

Title: A Plea for Greater Historicism in the Science and Religion Conversation
Author: Shapiro, Adam
Institutional Affiliation: Committee on Conceptual and Historical Studies of Science,
University of Chicago

This paper was prepared for “Science and Religion: Global Perspectives”, June 4-8, 2005, in Philadelphia, PA, a program of the Metanexus Institute (www.metanexus.net)

Abstract:

Questions about the relationship between “science” and “religion” have not been eternal, nor do they even span the bulk of human history. Indeed, speaking of such a relationship would have been impossible prior to the existence of something which could be called science. While historians of science extend their discipline much farther into the past than the separation of natural science from natural philosophy, and historians of religion often use a word which emerged in a specific Latin context to describe the bounds of a discipline they have extended even earlier, dialogues of science and religion should be attentive to the contingent and evolving nature of their subjects.

The history of science has been long-attentive to the difficulty of demarcation of its subject. When discussing ancient “scientists” such as Euclid, Ptolemy, or Aristotle, one is cautious to note that the prevailing metaphysical and epistemological assumptions are quite different from those of Kepler or Bacon, and again different from a Watson or Hawking. The question of whether there is something global in time—or in space (as in comparison among contemporary cultures)—which can be called science, is not easily answered. Mindfulness to historical developments serves as a guard against essentialism about science in the larger dialogue.

A similar trend may be observed in the history of religion. Scholarly approaches to religion self-consciously ask questions about the identity of their subject. Is religion defined as faith in a deity, a metaphysical worldview, a community or culture, a system of practices, an adherence to scripture or doctrine, or some admixture of all these? What enables one to speak of Catholicism, Sikhism, and the peyote religion as sharing a common label as “religions?” The history of individual religions often indicates that what is thought to be essential evolves historically. The Judaism of the second Temple is drastically different from the Judaism of twenty-first century America.

Increased historicism can help advance the science and religion dialogue by nuancing conceptions of specific sciences, religions and of science and religion more generally. This suggests that bringing history into the methods for exploring the relationship between science and religion can expand the scope of the dialogue. Not only does it bring a global perspective in space and geography, but also in history and time.

Biography:

Adam R. Shapiro is completing his Ph.D. in the Committee on Conceptual and Historical Studies of Science at the University of Chicago. His dissertation research focuses on the history of biology pedagogy and textbook publishing in the Scopes trial period, and its relation to religious culture in the American South. He received his B.A. from Columbia

University in Physics and Religion and a M.A. in Philosophy from the University of Chicago.

Paper Text:

[W]e are most likely to learn the best methods of discovering truth, by examining how truths, now universally recognized, have really been discovered.

— William Whewell.¹

Introduction--

For the 1893 World Parliament of Religions, Henry Drummond wrote a paper on “Evolution and Christianity,” in which he declared the following:

As to the time-honored question of the relation of that theory [evolution] to the Book of Genesis, it may surely be said that theology has now no longer any difficulty. The long and interesting era of the “reconcilers” is to be looked upon as past.²

Drummond argued that the new criticism of the Bible coming to prominence at that time did away for the need to look for “reconciliation” between science and theology. Genesis does not conflict with science. “Its object is purely religious, the point not being how certain things were made—which is a question for science which the revealer of truth has everywhere left to science—but that God made them.”³

Over a century later, a substantial percentage of the population of the United States disagrees with Drummond’s claim that Genesis does not describe the history of how things are made.⁴ The language of conflict, as well as the language of reconciliation are often heard in what has emerged in a dialogue between “science” and religion.”

Yet even though many people view the account of creation in Genesis to be historically accurate, many of these same people could still agree with Drummond’s assessment that “its object is purely religious.” Drummond’s pronouncement entails a specific conception of religion,—its meaning and scope— or of what is religious, that is not universal. What is meant by “reconciliation” in Drummond’s parlance also seems to differ from what is meant by participants in the contemporary dialogue who often use the

¹ William Whewell. The Philosophy of the Inductive Sciences. (1846) reprinted in: Whewell. Selected Writings on the History of Science. Chicago: University of Chicago Press (1984). p. 123-124.

² Henry Drummond. “Evolution and Christianity” in Richard Hughes Seeger, ed. The Dawn of Religious Pluralism. LaSalle, IL: Open Court Press (1993). p. 288

³ Ibid. p. 289.

⁴ According to a November 19, 2004 Gallup Poll, 45% of Americans surveyed agreed with the statement that “God created human beings pretty much in their present form at one time within the last 10,000 years or so.” Poll data summarized in: http://www.ncseweb.org/resources/news/2004/US/724_public_view_of_creationism_and_11_19_2004.asp. Accessed 31 March, 2005.

same rhetoric. In the history of the relationship between entities called “science” and “religion,” the meanings of both words have evolved, and the dialogue between these two, even the assumption that there are two different and separable entities, has changed and developed over time.

A greater role for history may be useful in advancing the Science-Religion dialogue. The very existence of a dialogue rests on several assumptions. A dialogue presupposes the existence of two separate participants, in this case, one called “science” another called “religion” and that these participants are understood or demarcated in such a way that a relationship between them can be established. There is a single category “science” which unifies the various disciplines—chemistry, astronomy, biology, physics, and so on—which are commonly accepted as scientific; likewise, a single category “religion” that unites Adventism, Shinto, peyote religion, and Islam. The development of such general categories that apply across specific instances of scientific or religious events is itself a historical one.

More than just providing a history of the Science-Religion dialogue itself, lessons can be drawn from the separate histories of science and religion that call into question, or place into context, characteristics treated as essential and unchanging. This does not summarily reject the claim that there are essential features of either science or religion, but enables a broader consideration of any candidate feature.

In addition to the history of science, in general, and the history of religion, in general, attention must also be paid to the history of specific sciences and specific religions. This not only invites philosophical introspection into particular issues, but also calls into question assumptions about what unifies such diverse concepts such as science and religion.

Lessons from the History of Science

Dialogue between science and religion would be impossible without science. Although the word derives from the Latin *scientia*, meaning knowledge, historians of science tend to view seventeenth-century Europe as the location for the “Scientific Revolution” when science began to be distinguished from natural philosophy. Natural philosophy consisted of investigation into nature, but this did not exclude consideration of a deity, or speculations into metaphysics. Perhaps the most important investigation of nature to come from this period was Newton’s *Philosophiae naturalis principia mathematica*. Newton himself, as the title suggests, conceived of this as a work of natural philosophy, yet today, Newtonian physics is frequently held up as the quintessential example of all that is science.

As the historian Steven Shapin notes “Newton’s achievement was represented by many contemporaries as the perfection of mechanical philosophy and by historians as the culmination of the Scientific Revolution.”⁵ Newton’s work connected terrestrial and celestial phenomena, it also connected mathematical representations of nature with observed phenomena, but the lasting impact of his discoveries were made possible because of the esteem of his contemporaries, aware of the larger philosophical dialogue

⁵ Steven Shapin. The Scientific Revolution. Chicago: University of Chicago Press (1996). p. 63.

which Newton engaged. Newton's universe, unlike Kepler's, required no "soul" to automate the sun, yet it made use of a universal mutual attracting force, the cause of which he did not attempt to hypothesize. For other natural philosophers, particularly those on the continent, Newtonian gravity smacked of action at a distance, movement without a mover, and was initially suspect. Newton himself attempted in vain to resolve this. As Shapin relates:

For Newton it was 'absurd' to regard gravity as acting between bodies at a distance, without the mediation of material bodies, and he persistently tried to find a *modus operandi* for how gravitational attraction was conveyed through a medium. Yet even without that physical theory, gravitational attraction was *not* to be regarded as unintelligible: its intelligibility resided in the lawful account of its action. The law of gravitation could be used for explanatory ends even if no mechanical cause could be specified.⁶

In order for something to be intelligible, it must be intelligible to someone. For Newton, this was found in a fledgling community established in 1660 in London. The Royal Society lays claim to being the oldest scientific society in the world and it was in this organization that the modern invention of science first found expression. Just a few years into its history, Thomas Sprat memorialized the Society's heritage.

Sprat's history begins by tracing the history of philosophy from the ancient Greeks to his own Age. In his age, the received authorities of ancients like Aristotle has been called into question, and Sprat finds praiseworthy this "sort of *new Philosophers*, have been those who have not only disagreed from the *Antients*, but have also propos'd to themselves the right course of slow, and sure *Experimenting*." ⁷ Above all others, Sprat calls to attention "one great Man, who had the true Imagination of the whole extent of this Enterprize, as it is now set on foot; and that is, the *Lord Bacon*."⁸

The Royal Society drew inspiration from Francis Bacon, whose *Novum Organon* helped shape the philosophical basis for inductive science: relying upon first-hand sensory experience and rejecting the authority of tradition or the received word of the ancients. Consequently, despite great emphasis on individual experience, knowledge could be best advanced through public demonstrations shared among members. Moreover, by joining together, the Society found discipline and support for its investigation of nature that has become essential to conceptions of scientific ethos. Sprat documents these beginnings:

There first purpose was no more, then onely the satisfaction of breathing a freer air, and of conversing in quiet with one another, without being engag'd in the passions, and madness of that dismal Age. And from the Institution of that *Assembly*, it had been enough, if no other advantage had come, but this: That by this means there was a race of young Men, provided, against the next Age, whole minds receiving from them, their

⁶ Ibid. p. 64.

⁷ Thomas Sprat. History of the Royal Society. London: Matryn (1667) reprinted St. Louis: Washington University Studies (1958) p. 35.

⁸ Idem.

first Impressions of *sober* and *generous knowledge*, were invincibly arm'd against all the enchantments of *Enthusiasm*.⁹

The term scientist to describe men such as the Fellows of the Royal Society is not coined until the nineteenth century, but its minter, William Whewell, was himself a Fellow of the Royal Society and used the principles of its community as archetype. If one accepts that the Royal Society marks the beginning of the modern differentiation of “science” from “natural philosophy,” then the details of its institution are essential to determining how the concept of science emerges.

Sprat refers to “the passions and madness of that dismal Age.” He refers to the age of the Protectorate, the civil war that ravaged much of England. The *Royal Society* was one of the first institutions established after the Restoration. The mores and values that characterize the society, often conceived of being eternal and essential hallmarks of science, are responses to the political and social climate of the time.

A reliance on the induction of one’s own experience says nothing about the manner in which one is supposed to conduct such observations. The notion that science is dispassionate, sober investigation into nature stems in part from antipathy to the religious enthusiasm seen under Cromwell. This was not an essential character of science per se; it does not come from the philosophy of Bacon, but it was characteristic of those men who founded the Society, and consequently, became a pattern of conduct for experimental reasoning.

The Royal Society, while wary of religious enthusiasm, was hardly irreligious. Sprat could not have conceived of a relationship or conversation “between” science and religion, not only because he viewed the project of the Royal Society to be natural philosophy, but also because this was seen as being part of religion. Sprat finds the basis for a dialectic, but not between natural philosophy and religion, but between different aspects of religion itself. Ideally: “all wise Men should have two Religions; the one, a *publick*, for their conformity with the people; the other, a *private*, to be kept to their own Breasts: I am confident, that most considering Men, whatever their first were, would make ours their second, if they were well acquainted with it.”¹⁰

Sprat’s history both described the ethos of the early Royal Society and—by describing them—codified practices that became normative of science. Above all, this cemented the idea of science as a community of individuals, not something done in isolation by great men. Natural philosophy is a public discourse, and the basis of a private religion. In drawing this distinction, Sprat identifies the public face of religion as one of affiliation with a church or community, while private religion refers to one’s worldview, though it is not so private that it cannot be shared amongst the members of the society.

The role played by the Royal Society in the history of science is substantial. Its membership includes such epoch-making scientists as Priestley, Darwin, Einstein, Crick, and Hawking. The traditions and norms of the Society became equated with the norms of science as the British Empire spanned the globe and its technology and methods became adopted by others.

⁹ Ibid. p. 53.

¹⁰ Ibid. p. 63.

This is not to say that in order to discover what science essentially is, one needs look to Bacon or Sprat. Science changes. From its very origins, sources of influence may be internal—due to the nature of discoveries—or external—shaped by the political, moral and economic climate.

That external considerations should substantially shape science's conception of itself should come as no surprise to those familiar with the writings of Thomas Kuhn, whose *Structure of Scientific Revolutions* is perhaps the most influential and most famous work of scholarship in the history of science. Kuhn's basic argument is that science consists in a succession of competing paradigms. Paradigms are worldviews, ways on conceiving nature and one's ability to investigate it.¹¹ Alternately, paradigms may be conceived of as language systems within which questions and answers can be made intelligible. Scientific communities operate within a paradigm, posing questions and answering them with reference to experiment. "New and unsuspected phenomena are, however, repeatedly uncovered by scientific research, and radical new theories have again and again been invented by scientists."¹² Scientists frequently encounter phenomena that cannot be interpreted according to prevailing worldviews, and in such moments of crisis, the community is prepared to accept new paradigms that account for the phenomena. This is not to say that new paradigms are constructed specifically to cope with anomalous data, but that their success in the scientific community stem in part from efficacy. "Einstein, for example, seems not to have anticipated that general relativity would account with precision for the well-known anomaly in the motion of Mercury's perihelion."¹³

Kuhn, however, argues that the ability of Einstein's theory of general relativity to account for phenomena not explained by Newtonian mechanics does not mean that one can speak of an old paradigm being wrong in any essential sense. The laymen who scoffed at Einstein's general theory of relativity because space could not be "curved"—it was not that sort of thing—were not simply wrong or mistaken.... What had previously been meant by space was necessarily flat, homogeneous, isotropic, and unaffected by the presence of matter. If it had not been, Newtonian physics would not have worked.¹⁴

Kuhn's construction of the history of science illustrates a succession of paradigms that are incompatible with one another. What remains consistent throughout revolutions is the existence of a scientific community. Revolutions occur within communities. The scientific community adopts new members through its processes of education. Kuhn identifies this as the major mechanism for change; revolution occurs less through the rational consideration of individuals within the scientific community (indeed rational consideration is constrained to the meaningful language internal to a paradigm,) but through the gradual social change that comes through generations. "But there is no single argument that can or should persuade them all. Rather than a single group conversion, what occurs is an increasing shift in the distribution of professional allegiances."¹⁵

¹¹ Kuhn. p. 111-135.

¹² Ibid. p. 52.

¹³ Ibid. p. 155.

¹⁴ Ibid. p. 149.

¹⁵ Ibid. p. 158.

The social and political structure of the scientific community, not merely rational consideration, shapes how science reinvents itself. Control over research programs, publications, and education create conditions that draw supporters of a dominant paradigm into the scientific community. It is this process that creates continuity, and allows one to call both Newton and Einstein “scientists,” even if Newton’s physics and Einstein’s physics are not even composed in the same world-view. Applied to eras before science was differentiated from philosophy, claims of such continuity are what enable scientists to claim the lineage of Aristotle and Ptolemy, and to call the ancients scientific.

Reliance on new membership in a scientific community to advance the progress of science illustrates the fact that such a community cannot be wholly isolated from the rest of the world. People are not born into science, and the issues that shape their individual worldviews will not

An example of this is treated in Adrian Desmond’s history of biology and politics in 1830’s England. Desmond points to competing conceptions of evolution that precede Darwin’s and relates these to the polarized society suffused with struggles over industrialization, democratization and class relations. Belief in “progress was a political concept that closely related to one’s conception of nature. “Darwin himself deplored the turbulence of the 1830s and shuddered at the mere mention of revolution. In his notebooks he actually talked of the natural, lawful processes of change of nature and society obviating the need for any sort of violent interruption.”¹⁶ Scientists are not ignorant of social and political conflicts, neither are they objectively rational without any influence from the community they are born into. This shapes not only the personal life of the scientist, but can also shape the available discourse with which scientific change is arbitrated. Perhaps at no time is this truer than at moments of scientific “revolution”—even when those who inaugurate it shudder at the mere term.

A far-from-complete overview of the history of science yields some important lessons. Any general claim about what science essentially “is” should be tempered with the recognition that characteristics of science are products of historical circumstance as much as products of discovery about the natural world. Philosophers of science have struggled for centuries over the issue of “demarcation,” establishing rules that allow for the distinction between science and non-science. By the twentieth century, philosophers such as Kuhn had demonstrated the futility of establishing a priori rules of what science is. Science has certain features: it is social and historical at least as much as it is empirical or naturalistic. To discuss “science” abstractly, one must look beyond the objects which science studies and the results it obtains, to the process and context of discovery.

Lessons from the History of Religion

The history of religion is the history of pluralism. It has been observed that some groups typically identified as “religions” avoid using the word “because identifying their

¹⁶ Adrian Desmond. 3:12 AMhe Politics of Evolution. Chicago: University of Chicago Press (1989) p. 2.

faith as a *religion* implies that there may be other, equally valid faiths.”¹⁷ The concept of “religion” as an abstraction seems to imply—or at least hypothesize—that there is some deep commonality of features between religions.

Yet those who would claim the greatest exclusivity are those which seem the best candidates to be called religions. The reason for this may be an historical one, as the term “religion” itself emerged in a Latin context which survived through traditions steeped in exclusivity. While the coinage of the word “scientist” is known, and the use of the word “science” to differentiate certain endeavors from natural philosophy is well documented, the emergence of the word “religion” comes from a disputed origin reaching back millennia. The Oxford English Dictionary traces this conflict. The word derives for the Latin *religionem*, but to this word is imputed multiple origins. Cicero claims that it “derives from the verb to review (*relegere*)” and compares it to other words that have “the same force of ‘choosing’ which is present in the adjective ‘religious’.”¹⁸ The verb *relegere* is also translated as rereading.

Augustine claims different etymologies, “we are told that the word ‘religion’ comes from *relegere*, to ‘re-elect’”¹⁹ or to devote oneself to God after neglecting him. Elsewhere, Augustine likens the word to *religare*, or binding.²⁰ Augustine himself specifies a wider social usage of the word as well:

The word ‘religion’ would seem, to be sure to signify more particularly the ‘cult’ offered to God, rather than ‘cult’ in general; ... However in Latin usage ... ‘religion’ is something which is displayed in human relationships, in the family (in the narrower and wider sense) and between friends; and so the use of the word does not avoid ambiguity when the worship of God is in question.²¹

Regardless of which of these origins (if any) are philologically accurate, the conception of what the term “religion” meant was influenced by an admixture of these two senses, bringing to the term the concept of reading, and the concept of binding, of community or collective participation.

These meanings are neither sufficient nor necessary to describe all that is called religious today. Sprat, for example, spoke of both a public religion, which bound one to a community, and a private one. To state that religion is rooted principally upon reading would exclude the many cultures whose religions spring from oral traditions or spoken revelations rather than written words.

Perhaps no example better illustrates the evolution and expansion of the concept of religion outside of the context of its initial formation than the creation, or discovery, of

¹⁷ Randall Balmer. *Mine Eyes Have Seen the Glory*. New York: Oxford UP. (1989/1993) p. 4f.

¹⁸ Cicero. *The Nature of the Gods*. P. G. Walsh, trans. Oxford: Clarendon Press (1997). p. 73.

¹⁹ Augustine of Hippo. *City of God*. Henry Bettenson, trans. New York Penguin (1972/1984). p. 376.

²⁰ Augustine. *Retractationum*. i. XII. In *Corpus scriptorum ecclesiasticorum Latinorum*. Vol. 36. Vienna: Vindobonae (1866). p. 64-65.

²¹ Augustine. *City of God*. p. 373.

Hinduism as a religion. This historical episode has been written on extensively, and controversially. As one historian of Hinduism has put it, “Hinduism—the word, and perhaps the reality too—was born in the 19th century.”²²

The presence of the British in India dates to the beginning of the seventeenth century, beginning with the East India Company, and much of the region was placed under the British crown in 1858. Many scholars point to the British government’s census-taking as instrumental in creating the conception of something called “Hinduism”. The word “Hindu” or “Gentoo” is a cognate of India, and has often been thought to derive ultimately from the Indus River which gave name to both the land and its inhabitants.²³ Regardless of its origin, the use of the word as a cultural identifier became altered in the colonial period.

The British census of 1891 sorts people by religion. A table printed in the census contains a “Diagram shewing the Number of Persons belonging to each of the Main Religions in Assam”. There are five religions listed: “Hindus,” “Musalmans” “Animistic” “Christians” and “Buddhists.”²⁴

The census also attempts to provide a religious history of India. “But whether Buddhism was ever the State religion or not, it is clear that it was preceded, as it was followed, by Hinduism.”²⁵ The census depicts various “sects” of Hinduism²⁶ and attempts to explain the development of competing religions.

Yet the census is also very self-conscious about its methods and their limitations, it nonetheless, imposes a structure upon the religious composition of the region. “I know that, as a general rule, a native of India is looked on as a Hindu, if he does not definitely say that he is something else.”²⁷

The travel writing of some British visitors to India in the eighteenth century describe the “religion” of the “hindoos.” Frequently, their use of the term and features of religion are essentially comparative, and their accounts emphasize similarities with European religion in structure, if not in doctrine. One of the earliest such accounts, that of, John Zephaniah Holwell emphasizes the monotheistic nature of “the Gentoos” writing:

We have seen that the original divine institutes of Bramah are simple and sublime, comprehending the whole compass of all that is; God, angels, the visible and invisible worlds, man and beasts; and is comprized under the following articles of the Gentoo Creed. To wit—

²² John Stratton Hawley. “Naming Hinduism” *Wilson Quarterly*, (Summer 1991). p. 20.

²³ According to at least one early travel writer: “The Hindoos are so called from Indoo or Hindoo, which in the Shanscrita language, signifies the Moon; ... the great river Indus takes its name from the people, and not the people from the river, as has been erroneously supposed in Europe.” Alexander Dow “A Dissertation concerning the Customs, Manners, Language, Religion and Philosophy of the Hindoos” (1768) in P. J. Marshall, ed. *The British Discovery of Hinduism in the Eighteenth Century*. Cambridge: Cambridge University Press (1970). p. 114.

²⁴ *Census of India, 1891*. Shillong: Assam Secretariat Printing Office (1892). p. 79

²⁵ *Ibid.* p. 80.

²⁶ *Ibid.* p. viii.

²⁷ *Ibid.* p. 82f.

That there is one God, eternal, omnific, omnipotent, and omniscient, in all things excepting a prescience of the future actions of free agents.²⁸

The religion of India Holwell discovers is one remarkably similar in doctrine to a familiar Christianity of the age. Yet another writer draws a similarity in structure: Indeed the whole office, as well as the sacred preeminence of the Braminical tribe, is almost an exact counterpart of that of the Levitical: the Levites were forbidden wine; so are the Bramins: the Levites were to assist the magistrate's judgment in difficult cases; so are the Bramins: and, in every other respect, the resemblance might well authorize a suspicion, that they had originally some remote affinity to each other, though conjecture cannot possibly trace the source of the connexion.²⁹

The connection, one may suggest comes from the particular expectations of the observer drawing the comparison. Not only does the similarity in structure permit the European to comprehend (or to believe that he comprehends) this culture, but its particular equation with Levitical roles place the culture into a relationship with Christian culture that is implicitly hierarchical.

At first glance, these travel writings seem quaint—or perhaps, dangerously colonial and orientalist. Did the people of India see themselves as correspondent with the Levitical structure? Certainly not. Does the use of such reference points skew and reshape the framework in constructing Hindu social identity? It is not difficult in an India that has been partitioned along religious lines, and that has seen the language of religiously branded nationalism occur in prominent political platforms. The website of the Bharatiya Janata Party (BJP), articulates a philosophy of Hindutva, defined as “Cultural Nationalism.” The website declares: “It must be noted that Hindutva is a nationalist, and not a religious or theocratic, concept.”³⁰ Yet an essay on the site asks the question: “How long can a people go on believing themselves to be and calling themselves Hindus and yet not know what it means and takes to be Hindus?” After alluding to the diversity of conceptions of Hinduism, the essay resolves this problem. “But this obfuscation arises when Hinduism is classified in every conceivable way except as what it ultimately is: The Eternal Religion.”³¹

What was at one point an external definition has become internalized, as seen especially in the postcolonial period. Hinduism has become a source of patriotism underlying the nationalist visions of the BJP. The definition and redefinition of

²⁸ John Zephaniah Holwell. “The Religious Tenets of the Gentoos.” (1767) in Marshall, p. 77.

²⁹ Nathaniel Brassey Halhed. “The Translator's Preface' to *A Code of Gentoo Laws*” (1776) in Marshall, p. 180-181.

³⁰ <http://bjp.org/philo.htm>. Accessed, 31 March, 2005.

³¹ Gautam Siddharth. “The Eternal Religion's Defining Movement in Time” (April 30, 1996). on: <http://bjp.org/history/htvgs-6.html>. Accessed, 31 March, 2005.

Hinduism, what began through anecdotal experiences in the eighteenth century became definitive both socially,³² and as government policy in the nineteenth, and

The specific example of the British colonial experience in India illustrates the fundamental difficulty for historians of religion to demarcate their subject. Regardless of how one chooses to construct the history of Hinduism, as eternal religion or as British construction, the British interaction with Hinduism shapes the way in which individuals identify themselves, and the way in which they find identification to be important. This also raised questions over the scope of religion, as opposed to customs, manners, and philosophy. Is a hierarchical caste a religious structure, or a social one? Is uniformity of belief necessary? Presupposing answers to this sort of questions, these observers constructed their own understanding of Hinduism as a religion, using their own ideas of religion as template.

This history of Hinduism illustrates the difficulty of determining the essential characteristics of a single religion. What seems to define the religion changes over time, and depends on whether the definition is imposed from an external observer or is one of self-identification. In the case of something like the 1891 census, the external observers act of census taking prompts self-definition.

More importantly for the history of religion, in general, the colonial experience in India compelled not only a reevaluation of Hinduism, but also of the concept of religion itself. A look at the arguments given by various individuals—both those identified as Hindus and not—for what constitutes a Hindu religion sheds light on how the term has evolved from the meanings ascribed to the word from Cicero and Augustine. The belief in a deity is invoked by one account, of hierarchical structure and social organization by another. By a third, it refers to the land of ones nativity; the census counts as Hindus those who are native born who are not already members of other religions. One cannot be without a religion, but one's religion change, through conversion. The equation of such nativism with nationalism is specifically not identified as religious by the BJP, yet Hinduism is also called "The Eternal Religion."

In many of these conceptions, the evaluation of what is religious relates to the type of ideas. Hindutva is not a religious "concept;" the Gentoo's have a "Creed." In others, the definition is social, focusing on the practices of people, or the self-professed affiliations of the population. These definitions will not produce the same picture of religion, or of religions, yet both social and conceptual attributes contribute to the continuity that enables one to speak of the history of a "religion." In the words of Alexander Dow, "it would be as ridiculous to hope for a true state of the religion and philosophy of the Hindoos from those illiterate casts, as it would be in a Mahommedan in London, to rely upon the accounts of a parish beadle, concerning the most abstruse points

³² The Society for Promoting Christian Knowledge published a handbook on *Hinduism* in 1877 that circulated widely and helped establish the concept of Hinduism as a religion. As Hawley notes: "Its very existence in that series served to set the Hindu religion on a par with Buddhism, Judaism, Confucianism, and all the other 'isms' that still figure, for better or worse, as the major building blocks in our modern conception of world religion." Hawley, p. 21-22.

of the Christian faith; or, to form his principles of the Newtonian philosophy, from a conversation with an English carman.”³³

This dynamic between different measures of religion persist through the development of the academic study of religion. The treatment of religion as an object of study begins in the nineteenth century with the work of individuals such as Friedrich Max Müller, whose investigation into ancient Sanskrit texts helped create the field of comparative religion. Müller’s investigations dealt with comparison of ancient texts, and emphasized the concept of scripture as essential to religion. Following this but focusing on experiential, rather than textual aspects of religion were William James’s Gifford Lectures of 1901-1902, *The Varieties of Religious Experience*, and a more social scientific examination of religion as ritual and practice in Emile Durkheim’s 1912 *Elementary Forms of Religious Life*.

In the midst of these publications was the first World’s Parliament of Religions, held in Chicago in 1893. The Parliament proclaimed itself augur of a new era of toleration and pluralism; from its very outset, concepts of religion were oft-considered. As one member of the Central Committee welcomed the assembly: “I appeal to the representatives of the non-Christian faiths, and ask you if Christianity suffers in your eyes from having called this Parliament of Religions? Do you believe that its beneficent work in the world will be one whit lessened?”³⁴

In his welcome, typifying religion as “faith” imputes an essential characteristic to religion which fits naturally with some religions much more than others. Another Protestant speaker asserted: “Religion, that is, the power of perceiving the infinite and the eternal is a characteristic of man, as man.”³⁵

At the same time that the study of comparative religion is beginning to take hold, religion’s relation to science is being debated. In 1875, John William Draper wrote *The History of the Conflict between Religion and Science*, and in 1892, Cornell University President Andrew Dickson White penned *The History of the Warfare Between science and Theology in Christendom*. Both of these books sought to be comprehensive histories, and began their portraits of conflict with ancient conflicts, viewing them according to anachronistic categories of science and religion. For both Draper and White, the conflict had only one resolution, the conquest of science.

Definitions of religion, like definitions of science have evolved throughout history, responding both to new ideas and to new activities of communities. This is true both of religion as a general concept—where Augustine suggested that it was a word best applied only to a cult offered to God, modern scholars seek ecumenism and comparative studies between them, and the most exclusive of communities abhor the word for its implication—and also true of specific religions. The Judaism of the Second Temple—its metaphysical conceptions of the self and world, its ritual practices, and its moral beliefs—are substantially different from American Judaism today, though the progression from one to the other has been continuous, within parts of the same, historically contiguous, community

³³ Dow, p. 119.

³⁴ John Henry Barrows. “Words of Welcome” in Seeger, p. 25.

³⁵ Lyman Abbot. “Religion Essentially Characteristic of Humanity” in Seeger, p. 53.

What unifies a religion over time is not the ideas that are seen at any given time to be fundamental to a particular religion, but the continual development of religious communities who value those ideas. To discuss “religion” abstractly, one cannot look to characteristics that are present in only some religions, no matter how necessary they seem; neither can one distill an essential nature of religion from comparison between major world religions. The history of attempts to do so, such as the World’s Parliament of Religions, has either imposed commonality by fiat, or found such overlap to be extremely limited. What many world religions do share is a common history as “religions.” Whether the term could be said to apply to them before their encounter with the Latin/European context in which the concept emerged, or whether other conceptual frameworks similar to that of “religion” existed independently,³⁶ the history of religion has engaged a global context, and has not only increased understanding of traditions and communities, but also given shape to them.

Science and Religion, as an Historical Context

The goal of the preceding sections has not been to provide rigorous or indisputable histories of science or religion, nor has it been to make positive claims about the nature of these subjects. The aim of these sections has largely been cautionary, to warn against essentialism in the Science-Religion conversation. Before speaking of categories, such as nature or spirit, as concepts that can be compared, or examined empirically, one would be well-served to question the very existence of such categories.

Neither should one interpret these histories as endorsing an originalism: that meanings of science and religion should be construed only in a narrow philological context. To do so evades the actual subject of the Science-Religion dialogue. To insist on a narrow primitive meaning, by fiat, denies the historical truth that both science and religion have evolved.

Studies of science and religion have embraced this, as, in the latter half of the twentieth century, scholars began to pay attention to the social elements of both science and religion. The rise of sociology of scientific knowledge (SSK) and a renewed interest in religion as it is practiced, or “lived religions.” This is not only true in studies of science today or religion today, but has opened new venues in history. In turn, the profusion of historical narratives examining a science or a religion as a community developing in a social context reinforce the utility of examining both science and religion as embodied in a society.

Thus the plea for historicism is not merely a plea for understanding the origin and development of ideas, but of the societies that value and contribute to the expression of those ideas. This is of especial importance to the Science-Religion conversation. This history of the relationship between things called science and religion cannot be envisaged as a relationship between abstract concepts, but must be looked at as a relationship within a community which holds these ideas, (or between interacting communities which hold differing ideas.) This can be seen in the history of science—such as in Desmond’s

³⁶ An example of this might be the promise of God in Genesis to make a “nation” of Abraham. The use of the word has some features similar to those of what is called “religion,” but the implications are not identical.

picture of conflicts within British society of the early nineteenth century—and in the history of religion—in the encounter between British and Indian societies in the colonial era.

The juxtaposition of these two histories, both affecting British society at the same time, might suggest an historical connection between the developments of science and religion in these periods. What are the implications of viewing science as a colonial enterprise? Does the attempt to speak of pre-colonial non-Western studies of nature as “science” distort their investigation, or does it compel reexamination for what is scientific?

This history brings particular questions concerning the notion of a Science-Religion dialogue. Is the very notion of such a dialogue in some way orientalist? Is it a vestige of particular conceptions of modernity? Does the continuing emphasis on a dialogue or conflict between science and religion compel other societies to reconstruct themselves in affiliation with one or the other?

The history of the relationship between science and religion often shows a tension between communities as opposed to ideas. Perhaps the most famous episode of the Science-Religion dialogue in United States history has been the Scopes trial of 1925. The trial of a young school teacher for violating a state law prohibiting the teaching of evolution became one of the most widely-covered media events of the era, and has shaped conceptions of how science and religion have related to one another ever since.

The public face of the trial had very little to do with the legal facts, and the lingering image has been that of Clarence Darrow questioning William Jennings Bryan about such events in the bible as Joshua’s commanding the sun to stand still, a whale swallowing Jonah, and Cain’s ability to sire offspring. These questions have nothing to do with whether the idea of evolution is true, or whether the idea of evolution is antithetical to the Bible. None of this even had to do with whether or not John Thomas Scopes violated a law that proscribed teaching “the story of the Divine Creation of man as taught in the Bible, and to teach instead that man has descended from a lower order of animals.”³⁷

The public presentation of the trial emphasizes the essential conflict between a scientific theory, that of evolution, and a theological doctrine, that of Fundamentalism or of Biblical literalism. While participants in the Science-Religion Dialogue try to explain the relationship between these ideas,³⁸ an understanding of the history of this episode shows a deeper underlying conflict.

The Anti-Evolution law, which led to Scopes agreeing to be tried as a test case, was passed as part of a legislative session in which the State of Tennessee enacted sweeping education reform, providing the money to create a high school in every county in the State and extending the school year. The Anti-evolution law was proposed by John Washington Butler, a legislator from the Cumberland valley, as part of a perceived tension between urban progressivism which supported public education, and rural

³⁷ Scopes v. State 154 Tenn 105.

³⁸ For example, Ian Barbour. Religion in an Age of Science. San Francisco: Harper (1990).

agricultural communities who saw the values of their way of life under attack by the civic lessons taught in compulsory schools.³⁹

Taking this into consideration, the seemingly eternal conflict between two ideas, one scientific, the other religious, is not so much an eternal conflict that inevitably would find expression in a trial like this. Comparisons between Scopes and Galileo, Giordano Bruno and Socrates may be ill-founded. At the same time, the fact that such comparisons were made helps to reshape the notion of what was essentially at stake in this episode.

On one level, the trial was an occasion for a clash between different communities, such as the urban Northern progressives who had formed the ACLU, and rural Southerners whose way of life was under severe economic pressure after World War I. At another level, the clash could be seen as a political one, as John Neal, Scopes's lead defense lawyer, had run against the incumbent governor, Austin Peay, in the democratic primary of 1924. On a more national level, the trial pitted the former Secretary of State Bryan, who had lost the battle within his party to keep the U.S. out of war, against the emerging liberalism of the ACLU, which had begun as an organization defending draft resisters in that war.

The legacy of the First World War also affected the Scopes trial in a curious indirect way, as paper shortages after the war caused the price of printed matter to nearly double shortly after the State of Tennessee adopted textbooks in 1919. In 1924, faced with the prospect of entering into a new contract for textbooks at a much higher price, the Governor and the State Textbook Commission postponed the new adoption. Because the contract did not expire until September, just after the start of the new school year, most students could still purchase books at the lower prices.⁴⁰ Had it not been for this, Scopes would not have been teaching from the eleven-year-old textbook *A Civic Biology*, by George W. Hunter,⁴¹ and perhaps the Anti-evolution legislation, or the trial itself, may not have occurred. At any rate, it would not have occurred in the way that it did, and so would not have determined so much the course of the science and religion relationship in the United States even today.

The courtroom has often been an arena where the relationship between science and religion is arbitrated and redefined. This continues even today, with the decision earlier this year in the case *Selman v. Cobb County*. In this case parents of students attending school in Cobb County, Georgia sued over the placement of a sticker placed in biology textbooks stating:

This textbook contains material on evolution. Evolution is a theory, not a fact, regarding the origin of living thing[s]. This material should be approached with an open mind, studied carefully, and critically considered.⁴²

³⁹ Jeanette Keith. Country People in the New South. Chapel Hill: University of North Carolina Press (1995).

⁴⁰ P. L. Harned. List Prices of Text Books Adopted in 1919 and Prices on the Same Books from September 1, 1924 to June 30, 1925. Nashville: State of Tennessee (1924).

⁴¹ George W. Hunter. A Civic Biology: Presented in Problems. New York: American Book Company (1914).

⁴² *Selman v. Cobb County*

The United States District Court ruling in the case (which, to date, is being appealed) is perhaps most notable for its use of history in determining its ruling. “Just as citizens around the country have been aware of the historical debate between evolution and religion, an informed, reasonable observer in this case would be keenly aware of the sequence of events that preceded the adoption of the Sticker.”⁴³

Whether or not this decision is ultimately upheld, it makes plain the understanding that religion and science are both historical entities, and the relationship between the two is one which must pay heed to such history. This may be true most especially in the legal sphere, where decisions must be reached when a court accepts a case, but it is also advisable in the more general philosophical discourse about science and religion, either abstractly, or with regards to specific episodes and specific relationships.

Ultimately, history should be used in furthering the Science-Religion dialogue. This claim is not limited to the history of the dialogue itself, though examining the conditions in which the conceptions of a dialogue, or of a conflict emerged would be instructive. This requires distinguishing between the history *of* the Science-Religion dialogue, and the use of history *in* the Science-Religion dialogue. The latter treats concepts as historical phenomena. Perhaps most importantly, it examines the relationship between science and religion as embodied in societies around the globe, each with their own histories, brings new depth and sensibilities to existing strategies for discussing science and religion and suggests areas where new strategies can be employed.

⁴³ *Idem.*