

A Typology of Methods

DRAFT—please do not cite or quote!

Adam J. Chin*

For over 30 years, participants in the field of religion-and-science have widely employed Ian Barbour’s fourfold typology. It structures textbooks used in introductory courses to the subject (e.g. McGrath 2020), organizes scholarly dialogues (e.g. Copan and Reese 2021), and even shapes the way scholars discuss non-Western religions (e.g. Aukland 2015). The terms Conflict, Independence (or sometimes Separation), Dialogue, and Integration (or sometimes Harmony) thoroughly permeate the discourse.

But despite its wide presence, many scholars complain of Barbour’s typology. It is too restrictive and ought to be expanded (e.g. Stenmark 2010); it relies on overly ridged notions of “religion” and “science” (Jaeshik 2016); it doesn’t capture the richness of individuals’ particular ways of relating religion and science (Cantor and Kenny 2001). But despite all these issues—some of which some find quite major—scholars seem quite happy to make use of the fourfold typology. I take McGrath’s comment (versions of which are found in many of his works) at the start of his popular textbook on religion and science to be representative: “despite its limitations, the framework set out by Barbour remains helpful as a means of approaching the field of science and religion studies” (McGrath 2020).

True, some scholars have proposed alternative typologies: Haught (1995), Drees (1999), and Stenmark (2004, 2014) for example expand upon Barbour’s typology. But none of these have truly caught on—perhaps they are too complex for a typology¹. And in a sense they are all doing the same kind of thing: they carve out the space of logically possible/plausible ways or dimensions in which religion and science could be related and then categorize various scholars (and non-) into those niches. They are all based on classifying the proposed relationships between religion and science.

In this paper I will sketch a different *kind* of typology from those “relationship-based” ones currently on offer. This typology is based on the *methods* that scholars employ in coming to their conclusions about the religion-and-science-relationship (RSR) rather than on the particular form of relation the scholars endorse. It centers, then, not on the the relationship itself but on the the *relating* done by scholars—it is “relating-based” rather than relationship-based. In particular, I focus on methods often associated

*In the interest of transparency, the author identifies as an atheist.

¹Indeed, one of the criticisms of Barbour’s typology is that it is too simplistic—but in a sense that is the whole point of a typology: to simplify the complex (a point noted by Barbour himself (I. Barbour 2002 p. 348))!

with (but by no means limited to the disciplines of) history, philosophy, and the social sciences: the use of case studies, historicizing, conceptual analysis, and (quite broadly) fieldwork. This typology of methods, I argue, avoids many of the critiques proposed against typologies like Barbour’s—and offers a variety of further advantages to boot.

I’ll start (§1) by reviewing several major typologies currently on offer by grouping them as conclusion-oriented and concept-oriented. I then examine two major ways in which typologies are actually used (and critiqued) in the discipline²: as first-order categorizations of how religion and science could themselves be related and as second-order taxonomies of scholars contributing to the literature. In §2, I argue that concept-oriented typologies are more useful than conclusion-oriented ones to both scholars and the various publics which consume the religion-and-science literature. I then (§3) propose and unpack a typology of methods, different in kind from the concept-oriented typologies, and argue that this kind of typology retains all the virtues of a concept-oriented typology—and some. I conclude (§4) with a summary.

1 Typologies and Their Uses

There are (at least) two major kinds of typologies currently on the market: conclusion-oriented and concept-oriented. Despite their differences, both kinds of typologies are relationship-based, that is, they are based on the particular configurations of the relationship between religion and science. Moreover, typologies in religion and science are used in (at least) two distinct ways: as classifications of how religion and science are themselves related and as a way of taxonomizing scholars and scholarly contributions. As far as I am aware, neither of these distinctions—between types of typologies or their uses—have been discussed in previous literature.

In this section, I will first lay out the two major kinds of typologies, citing Barbour and Haught as exemplars of conclusion-oriented and Drees and Stenmark as exemplars of concept-oriented typologies. Then, I will turn to how typologies are actually used. In doing so, we will then be in a position to evaluate the virtues of the two kinds of typologies.

1.1 Conclusion-Oriented Typologies

The most commonly cited typology, that of Ian Barbour, is a conclusion-oriented typology. First presented explicitly in *Religion and Science* (I. G. Barbour 1997), Barbour’s typology is constituted by four possible religion-science relations: Conflict, Independence, Dialogue, or Integration.³ These four views are typically glossed in something like the following manner: Conflict means religion and science are opposed, and only one

²The “discipline” here being “religion-and-science” or “science-and-religion”, however you’d like to order them.

³As pointed out by Berg 2004, in earlier work Barbour actually referred to a fivefold typology borrowed from H. Richard Niebuhr’s (1892-1971) *Christ and Culture* (1951). In this system, which focused on the *ethical* relationship between religion and science, religion could be against, under, above, separate from, or transformative of science.

is legitimate; Independence means they deal with entirely different phenomena/aspects of human life; Dialogue means they pursue similar questions or have similar methodologies; Integration means they can be assimilated for a single purpose (see e.g. Jaeshik 2016 for a similar characterization).

Barbour himself, however, does not provide such straightforward characterizations of his “ways of relating.” In fact, aside from Independence, the other three ways are actually “headings” under which rather different views of the relationship are categorized. Thus Barbour recognizes two kinds or modes of Conflict: scientific materialism (science wins the opposition) and biblical literalism (religion⁴ wins). Likewise “Dialogue is a diverse group of views” including that religion and science engage in a back-and-forth over each others’ explanatory limits, that they share in each others’ methods, and what Barbour terms “Nature-centered Spirituality”: responses “to nature in personal and experiential ways” (p. 95). What unites these three views together and separates them from Integration is that they “[start] from general characteristics of science or of nature rather than from particular scientific theories.” In taking the latter course, one can arrive at three different versions of Integration: natural theology (theological doctrines inferred from nature), theology of nature (scientific theories shape theological doctrines), or systematic synthesis (“both science and religion contribute to the development of an inclusive metaphysics” (p. 98)).⁵ In total, then, Barbour provides *nine* ways of relating religion and science—though these can be grouped under four headings.

Haught 1995 also offers a fourfold typology. As with Barbour, his system includes Conflict and Separation (re-labeled “Contrast,” perhaps so that all headings in the typology begin with C). But the other two categories differ because “I do not find a sufficiently crisp logical distinction between his third and fourth types, ‘dialogue’ and ‘integration’” (p. 9 fn. 1). In their place, Haught provides “Contact” (science and religion have implications for one another and thus ought to adapt as either changes) and “Confirmation” (“religion supports and nourishes the entire scientific enterprise” (ibid. p. 9)). It seems to me that there is a bit of an asymmetry hidden in Confirmation: Haught understands it only as religion (qua theology) supporting science; “[s]uch an approach does not look for or expect in return any scientific endorsement of religion” (p. 22). It seems, though, that there is nothing in principle ruling out such a return or expectation, and there are clear cases where such a return *is* thought to exist—for instance those who take scientific confirmation of particular claims in the Q’ran to reinforce the truth of Islam () and those who believe Buddhism to be “true” because of its consonance with modern evolutionary psychology (Wright 2017).

I should also note that in addition to the four C’s, Haught also discusses a fifth C, Conflation (see e.g. pp. 13-14, 17), although he does not include this among his main “headings.” Conflation collapses religion and science into one another, as we might see

⁴Or “theology”; Barbour often slips between these two, a frustrating move not uncommon in the literature (see e.g. White 1896, Haught 1995). One also sometimes finds authors conflating theology with religious studies—e.g. Zehnder 2011; Ecklund 2010 finds that some university-employed scientists have this confusion too (pp.).

⁵I should note that in my summaries of these views I have generalized from Barbour’s focus on Christianity, which would otherwise limit the categories to e.g. theistic religions.

in those who claim Buddhism to be a form of science (see, again, Wright 2017; see also Winter 2015 on *Kōfuku no kagaku* and Hubbard 1950/2007 on Scientology) or in those who embrace Science (with a capital S) as their religion (e.g. the Religious Naturalists (Goodenough 1998)). Why Haught holds to a fourfold typology and only implicitly recognizes Conflation is not clear.

In any case, what is common to both Barbour and Haught’s typologies is their orientation towards the *particular relationship* between religion and science: the two relata are in Conflict or are in Contact or what have you. When applied to particular scholars, the typology focuses exclusively on their general conclusion. In a sense, the character of this kind of typology is holistic: religion and science are related *in total* or *all at once* in one way or another.

1.2 Concept-Oriented Typologies

In contrast to these conclusion-oriented typologies are concept-oriented ones. These tend to focus on particular aspects of religion and science and how those particular aspects are related. One might say that concept-oriented typologies are more fine-grained than conclusion-oriented ones.

Drees offers a nine-fold typology in this vein. He begins by canvassing three kinds of “challenges to religion” that have historically been generated by science: those related to new bits of knowledge (like the age of the earth); ones concerning epistemology, or how we understand knowledge (as in the transition from a purely deductive model of science to an inductively-inflected one); and finally ones regarding “our appreciation of the world” (e.g. the emergence of the possibility of a meaningless world) (Drees 1996 pp. 39-41). This trio of challenges is accompanied by three ways of understanding the nature of religion: cognitive (akin to systematic theology), experiential (a la Schleiermacher), and as traditions (which Drees associates with “languages and forms of life”) (Drees 1996 pp. 42-3). By crossing the challenges and conceptions, we obtain a nine-member matrix of “areas of discussion in science-and-religion”. Scholars who engage in a particular area of discussion will thus tend to focus on a particular kind of challenge posed by science to a particular conception of religion—though authors can, of course, engage in multiple areas of discussion at once.

As Drees points out, most conclusion-oriented typologies are focused on “the way cognitive claims in religion (theology) and in science are related”—which is only one “column” of Drees’ taxonomy (see Figure 1). Further, it is not just the typologists who ignore the relevance of the experiential and traditionary aspects of religion, but the scholars being classified themselves; they too tend to focus on one particular aspect of religion *despite* the fact that “debates do not stand in isolation, but require consideration of other views of religion and other views of the challenges” (Drees 1996 p. 45).

So Drees’ typology cross-cuts other conclusion-oriented typologies by slicing along the conceptions of religion (and of science⁶) at play. In fact, Drees claims that Barbour’s

⁶ It is not clear to me why Drees’ “vertical” axis is not “Character of science” rather than “Challenge”—it seems to me as if each challenge is itself picking up on a different aspect of science

Challenge	Character of religion		
	1. Cognitive	2. Experience	3. Tradition
1a. New Knowledge	1a. Content: i. Conflicts ii. Separation iii. Partial adaptation iv. Integration	2a. Opportunities for experiential religion? Religious experience and the brain.	3a. Religious traditions as products of evolution.
b. New views of knowledge	1b. Philosophy of science and opportunities for theology.	2b. Philosophical defences of religious experiences as data	3b. Criticism and development of religions as ‘language games’.
c. Appreciation of the world	1c. A new covenant between humans and the Universe?	2c. Ambivalence of the world and implications for the concept of God	3c. A basis for hope? Or religions as local traditions without universal claim?

Figure 1: Drees’ 3x3 classification of “Areas of Discussion”. Notice how Barbour’s categories are contained within Drees’ matrix. Adapted from Drees 1996 p. 45.

typology can be found distributed within particular areas of his nine-fold typology (p. 45).⁷ In that sense, it is more fine-grained than Barbour’s and Haught’s: religion and science are not related wholesale but along particular dimensions.

An even more sophisticated typology which takes this dimensional approach further is developed by Mikael Stenmark, especially in his Stenmark 2004 and Stenmark 2010. The typology begins with three basic distinctions familiar to conclusion-oriented typologists: religion and science might be entirely separate endeavors, overlap some, or be unified. But Stenmark points out that really quite distinct views are wrapped up in the overlap and unity positions: one might think that there is more or less overlap, or that science wins in the overlap (scientific expansionism) or that it loses (religious expansionism), or that science may come to totally encompass religion (the complete scientific expansionist view), or that science may instead eventually be just a subset of religion (the complete scientific expansionist view) (see especially Stenmark 2004 pp. 251-259).

Further, what is separated/overlapped/unified are often not just single things, Science or Religion with capital S and capital R—these two human endeavors are, after all, not monolithic phenomena but complex social practices. To that end, Stenmark outlines a number of dimensions along which one might evaluate the RSR: the social, teleological (i.e. the goals of the practices), epistemological, and theoretical—though importantly this list is not meant to be exhaustive. Further, within each dimension are wrapped up a number of what one might call sub-dimensions (though Stenmark does not use that

(propositional, epistemic, social). Labelling the axis “Challenge” also seems to belie a latent Conflict thesis in a way that I would think Drees would like to avoid.

⁷Although I agree that Barbour’s typology can be “contained” in Drees’ in this way, Drees seems overly restrictive of that containment. For instance, Barbour’s Conflict is only to be found in the Cognitive-New knowledge area—though it seems clear that there could be “conflict” in any of the three “challenge” rows within the Cognitive column (see, again, Figure 1). In fact, as mentioned in fn. 6, by labelling the rows “challenge”, it seems like Drees is implicitly committed to the possibility of Conflict in *all* areas of his matrix.

phrase). For instance, when thinking of the teleological dimensions of religion and science, one might think at the community level—what religious congregations or groups of scientists aim at achieving—or at the individual level—what particular religious practitioners or scientists seek. And the degrees of overlap may differ along different dimensions as well: one might be a teleological community-level separatist (or “restrictionist”) but a methodological unitarian (an admittedly rather practically implausible position which is nonetheless logically possible).

In all, this highly nuanced typology allows for something on the order of 6^4 possible characterizations of the RSR. Notice that just as with Drees’, Stenmark’s typology cross-cuts conclusion-oriented typologies: those who might have been labeled Conflict theorists (like scientific new atheists and biblical literalists), might be classed as scientific or religious expansionists; or historical interactions between Religion and Science which have appeared to represent Conflict or Harmony (e.g. the Galileo Affair and the early reception of Darwin in England), might instead both be categorized as instances of, say, theoretical overlap. Again, what separates Stenmark’s typology from conclusion-oriented ones is his focus on the particular conception(s) of religion and science at play.

As we will see, I think that concept-oriented typologies are better than conclusion-oriented ones; they are more useful both to scholars and to the publics who consume the scholarly religion-and-science literature. Before arguing for that, however, it will be useful to discuss how typologies are in fact used—or at least expected to be used.

1.3 How Typologies are Used

As I said above, typologies are used—or expected to be used—in two major ways. The first of these uses is what I call “first-order.” Here the goal is to characterize the space of logically possible RSRs and then sort particular religion-science interactions within that space. For instance, in using Barbour’s (fourfold) typology, one might say the Galileo Affair represents a Conflict between religion and science—or conversely one might understand Newton’s career as exemplifying Integration (Iliffe 2017). Were we to use Stenmark’s typology instead, we might say that the Galileo Affair represented a period of epistemological overlap.

That typologies are indeed *expected* to have this use is further demonstrated by the critiques launched against them. Consider, for instance, Cantor and Kenny’s now-famous critique of Barbour’s fourfold typology (Cantor and Kenny 2001). As they explain, “The first point to notice is that these [four options] are the only viable alternatives—the only shows in town—and they must therefore cover all cases” (766): Barbour is interpreted as offering a first-order characterization of how religion and science could possibly be related. But, as Cantor and Kenny argue, this typology over-essentializes the categories of religion and science, presuming that they are diachronically definable and stable concepts. “As historians,” they take grave issue with this presumption: “neither science nor religion (nor the conjunction “science and religion”) possesses clear historical continuity” (p. 771), and thus typologies like Barbour’s are ill-founded. Regardless of whether or not one agrees with Cantor and Kenny’s historicizing criticism, what is clear is that they interpret Barbour’s typology in a first-order manner: if Barbour were not

understood to be specifying the logically possible relations between religion and science, then it wouldn't make sense to problematize the categories "religion" and "science".⁸

Likewise, in a much less antagonistic manner, Jaeshik 2016 objects to the typologies of Barbour and Haught on the basis that they fail to adequately capture how religion and science are understood and related in Eastern Asia. The East Asian context is different in at least three major respects: historically the categories "religion" and "science" were introduced to East Asia by via Western cultural imperialism (see also Josephson 2012); those categories are understood through a nondualistic, Yin-Yang approach/worldview; and East Asian religions emphasize practice rather than "theoretical knowledge" (p. 205). These differences mean that the RSR is understood (according to Jaeshik) in a radically different way in East Asia than in the West. Thus, it is problematic that "typological categories tend to be seen as representing some unchanging reality like a fixed *idea*, rather than as provisional concepts in which the boundaries are loose and flexible" (p. 217)—a tendency that can supposedly be dissolved by adopting an East Asian way of thinking. Clearly this kind of critique is motivated by a first-order understanding of the typologies: they haven't successfully carved out the total possibility space—there are other ways that religion and science might be related, but which have been missed due to cultural assumptions surrounding the nature of religion and science.

In a rather different manner from Cantor and Kenny 2001 and Jaeshik 2016, Latour's critique in his "Thou Shalt Not Freeze Frame" (2010) also belies a first-order conception of typologies. As Bigliardi explains, Latour believes that Barbour and Stenmark have fundamentally misunderstood the natures of religion and science, which leads them to mischaracterize the possible relations between them (Bigliardi 2014 p. 893, 896-7). In particular, the typologists fail to realize that religion and science are simply engaged in different language games, and so there cannot be any real contact between the two: Barbour and Stenmark have thus improperly carved up the space of possible relations—there can be only one (trivial) relationship, not four or more. Again, this kind of criticism only makes sense if we understand typologies in a first-order manner, as speaking about the "on-the-ground" relationship between religion and science, where both are understood as (abstract, perhaps social) objects interacting in the world.

Typologies, however, are used in a second way which tends to avoid the kinds of critiques offered by Cantor, Kenny, Jaeshik, and Latour. In the second-order mode of employment, typologies aim to classify *scholarship* on religion and science as manifesting/representing some particular view of the RSR. That is, rather than focusing on the "actual" RSR itself, these typologies focus on work produced *about* the RSR. Thus, using Barbour's typology, we might classify Galileo himself as a proponent of Dialogue (Blackwell 1991) and out Andrew Dickson White as a supporter of Conflict⁹ (White 1896). Likewise, someone like Stenmark would want to classify scientific materialists like Dawkins as scientific expansionists rather than as "mere" supporters of Conflict.

⁸Stenmark agrees with this first-order critique of Barbour—thus implicitly accepting the first-order use of typologies. He defends himself (or at least tries to) from Cantor and Kenny's historicizing critique by employing a dynamic, multi-dimensional understanding of the RSR (though interestingly not of R and S themselves; 257).

⁹Or, as we will see later (§2.2.1), possibly Dialogue.

This understanding of the use of typologies actually better matches Barbour’s own self-description in *Religion and Science* than the first-order use, for he explicitly admits that “Particular *authors* may not fall neatly under any one heading” (p. 77; my emphasis)¹⁰. He then goes on to sort particular authors according to his headings. In introducing his 3x3 classification scheme, Drees likewise explains, “in practice, most *authors* focus on one area, a single column, or a single row, or at least have a characteristic emphasis there” (Drees 1996, p. 44; my emphasis). We can even understand Drees’ (1996) and Stenmark’s (2004) typologies as directly trying to expand the ways we can classify the scholarship by offering more nuanced niches into which scholars fit.

Likewise, there is a whole industry within the discipline of sorting various historical figures into the Barbourian categories. For instance Arther 2001 tries (and fails) to fit Paul Tilich into the typology; Bigliardi 2012 too attempts (and fails) to fit a host of more-or-less-contemporary Islamic scholars into the categories; Qidwai 2019 does much the same. The examples go on and on.

Just as we saw before, the critiques also highlight the expectation. For instance, Stenmark presumes the second order use of typologies in his critique of Barbour’s Dialogue model. “Irrespective of which of [Barbour’s] science-religion views we hold,” Stenmark explains, “we could argue that its advocates ought to get engaged in a *dialogue* with each other and thus drop the polemics or stop ignoring each other... It is therefore infelicitous to call one science-religion view the “dialogue view” because it is desirable that people—regardless of whether they accept the conflict view, the contact view, or the independence view—should at least sometimes try to become involved in a dialogue with each other and listen carefully to what people with differing views think about these issues.” Stenmark in fact calls on us to “immediately stop talking about a dialogue view” (Stenmark 2004 p. 253; emphasis original). Clearly this kind of talk conceives of dialogue (and possibly contact, overlap, and independence) as a view had by people, rather than an on-the-ground (possible) fact about the RSR. That is, Stenmark, at least in this particular critical passage, understands Barbour’s categories in a second-order fashion: they classify people rather than concepts.

This second-order focus is also evident in his broader critique of Barbour’s typology. Consider, for instance, the case of Dawkins. According to Barbour, Dawkins is a Conflict theorist. But Stenmark points out that Dawkins doesn’t think that *all* of science is in conflict with *all* or religion. Unlike a true (monistic) Conflict theorist like E. O. Wilson, Dawkins doesn’t think science can totally replace religion—religions are supposed to “help us deal with our existential questions and offer us ethical guidelines”, and since Dawkins (according to Stenmark) doesn’t think science can do the latter, he doesn’t believe science can replace religion (ibid. 255-6). Stenmark takes this to show that Dawkins is in fact a proponent of Overlap, not (monistic) Conflict; the realms of religion and science overlap but are not identical. He goes on to point out that other writers similarly fail to fall neatly under Barbour’s headings (see also Stenmark 2010). The point of all this is to show the inadequacy of Barbour’s model in its second-order usage:

¹⁰Barbour in fact cites this same line in defending himself against Cantor and Kenny’s critiques (I. Barbour 2002).

it fails to properly categorize participants in the religion and science literature.

So typologies are used in (at least) two main ways in the literature: to characterize the logically possible space of relations between religion and science and to instead classify the scholarship. Typologies employed in the first-order manner are thus typologies of the RSR; those employed in the second-order mode are instead typologies of scholars' views of the RSR.¹¹ These two uses exist regardless of whether the typology in question is conclusion-oriented or concept-oriented, although concept-oriented typologies are perhaps most naturally used in the second-order way (since they are developed according to the *concepts* of religion and science at play). In the rest of this paper, I will focus on the second-order usage of typologies, which I take to be the more prevalent usage in the field.

2 The Usage of Typologies

In this section, I consider the relative merits of conclusion- and concept-oriented typologies in their second-order employment. I'll start by questioning the use, for both scholarly and public readers, of conclusion-oriented typologies and then discuss some advantages of concept-oriented typologies.

2.1 Issues with Conclusion-Oriented Typologies

Recall that conclusion-oriented typologies all refer to the same thing: the *conclusions* scholars draw about the RSR. But of what use is this kind of typology? That is, in what way is it helpful to class the scholarship in this fashion, typing scholars and their work by their conclusions? One defense, offered by Barbour against Cantor and Kenny, is that such typologies serve a pedagogical function: “typologies might still be useful in introductory courses... Especially in dealing with contemporary thought students need to be aware of a wide range of alternative views that would be difficult to treat... in the time that is usually available” (I. Barbour 2002 pp. 347-48). And indeed, as we saw above with e.g. McGrath, this is how many introductory textbooks, and so presumably syllabi, are in fact structured. But while Barbour may be right that this kind of typology can help widen some student's perspectives, this doesn't seem like an especially compelling reason to accept the typology as the standard for academic, scholarly use—consciousness-raising doesn't seem a proportionate justification for the widespread appearance of Barbour's typology in the scholarly non-introductory literature.

Another reason cited by Barbour is that these kinds of typologies offer maps of the religion-science literature: “... a broad overview of a range of possible relationships can be helpful to readers new to this interdisciplinary field, even though an overview inevitably oversimplifies the complexities of the real world. A guidebook to any territory

¹¹One might think that, somewhat trivially, the second mode of employment is derived from the first: scholars are typed based on their characterization of the religion-science relationship. But this need not be the case; as we will see below in the typology of methods, we have a typology meant to be used in the second-order manner which does not depend or even bear on the possible ways in which the RSR could be configured.

is not intended as a substitute for firsthand exploration but is intended to help people find their way around” (ibid. p. 348). Likewise Stenmark: “the aim of developing a typology is primarily to give a map which sorts out the main positions regarding how to relate science and religion” (Stenmark 2004 p. 262). True enough; the literature is vast and a map/guidebook would surely be useful. But not all maps are useful. Just because one can trace the territory along certain contours does not mean that the resultant sketch will aid you in any way. What I find peculiarly missing is any explanation of how exactly slotting scholars into categories like “Conflict” or “Separation” is actually useful for the scholar. In a sense, conclusion-oriented typologies are almost trivially true: yes, Dawkins is indeed a Conflict theorist and Gould embraces Separation—we can get all that on the first page (or sooner). But so what? What can a scholar (or a lay reader) do with that kind of information?

Barbour draws a more sophisticated justification for typologies comes from the social scientific literature. Citing Weber and others, he points to the idea that classification schemes are useful for highlighting the complexity of individual cases, for only very rarely will a particular case fall perfectly into the scholarly categories. Typologies thus help us to compare individual cases to one another by providing a kind of metric: approximation to the idealized category (I. Barbour 2002 p. 348). Even if this *were* the case, however, it does not appear as if this is how typologies, at least in the religion-and-science literature, are actually used. They are far more commonly used to *eliminate* nuanced differences—as in the case of scientistic atheists and biblical literalists in Barbour’s own system. Of course, Barbour may counter that this is a *misuse* of his typology—but if it is, it is far from clear that he has demonstrated its proper use.

So despite Barbour’s defense, it is not clear of what use conclusion-oriented typologies are, either to the public or to the scholars who encounter and employ them outside of an introductory context.¹²

2.2 Merits of Concept-Oriented Typologies

In this section, I consider two advantages concept-oriented typologies offer to both scholars and lay consumers of the religion-and-science literature: 1) they illuminate ways in which contributions in the field do/do not effectively engage with one another and 2) they can provide a useful guide to the literature for a public with varied understandings of religion and science.

2.2.1 Effective Engagement

Concept-oriented typologies can help illuminate a common problem in the religion-and-science literature: talking past one another. By calling attention to the concepts at play, concept-oriented typologies can help us see when particular authors are effectively engaging with one another—and when they are not. Ideally, effective engagement would involve the same concepts of religion and science being deployed by all involved. Unfortunately, however, this is not the case; the literature is filled with authors with sometimes

¹²That said, we *will* see one possible scholarly use for conclusion-oriented typologies in §4.2

radically different conceptions of religion and science, all of whom take themselves to be discussing the same subject. While in some sense this is true—they are talking about religion and science—it can be misleading since they are often talking about different conceptions, or forms or aspects, of religion and science. But since authors do not typically explicitly state what conception of “religion” or “science” they are working with, it appears to their readers that their discussion is of a single, monolithic entity which is understood in the same way by other scholars, which, of course, is simply not true.

For instance, imagine that someone understands religion (and science) along the “cognitive” line in Drees’ typology—they think that “religion... is an attempt to grasp the true, ultimate nature of reality” (Drees 1996 p. 42). On this basis of this conception of religion (and science), they conclude that the two are incompatible; religion and science employ different methods but aim at the same thing and ultimately, as the philosopher Tiddy Smith has recently said, “the methods of science out-compete the methods of religion” (Smith 2019 p. 1). It seems remiss to object to Smith’s argument by pointing out, like sociologist John Evans, that ordinary folk simply do not conceive of religion (and possibly science) as “knowledge structures,” but rather, see it as a kind of therapeutic experience; they see religion as something *used* rather than something assented to (J. H. Evans 2018 esp. Ch. 5). This objection seems to miss the mark because Smith and Evans seem to be talking about different things: Smith is talking about an intellectualized, scholarly conflict between religion and science while Evans appears to be focused on a more public space. Smith’s retort is easily anticipated: “I am not concerned with what the public think but rather with what religion *truly* is about—at least partially but significantly) knowledge.” Likewise Evans’ response would likely be something like: “But what is most important is the way in which the public understands their religion and its relation to science!” By insisting that they are engaged in the same debate, Smith and Evans would find themselves talking past one another without realizing it; it is only once we take the time to carefully think through the notions of religion and science they have in mind that we can see how the two fail to effectively engage.

Perhaps a stronger example of this comes from the many responses to the Conflict/Warfare theses of Draper and White. Many of the objections stem from assuming Draper and White conceive of religion as a monolithic entity which is in eternal conflict with science—supposedly they support a general, rather than a nuanced, form of Barbour’s Conflict (e.g. Numbers and Hardin 2018). This is perhaps understandable in the case of Draper who titled his book *History of the Conflict between Religion and Science* (1874), but it is a bit more puzzling in the case of White, who writes in the introduction to his *History of the Warfare Between Science and Christian Theology*, “[Draper] regarded the struggle as one between Science and Religion. I believed then, and am convinced now, that it was a struggle between Science and *Dogmatic Theology*” (White 1896 Introduction; my emphasis). Indeed, White takes great pains to clarify that his opposition is to *systematic/dogmatic theology*, not religion itself—in fact, White understood his work as helping to *strengthen* Christian religion by detailing the negative impacts of theology on “true” religion: “Thus, in this field (Geography), from the

supremacy accorded to theology, we find resulting that tendency to dogmatism which has shown itself in all ages the deadly foe not only of scientific inquiry but of the higher religious spirit itself, while from the love of truth for truth's sake, which has been the inspiration of all fruitful work in science, nothing but advantage has ever resulted to religion" (ibid. Ch. II P. V).

Even in the case of Draper, however, it is far from clear that he also embraced a broad form of Conflict, assuming that *religion*—rather than some particular form of it—is opposed to science as a whole. For instance, Draper gives a rather rosy account of the relationship between Islam and science (Draper 1874 Ch. IV), and shows great enthusiasm for emanationist versions of Christianity (ibid. Ch. V). Scholars have thus more recently come to understand Draper as employing “religion” as a front for “Catholicism,” hence understanding his argument as concerning not religion as a whole but instead the Catholic Church in particular (Ungureanu 2019 p. 12).

As Ungureanu points out, the more specific conceptualizations of religions used by Draper and White is ironic since “the actual conflict Draper and White envisioned is remarkably similar to how such historians have sought to redefine the idea of “warfare” or “conflict” between science and Christianity as one *within* religion” (ibid. p. 13; original emphasis). Recognizing the particular conceptions of religion Draper and White had in mind threatens to disrupt the many historical objections that have been raised against the two. For instance, the rather common practice of pointing to religious scientists (past and present) as problem cases for Draper and White’s Conflict thesis¹³ lose their teeth once it’s realized that they object not to religion no matter its manifestation but instead one particular form of it—Catholicism or dogmatic theology.

Had scholars instead thought of Draper and White through the lens of a concept—rather than conclusion-oriented typology, perhaps they would have avoided this mischaracterization and thus engaged more engaged with the actual arguments of these 19th century figures. By calling our attention to the particular concepts in use, concept-oriented typologies help us understand when different scholarly works are actually relevant to one another’s theses—something we might miss by focusing overmuch on the conclusions those scholars reach.

2.2.2 A Guide to the Public

Another virtue of a concept-oriented typology is the guidance it can offer to members of the public (and also to scholars) in navigating the truly vast literature on the RSR. The main idea behind this kind of guidance is simple: it is likely that the works which will be most relevant to readers will be those which employ understandings of religion and science similar (if not identical) to those of the reader. The typology highlights the particular conceptions of religion and science in a particular work, so we can easily (we hope) sort through the literature to find what is likely to be most relevant for our reader. The guidance scheme would then look like this: “If you conceive of religion in way X, and science in way Y, then read works A, B, C...”

¹³E.g. Qidwai 2019; Iliffe 2017.

Imagine, for example, a freshman biology major visiting their professor in office hours. They explain that they grew up an Evangelical Christian but have recently heard that there is some kind of conflict between religion and science—in particular biology—and they are concerned: “Can I flourish as a Christian biologist?” Supposing the professor would like to help this student on their journey, and supposing she would like to direct the student to the literature rather than try to convince them of some particular view directly, how should she form her recommendations? According to the guide offered by concept-oriented typologies, she should proceed by considering how this student conceives of religion and science, or ask “what conception(s) of religion and science are relevant to your situation?”

Perhaps our student is more disposed to understanding (their) religion as a “personal relationship between themselves and God”—more along the lines of Drees’ “experiential” conceptions of religion. In that case, the guide would recommend biographies like Iliffe 2017 and Hunter 2010 over, say works like Dennett 2006 or Plantinga 2011 which take a much more intellectualized, “cognitive” approach to religion. On the other hand, if our student *is* worried about what appears to them to be a difference in epistemic standards between religion and science, then Dennet and Plantinga *would* be better recommendations.

Thus, concept-oriented typologies can be useful to the public: they can be used to generate guides for navigating the vast religion-and-science literature. This is something the conclusion-oriented typologies of Barbour and Haught cannot do; they are simply too coarse-grained. Further, even if such typologies became *more* fine-grained, more nuanced, it is unlikely that the guides they produced would be desirable—confining recommendations to views of the RSR the reader already accepts seems at best stifling, at worst nefarious; presumably a map ought not generate an echo chamber.

So, concept-based typologies like Drees’ and Stenmarks’ are on the right track in analyzing scholars and their scholarship in light of more than their conclusions—they offer both scholarly insight and guidance for the public readership. But we can go further. For scholars and pieces of scholarship differ not just in their conclusions—and their emphasis on particular “dimensions” of religion and science—but also in the methods they employ to reach their conclusions and analyze those dimensions.

3 A Typology of Methods

In this section, I develop a further kind of typology, one that is based not on the (possible) RSRs, whether in the broad conclusion-oriented manner of Barbour and Drees or in the more particular concept-oriented manner of Drees and Stenmark, but rather on the process by which religion and science are related. It is thus not relationship-based but “relating-based”. This kind of typology is thus essentially of second-order use: it classifies scholars and scholarship rather than the “on the ground” RSR.

Relating-based typologies build on some of the insights behind concept-oriented typologies: they demand greater attention to the ways in which scholars frame their en-

trance to the discussion of the RSR. Relating-based typologies, however, focus on the arguments scholars employ, not just the concepts they use. The particular relating-based typology I develop here is methods-oriented—it focuses on the general form of argument scholars use, highlighting the kinds of evidence they take to be significant. A summary taxonomy of typologies in religion and science can be found in Figure 2.

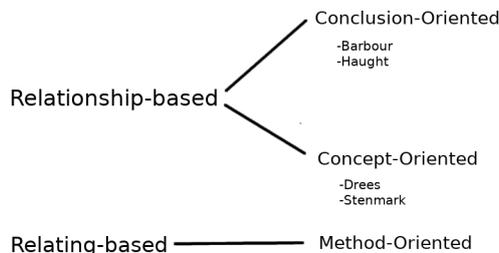


Figure 2: A taxonomy of typologies in religion-and-science

In what follows, I outline four main methods which are widely used in the religion and science literature and with which I believe that literature can be usefully typed. I should emphasize that I am not setting out all the logically possible methods scholars may use—I am only trying to provide a general way of divvying up the literature, one which both captures significantly differing features while not becoming overly complicated—the typology ought to be usable. Further, authors can, of course, use several (perhaps all) of these methods—both across their careers and within particular works¹⁴. However, I think that many scholars and most scholarly works tend to employ one of these four methods at least a majority of the time.

I should also note two more things. First, although the methods sketched below derive from and are most often used by those housed within particular disciplines (e.g. the method of case studies is largely used by historians), they are by no means limited to those disciplines. For instance, although conceptual analysis may most naturally find use among philosophers, it is also used by anthropologists like James Frazer (discussed below).

Second, this taxonomy cross-cuts Relationship-based typologies like Barbour’s: if one so wished, one could classify a scholar who employs the method of case studies as a proponent of Conflict (for instance White 1896), while another supporter of Conflict could make use of conceptual analysis (for instance Smith 2019). As I shall argue in §4, however, I believe that typing scholars according to the methods they use rather than the particular position they support or the concepts they employ is more illuminating

¹⁴McGrath offers a nice example of this kind of methodological blending. For instance, in his *Twilight of Atheism* (2004), McGrath mostly employs the method of case studies to refute Dawkins’ claims about science (p. 95), while in *Dawkins’ God* (2005), he instead takes a more conceptual analytic approach (p. 53). In other works, like *The Foundations of Dialogue in Science and Religion* (1998), we find a blend of historical case studies, historicizing moves, and also sociological studies all employed to demonstrate the complementarity of religion and science—likewise in the much more recent *The Territories of Human Reason* (2019).

and ultimately useful—to both other scholars and to those members of the public who often consume this kind of literature.

So, the methods.

3.1 Conceptual Analysis

A common way of determining the relation between religion and science is via conceptual analysis. Conceptual analysis, of course, has been conceptualized in a wide variety of ways. For my purposes, what I mean by the method of conceptual analysis in religion and science is this: one first determines the definitions of “religion” and “science”, and then one logically deduces their relationship on the basis of those definitions.

We see this method employed by, for example, Stephen J. Gould: science and religion are both human endeavors, but they have very different “magisteria.” In fact, those magisteria are so different that they do not overlap—and thus there can be no conflict between them (Gould 1998). Reaching a very different conclusion using the same method is Tiddy Smith: religion and science do in fact overlap in their explanatory target (the world and its happenings), but they employ radically different epistemologies—religion makes use of highly individualistic evidence while science respects only intersubjective evidence. Given this, the two inevitably wind up in conflict (Smith 2019). Yet again, Alvin Plantinga reaches a conciliationist view through conceptual analysis: “there is superficial conflict but deep concord between science and theistic religion, but superficial concord and deep conflict between science and naturalism” (Plantinga 2011). He gets to the concord by characterizing science as a particular kind of enterprise which requires that: 1) the world be regular, predictable, and constant (in its operations) and 2) we as humans/scientists believe in that regularity (ibid. pp. 282-3). Since “theistic religion” gives reason to expect 1) and 2) (due to the nature of God and humans being created in His image), science and (theistic) religion are compatible. In a somewhat similar vein, Wright tries to show that Buddhism just *is* a particular kind of science, based on a certain narrow definition of Buddhism as a set of meditative practices aimed at distancing the self from emotional and material constraints (Wright 2017).

It should be pointed out that the particular way in which a conceptual analysis is conducted may vary greatly between scholars. One might, like Tolstoy (Tolstoy 1879/1987; Tolstoy 1902/1987), simply intuit the notions of religion and science *a priori*. On the other hand, one could instead arrive at conceptions of religion and science more empirically: James Frazer, for instance, does this in his famous and widely-influential *The Golden Bough*: that religion makes appeal to Wills/agents while science appeals to regular Laws is a conclusion (supposedly) reached by induction over many cases (Frazer 1922, Ch. 4). So too Dawes 2021 arrives at conceptions of science and of religion via this kind of method. But regardless of how they determine the definitions of “religion” and “science”, the above authors all arrive at their characterization of the RSR by comparing the definitions. This is the method of conceptual analysis.

3.2 Case Studies

Perhaps the *most* common method employed in the literature, however, is what I'll call the method of case studies. Here, rather than comparing definitions, one performs a kind of induction over some number of historical episodes of religion-science interaction. The goal is that such an induction will reveal the RSR.

Exemplars of this method go back to the very history of the religion-science discipline: the works of Draper and White. In their now rather infamous histories, Draper and White enumerated dozens (perhaps hundreds) of historical episodes (some, of course, fabricated), on the basis of which they made claims like: “The history of Science is not a mere record of isolated discoveries; it is a narrative of the conflict of two contending powers, the expansive force of the human intellect on one side, and the compression arising from traditionary faith and human interests on the other” (Draper 1874, Preface)¹⁵.

Working at a perhaps more modest scale, historians like David Hollinger and Marwa Elshakry have pushed for Harmony on the basis of their studies of 20th c. Jewish scientists (Hollinger 1996) and the reception of Darwin in Islamic cultures (Elshakry 2013).

These kinds of “positive”, or “constructive” inductive projects can be contrasted with more “negative” projects of a “debunking” nature. Indeed much of the historical work from the past five decades has focused on debunking the narratives of the classic Conflict theorists (Lightman 2019 calls it “myth-busting”). Ronald Number’s aptly-named *Galileo Goes to Jail and Other Myths about Science and Religion* (2009) is representative, as are the revisionist accounts of the Galileo Affair by Heilbron 1999 and religious biographies¹⁶ of eminent scientists—like Iliffe 2017’s *Priest of Nature: The Religious Worlds of Isaac Newton*. In all these cases, particular historical episodes or thinkers are consulted to make a broader claim about the RSR: it *should* or *shouldn’t* be characterized in such and such a way.

3.3 Historicizing

A closely related, but I think quite distinct, method is what I will call the “historicizing” method. While the method of case studies engages with historical actors and their actions themselves, the historicizing method operates at a different level. The general idea is this: take the concepts “religion” and “science” at use by authors today—deconstruct them through historical analysis (how did they come to have the meanings they have today?)—now return to the modern discourse and problematize it by indicating that one cannot provide a universal, diachronically stable characterization of the RSR.

This method has its roots in the work of John Hedley Brooke (especially 1991), in some sense the originator of the “Complexity Thesis.” But I think the approach is best exemplified in the work of Peter Harrison, especially in *The Territories of Science*

¹⁵See White 1896, p. for a similar sentiment

¹⁶Cantor and Kenny cite biography as a genre/method of particular importance (Cantor and Kenny 2001 p. 779). I take biography to be one form that the method of case studies can take: the case study is the life of a scientist, or an episode in their life, rather than a broader group/societal experience.

and Religion (2015), wherein he demonstrates how various socio-historical contingencies from the sixteenth century til now set the parameters for how we in the West understand the RSR. Had things turned out differently (e.g. had the Protestant Reformation not happened or Aristotelian virtue ethics been maintained), had our notions of “science” and “religion” had slightly different forms, we may not have even been able to conceive of religion and science as being related in one of the four Barbourian ways. James Ungureanu’s recent work (Ungureanu 2019) likewise highlights how the notion of conflict between religion and science emerged from a very particular socio-historical moment in 19th c. Victorian England.¹⁷

Another good example of this method is found in Jason Ānanda Josephson’s *The Invention of Religion in Japan* (2011). Josephson contends that prior to the Meiji Restoration and the US’ forceful “opening” of Japan’s ports, there was no native Japanese conception of religion—or of science. Instead, this concept was invented (quite explicitly) by a number of scholars and political figures in order to appease the foreigners’ demand for “religious freedom”: what they found was that “religion” was simply Christianity (Josephson 2012 p. 78-79, 92)—which itself was understood as a heretical form of Buddhism (ibid. pp. 22-23, 84)! The moral of the story (if taken to heart) for the RSR is that we ought not generalize our characterization of it temporally or spatially; the things related are radically different in different times and places¹⁸.

3.4 Fieldwork

The final method I consider is really more of a set of methods drawn from the social sciences, and which I broadly call “fieldwork.” This embraces methods such as survey work, interviews, and ethnographies. What distinguishes these methods from the above in the religion and science literature is their explicit focus on the “everyday,” quotidian concepts of “religion” and “science”. The essential idea behind fieldwork is that the proper characterization of the RSR is to be found reflected in the responses or actions of everyday, ordinary scientists and religious folk.

The classic example of this is Leuba’s (1916) survey of those listed in the *American Men of Science*, a directory of scientists first produced in 1906, with a second edition released in 1910¹⁹. Observing that only 31.6% of the “greater men” (marked as “eminent” in *American Men of Science*) among his sample indicated belief in a prayer-granting God²⁰, Leuba claimed a basic incompatibility between religion and science, anticipat-

¹⁷See also Turner 1978. Although Turner cites sociological data, note that his conclusion about the RSR (that it ought not be characterized by (simplistic) Conflict) is outside the data: he does not claim that the proper characterization of the RSR is reflected by the sociological data. For this reason I classify scholarly works like Turner’s as historicizing rather than instances of fieldwork.

¹⁸See e.g. Lopez 2008 and Jaeshik 2016 for similar historicizing arguments about the RSR in East Asia.

¹⁹Leuba does not state which edition he used for the study, but it must have been one of the first two; the third edition was published in 1921.

²⁰The options listed were the following:

1. “I believe in a God in intellectual and affective communication with man, I mean a God to whom one may pray in the expectation of receiving an answer. By “answer,” I do not mean the

ing that future scientific communities would be even less religious. Leuba-esque studies have been repeated several times in the intervening century-plus, with varied interpretations (Larson and Witham 1997; Larson and Witham 1998). A much more complex instance of fieldwork can be found in the work of Elaine Howard Ecklund, sometimes in collaboration with Christopher Scheitle. In addition to surveying hundreds of academic scientists and everyday religious folk, Ecklund has also performed an extensive sleuth of interviews with such scientists and immersed herself in various religious communities across the United States.

4 Virtues of a Typology of Methods

Above, I critiqued the usefulness of conclusion-oriented typologies to both scholars and lay readers of the religion-and-science literature. Concept-oriented typologies, however, *are* useful to both audiences. The typology of methods just sketched carries those same advantages, but does so in a slightly different way from concept-oriented typologies. In this section, I return to the two advantages sketched in §2.2 and show how a typology of methods also manifests those virtues. I also discuss another merit of a typology of methods not shared by concept-oriented typologies: its provision of a possible explanation as to why some scholarly works experience more public uptake than others.²¹

4.1 Virtue I: Illuminate Effective Engagement

As with concept-oriented typologies, a typology of methods has the major virtue of illuminating how particular works engage, or fail to engage, with one another—and can help point to how to most effectively engage with others. By calling explicit attention to the methods used by scholars, the typology encourages us to address the *arguments* rather than the conclusions found in the works to which we respond. The different methods outlined above clearly employ different kinds of evidence—for instance the method of case studies does not rely on the first-hand reporting of everyday laypersons, as does fieldwork. To try to use fieldwork-based evidence against a scholar employing the method of case studies is thus illegitimate.

This kind of talking past one another, however, is all too common in the literature. Consider, for instance, some of McGrath’s early responses to Dawkins (briefly discussed in fn. 9 above). In *The Twilight of Atheism* (2004), McGrath counters Dawkins’ claim that science and religion have distinct methodologies (one uses faith, the other does not) by employing historical case studies of religious scientists (p. 95). But Dawkins reaches

subjective, psychological effect of prayer.

2. I do not believe in a God as defined above

3. I am an agnostic.” (Leuba 1916 pp. 224-225)

In his results, Leuba combined respondents indicating 2 or 3 as “unbelievers” in contrast to those “believers” indicating 1 (ibid. p. 250).

²¹Of course, further work on typologizing by method needs to be done in order to more fully flesh-out these advantages/virtues.

his conclusions via conceptual analysis, which offers an “easy” out: perhaps McGrath’s religious scientists are simply mistaken about the nature of religion and science, and thus are not good judges of their relationship. Regardless of whether we agree with Dawkins’ analysis of “religion” and “science,” we can see that no matter how that analysis goes, he could always evade McGrath’s criticism in the same manner.

On the flipside, we could imagine a conceptual analytic attack of a case-studies-based characterization—which we perhaps have in the case of Latour’s critique of Barbour’s support for Integration. In defense, someone like Barbour could simply say that the analysis performed is clearly mistaken—look at the case studies!

What these two back-and-forths indicate is that there are really different conversations going on on each side. Because the sides employ different methods, they have different standards of evidence which happen to be mutually incompatible. To employ a different method in refutation of another is simply to preclude the opponent at the outset rather than engage with them. We see this perhaps most starkly in the case of historicizing vs the method of case studies: if we fully embraced the historicizing method and all its implications, then we would not even permit the lumping-together of distinct historical episodes to form the base for a case-studies induction.²²

In fact, the dangers of talking past one another as a result of different methodologies are already sometimes highlighted in the literature. Tiddy Smith, for instance, recognizes this potential issue in his recent *The Methods of Science and Religion* (2019). Right at the start, he clarifies that he is speaking of an *epistemic* conflict between religion and science, not an historical one:

... I will argue in the course of this book that the conflict between science and religion is quite real, and further, that the conflict has a clear victor. The methods of science out-compete the methods of religion. I must emphasize from the outset that I do not dispute what has already been said by [historians]: the *historical* relationship between science and religion has been complicated... But this book is not about history. This book is about epistemology: the theory of knowledge. And the questions that this book seeks to answer are primarily about knowledge, not history. (Smith 2019 p. 1)

The message is clear: it is simply not relevant to bring up historical case studies as objections to Smith’s account—religion and science are here understood as particular kinds of intellectual endeavors employing particular kinds of evidence to explain particular, *overlapping* classes of phenomena, and thus are by very definition bound to conflict with one another, at least at some point (and in such a way that science will always come out on top). By drawing our attention to the scholarly methods used in favour of a particular characterization of the RSR, a typology of methods can thus help determine what kinds of objections will be relevant to particular authors and their works.

²²Oddly this tension between historicizing and the method of case studies has not, to my knowledge, been acknowledged in the field—and very often historians, especially, are quick to endorse both simultaneously (in particular as ways of criticizing the Conflict Thesis; see e.g. Lightman 2019, pp.5-6).

4.2 Virtue II: Public Uptake

Straddling the line between a scholarly and a public-facing virtue is a methods-oriented typology’s advice for the untangling of one particular puzzle: why do certain works on the RSR receive more public uptake than others. The historian Ronald Numbers complains of this very thing in light of the prevalence of the Conflict thesis, “Four or more decades of revisionist scholarship has not trickled down very far into popular culture, especially in North America and Western Europe” (Numbers 2019). This puzzlement is echoed by several others in the field (Jeff Hardin 2018).

To explain why particular works, especially those that support Conflict, have a stronger hold on the public imagination, a number of explanations have been proposed. One is rhetorical: many of the works supporting the Conflict thesis are polemical, and as we know, polemics sell. It’s not difficult to find examples; open Harris’ *The End of Faith* (2004) and you’ll find blatant Islamophobia within two pages—and you don’t even need to open Dawkins’ *The God Delusion* (2006) to understand the tone within. Likewise, Rodney Stark’s works are both polemical and widely read, though he is an advocate of Harmony not Conflict (see e.g. Stark 2003). But rhetoric by itself can’t explain why these particular works are New York Times Bestsellers—one can find polemics almost everywhere in the religion-and-science literature; people engage in the topic because they care incredibly deeply about the members of the RSR, which almost certainly guarantees a substantial amount of fiery language.

So rhetoric alone can’t be the full story; the content itself must also be relevant, if the sales charts and narratives in popular media are anything to go by. In this vein, several recent scholars have suggested that particular religion-science narratives (especially Conflict) play into larger public/political social narratives, and because of this cozy connection they are absorbed and perpetuated (Harrison 2015; J. H. Evans 2018; Numbers 2019). This kind of thinking can make sense of the popularity of works like Hitchens, Harris, and Dawkins which are explicitly Islamophobic—they were all published in the aftermath 9-11.

Focusing on political context has a further advantage in that it can also go some way in explaining smaller-scale trends—like the popularity of Plantinga Rodney Stark’s relatively good sales among Evangelicals. These works, which argue against the Conflict Thesis in favour of something like Harmony, appeal (as we’d expect) to particular segments of society.

Note that the narrative focus is actually derived from conclusion-based typologies: such a taxonomy provides the categories by which we distinguish the narratives. In that sense, conclusion-based typologies *do* have a scholarly use; they can help us address the question of public uptake.

But narrative paired with political context doesn’t prove very satisfactory in explaining why only particular works get traction—why Dawkins and not Yves Gringas? And it doesn’t explain why, despite the emergence of the Christian Right, authors like Harrison and Numbers—or even the more polemical Plantinga—haven’t entered the public limelight in the same way as their new Atheist predecessors, even in religious circles.

We might expect a more nuanced view to be provided by concept-oriented typolo-

gies, which, again, draw our attention to the particular ways in which scholars construe religion and science. Perhaps the understanding of religion, and of science, offered by more popular authors is simply more consonant with the conceptions held by their lay readers. Thus, for instance, maybe Dawkins is so popular because he speaks to a form of religion and a form of science that is easily accepted by the lay public—whereas a work like Peter Harrison’s *The Territories of Science and Religion* (2015) gets much less publicity because it explicitly tries to explode the everyday concepts of religion and science.

While it might be the case that Harrison’s project is too far from public conceptions for it to catch on, ultimately I think this approach to the question of public uptake is a dead end. An issue that focusing on the concepts of religion and science at play runs into is the fact that most of the popular scholarly literature conceives of the two along cognitive/epistemic lines. Dawkins, for instance, thinks of religions as processes of learning about the world in a manner parallel to the sciences (and he thinks treating them as such means he takes them seriously; Dawkins 1995 pp. 46-47). But it seems unlikely that this is really the conception of religion shared by many members of the public (J. H. Evans and M. S. Evans 2008; J. H. Evans 2018)—though further research on this matter is surely required (perhaps, for instance, though this is not the concept held by religious individuals, this *is* the conception held by non-religious folk, or by folk that have been sufficiently socialized within secular academic spaces). Thus, it just does not appear to be the case that focusing on the conception of religion (or science) at play will be useful for explaining the differential popularity of scholarly works.

On the other hand, a typology of methods *does* provide a fruitful take on the issue. Parallel to the schema derived from concept-oriented typologies above, the idea is simple: some methods are easier to understand, follow, and digest than others. The historicizing method, in particular, is itself quite complex, and doesn’t lend itself easily to public exposition or, when that is achieved, to uptake. Other methods, however, *are* more liable to absorption by the public. At least some forms of conceptual analysis, for instance, are amenable to sloganization—“Science uses Reason, Religion uses Faith”—which can help their conclusions stick. Likewise, the narrative style employed by some instances of the method of case studies lends itself to public remembrance: who can forget the great struggle between Galileo and the Church or the burning of Bruno?

Notice that, this is a distinct way of approaching the issue from that suggested by concept-oriented typologies. Its explanatory power comes from the way various publics digest information rather than on their particular conceptions of religion and science. The sociological data which poses a stumbling block for concept-focused explanations is thus inapplicable to this methods-focused explanation.

Much work, of course, is still to be done in exploring exactly how this methodological strand of analysis can contribute to resolving the question of public uptake—and surely in the end it isn’t just method or rhetoric or politics²³, but a blend of all which do the explaining. I think, however, focusing on how the methods used appeal/fail to appeal

²³I should also point out that the slowness/reluctance of high school history and social science textbooks to change their presentation of the RSR (especially in their characterization of the Enlightenment) is also surely relevant (see Aechtner 2019 for more on this strand).

to particular publics can offer fruitful insight into the issue.

4.3 Virtue III: Guide for the Public

A typology of methods' greatest strength, I believe, lies in its ability to provide a guide to the public in navigating the literature. We saw above that concept-oriented typologies do this by asking what concepts of religion and/or science the subject has and directing them to literature which employ those same conceptions. In this way concept-oriented typologies can help consumers (scholarly or not) find work that is actually relevant to them. A typology of methods can provide a similar guide, but one that is, I think, even more useful to the subject.

A methods-oriented guide builds off the idea that different methods are likely to appeal to different readers. Now, it's important to note that the consumers of the religion-science literature are incredibly diverse. Readers have all kinds of different reasons for delving into the work on the RSR: some seek ways to defend their faith, others seek ways to attack others' faith; some have purely academic interests in the RSR, others a much more personal investment; some are embedded in a particular faith tradition, others are not. And the particular set of circumstances which lead readers (and researchers) to the literature contribute to the kinds of evidence they will find relevant (and convincing). Since different methods employ different kinds of evidence, it follows that the different methods will be more or less equipped to deal with different particular readers' concerns/interests in the RSR. By isolating what kinds of methods are best suited to which kinds of concerns, a typology of methods can thus help direct members of the public (and scholars!) to those works which would be most relevant to them. Schematically, the guidance would look like this: "Readers with concerns X should read works Y and Z because they use method A."

This focus on values rather than concepts results in real, pragmatic differences. Recall, for example, the case of the freshman biology student who has grown up in a relatively conservative Evangelical Christian faith community. They are interested in evolutionary biology but have also heard rumors that such a field is in deep conflict with their faith—and so they wonder whether they can flourish as both a biologist and a Christian. What kind of guidance could a typology of methods give? It might well be that what concerns this student the most is whether they can fit themselves into a narrative of religious biologists (or religious biology). Given that, it would make sense to direct them to the case-study literature, perhaps to the work on Darwin's reception in Victorian England and in the US (e.g. *Post-Darwinian Controversies*)—rather than to historicizing work like Harrison's, or even conceptual analytic work like Plantinga's, our student may find too abstract. Likewise, this kind of student might be interested in how they will be treated as an academic biologist who is also a Christian, in which case fieldwork-esque studies will be the most relevant.

Now consider a case with broader social implications: a politician navigating her, say Muslim, constituents' opposition to stem cell research. The politician in this, say, case wants to understand the root of the opposition, and thus find ways of defusing it or communicating it to their colleagues. Here, again, fieldwork studies, like the work

done by the Pew foundation (*Public Praises Science; Scientists Fault Public, Media* 2009; Johnson, Thigpen, and Funk 2021) or Everhart’s study of Muslim physicians (Everhart and Hameed 2013), will be more appropriate rather than historical case studies or conceptual analyses.

Note the difference in how this case is treated by a methods-oriented guide rather than a concept-oriented guide. Using concepts, we would ask after the politician’s conceptions of religion and science, or perhaps about their constituents’ notions. But it’s easy to see how this might not lead to a result that is actually *useful* for the politician. For suppose that both the politician and her constituents understand religion and science as competing forms of knowledge production about the natural world. We would then suggest that she read works from, again, T. Smith and Plantinga. But it is not clear how those works would lend themselves to actionable recommendations for the politician’s actual situation: how does it help to know that indeed the methods of science out-compete the methods of religion or that true science is really compatible with true religion? Would this help our politician address or even make sense of her constituent’s concerns? Instead, fieldwork studies which indicate how lay religious folk actually interact with science seem to be more likely useful—regardless of her own understanding of what religion and science are²⁴. Such studies can give the politician a better sense of what is “really” at issue in Muslim opposition to stem cell research because it builds on actual studies of on-the-ground individuals rather than abstract, idealized concepts.

In the above cases, we have seen a constant recommendation against the use of conceptual analytic works. This is an artifact of the examples, not an indication of the methods-oriented guide’s fundamental opposition to conceptual analysis. Consider, for instance, a Buddhist apologist in the West. To the extent that they see a need for legitimizing their religion in a Christianity-dominated society, such a person might indeed find the conceptual analytic literature more relevant. If it is indeed the case that religion, and Buddhism in particular, is such-and-such a thing, and that it is in fact compatible with science (as properly understood as such-and-such), then that seems to be a strong reason to take Buddhism seriously (given that we take science seriously). Likewise, if it is actually the case that Buddhism is a *type* of science (c.f. Wright 2017), then this is even better fuel for the apologist.²⁵

Again, notice that this recommendation side-steps the concepts of religion and science that the apologist holds and instead cuts directly to their values and situation. The question the methods-oriented guideline asks is “What are you trying to do with religion-and-science?” rather than “How do you understand ‘religion’ and ‘science’?” And in fact asking this latter question is *irrelevant* to the apologetic purpose of the Buddhist. It *might* be relevant to understand how their opponent conceives of religion and science. However, if their opponents are a diverse bunch, with many conceptions of religion and science present, then the recommendations from a concept-oriented guide will quickly

²⁴In a sense we might say that the politician’s conceptions of religion and science are irrelevant to the issue at hand; what matters is how her constituents relate the two in their actual lives.

²⁵Historically, this use of conceptual analytic studies has in fact been a strategy employed by Buddhists to resist Christian colonizers and to win legitimacy for the religion worldwide (see especially Lopez 2008)

get out of hand: read everything!

Thus, although concept-oriented typologies are also able to generate guides to the religion-and-science literature for the public, method-oriented typologies do it better.

5 Conclusion

In this paper, I have done three main things. First, I proposed a taxonomy of typologies in the religion-and-science literature: some are conclusion-oriented while others are concept-oriented. I then considered the ways in which typologies are used—as first-order classifications of the RSR and as second-order taxonomies of scholars and their works regarding the RSR—and critiqued conclusion-oriented typologies for failing to be useful, especially in their second-order usage. Second, I proposed a different kind of typology, one based on the methods used by scholars in their studies of the RSR. Finally, I discussed the merits of this kind of typology.

I should emphasize that my goal in outlining this typology has not been to argue in favour of any one of the particular methods. As discussed above, the different methods have their different uses: depending on one's reasons for entering into the religion and science literature, one will find particular methods more or less useful. Perhaps the worried student finds solace in case-study biographies; perhaps the politician is better helped by fieldwork; and perhaps the apologist (or the philosopher) is more interested in conceptual analysis. For what it's worth, I tend to find the class of methods I've headed under "Fieldwork" to be the most relevant; I come to the literature interested in relatively mundane issues related to religious tolerance—what matters most to me is what "everyday" people think *now* regardless of how odd I think their conceptions of "religion" or "science."

I should also reiterate that my typology of methods is not meant as a *replacement* for relationship-based typologies, whether they be conclusion-oriented like Barbour's or concept-oriented like Stenmark's. This is so for two reasons. First, these different typologies cross-cut one another; they are often mutually compatible. If one so wished, one could find Conflict theorists within the category of Conceptual Analyzers just as much as they could find Historicists within the category of Neo-Harmonists. But second, a typology of methods, in virtue of being a relating-based typology, is focused only on classifying scholars (or other authors) and their works. Relationship-based typologies can also be used in the first-order way as a means of categorizing ways in which the RSR could be itself configured. Relating-based typologies simply cannot do this; they are not typologies of the RSR, but of those who discuss the RSR. In that sense a typology of methods cannot *replace* relationship-based typologies; their uses are not identical.

However, I do believe, and have argued above, that a typology of methods is more useful than relationship-based typologies (or at least the ones currently on the table) when it comes to the second-order use which, again, I think is the most common use of typologies in the religion-and-science literature. Like conclusion-oriented typologies, method-oriented typologies can help explain why certain pieces of scholarship receive more public attention than others. Further, a typology of methods can, like concept-

oriented typologies, help to highlight effective engagement—and thus also guide scholars in figuring out how to effectively engage with their colleagues—and also guide the public through the vast literature in a way that prioritizes the public’s values. And, I have argued, a typology of methods does these things *better* than a concept-oriented typology. Thus, the typology sketched here possesses the best of both relationship-based typologies.

References

- Aechtner, Thomas H. (2019). "Teaching Warfare: Conflict and Complexity in Contemporary University Textbooks". In: *Rethinking History, Science, and Religion: An Exploration of Conflict and the Complexity Principle*. Ed. by Bernard Lightman. University of Pittsburgh Press.
- Arther, Donald E. (2001). "Paul Tillich's Perspectives on Ways of Relating Science and Religion". In: *Zygon* 36.
- Aukland, Knut (2015). "Is the Earth round? Traditional cosmography and modern science in Jainism". In: *Asian religions, technology and science*. Ed. by István Keul. Routledge.
- Barbour, Ian (2002). "On Typologies of Relating Science and Religion". In: *Zygon* 37.
- Barbour, Ian G. (1997). *Religion and Science: Historical and Contemporary Issues*. Harper San Francisco.
- Berg, Christian (2004). "Barbour's Way(s) of Relating Science and Theology". In: *Fifty Years in Science and Religion: Ian G. Barbour and His Legacy*. Ed. by Robert John Russell. Ashgate Publishing.
- Bigliardi, Stefano (2012). "Barbour's Typologies and the Contemporary Debate on Islam and Science". In: *Zygon* 47.
- (2014). "Testing Latour's App: A User's Guide". In: *Zygon* 49.
- Blackwell, Richard J. (1991). *Galileo, Bellarmine, and the Bible*. University of Notre Dame Press.
- Cantor, Geoffrey and Chris Kenny (2001). "Barbour's Fourfold Way: Problems with his Taxonomy of Science-Religion Relationships". In: *Zygon* 36.
- Copan, Paul and Christopher L. Reese, eds. (2021). *Three Views on Christianity and Science*. Zondervan Academic.
- Dawes, Gregory (2021). *Deprovincializing Science and Religion*. Cambridge Press.
- Dawkins, Richard (1995). "A Reply to Poole". In: *Science and Christian Belief* 7.
- Dennett, Daniel C. (2006). *Breaking the Spell: Religion as a Natural Phenomenon*. Penguin Books.
- Draper, John William (1874). *History of the Conflict between Religion and Science*. URL: <https://www.gutenberg.org/files/1185/1185-h/1185-h.htm>.
- Drees, Willem B. (1996). *Religion, Science and Naturalism*. Cambridge University Press.
- Ecklund, Elaine Howard (2010). *Religion vs. Science: What Scientists Really Think*. Oxford University Press.
- Elshakry, Marwa (2013). *Reading Darwin in Arabic, 1860-1950*. The University of Chicago Press.
- Evans, John H. (2018). *Morals Not Knowledge: Recasting the Contemporary U.S. Conflict Between Religion and Science*. University of California Press.
- Evans, John H. and Michael S. Evans (2008). "Religion and Science: Beyond the Epistemological Conflict Narrative". In: *Annual Review of Sociology* 34.1.
- Everhart, Donald and Salman Hameed (2013). "Muslims and evolution: a study of Pakistani physicists in the United States". In: *Evolution: Education and Outreach* 6.2.

- Frazer, James George (1922). *The Golden Bough : a study of magic and religion*. abridged ed. URL: <https://www.gutenberg.org/files/3623/3623-h/3623-h.htm>.
- Goodenough, Ursula (1998). *The Sacred Depths of Nature*. Oxford University Press.
- Gould, Stephen J. (1998). “Non-Overlapping Magisteria”. In: *Leonardo’s Mountain of Clams and the Diet of Worms*. Harmony Books.
- Harrison, Peter (2015). *The Territories of Science and Religion*. University of Chicago Press.
- Haught, John F. (1995). *Science and Religion*. Paulist Press.
- Heilbron, John (1999). *The Sun in the Church: Cathedrals as Solar Observatories*. Harvard University Press.
- Hollinger, David A., ed. (1996). *Science, Jews, and Secular Culture: Studies in Mid-Twentieth-Century American Intellectual History*. Princeton University Press.
- Hubbard, L. Ron (1950/2007). *Dianetics: The Modern Science of Mental Health*. Bridge Publications, Inc.
- Hunter, Michael (2010). *Boyle: Between God and Science*. Yale University Press.
- Illife, Rob (2017). *Priest of Nature: The Religious Worlds of Isaac Newton*. Oxford University Press.
- Jaeshik, Shin (2016). “Mapping One World: Religion and Science from an East Asian Perspective”. In: *Zygon* 51.
- Jeff Hardin Ronald L. Numbers, Ronald A. Binzley, ed. (2018). *The Warfare between Science and Religion: The Idea that Wouldn’t Die*. John Hopkins University Press.
- Johnson, Courtney, Cary Lynne Thigpen, and Cary Funk (2021). “On the Intersection of Science and Religion”. In: *TREND* Winter.
- Josephson, Jason Ananda (2012). *The Invention of Religion in Japan*. University of Chicago Press.
- Larson, Edward J. and Larry Witham (1997). “Scientists are still keeping the faith”. In: *Nature* 386.
- (1998). “Leading scientists still reject God”. In: *Nature* 394.
- Leuba, James H. (1916). *The Belief in God and Immortality: a Psychological, Anthropological, and Statistical Study*. Sherman, French & Company.
- Lightman, Bernard (2019). “Preface”. In: *Rethinking History, Science, and Religion: An Exploration of Conflict and the Complexity Principle*. Ed. by Bernard Lightman. University of Pittsburgh Press.
- Lopez, Donald S. Jr. (2008). *Buddhism and Science*. The University of Chicago Press.
- McGrath, Alister E. (2020). *Science & Religion: A New Introduction*. 3rd. Wiley Blackwell.
- Numbers, Ronald L. (2019). “Revisiting the Battlefields of Science and Religion: the Warfare Thesis Today”. In: *Rethinking History, Science, and Religion: An Exploration of Conflict and the Complexity Principle*. Ed. by Bernard Lightman. University of Pittsburgh Press.
- Numbers, Ronald L. and Jeff Hardin (2018). “New Atheists”. In: *The Warfare between Science and Religion: The Idea that Wouldn’t Die*. Ed. by Ronald A. Binzley Jeff Hardin Ronald L. Numbers. John Hopkins University Press.

- Plantinga, Alvin (2011). *Where the Conflict Really Lies: Science, Religion, and Naturalism*. Oxford University Press.
- Public Praises Science; Scientists Fault Public, Media* (2009). Tech. rep. Pew Research Center, Washington, D.C.
- Qidwai, Sarah A. (2019). “Reexamining Complexity: Sayyid Ahmad Khan’s Interpretation of “Science” in Islam”. In: *Rethinking History, Science, and Religion: An Exploration of Conflict and the Complexity Principle*. Ed. by Bernard Lightman. University of Pittsburgh Press.
- Smith, Tiddy (2019). *The Methods of Science and Religion: Epistemologies in Conflict*. Lexington Books.
- Stark, Rodney (2003). *For the Glory of God: How Monotheism Led to the Reformations, Science, Witch-Hunts, and the End of Slavery*. Princeton University Press.
- Stenmark, Mikael (2004). **How to Relate Science and Religion: A Multidimensional Model*. Eerdmans.
- (2010). “Ways of relating science and religion”. In: *The Cambridge Companion to Science and Religion*. Ed. by Peter Harrison. Cambridge University Press.
- Tolstoy, Leo (1879/1987). “A Confession”. In: *A Confession and Other Religious Writings*. trans. Jane Kentish. Penguin Classics.
- (1902/1987). “What is Religion and of What Does Its Essence Consist?” In: *A Confession and Other Religious Writings*. trans. Jane Kentish. Penguin Classics.
- Turner, Frank M. (1978). “The Victorian Conflict between Science and Religion: A Professional Dimension”. In: *Isis* 69.3, pp. 356–376. ISSN: 00211753, 15456994. URL: <http://www.jstor.org/stable/231040>.
- Ungureanu, James (2019). *Science, Religion, and the Protestant Tradition: Retracing the Origins of Conflict*. University of Pittsburgh Press.
- White, Andrew Dickson (1896). *History of the Warfare of Science with Technology in Christendom*. URL: <https://www.gutenberg.org/files/505/505-h/505-h.htm>.
- Winter, Franz (2015). “On ‘science’ in ‘The Science of Happiness’”. In: *Asian Religions, Technology, and Science*. Ed. by István Keul. Routledge.
- Wright, Robert (2017). *Why Buddhism is True: The Science and Philosophy of Meditation and Enlightenment*. Simon & Schuster.
- Zehnder, David J. (2011). “A Theologian’s Typology for Science and Religion”. In: *Zygon* 45.