which science could be a source. In contemporary Methodism, for example, experience “vivifies” that which is revealed in scripture, illumined by tradition, and confirmed by reason. I do not pretend to know what each of these verbs means to the United Methodist Church, but perhaps this vivification is what Perry and Leidenhag have in mind. One plausible, if reductive, reading of this is that science should play a rhetorical or pedagogical role in theology. We are dangerously close to the poorly-executed homiletical strategy mentioned above, but not all is lost. Examples taken from science might make a theological concept easier to understand; this is arguably how analogies for the Trinity are intended to function. St Augustine's use of psychological analogies is not intended as evidence for the doctrine of the Trinity; indeed, it presupposes not only the doctrine of the Trinity but also that human beings are made in God's image and that this image is to be found in the mind, because it is what separates human beings from non-human animals. This is why Book IX of *De Trinitate* begins with an exposition of the doctrine of the Trinity before commencing the search for images of the Trinity in nature, which is motivated by the expectation that “our feeble mind perhaps can gaze upon [them] more familiarly and more easily.” This suggests another way in which science might make a difference, which is whether the science makes a difference in how easy a theological idea is to understand. Perhaps it is a matter of

prejudice, but I am disinclined to consider this kind of engagement to be substantive, even if it is not quite superficial either.

How do the present offerings fare? It is, as should be expected, a mixed bag. Cockayne and Salter's project might be better described as *psychology of religion* than either science-engaged theology or even theology-engaged science. They argue on exegetical and theological grounds that the commands to "remember" in Jewish and Christian liturgy call for more than the mere recollection of facts, but also the re-living of and participation in past events. The metaphysics of participation—including sacramental participation—is indeed a topic of great theological interest, as Davison can testify.¹ But this "something [that] is going on in the present during Communion" is not Cockayne and Salter's focus, which they distinguish from their primary interest, the "act of remembrance" itself, which is a cognitive phenomenon. The words "re-living," "participation," "actualization," and most obviously "time travel" are all used metaphorically here, or at best in the thinnest possible analogical sense. In other words, their project is one of hypothesizing what cognitive processes might be involved in certain liturgical acts, which is just to do psychology of religion rather than theology. This is quite pleasing to me *qua* psychologist, but theologians might get less mileage out of it.

There are also instances of science-inspired theology, in which the theological work is motivated by some science rather than substantively informed by science. For example, Visala tries to persuade theologians to care about free will by mentioning empirical research on the moral corrupting influence of free will scepticism; here, science is providing the impetus for Visala to engage with a philosophical or theological question. He might be interested to know that recent attempts to replicate the original Vohs and Schooler (2008) study have failed,² and sufficiently-powered studies have found no correlation between free will beliefs and moral behavior.³ Sollereeder's essay also fits the description of science-inspired theology. She argues for the importance of her approach to theodicy in part by referring to a key premise in cognitive-behavioral therapy, which is that our beliefs matter in how we experience and cope with pain and suffering. What is not clear is whether and how scientific research has shaped her own attempt at compassionate theodicy. For example, her book *Why is There Suffering?*⁴ provides the reader with a greater sense of agency than do traditional works of theodicy and avoids vivid descriptions of violence commonly found in such works, but she does not say whether these choices were informed by cognitive behavioral therapeutic research or just based on introspection on her own experiences. She does cite specific research on how different depictions of God carry different emotional resonances, but then it is unclear whether this has impacted her work too. Does she, for example, avoid the metaphor of God as judge altogether? If so, does the exclusion of some metaphors undermine the agency she aims to provide the reader?

Most of the other contributions are more recognizably attempts at science-engaged theology with various levels of substantive and superficial engagement both within

¹ Andrew Davison, *Participation in God: A Study in Christian Doctrine and Metaphysics* (Cambridge: Cambridge University Press, 2019).

² Thomas Nadelhoffer, Jason Shepard, Damien L. Crone, Jim AC Everett, Brian D. Earp and Neil Levy. "Does Encouraging a Belief in Determinism Increase Cheating? Reconsidering the Value of Believing in Free Will," *Cognition* 203 (2020), <https://doi.org/10.1016/j.cognition.2020.104342>.

³ Damien L. Crone and Neil L. Levy. "Are Free Will Believers Nicer People? (Four Studies Suggest Not)," *Social Psychological and Personality Science* 10, no. 5 (2019): 612-19.

⁴ Bethany N. Sollereeder, *Why is There Suffering? Pick Your Own Theological Expedition* (Grand Rapids: Zondervan, 2021).

and across articles. In some cases, the science made no difference because it was *superfluous*: the point could have been compellingly made without any reference to the scientific research. For example, both Ritchie and Tanton refer to psychological research on religious beliefs and experiences, but some of the lessons they draw from this research—like the idea that our beliefs are labile, that we anthropomorphize gods, and that immersive, exceptional experiences are powerful—are pre-scientific observations about which scientists now theorize and for which they posit mechanisms that are more or less irrelevant to Ritchie's and Tanton's main purposes. Ritchie does not need research on neuroplasticity to tell us that beliefs are labile; indeed, the research on neuroplasticity assumes that beliefs are labile, and seeks to explain how this is so. She certainly does not need neuroscience and psychology to "suggest" that "immersive, exceptional experiences are powerful," not least because neuroscientific studies of religious experience often produce small, fickle, and unreliable findings. Indeed—as we shall return to later—the science she needs does not yet exist, which is evidence that we can affect our own religious beliefs and experiences. Similarly, Tanton does not need theories of embodied cognition or cognitive theories of religion to tell us that we are prone to idolatrous and anthropomorphic conceptions of God; Xenophanes (d. 475 BCE) noticed this long ago. Divine accommodation poses the risks of idolatry so long as God's thoughts are not our thoughts; if they were, there would be no need for accommodation. Perhaps the conceptualization hypothesis exacerbates Tanton's dilemma beyond Aquinas's version of the problem, but he does not make this case. He does say it brings it "into even sharper focus," but this brings it into vivification territory.

Another recurring issue is one of a *missing* or *defective bridge* between the science and the theology. For example, Visala seems to think that the messiness of folk intuitions about free will poses a problem for compatibilists, but why—either in general or especially in this case—should folk intuitions matter in philosophical or theological argument? Perhaps there is the rumour of an argument from universal assent here, but if so it should be made explicit and the standard objections handled. The same question can be posed to Pedersen, who argues that we should not be damned for those sins whose predispositions evolved prior to the emergence of human volition. Why—either in general or specifically in this case—should the source of behavioral predispositions be morally significant at all? In assessing praise- and blameworthiness for actions, compatibilists and libertarians alike look at the source of the action itself, not the source of the predisposition toward it, evolved or otherwise. If the sinful act is not determined by the predisposition in question, it is just one cause among others of the act in question, including more proximal factors like the character of the sinner and more distal ones like the laws and constants of physics. Even Robert Kane's self-forming actions can be partly caused by antecedent conditions and other non-volitional factors as long as they are not sufficiently caused (i.e., determined) by them. Massmann's problem is slightly different. Like Augustine, Massmann is searching for divine images in creation, this time of giving and reciprocity. Augustine's search brings him to the activities of the human mind because it is where he expects to find the clearest image. Massmann is less clear about why he looks to human and non-human economic activity, except to say that broad trends across different forms of life indicate something about the grammar of creation, which in turn informs how we think about redemption. The trouble, as Pedersen has shown, is that some broad trends in nature are deeply morally problematic. Indeed, Massmann himself recognizes the existence of "dark" versions of reciprocity in nature.

It seems that in this case, science does make a difference; if there were no evidence of reciprocity outside of our species, Massmann could not claim that reciprocity is part of the grammar of creation. But I do not know how Massmann stops science from making *too much* of a difference, to avoid Machiavellian forms of reciprocity—not to mention war and violence—from also being part of this grammar.

Finally, there were what I will clumsily call *mismatches in levels of analysis*. For example, in Zahl's rejoinder to critics of individualist soteriologies, he refers to research on the function of social emotions like guilt, the experiences of which are typically socially- and relationally-oriented. But this does not quite hit the mark. The criticism of individualist soteriologies does not assume that, say, guilt is *never* experienced relationally, only that it is not so experienced in the relevant religious contexts. Even if the proper function of social emotions is to motivate the repair of relationships, this is not to say that they always function properly. Similarly, the claim that there are such things as collective emotions is not particularly meaningful unless emotions are collectively experienced in the relevant religious contexts. And again, the claim that interpersonal relationships do not necessarily come at the expense of communal concerns tells us very little about whether they do in the aforementioned religious contexts. Zahl wants to make some quite specific empirical claims, and the broad generalizations available to him are poor substitutes.

Perhaps there is a lesson here about engagement with the psychological and social sciences, in which *ceteris paribus* generalizations are not very informative because social and psychological phenomena are highly context-dependent. Science is, in this way, not like philosophy and theology; arguments from first principles rarely go very far. A version of this problem exists at the theoretical level too, as we see in Leidenhag's essay. He wants to retrieve a theologically-meaningful sense of teleology against neo-Darwinian sceptics by appealing to descriptions of biological organisms as autopoietic self-organising systems. The trouble, as Leidenhag acknowledges, is that there are multiple senses of "teleology"; it is not clear which senses are theologically significant, which have been threatened by evolutionary theory, and which can be reconstructed from theories of autopoiesis. The kind of teleology that autopoiesis posits is very different to the kind of teleology Alister McGrath proposes, in which there is directionality to biological evolution toward complexity. Furthermore, while autopoiesis does supply an alternative to reductionist theories in which only lower-level entities like genes have goals, there remains a gap between the account of an organism's *telos* in biological autopoietic terms and the account that, say, a natural law theologian would find useful in thinking about the good life. Perhaps biology cannot provide any more specificity, but if so, then its contributions are limited indeed; its conception of teleology is too thin for theological use.

The issue in Whelan's essay is slightly different: in this case, I am unsure if there is mismatch because I am unsure what the appropriate level of analysis should be. Whelan makes a very compelling case that agroecology can, in principle, supply empirical details to "concretize" Catholic social teaching about care for the environment, but the idea that he highlights is the centrality of death in the health of ecosystems, which also happens to be the lesson—in sanitized form—of the opening number of Disney's *The Lion King*. Whelan himself recognizes the point in Darwin and Tennyson; surely modern agroecology has more to offer. Consider Aldo Leopold's example about wolves and deer. Whelan does not tell us how this particular finding might inform Catholic

social teaching. Nor does he tell us whether agroecological lessons at this level of specificity are generally instructive for Catholic social teaching. If not, then it seems that nineteenth-century observations about death in the natural world are sufficient for the concretizing job.

Davison's essay has escaped my critical scrutiny, but not my attention. Many of my complaints are about analogies and disanalogies. Terms like "memory," "participation," "teleology," "belief," and "reciprocity" have been used in these essays, and while some moves from the scientific use to the theological may be justified, others may have stretched words and concepts too far. By "remember," psychologists refer to something that happens in people's heads; the liturgical command means much more than this, and it is the excess that is of theological import. The biological sense of "teleology" may well give us true functions and even purposes within nature, but biological accounts of function fall short of the accounts of *telos* that natural law theorists want, and it is not clear how to make up the difference. *Pace* Ritchie, there is no scientific definition of the word "belief"; the term is often bandied around incautiously. This is inconveniently common across the sciences: *mea culpa, mea maxima culpa*.

If I were to draw a lesson from old-school science-and-religion, it is that science is a metaphysically dissatisfying enterprise. All scientific theories are underdetermined by data; a fortiori metaphysical, including theological, ones. Neither quantum mechanics nor complexity theory gave us special divine action without a whole lot of heavy-lifting by prior philosophical and theological commitments. The theory of the expanding universe gave us neither *creatio ex nihilo*, nor did it take it away. Neither neuroscience nor evolutionary biology defaced the *imago Dei*. The lesson I am beginning to glean from this new science-engaged theology is that it may well be inseparable from theology-engaged science. The most promising signs of engagement here were occasions when theologians reached out for empirical discoveries, only to find that science could not quite deliver. And so our theologians were left with approximations that were not quite fit for purpose. Or they engaged with quite high-level concepts—embodiment, autopoiesis—that exist somewhere at the border of science and philosophy, and quite far away from the ordinary business of empirical science.

It seems that almost nothing published in the pages of *Science* and *Nature* are worth engaging with; but this should be intolerable to anyone seeking to do science-engaged theology. Perhaps such people should ask of science what it can give. Perhaps, instead of looking for images of teleology in biological systems, Leidenhag should ask questions about how the self-organization of human organisms differs from the self-organization of any other animal, and what this entails for what makes human beings flourish. Perhaps, instead of looking to see if private emotional experiences are ever socially- and relationally-significant, Zahl should ask whether and when their interpersonal experiences with God translate into the broader life of their communities. Perhaps, instead of citing cognitive scientific theories about the naturalness of religious ideas, Ritchie should ask whether saying our prayers really does increase our faith, or whether speaking in tongues really does make us feel closer to Jesus. These are the questions that need answering, but scientists are not going to know the answers to any of these questions, yet. All this means is that there is plenty of room for substantive two-way engagement between theologians and scientists. The harvest is indeed plentiful; I don't know about the workers.