



On the Method of Conceptual Analysis in Religion-and-Science

Adam J. Chin, PhD candidate, University of California, Irvine, US, achin6@uci.edu

In this paper, I critique conceptual analysis as used in the religion-and-science literature as a means of determining how to characterize the relationship between religion and science. "Conceptual analysis," as discussed in this paper, begins by defining the terms "religion" and "science" and then derives their relation logically on the basis of those definitions. Scholars from a variety of disciplinary backgrounds (not just philosophers!) employ this method. Although it is widely criticized, I argue that the method should not be abandoned, and the critiques can instead be read as providing ways of improving conceptual analysis. The paper starts by explaining the method and canvassing some exemplars. I then consider three general issues with the method—it employs monolithic conceptions, over-essentializes religion/science, and ignores whose conceptions are analyzed—and show how it ought to be reformed. I close with a discussion of what public audiences might find conceptual analysis especially useful.



In characterizing the religion–science relationship (RSR), scholars in “religion-and-science” employ a variety of methods to argue their positions (Chin 2023). One common method is conceptual analysis, roughly: define the terms “religion” and “science,” then derive their relationship. This method has been subject to a wide range of criticisms from practitioners of other methods: it tends towards monolithism, it falsely essentializes the relata, it fails to take into account religion-as-practiced. Considering these issues, should it be abandoned entirely?

I do not think so. In this article, I critique the method of conceptual analysis, clarifying what exactly it is and how it might be improved. I begin by specifying what I mean by “conceptual analysis” and providing a few illustrative examples. I then consider several problems with the method and its extant implementation. These issues, however, are not to be understood as reasons to reject the method completely; instead, I rework them into suggestions for its improvement. I conclude with a discussion of what kinds of public, non-scholarly audiences might find conceptual analytic studies useful, since religion-and-science scholarship often aims to be public facing.

Varieties of Conceptual Analysis

By “conceptual analysis” in religion-and-science, I mean the method that proceeds as follows: 1) define “religion” (or a particular religion) and “science” (or a particular science), then 2) on the basis of those definitions alone, derive their relationship.

For instance, one might define “religion” as a system of knowledge about the world that relies on faith and “science” as a system of knowledge about the world that relies on empirical observation. Given these definitions, one might then claim that religion and science are in conflict, since they are both systems of knowledge about the world but rely on opposing methodologies (granting, of course, that faith and empirical observation are antithetical; this is essentially the argument of Tiddy Smith (2019)). Importantly, the method does not constrain any particular characterization of the RSR. While Smith might use it to argue for a form of conflict, others might use it to argue for separation (e.g., Stephen J. Gould) or even harmony (e.g., Alvin Plantinga).

There are a number of things to note about my characterization of conceptual analysis. First, it involves definitions. In some philosophical circles, definitions carry significant baggage. For our purposes, I do not require the definition(s) in step one of the method to satisfy any stringent requirements—if the reader would prefer to replace “define” with “analyze” or “characterize,” they are free to do so. In religion-and-science literature, however, many authors go so far as to provide explicit definitions (see, e.g., Stark 2003, 4, 124). Furthermore, many authors talk of defining religion (or a particular religion) and science (or

a particular science) at the start of their works, even if they do not provide an explicit definition. Here, for example, is John Hedley Brooke in his famous work *Science and Religion: Some Historical Perspectives*:

How can one speak about the relationship between science and religion, either as practices or as systems of belief, without first **defining** terms? It is possible to go only so far in meeting this objection . . . Too restrictive a **definition** can, however, be counterproductive because it may exclude too many questions before they have been asked. If the study of history is to be instructive, it is important not to establish foregone conclusions through the rigidity of definitions. (Brooke 1991, 6; emphasis added)

Thus, in this article I will follow the conventions of the literature and refer to authors' "definitions" without the more sophisticated connotations of especially picky philosophers.

Second, step one can proceed in any number of ways. Conceptual analysis often implies an a priori method; one might think of the canonical armchair philosopher pontificating from their ivory tower. But conceptual analysis can be done in a variety of ways and need not be done by philosophers. Although some—like Leo Tolstoy (Tolstoy [1902] 1987)—do indeed employ a priori methods when defining religion and science, many do not. The anthropologist James Frazer provides a good example of an empirical form of conceptual analysis. After surveying ancient forms of worship, Frazer felt he could extract a general characterization of religion as an explanatory system of the natural world that appeals to agential wills (Frazer 1922). Gregory Dawes employs a similar empirical approach in his much more recent *Deprovincializing Science and Religion* (2021).

Analysis, of course, can isolate different aspects of religion/science (or their species); the definitions arrived at by different scholars can vary radically. As discussed, Smith focuses on the methods he deems characteristic of religious and scientific ways of knowing. But one could instead focus on the social structures, endorsed propositions, or aims of religious/scientific communities, just to name a few. Furthermore, a conceptual analyzer could also generate definitions that mix these aspects, as suggested by Mikael Stenmark (2004), whose work and recommendations I discuss later in this article.

Finally, regarding step one: the qualifiers are important. Some scholars talk of Religion and Science as capitalized, global, seemingly monolithic categories; others discuss more local species. Interestingly, whether a scholar analyzes religion in general or one religion in particular seems to be highly correlated with the aims of the scholar, and ultimately their view of the RSR. The trends seem to be as follows: those with a negative view of the RSR (e.g., conflict theorists) tend to take a more global approach, as seen with Smith and Frazer.

Also in the globalizing camp are separatists like Gould and Michael Ruse. On the other hand, apologists tend to focus on their religion in particular—Plantinga, for instance, is only concerned with a particular form of Christianity (though at times he speaks of a generalized “theistic religion”). This global/local focus does not often spill over to the science side, however. Even when authors offer definitions of particular religions, they tend to still seek a general definition of science. There are a few exceptions, of course. Evolutionary biology is often singled out for discussion, as are relativity and quantum mechanics. No one, though, seems to be interested in chemistry, environmental science, agricultural science, or any of the industrial or “non-research-oriented” sciences (like routine genome sequencing). I return to this lacuna in a later section.

Regarding step two, I should clarify that the derivation involved is strictly (purportedly) logical, not empirical. Thus, after Frazer arrives empirically at his definitions of religion and (via some other process, perhaps armchair pontificating) science, he arrives at their relationship logically: religion appeals to wills and science does not; thus, they are in conflict because they try to explain the same thing (Frazer 1922). Frazer does not present historical examples of religion–science interaction and then arrive at their relationship via induction (this would be using what I have called the “method of case studies” (Chin 2023)).

Finally, the “then” between steps one and two need not be explicit. That is, the definitions in step one need not be laid out plainly for the reader to see; they may instead be implicit. The key, however, is that the derivation in step one is made on the assumption of the definitions in step one, even if they are not formally spelled out.

Thus, the method of conceptual analysis proceeds by defining the terms and “then” deriving their relationship based on those definitions. The method is used widely by philosophers, historians, social scientists, and scientists alike (among others). To be clear, this method is just one among others scholars may use to characterize the RSR. I previously outlined three other methods scholars tend to use, which I labeled “case studies,” “relativizing,” and “fieldwork” (Chin 2023). These methods do not start by defining the terms science and religion and deriving their relation on the basis of those definitions. Instead, they may refer to particular historical interactions between religious and scientific forces and perform a kind of induction over those episodes to reach their conclusions (the method of case studies). Other accounts (e.g., Harrison 2015) begin with demonstrating the historical or cultural contingency of the concepts of science and religion and draw their conclusion from the shown instability (the method of relativizing, although it is perhaps better termed “deconstruction”). Still others try to extract the proper understanding of the RSR from the interviews and ethnographies of scientists and religious folk (the method of fieldwork). These methods are not necessarily incompatible with conceptual analysis.

However, many scholars believe that the method of conceptual analysis suffers from major issues; some even advocate it be abandoned entirely. I do not think abandonment is warranted, but scholars employing conceptual analysis have much they can learn from their critics. Before turning to the criticisms, though, I will lay out some examples of conceptual analysis in action.

Some Exemplars

We will start with Frazer's *Golden Bough* (1922), a historical example chosen to illustrate the method's long pedigree. As briefly discussed, Frazer's approach to characterizing the RSR is arguably empirical. In the *Golden Bough*, Frazer reconstructs the practices of dozens of ancient and medieval cultic forms of worship (mostly European and Middle Eastern). Presumably on the basis of his vast research, Frazer then generates his definition¹ of religion as "a propitiation or conciliation of powers superior to man which are believed to direct and control the course of nature and of human life" (Frazer 1922). As Frazer points out, his definition is twofold, containing both theoretical (belief in superior powers) and practical (propitiation of said powers) elements. An implication of this definition is that "the course of nature is to some extent elastic or variable" (Frazer 1922); propitiatory acts can alter "the current of events from the channel in which they would otherwise flow" (Frazer 1922).

Frazer's conception of science is more difficult to pick out. He never explicitly defines it as he does religion. However, from his discussions of magic and science, a Frazerian science can be pieced together. As in magic, so too in science "the succession of events is assumed to be perfectly regular and certain, being determined by immutable laws, the operation of which can be foreseen and calculated precisely; the elements of caprice, of chance, and of accident are banished from the course of nature" (Frazer 1922). But where magic misapplies the "fundamental laws of thought, namely, the association of ideas by similarity and the association of ideas by contiguity in space or time" (Frazer 1922), science does not. So Frazerian science involves both a theoretical aspect (assumption of the regularity of events) as well as a practical one (proper application of the laws of thought).

Once Frazer has established his conceptions of religion and science (his definition of religion actually comes after his discussion of science and magic), he moves on to assess the RSR: the "implied elasticity or variability of nature [in the definition of religion] is directly opposed to the principles of magic as well as of science, both of which assume that the processes of nature are rigid and invariable in their operation, and that they can as little be turned from their course by persuasion and entreaty as by threats and intimidation" (Frazer 1922). For Frazer, religion and science disagree in both their theoretical and practical parts—a classic case of Barbourian conflict. But the locus of disagreement can be more accurately pinpointed in the explanations they offer. Frazer goes on

to explain that the real distinction between “the two conflicting views of the universe turns on their answer to the crucial question, Are the forces which govern the world conscious and personal, or unconscious and impersonal?” (Frazer 1922). Religious explanations feature the former, scientific the latter. We thus have, in Frazer, an epistemic methodological conflict between religion and science arrived at via conceptual analysis.

A modern example of conceptual analysis is Plantinga’s widely read *Where the Conflict Really Lies* (2011). As an Evangelical Christian, Plantinga seeks to demonstrate the compatibility of Christian faith with science and further advances the controversial claim that science is in fact incompatible with philosophical naturalism. The overarching slogan of the book is “there is superficial conflict but deep concord between science and theistic religion, but superficial concord and deep conflict between science and naturalism” (Plantinga 2011, e.g. 265).

Plantinga’s thesis is at once local and global. Although he talks at times of (theistic) religion as a whole, he is clear that he means Christianity in particular, and a very particular form of Christianity at that. On the other hand, when he speaks of science, he seems to speak of science writ large—the total institution of modern science—although he focuses on particular cases from the special sciences (especially quantum mechanics and evolutionary biology). Regardless, the argument is straightforwardly conceptual analytic: he defines his terms and derives their relationship. Plantinga’s Christianity is “defined or circumscribed by the rough intersection of the great Christian creeds: the Apostle’s Creed, the Nicene Creed, and the Athanasian Creed, but also more particular creeds such as the Catholic Baltimore Catechism, the Reformed Heidelberg Catechism, the Belgic Confession, and the Anglican Thirty-Nine Articles” (Plantinga 2011, 8). His science, as with Frazer’s, is a bit more nebulously defined but largely reduced to the method it employs. It is that enterprise that takes as its starting place first that the world is regular, predictable, and constant (in its operations) and second that we as humans/scientists believe in that regularity (Plantinga 2011, 282–83). Once these definitions are on the table, the argument for Plantinga’s positive thesis is relatively straightforward. The prerequisites of science are eminently compatible with the beliefs of Christianity. In fact, those religious beliefs offer justification for the pre-conditions of science, since theistic religion gives reason to expect the world’s regularity (given God’s character) and human belief in that regularity, since humans are created in God’s image. Thus, there is “deep concord between science and theistic religion” (Plantinga 2011). The conceptual analytic form of the argument is clear.

Using the same method to reach an almost opposite characterization of the RSR, Dawes, in his recent *Deprovincializing Science and Religion* (2021), argues for an irreconcilable form of conflict between religion and science—or at least between specific forms of the two. Dawes explicitly notes, however, that “it

would be foolish to try to make general claims about ‘science’ and ‘religion,’” and that any claims made must be conditional: “They will state that if the religion [in] question is of kind x , and the *scientia* in question is of kind y , then they will be related in manner z ” (Dawes 2021, 12). It should be noted immediately that Dawes speaks here of “*scientia*” rather than “science”—a linguistic convention he adopts in order to help readers ignore some of the connotations “science” carries in modern discourse. But despite his opposition to generalities, Dawes is nonetheless comfortable offering some very general initial characterizations of these “two different ways in which humans have thought about what we call ‘the natural world’” (Dawes 2021, 1). On a first gloss, *scientia* “explains . . . by reference to a set of principles, which are derived from observations of the way the world regularly operates,” religion “by reference to what we may call ‘metapersons’” (Dawes 2021, 1). These initial definitions are precisified soon after, however. For *scientia* he presents the following:

A communal tradition of inquiry whose aim is to create a systematic account of the principles governing a set of regularly observable phenomena within the natural or human world. (Dawes 2021, 6)

And for religion:

A communal tradition of ritual action that seeks to make contact with a hidden realm of metapersons and powers and whose goal is to bring this-worldly and/or other-worldly benefits to the individuals or community in question. (Dawes 2021, 8)

These are both explicitly definitions (or attempts at definitions). They are important because Dawes then uses them to generate characterizations of the RSR (qua the religion–*scientia* relationship).

Dawes is quick to point out, however, that these definitions manifest differently depending on time and place. He considers four time periods that correlate roughly with different societal forms: ancient China (c. fifth century BCE to ninth century CE); medieval European and Muslim worlds; modernity (stretching from the early modern era to the present); and small-scale societies, seemingly whenever and wherever they exist. According to Dawes, ancient China had an integral cosmology interacting with a large-scale diffused religion (i.e., religion was an integral part of community life and other not-uniquely-religious social structures); medieval Europe and the Islamic Golden Age had natural philosophy mixed with institutionalized religion (wherein religious affiliation was not typically a matter of individual choice); in the modern period, “modern science” intermingles with “modern religion” (wherein religious affiliation is

seen as a matter of individual choice—it is “privatized”); and in small-scale societies, indigenous knowledge, or “ethnoscience,” presents alongside small-scale diffused religion (often “coextensive with some ‘natural’ grouping, such as that of the family or the tribe”) (Dawes 2021, 9). In addition to time, place, and social structure, Dawes makes a further qualification: the RSR is not monolithic but instead multifaceted, a fact that the other authors mentioned do not seem to recognize and that serves as the basis of a large-scale critique of much conceptual analysis in religion-and-science, as I discuss later in this article. For Dawes, there are four main “dimensions”: the cognitive (what is claimed), teleological (what is aimed at), organizational (what norms of behaviour exist), and epistemological (how knowledge is generated). Ultimately, Dawes argues that, given the ways in which religion and *scientia* have been defined, they must always find themselves in epistemological conflict.

Dawes’ argument is an exemplary application of conceptual analysis that avoids many of the issues I discuss in the following section.² It can thus serve as a kind of aspirational model towards which employers of conceptual analysis should aim, although as I show, it can still be improved in an important respect for use by scholars in public-facing work.

Having laid out several exemplars of the method of conceptual analysis in the religion-and-science literature, I now consider some of its critiques. In doing so, I aim to provide concrete recommendations for how to improve applications of conceptual analysis. So, while I will discuss its shortcomings—both those recognized by others and novel issues of my own—my aim is ultimately constructive: by outlining its shortcomings, I propose how conceptual analysis may be improved.

Some Problems with Conceptual Analysis and Its Use

The method of conceptual analysis has been widely critiqued in the religion-and-science literature. In this section, I bring together the various heads of the critical hydra and discuss their merits and drawbacks. While some critics of conceptual analysis claim that the method is hopelessly mired with difficulties and so ought to be abandoned, this is overstating the situation. That said, conceptual analysis in the style of most extant scholarship is surely in need of improvement, recommendations for which can be extracted from the critiques.

I start with a discussion of monolithism and Stenmark’s suggestions for a more nuanced, dynamic conceptual analytic approach to the RSR. I then look at anti-essentialist objections to conceptual analysis, which often call for a radical abandonment of the method. Finally, I propose my own critique and recommendations based on the need to consider the non-research-oriented sciences.

Monolithism

One issue often faced by conceptual analytic accounts is their focus on only a single aspect of religion and/or science (often both), treating them each as monolithic entities. Paul Tyson puts it this way:

It is typically assumed that this mode of philosophising can bring clarity and precision to the discussion and provide a neutral bridging language that facilitates conversation between [religion and science]. But for this very reason, the approach of some analytic philosophers has the potential to exacerbate the distortions inherent in the categories themselves, often reducing “religion” and “science” to their propositional contents or their approaches to knowledge, and thereby disembedding them from their real-life contexts. (Tyson 2022, 4)

Given that religion and science are dynamic, multifaceted institutions, monolithic treatments may fail to engage with reality—the conclusions reached are conclusions about scholarly constructs rather than real-world entities. Frazer and Plantinga both fall prey to this kind of critique.

So how to avoid monolithism? Stenmark 2004 suggests taking an explicitly multidimensional approach, recognizing that religion and science are far more than their epistemic content and methods. In particular, Stenmark recommends scholars consider four broad dimensions—the social, teleological, theoretical, and epistemic (though these are not meant to be exhaustive)—along various subdimensions (though he does not use that term).

The latter two dimensions constitute the focus of most scholarship: the propositions claimed and the methods employed, respectively. While Stenmark considers the theoretical dimension relatively flat, he unpacks a number of subdimensions contained in the epistemic—belief/theory formation, regulation, and/or reformation (Stenmark 2004, 52; these subdimensions also form the basis for Stenmark 2010). But even within the theoretical dimension, it seems scholars would be well-served by considering the different kinds of propositions contained within religious/scientific doctrine. One relevant distinction might be between general and particular claims. For instance, a biologist might claim that speciation occurs via random genetic mutation paired with natural selection (a general claim) and that seahorse and pipefish morphology diverged because of differential foraging behaviours³ (a specific claim). I suspect that characterizations of the RSR along theoretical lines might differ based on whether general or specific scientific claims are compared with general or specific religious claims. Perhaps conflict is more easily found between general claims from both fields. Another theoretical subdimension to explore would be the difference between claims found in official doctrine and the actual beliefs held by religious/scientific practitioners. Too often, conceptual

analytic approaches privilege the established doctrines found in elite sources—scriptures, textbooks, etc. (see Barrett 1999 for a discussion of this difference in the case of theology).⁴ But insofar as scholars would like to engage with religion/science-as-practiced, they would do well to look elsewhere, perhaps following leads in experimental philosophy of science, sociology of religion, and media studies.

Stenmark's social and teleological dimensions are less frequently encountered. The social dimension consists of the processes by which new members are enculturated, such as trust in authority and the diversity of practice on both individual and collective levels generated by non-epistemic factors (e.g., rejecting certain methods or theories on a moral basis). I return to a discussion of the social dimension later in this article. On the other hand, the teleological dimension involves the goals—individual or collective, practical or epistemic, held manifestly or latently—that scholars recognize for religion/science. Stenmark asks scholars to be explicit about our views, since “[t]he reason why [scholars] sometimes come to different conclusions and seem to be talking past each other is often that they are, in fact, committed to different accounts of the goals of religion and science, which are not clearly stated” (Stenmark 2004, 50). Further, Stenmark points out that many scholars fail to be explicit about whether they think these goals are static or change over time. Thus, while Frazer, Plantinga, and Dawes are all quite explicit about the goals of religion and science, they seem to be only implicitly committed to the diachronic stability of those goals.

While Stenmark recommends trying to embrace all the dimensions of religion and science at once, conceptual analyzers have another option to avoid monolithism: simply be very explicit about the single dimension analyzed. Smith 2019 is a clear example of this: “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, 1). Surely not all studies can cover all aspects of religion/science, for a host of good reasons. But scholars—and especially their readers—would be well-served being explicit about their focus to avoid being misleading. This can be difficult; scholars may often wish to discuss *The Religion-Science Relationship*, writ large with capitalization, and exploit one aspect/dimension to make a broader claim about the whole. But the point of this critique is that such generalizations are illicit—indeed the epistemic and theoretical dimensions are radically different from the social and teleological, and so generalizing about the RSR from the former is a classic fallacy of illicit concept change. Being clear and consistent about one's focus throughout one's work—whether by embracing many dimensions at once or not—is thus essential for fruitful applications of conceptual analysis. Dawes 2021, drawing inspiration from Stenmark, is an excellent example of the former.

Essentializing

A related but distinct critique of conceptual analysis is its tendency to over-essentialize the notions of religion and science. Advocates of different methods, especially historical methods, often bring up both weaker and stronger forms of this criticism. The former simply points out the difficulty of finding satisfactory definitions of religion and science that will unify our⁵ intuitions about the various cases they are supposed to cover, as seen in Brooke 1991 discussed previously. Perhaps one could generate relevant and useful definitions, but doing so would be incredibly difficult, and our time is better spent using other methods. Of course, the difficulty of a task is neither a sign that it should not be undertaken nor an indictment of the product produced, so this weaker version of the critique has no real bite.

The stronger anti-essentializing critique claims that conceptual analysis of religion and science—and deductions about the RSR on the basis of that analysis—is impossible. This critique features in one part of Geoffrey Cantor and Chris Kenny’s attack on Barbour’s fourfold typology and the use of the “copula” “religion *and* science”:

[N]either science nor religion (nor the conjunction “science and religion”) possesses clear historical continuity . . . in spite of the unbounded and fluid extensions of the categories, *science* and *religion*, many writers treat them as distinct classes with fixed, temporally independent, and self-evident meanings . . . We suggest that [historical episodes] cannot be analyzed in terms of the interactions between broad categories—for example, between science and religion—no matter how subtly we redefine the boundaries between them. (Cantor and Kenny 2001, 771–73)

The problem is stated even more explicitly by Stephen P. Weldon:

The greatest problem is that the very terms “science” and “religion” encourage an *essentialist* approach to history, an approach that tries to describe all events in the past in terms of the two modern categories of science and religion. Yet these terms are inadequate to describe the nature of the historical topics that are covered under that rubric because both terms refer to Western institutions and ideas that assumed their current form after 1800. (Weldon 2017, 3)⁶

Weldon’s characterization of the issue indicates two separate strands of the essentialist critique: historicism and cultural relativism. Since religion and science are neither diachronically nor cross-culturally stable concepts, they cannot be usefully analyzed in a way that will allow broad claims to be made about the RSR that are representative across time periods and cultures. Instead,

these scholars argue, we must only proceed in a piecemeal fashion, discussing religion–science relations in particular time-places.

If taken seriously, this strong form of anti-essentializing poses a problem for conceptual analysis—not just within religion-and-science, but more generally. Religion and science are not unique in having varied ancestries; almost all concepts which we might subject to analysis have diverse, often tortured, pasts. This universality of the critique calls into question its applicability.

Consider, for example, the concept of race. Like science (and religion), race has been used in a variety of incompatible ways since its origins as a technical “anthropological/biological” term in the late seventeenth century (Smedley and Smedley 2005). The number of races, their geographic distribution, and the particular attributes said to constitute or follow from racial membership have all varied significantly both temporally and culturally. On this basis, the hardline anti-essentialist should dispute the cogency of discussions of race, let alone relations between different races—neither, say, “white” nor “black” refer to diachronically and/or transculturally stable groups.

Clearly, however, we cannot dispose of the concept of race. Scholars believe (for the most part) that race has no biological basis; it is rather a social construct. Like all social constructs, race can change, often quite significantly, based on the social groups that construct it. But its status as such does not mean that race is, in general, an empty concept. Race still has real-world effects. Witness differential healthcare treatment and policing experiences in the US. Even if race is not biologically real, it is still socially real (and very much so). Because of this, it is still quite meaningful to talk of race, and even the relationships between different races/racial groups.

So too with religion and science. Even if there are no meaningful diachronic or transcultural characterizations of the concepts, they still exist as entities in contemporary discourse that have actual impacts on real-world actors. Medicines are given to patients when they are backed by the label science; institutions receive money for doing or producing science; organizations get special tax treatment for being religious (at least in certain countries). If religion and science can have real influence in these ways, it is not clear how anti-essentialist critiques can do away with analyses of these concepts—or subsequent discussions of their relationship(s).

Some may balk at this kind of deflationary response. If religion and science are not stable concepts, is there anything at all in the world beyond mere use that such terms pick out? And if there are no referents, then how can we even have definitions, let alone derive relations on the basis of those definitions? Readers with these worries may be comforted by recent work in social ontology by Jason Ānanda Josephson Storm. Seeking a kind of middle ground between overblown essentialism and socially irresponsible deconstruction, Josephson Storm offers a new way of conceiving social kinds like race and religion

(Josephson Storm 2021). Race and religion, he argues, are best understood as process-power-clusters: they refer to clusters of powers (the ability to impact/change something), but what particular powers are always subject to change. Such changes are due to dynamic social forces—“anchoring processes”—that cause groups to settle on/select different powers as relevant at different times (Josephson-Storm 2021, 118–26). Understanding race and religion in this way allows their continued use as unified, existing concepts but is responsive to the fact that they are unstable. Their real relations with other social kinds—and real-world-effects—can still be referred to since they are “anchored” by real social forces. Thus, when speaking of the RSR, we can understand ourselves as referring to particular underlying social forces—e.g., the professionalizing of certain endeavors—which led contemporary discourse to conceive of religion/science as it does, a move that seems in line with Harrison 2015. That said, Josephson Storm’s “metamodernist” take on social kinds faces some issues—for instance, whether the anchoring mechanisms are themselves best understood as process-power-clusters and what might anchor those. However, it does provide a reasonable middle ground for productively thinking using social concepts. Of course, this account requires staying away from universal, global characterizations of the RSR—but that does not mean we cannot use conceptual analysis to arrive at our characterization.

This aligns with an issue with the strong version of the anti-essentialist critique that emerges from the relevance of race, religion, and science to ordinary folk today. While it might be true that these concepts cannot be analyzed in a way that reduces them to diachronically stable and still useful cores, that does not mean they cannot be analyzed at all, and in particular that they cannot be analyzed *now* (whether or not Josephson Storm’s account is accepted). In fact, historicists like Peter Harrison (see especially Harrison 2015 and the After Science and Religion project it started (Tyson 2022)) are still committed to there being concepts-at-a-time that are stable enough to compare diachronically. This more piecemeal approach still requires distinct pieces to examine. That is, Harrison must be comfortable isolating, say, 1800s science and 2000s science, for he must be comfortable claiming that they are not the same; analyzing either term is a precondition for determining their difference. So why can a conceptual analyzer not simply talk of 2000s science and its relation to 2000s religion? Similarly, for the cultural-relativizing branch of the critique, why not analyze Western religion/science? The anti-essentialist critique does not seem to pose a problem for this much more local discussion. It does, of course, limit the scope of any conclusions drawn about the RSR. But local discussions are useful nonetheless. In fact, to a large extent, local discussions are the most useful that could be had. Insofar as the authors discussed in this article are public facing, their goal is to talk to local audiences, folks who live in a particular time—the now—and place, for the authors, the anglophone West. Such authors presumably hope to

influence current opinions concerning the RSR to enact (or resist) real change in the ways people interact with religion/religious folk and science/scientists, be it as everyday lay individuals, as members of religions/scientific communities, or as policymakers. To that extent, limiting discussion to 2000s Western religion and 2000s Western science to make a claim about the 2000s Western RSR seems eminently reasonable. Those are the concepts with which people living in the 2000s in the global West are actually engaging.

The strong anti-essentialist critique should not force us to abandon conceptual analysis. Of course, recognizing the historical/cultural contingency of our concepts is important. A major lesson conceptual analyzers could learn is to explicitly localize their analyses and be clear about having done so, or at least be up-front about the limits of the analysis presented. It should be noted that this more piecemeal approach to the RSR is not giving up on the method of conceptual analysis. Limiting oneself to a particular time-place does not mean that one cannot start with definitions of religion and science and derive the RSR logically from those definitions. It simply means that the concepts examined are more confined, more specific. Moving from universal, general conclusions about the RSR to more piecemeal ones is not abandoning the conceptual analytic method. It is simply changing the kind of conclusion made. But even if it were the case that some claim could be made about how religion and science have been related, on average, since the beginning of time throughout the world (which is doubtful), a further argument would be needed that this was relevant to the RSR as it is here-now, i.e., that current concepts are not unique. But, as far as I can tell, no such further argument has been offered. Again, none of this rules out a discussion of the contemporary RSR based on contemporary conceptions of religion and science. We ought not essentialize overmuch, but we *can* still talk—and usefully at that—about concepts and their relations at a particular time-place.

Whose Science, Whose Religion?

While the aforementioned critiques focused on internal features of religion and science, this section considers external features; that is, the ways in which religion and science interact as a result of their being institutions embedded in broader sociocultural contexts. In particular, I argue that conceptual analyses of the RSR need to recognize the multiple different conceptions of religion/science operating within the same time-place. A pithy way of putting this is that scholars ought to pay greater attention to just whose religion and whose science is being analyzed.

Calls under this exact heading have been sounded by scholars within the literature (e.g., Brooke and Cantor 2000). But they do not consider the fact that just what religion/science is depends on who one asks within the historico-cultural frame. Surely, the lay Buddhist conceives of Buddhism differently than the theologian (an expert–lay distinction), just as the industrial chemist may conceive

of science differently from her research-university peer (a research-oriented-or-not distinction). Insofar as scholars of religion-and-science want to discuss the RSR as an object of real public concern, they will need to pay attention to these different conceptions as they play out in the public sphere. In this section, I consider three distinctions among conceptions of religion/science related to external factors shaping them that conceptual analysis should take seriously.

First, scholars should pay more attention to the fact that religion and science are mutually interacting social institutions—what we might call an external social dimension (akin to Josephson Storm’s anchoring mechanisms) in contrast to Stenmark’s internal ones. I mean this not only in the Harrison-esque sense of understanding how religion and science have co-constructed one another—and continue to (Harrison 2015)—but in a much more everyday sense. When a young adult enters the wider world, they must decide what to do with their life. Many forces compete for their time, and though perhaps religion and science are never in zero-sum competition, their mere separation does pose an allocation problem. Should one get a PhD or go to seminary? Should they go on a mission or take up the post-doc? Scientific jobs can be temporally demanding in ways essential to the scientific process, but not clearly in opposition to religious practice. Consider a biologist who must care for her cells every day, including on Saturdays. Such a career is closed to conservative Orthodox Jews and Seventh Day Adventists. Yet, it is hard to accept that this state of affairs points to any hard incompatibility between religion and science, or even between some particular religion and some particular science. But still, it must be recognized that individual cases like these do contribute to a larger impression of a tension between religious and scientific commitments. This tension results simply from the fact that religion and science are not the same social institutions. Other professions pose these same resource-management problems—as do familial obligations—and so the potential tension between religion and science perceived by ordinary folk may not stem from anything specific to religion/science qua religion/science themselves. When discussing the RSR, especially in public contexts, conceptual analysis should take these non-epistemic aspects of religion and science more seriously.

Second—but intimately related—conceptual analysis should track the expert–non expert (or elite–non-elite) distinction. Most conceptual analyses—including all those cited in this article—focus on elite, scholarly notions of religion and science: the Creeds developed by theologians, the ideas thought up by philosophers, etc. This need not be problematic if the intent is to discuss the relationship between elite/expert religion and elite/expert science. But very often scholars wish to engage in larger projects relevant to non-theologians and non-scientists; in those cases, more attention must be paid to non-elite/non-expert conceptions. The sociologist John Evans has demonstrated one way this might be done, illustrating how sociological data indicates that

everyday American conservative Evangelicals' opposition to science is in fact limited to particular claims and determined by morals not knowledge (Evans 2018).⁷ Conceptual analyses that start with the actual views of the publics with which they wish to engage may thus come to surprising conclusions.

Sometimes, of course, scholars do pay attention to more everyday conceptions. However, it is often done asymmetrically, in that scientists—experts—are used as the exemplars for the science side, while everyday religious folk—non-experts—are taken as the representatives for the religion side. Thus, for instance, Richard Dawkins famously refuses to consider the works of theologians, “engaging” only with popular conceptions of Christianity and Islam (see, e.g., McGrath 2005, 83, 99).

But there are in fact four possible general relationships when discussing the RSR: elite–elite, elite–quotidian, quotidian–elite, and quotidian–quotidian—though of course the distinction between elite and quotidian is not absolute but a spectrum.⁸ Much academic discussion focuses on either the elite–elite or quotidian–elite forms of the RSR. Often, those who believe that there is tension between religion and science (e.g., Dawkins) or that the two are entirely separate/non-interacting (e.g., Gould) focus on the quotidian–elite relationship. By contrast, the elite–elite relationship tends to feature in apologetic works in which scholars try to demonstrate the compatibility of their religion with science writ large or some particular sciences (e.g., Plantinga). The elite–quotation and quotation–quotation relationships are almost never discussed—though there are no in-principal reasons not to. Further, as just mentioned, exploring these areas of the conceptual matrix would help scholars produce work that speaks more directly to the experiences of the publics they so often wish to reach. Being explicit about the particular conceptions analyzed may clarify exactly what is at stake in discussions of the RSR and so help scholars avoid talking past one another.

Third and finally, conceptual analyses would do well to consider what might be called the non-research-oriented, or non-theory-oriented, sciences. Scholars of science—whether in religion-and-science or not—almost always assume that (a particular) science is a theoretical enterprise, one focused on the production of knowledge, often in the form of theories or deductions from theories. But—and this is important—the vast majority of people classed as scientists do not engage in this kind of practice. According to the May 2022 Occupational Employment and Wage Statistics survey of the US Bureau of Labor Statistics (published in 2023), there are about 1.3 million individuals with “life, physical, and social science occupations” in the US. Of these, only about 24% are found in research-oriented industries (or about 305,910 individuals, combining those who work in “scientific research and development services” and “colleges, universities, and professional schools”—assuming (problematically) that those in the latter do research (Bureau of Labor Statistics 2023)). The remaining 76% majority do not engage in research-oriented science. Instead, the vast majority of people

identified, at least by the Bureau of Labor Statistics, as scientists are engaged in other endeavors: sequencing genomes for ancestry tests, doing routine analyses of commercial products, assessing the soil composition of fields, etc. In none of these cases is the goal theory production, nor is the work of these scientists easily classified as something like Kuhnian normal science, for theory does not even play a controlling role: they are not solving puzzles framed by some paradigm.

But scholars across the board ignore these kinds of science. This is especially the case among those who employ conceptual analyses of science, like philosophers. One might point out rather trivially that philosophers of science are interested in basic metaphysical and epistemological questions—what is out there and how we know about it—and so are predisposed to theory-oriented science. It may also be relevant that, embedded as they are within academic spaces, philosophers do not have as ready access to non-research science. On the historical side, there is also the fact that much analytic philosophy of science had its origins in reactions to the physics of the early twentieth century, a historical accident that has resulted in almost all subsequent philosophical models of science taking theoretical physics as the base model for all other forms of inquiry. But these are not reasons to neglect the non-research-, non-theory-oriented sciences. After all, if we wish our accounts of science to be accurate, then we should accommodate all science—not just the 24% minority with which we are familiar.

Furthermore, insofar as contributors to the religion-and-science literature wish to engage with the RSR as an object of public, not just scholarly concern, they should heed the fact that it is much more likely for individuals to encounter non-research-oriented science/scientists. As such, their quotidian conception of science is likely to be shaped by those encounters. This is not to say that research-oriented science is not a part of the public conception of science; any perusal of the streaming service of your choice will demonstrate it is. But even looking to popular movies shows that public conceptions of science often go far beyond the laboratory, as in the *Jurassic Park* series and *The Martian* (2015), wherein the titular character declares he will “science the shit out of this”—by which he means applying principles from chemistry and botany to produce water and grow potatoes—a far cry from traditional philosophical accounts of science as falsifiable claims or paradigm-building puzzle solving.

So how to incorporate these other sciences into conceptual analyses? One way would be to treat the two kinds of science—research-oriented and non-research-oriented—separately and be very clear about which is being talked about. This could then be an additional index scholars add to their conclusions, joining the temporal and cultural (and possibly dimensional) indices discussed previously. Treating research-oriented and non-research-oriented science separately could reveal some interesting facets of a more general RSR, especially if the different forms of science relate differently to religion. Of course, if bifurcating the conception of science is too messy, scholars could instead try

to develop more general accounts of science that encompass both research-oriented and non-research-oriented forms. This more general approach may be more in line with public conceptions of science, since I doubt that everyday individuals work with a divided conception of science (though this is open to empirical verification). Therefore, conclusions about the RSR based on a combined notion may be more relevant to more audiences.

Regardless of how it is done, conceptual analysis has much to gain in taking the non-research, non-theory-oriented sciences into account. Not only will such analysis thus work with conceptions of science that better match reality, but it will also more likely better reflect public conceptions of science and thus vastly enrich the existing literature.

The Relevancy of Conceptual Analysis

In previous work, I claimed that certain methods are likely more or less relevant to different audiences/publics based on the latter's values and reasons for caring about the RSR (Chin 2023). So, what publics might find conceptual analysis—when suitably reformed, as discussed—useful? Here, I briefly consider three public contexts where conceptual analysis is likely useful: apologetics, funding/hiring of religious/scientific professionals, and certain legal contexts.

Apologetics—be they religious or non/anti-religious—are likely primed to find conceptual analysis useful. After all, showing a fundamental compatibility between religion and science along some particular dimension(s) is an especially powerful way of convincing possible skeptics that religion and its practitioners ought not be dismissed outright on the basis of the RSR. This is the case for those advocating very general religious toleration (e.g., the US-based National Academies of Sciences Engineering, and Medicine 2023) as well as in those cases where the apologist is embedded within a particular tradition. By the same token, conceptual analysis is also useful for religious anti-apologists (or apologists for non-religion), as seen in some humanist literature (e.g., Hall and Hall 1986). One other place conceptual analysis might be especially useful is in what might be termed “redemptive” contexts, wherein the apologist feels compelled to defend the credibility of their religion in a largely hostile environment—as is often the case with religious minorities. Indeed, historically, this strategy has been employed by Christian missionaries in new colonial encounters (Stenhouse 2019) and by East Asian Buddhists against such missionaries in slightly later colonial contexts (Lopez 2011).

Perhaps more controversially, funding and hiring committees may find conceptual analysis useful when determining which projects/scholars to back. For instance, a grant committee deciding among many applicants might think it relevant if a certain religious tradition is fundamentally incompatible with the particular science being done. Likewise, a religious organization seeking to hire

an advocate could reasonably think it important to know if an individual trained in a particular science is thus primed to be in tension with the organization's beliefs and/or practices. Put more concretely, committees might worry whether, say, a team of Hare Krishnas should be given funding for their early cosmology project or if an epidemiologist is well-suited to be elected to the year's Christian Science Board of Lectureship. In this context, taking the non-research-oriented science seriously might be especially relevant. For even if an epidemiologist is not well-suited as a Christian Science lecturer by virtue of their training, perhaps a cosmetic chemist would be—if there is conflict, say, only with the research-oriented sciences. In these more practical cases, conceptual analyses, regardless of the resultant analysis of the RSR, might be an appealing resource.

One might expect that the clearest place conceptual analysis could be relevant is in the courts. After all, conceptual clarity is especially relevant in the legal arena, where the nuances of definitions often determine outcomes. Indeed, perhaps the most obvious cases of public religion–science interaction have taken place in the courthouse, e.g., in the famous US trials focused on evolution in public schools. But the way conceptual analysis of the RSR—at least as discussed in this article—enters into the judicial context is not obvious, for most court cases concerning religion and science are not typically about the RSR. Instead, they are about particular theories or books and whether these count as scientific or religious. It is true that courts deal in general with conceptual analysis: they must define religion and define science. But the courts do not then, on the basis of those definitions, derive general characterizations of the RSR, nor do they take interest in such characterizations. Instead, they focus on classifying particular other objects (theories, books, practices) as religion/religious or science/scientific and, to put it roughly, plugging them into the law: if it is religion/religious, it cannot be in the (science) classroom; if it is science/scientific, it can be. Thus, when Michael Ruse acted as an expert in *McLean v. Arkansas* (1981), his conclusion to Judge Overton was not “[t] herefore religion and science are entirely separate endeavors,” but rather “[b]y every mark of what constitutes science, creation-science fails” (Ruse 1982). In this sense, conceptual analysis as discussed in this article is not actually relevant to these rather famous judicial contexts.

Where conceptual analysis of the RSR does enter the legal sphere is where that context overlaps with the apologetic context. It is at least conceivable that an apologist could try to leverage a conceptual analytic characterization of the RSR to demonstrate that their religion is a science and therefore should be afforded a place in the science classroom. Notice how this differs from the argumentative strategy employed by Ruse: the apologist's argument does make reference to the RSR—it is an equivalency relation. In most legal cases, however, the relationship is sidestepped; the arguments occur in the context of an unargued assumption that religion (in particular or in general) and science are

not identical. But, again, for apologists at work in the legal arena, the method of conceptual analysis—especially focused on particular religious traditions—may be a useful tool.

Conclusion

In this article, I have offered a general critique of the method of conceptual analysis as used to characterize the RSR. The method begins by defining religion and science and then, on the basis of those definitions alone, derives the RSR. After reviewing some examples of the method in the literature, I discussed three general issues the method faces: it tends to embrace monolithic conceptions of religion, science, and the RSR; it often over-essentializes the concepts; and it fails to pay attention to the different notions of religion/science often at work in the same socio-historical setting. Despite these issues, conceptual analysis of the RSR should not be abandoned. By addressing these shortcomings, taking care to recognize the multidimensionality of religion/science, being clear about the time-place of the discussions, and acknowledging and incorporating non-elite conceptions of religion/science, scholars can more fruitfully employ the method of conceptual analysis. After all, as I argued in the final part of this article, conceptual analysis may be especially relevant to a variety of publics. As with so many things, the key is reform, not rejection.

Notes

- ¹ Frazer himself calls it a definition, although he cautiously acknowledges that “[t] here is probably no subject in the world about which opinions differ so much as the nature of religion, and to frame a definition of it which would satisfy everyone must obviously be impossible. All that a writer can do is, first, to say clearly what he means by religion, and afterwards to employ the word consistently in that sense throughout his work” (Frazer 1922).
- ² This is in part because Dawes’s “multifaceted” approach is highly influenced by Mikael Stenmark’s “multi-dimensional” approach (as Dawes himself notes; Dawes 2021, 4), discussed later in this article.
- ³ Thanks to Jaehyun Lee for this example.
- ⁴ Thanks to an anonymous referee for this reference.
- ⁵ That is, those who investigate the RSR.
- ⁶ See also Harrison and Milbank 2022 for a very recent development of this view.
- ⁷ This is not to say that Evans employs conceptual analysis. He does not and in fact argues that extant conceptual analyses fail to capture reality.
- ⁸ What matters is that there is not just one religion or science concept at play in the wide religion-and-science discourse that encompasses university-entrenched academics, temple-tied religionists, and ordinary members of society. Dividing the concepts into general classes of “elite” and “quotidian” is certainly a simplifying device but is nonetheless useful for highlighting the quite different conceptions at play.

References

- Barrett, Justin L. 1999. “Theological Correctness: Cognitive Constraint and the Study of Religion.” *Method & Theory in the Study of Religion* 11 (4): 325–39. DOI: <https://doi.org/10.1163/157006899X00078>
- Brooke, John Hedley. 1991. *Science and Religion: Some Historical Perspectives*. Cambridge: Cambridge University Press.
- Brooke, John Hedley, and G. N. Cantor. 2000. *Reconstructing Nature: The Engagement of Science and Religion*. New York: Oxford University Press.
- Bureau of Labor Statistics, US Department of Labor. 2023. Occupational Employment and Wages, May 2022. <https://www.bls.gov/oes/current/oes190000.htm>.
- Cantor, Geoffrey, and Chris Kenny. 2001. “Barbour’s Fourfold Way: Problems with his Taxonomy of Science-Religion Relationships.” *Zygon: Journal of Religion and Science* 36 (4): 765–81. DOI: <https://doi.org/10.1111/0591-2385.00395>
- Chin, Adam J. 2023. “The Aims of Typologies and a Typology of Methods.” *Zygon: Journal of Religion and Science* 58 (3): 656–77. DOI: <https://doi.org/10.1111/zygo.12890>
- Dawes, Gregory. 2021. *Deprovincializing Science and Religion*. Cambridge: Cambridge University Press. DOI: <https://doi.org/10.1017/9781108612623>
- Evans, John H. 2018. *Morals Not Knowledge: Recasting the Contemporary US Conflict between Religion and Science*. Berkeley: University of California Press. DOI: <https://doi.org/10.1525/luminos.47>
- Frazer, James George 1922. *The Golden Bough: A Study of Magic and Religion*. Chapter 4. <https://www.gutenberg.org/files/3623/3623-h/3623-h.htm>. DOI: <https://doi.org/10.1007/978-1-349-00400-3>

- Hall, Norman F., and Lucia K. B. Hall. 1986. "Is the War between Science and Religion Over?" *Humanist* May/June: 26. <https://americanhumanist.org/what-is-humanism/war-science-religion/>.
- Harrison, Peter. 2015. *The Territories of Science and Religion*. Chicago: The University of Chicago Press.
- Harrison, Peter, and John Milbank, eds. 2022. *After Science and Religion*. Cambridge: Cambridge University Press.
- Josephson Storm, Jason Ānanda. 2021. *Metamodernism*. Chicago: The University of Chicago Press.
- Lopez, Donald S., Jr. 2011. "Buddhism." In *Science and Religion Around the World*, edited by John Hedley Brooke and Ronald L. Numbers, 210–28. Oxford: Oxford University Press.
- McGrath, Alister. 2005. *Dawkin's God: Genes, Memes, and the Meaning of Life*. Maiden, MA: Blackwell Publishing.
- National Academies of Sciences, Engineering and Medicine. 2023. Science and Religion. Evolution Resources at the National Academies. www.nationalacademies.org/evolution/science-and-religion.
- Plantinga, Alvin. 2011. *Where the Conflict Really Lies: Science, Religion, and Naturalism*. New York: Oxford University Press. DOI: <https://doi.org/10.1093/acprof:oso/9780199812097.001.0001>
- Ruse, Michael. 1982. "Creation Science Is Not Science." *Science, Technology, & Human Values* 7 (3): 72–78. DOI: <https://doi.org/10.1177/016224398200700313>
- Smedley, Audrey, and Brian D. Smedley. 2005. "Race as Biology Is Fiction, Racism As a Social Problem Is Real: Anthropological and Historical Perspectives on the Social Construction of Race." *The American Psychologist* 60 (1): 16–26. DOI: <https://doi.org/10.1037/0003-066X.60.1.16>
- Smith, Tiddy. 2019. *The Methods of Science and Religion: Epistemologies in Conflict*. Lanham, MD: 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, NJ: Princeton University Press. DOI: <https://doi.org/10.1515/9781400866809>
- Stenhouse, John. 2019. "Christian Missionaries, Science, and the Complexity Thesis in the Nineteenth-Century World." In *Rethinking History, Science, and Religion: An Exploration of Conflict and the Complexity Principle*, edited by Bernard Lightman, 65–82. Pittsburgh, PA: University of Pittsburgh Press. DOI: <https://doi.org/10.2307/j.ctvqc6h4s.8>
- Stenmark, Mikael. 2004. *How to Relate Science and Religion: A Multidimensional Model*. Grand Rapids, MI: Eerdmans.
- . 2010. "Ways of Relating Science and Religion." In *The Cambridge Companion to Science and Religion*, edited by Peter Harrison. Cambridge: Cambridge University Press. DOI: <https://doi.org/10.1017/CCOL9780521885386.015>
- Tolstoy, Leo. (1902) 1987. "What Is Religion and of What Does Its Essence Consist?" In *A Confession and Other Religious Writings*, translated by Jane Kentish. New York: Penguin Classics.
- Tyson, Paul. 2022. "Introduction: After Science and Religion?" In *After Science and Religion*, edited by Peter Harrison and John Milbank, 1–11. Cambridge: Cambridge University Press.
- Weldon, Stephen P. 2017. "Science and Religion." In *Science & Religion: A Historical Introduction*, edited by Gary B. Ferngren, 3–19. Baltimore, MD: Johns Hopkins University Press.

