INTRODUCTION

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The studies gathered in this collection showcase the rich and diverse responses to evolutionary ideas around the globe in the long nineteenth century. Evolutionary figures who championed a variety of theories appealed to different religious traditions. As a result, no single pattern, whether it be harmony, integration, or least of all conflict, is comprehensive enough to capture the complexity of the global cultural engagement with evolution and religion in this period. Consider these examples of very different relations between religious and evolutionary doctrines in Argentina, Türkiye, and Japan. Three years after the publication of the *Origin of Species* (1859), an Argentinian lawyer named José Manuel Estrada (1842–1894), who was also a defender of Catholic thought, complained about those intellectuals in Buenos Aires who had been touting Jean-Baptiste Lamarck's transformism. Estrada was a key figure during parliamentary discussions about secular education in the early 1880s. Although fifty years earlier Charles Darwin (1809–1882) traveled through Argentina while on the *Beagle* voyage, he was not the only evolutionist discussed in the controversies during the eighties. In fact, Darwin's theory was understood through the evolutionary concepts of Herbert Spencer. But Spencer's evolutionary theory diverged significantly from Darwin's, particularly when it came to its implications for religion. In some regions of the world, Darwin was read

through the evolutionary perspective of other evolutionary figures in addition to Spencer. In fact, during the late nineteenth century, Muslim intellectuals in Ottoman Türkiye found Ernst Haeckel's writings important in their attempts to build a broad worldview. Inspired by their reading of Haeckel, they created a connection between materialism and evolution that was compatible with their faith. This allowed the introduction of ideas of previous Islamic intellectuals, such as the twelfth-century scholar, mystic, and philosopher Ibn ʿArabî (1165–1240). But neither Haeckel nor materialism appealed to Japanese intellectuals with a commitment to Buddhism. In the beginning of the twentieth century, members of Jinsei gakkai (the Society for Studies of Humanity), an academic society in Japan, organized a conference at the University of Tokyo to mark the momentous occasion of the fiftieth anniversary of the publication of the *Origin*. The lead organizer, Fujikawa Yū (1865–1940), a medical doctor and polymath, was the driving force behind a new publication that focused on the scientific understanding of humankind, the journal *Jinsei*. Fujikawa was an adherent of Jōdo Shinshū (the True School of Pure Land). His commitment to Buddhism was not apparent at the conference, nor did he see any conflict between his faith in Buddhism and evolutionary theory.

In this volume our goal is to explore how intellectuals and the public around the world viewed the relationship between science and religion from about 1800 to about 1920. We have attempted to provide a broad range of national and transnational perspectives. This goal has taken us to Britain, Spain, and the United States but also to New Zealand, Australia, India, Egypt, Argentina, Sri Lanka, China, Japan, and the Ottoman Empire. While various European countries and the United States of America receive some attention, our emphasis is on other parts of the world that are underexamined in modern histories of evolution and religion developed in the United Kingdom and North America. Some chapters deal with a single country or geographic region, while others take a transnational viewpoint. We have examined a variety of religious traditions, including Christianity, Hinduism, Buddhism, Confucianism, and Islam, as well as the intersection of multiple religious traditions. We have drawn attention not only to European scientists other than Darwin who played a significant role in the dissemination of evolutionary ideas but also to the central figures in national contexts who appropriated scientific theories for their own purposes. Many of these central figures were not scientists. They were missionaries, religious figures, journalists, cartoonists, indigenous leaders, novelists, popularizers of science, educators, and politicians. It is important to note that some religious figures were discussing and incorporating evolutionary theory into their thought well before Darwin came on the scene. Although many chapters focus on evolution across the life sciences, others examine the closely connected themes of social evolution

and human origins. Disputes about the validity of evolutionary theories and their implications for religion are further situated within interconnected debates about colonialism, imperialism, racism, orientalism, secularization, materialism, and education. Even cultural historians who are not focused on science will therefore find many points of interest for their work. We have thought carefully about how conceptions of the relationship between science and religion have circulated globally and through what cultural media. We have selected the middle of the 1920s as a cutoff point, as this is when a new medium, radio, was introduced, altering the way views on science and religion were communicated.

Any study of the transnational history of evolution and religion in the long nineteenth century must draw on, and bring together, multiple areas of historical research. At minimum, this interdisciplinary study would include previous scholarship on global history, the global history of religion, the global history of science, the history of science and religion, and the history of evolutionary theory as these pertain to the period and places we examine. Sophisticated work in global history began at the beginning of the twenty-first century. Two works published in 2006 argued that globalization had a long history and explored how globalization had been written about from a historical perspective.[1] A more recent study attempted to explain why global and world history have been among the fastest-growing fields for several decades, while another work focuses specifically on the nineteenth century.[2]

As Michael Bergunder sums up, "the historicization of 'religion' remains an unresolved question in the academic discipline dedicated to its study."[3] Thus, for a volume that speaks to a global or transnational view of religion, it is imperative to acknowledge that in the nineteenth century, various worldviews started to define themselves as religious traditions, and any global history of evolution and religion will include a critical examination of this phenomenon.

In the last few decades, the "global" turn in the history of science has marked an important step for scholarship in the discipline.[4] One consequence is that scholars have begun to stress the significance of examining non-Western contexts as well as entanglements driven by imperial encounters. As a result, the call to decolonize scholarship in the history of science is stronger than ever.[5] In the introduction to the eighth volume of *The Cambridge History of Science*, which focuses on modern science in national, transnational, and global context, Hugh Richard Slotten offers a valuable synthesis of recent scholarship in the global history of science.[6] Slotten sums up a key theme in that volume: the recent emphasis on the "situatedness of science," which places "activities, practices, and knowledge in their proper local context."[7] The driving point of analysis is to view the history of modern science "not only in particular local, national, and regional contexts but also with respect to the

flow or circulation of knowledge, tools, methods, people, and artifacts across national borders."[8] This orientation decenters the approach to the history of science based on Western accounts, treats non-Western regions as fundamental to the development of modern science, and pictures all regions and nations as interconnected on a global scale. Building on this historiographical vision in their chapter "Science and Imperialism since 1870," Pratik Chakrabarti and Michael Worboys argue that the story is complex and "the history of modern science is one of hybrid origin and articulation and that modern science is neither Western nor colonial, but 'global.'"[9] While Chakrabarti and Worboys's study takes a global approach, entanglements between imperialism and various sciences cast a looming shadow in most accounts.[10] In recent years, scholars have demonstrated that this relationship is imperative to understanding the development of nineteenth-century science. In *The Routledge Handbook of Science and Empire* edited by Andrew Goss, for example, the essayists examine how the symbiotic relationship between science and empire spawned complex systems, institutions, and networks that sustain each other.[11] This would include religious institutions across the globe. While these texts do not directly address the global history of evolution and religion, we grapple with similar issues across this volume.

Incorporating the global turn into the history of science and religion began a little over a decade ago. Two publications charted a way forward toward a more "global" approach to the field of science and religion, which had for two decades been consumed by the critique of the conflict thesis and the development of the complexity principle.[12] In their pioneering edited collection, *Science and Religion around the World*, John Hedley Brooke and Ronald L. Numbers shifted the discussion to include non-Western contexts and non-Abrahamic religions.[13] In addition to chapters on early and modern Judaism, Christianity, and Islam, the collection offered chapters on early Chinese religions, Indic religions, Buddhism, African religions, and unbelief. Acknowledging that the field had been too preoccupied with Christianity's historical relationship to science, they attempted to establish new directions that encompassed a "global" approach. But since there was already a well-developed scholarship on Judaism and Christianity, the chapters devoted to them provided a much fuller picture than the chapters dealing with the other religious traditions. In the sections that covered non-Western topics, the weakness of the previous historiography was all too apparent. Nonetheless, these chapters charted a way forward. Around the same time, in his chapter "A Global History of Science and Religion" in the edited collection *Science and Religion: New Historical Perspectives*, Sujit Sivasundaram posed a number of provocations for what a global history of this field could look like.[14] Sivasundaram argued that "global history" required a historical methodology based on "the analysis of broad

patterns and connections across space, rather than a comprehensive history of all regions."[15] More importantly, he addressed the question of colonial encounters, stressing the fact that different intellectual traditions borrowed ideas from each other. These publications represent two independent attempts to open up the historical study of the relationship between science and religion to non-Western religions. Both push scholars to go beyond the Judeo-Christian traditions when referring to religion. Furthermore, they stress a move away from center-periphery frameworks overall. The new set of non-Western actors highlighted in recent research engaged with and, often, reconfigured imported and indigenous scientific ideas and practices and religious traditions, which they did not necessarily systematically distinguish from each other. It is important to emphasize that the accounts of science and belief in non-Western religions do not begin with colonial encounters. We have to examine the rich and local traditions flourishing well before the nineteenth century, accounting for how these systems and relationships change or are destroyed, absorbed, or even appropriated. Sivasundaram's piece was followed six years later by Yiftach Fehige's edited collection *Science and Religion: East and West* (2016), which also attempted to broaden the study of science and religion so as to include the Global South in a significant way. In the introduction, Fehige presents an overview of the development of science and religion as an academic field. But he points out the increasing awareness of the role of Eastern cultures in the rise of modern science. "The interactions between East and West," Fehige declares, "are just another aspect of the trans-cultural character of modern science and not an indication that modern science is constrained by language, geographical location, religious context or national identities."[16] Arguing for a less Eurocentric approach, this is a groundbreaking effort to move toward a transcultural history of science and religion. Numbers, Brooke, Sivasundaram, and Fehige laid the groundwork for a more sophisticated study of the transnational and global history of science and religion.

Given the underdeveloped state of the field, we are not yet at the point where a full global history of science and religion is possible in any meaningful sense. That is a far too ambitious project. In this volume, we have tried to move the field forward by focusing our attention on a particular period, the nineteenth century, on the scientific theme of evolution, and on national and transnational perspectives. We have also tried to explore a broad spectrum of religious traditions. The nineteenth century is a particularly important period for the history of the relationship between science and religion. The modern Western category of science was not established until the nineteenth century.[17] In that century science came to be linked to a purportedly unified set of practices known as "the scientific method," connected to a distinct group of individuals known as scientists, and cleansed of concepts that had previously

been seen as defining features that we would now view as metaphysical and religious.[18] The very definition of what constituted science was under debate. As a result, the scientific disciplines were transformed and new disciplines arose. In the early decades of the western European nineteenth century, a new disciplinary landscape developed that included more specialized bodies of knowledge, referred to as physics, chemistry, geology, astronomy, and biology. The fluidity of science in the nineteenth century cannot be overestimated. This volatile atmosphere was destabilized even further in the middle of the century by the theory of evolution, which was not applied merely to biological issues. Specialists from a range of sciences, including astronomy and geology, convened around evolutionary themes. And in turn, evolutionary themes impacted the subsequent growth of each discipline. Moreover, evolution was seen as relevant "outside" the sciences and, some argued, provided the key to understanding every aspect of human culture, including religion. Thus, while historians of science and religion adopted the global approach to bring into the fold the study of religions other than Judaism and Christianity, focusing on a specific field—evolution, for example—will paint an even broader picture. It should also be remembered that the nineteenth century was not only a period in which science was transformed. This was also an era when imperial European powers scrambled to colonize other parts of the world, when industrialization was transforming the social and economic structure of both Europe and its colonies, and when traditional political structures were disrupted and altered. The nineteenth century, after all, was the era in which both liberalism and socialism were born. The transformation of science was closely tied to these other developments. Thus, the accounts are no longer about simple binaries of science and religion; they involve a whole array of social, economic, cultural, and political circumstances as well.

A small number of scholarly works have covered the relationship between evolution and modern religion in various geographical settings. They tend to focus on responses and reactions to Charles Darwin or Darwinism. In his *Dealing with Darwin* (2014), David Livingstone emphasizes the instability of scientific meaning across local spaces. Darwin's evolutionary theory was deployed for different political purposes in Charleston, South Carolina; Wellington, New Zealand; St. Petersburg, Russia; and Cape Town, South Africa. Place, cultural politics, and rhetorical style, Livingstone argues, matter in discussions about Darwin in religious communities. In this book Livingstone illustrated his geography of science-and-religion by focusing on Scottish Calvinists, one "spatially distributed but consciously self-identifying confessional family," and tracing how their confrontation in a range of different places with Darwin generated very different responses.[19] In some cases, Scottish Calvinists rejected Darwinism outright; others tolerated it; and still others welcomed it.

While still focused on a specific religion, by demonstrating diverse responses in different spaces Livingstone demonstrated the importance of examining local contexts. More recently, C. Mackenzie Brown's edited collection *Asian Religious Responses to Darwin* (2020) presents one of the more pluralistic studies on the topic. Emphasizing the importance of cultural, historical, and religious contexts, this volume centered on Asian religions. Brown stated that among all the concerns surrounding the Darwinism model, the lack of "cosmic teleology"—the conception of a universe devoid of transcendent direction, meaning, and purpose—was most common among Asian religious thinkers.[20] However, as with Livingstone, the responses were specifically to Darwin's theory.

This volume could have been organized in many different ways. We might have divided the chapters up by geographical region, which is largely the approach taken in Slotten, Numbers, and Livingstone's *Modern Science in National, Transnational, and Global Context*. But the main disadvantage of that approach is that the transnational features of the topic would have been obscured. We also could have chosen to structure the volume on the basis of scientific discipline, but that would have elided the way evolutionary themes were explored across biology, astronomy, geology, and the study of human antiquity. A third possibility was to focus each section on a different religious tradition, gathering all of the chapters on Christianity, followed by a section on Confucianism, Buddhism, and Hinduism, and then another one on Islam. Brown's edited collection *Asian Religious Responses to Darwin* is structured thus, around the responses of different religions traditions in Asia. But this would have prevented bringing out the parallels that existed between religious traditions in their responses to evolutionary theories. Finally, we could have simply ordered the chapters chronologically, which would have made more apparent any developments over time. However, we settled on a thematic approach that divided the chapters into three groups: "Empire and Colony," "Authority and Minority," and "Appropriation and Response." This structure will allow the reader to more easily see the important thematic links between the chapters, pointing to the transnational dimensions of the project. These themes cut across several chapters in different categories but provide new approaches to the study of evolution and religion. Most importantly, these themes allow the authors to cut across the "East and West" binary and challenge Eurocentric biases.

In the first section, "Empire and Colony," the chapters deal with imperialism and empire as a central category of analysis. The networks, publications, and scholarly communities discussed are seen as part of, or responses to, a web of empire in which there were connections between colonies as well as between colonies and Western metropoles. The chapters explore the complex

connections between evolutionary thought, religion, and the growth of European empires. In his chapter, "British Orientalism on Histories of Religion and Astral Sciences in Northern India," Schaffer explores debates within the Asiatic Society revolving around the accuracy and age of ancient Sanskritic astral sciences. The implications for the place of India in the British empire were enormous. At stake was the credibility of Calcutta pandits, Brahmin astronomers, Parisian savants, British orientalists, and biblical scholars. Whereas Schaffer focuses on how issues of science and empire become entangled in discussions about the relationship between Christianity and Hinduism, Fernando and Qidwai draw attention to how the religious diversity of South Asia affected the response to evolution in their "Debating Evolution and Religion in Nineteenth-Century South Asia." Here, where heterogeneous religious worlds existed side by side in a colonial context, science could play a crucial role in their justifications for the superiority of their faith. Putting a Muslim, Sayyid Ahmad Khan, and a Buddhist, Anagarika Dharmapāla, in dialogue with each other, Fernando and Qidwai discuss the advantages and dangers of using "South Asia" as an analytic category in the study of the global history of evolution and religion. In his chapter, Barnes takes us to colonial Australia to examine the world of university education. "Evolution in Colonial Australia: Institutions, Religion, and Moral Formation" treats universities as scientific and religious sites, in which imperatives for the moral, religious, and intellectual formation of an intellectual elite shaped an agenda that excluded the hiring of Darwinians until the 1880s. Barnes, then, argues that midcentury Australian universities were conservative by nature and aimed to transmit received knowledge rather than questioning it or adopting the new discoveries about evolution coming out of Britain. The last chapter in this section, Guimont's "As Above, So Below: The Role of Astronomical Evolution, Imperialism, and Religion in the Long Nineteenth Century," investigates how notions of evolution, astronomy, and extraterrestrial life were informed by racial ideologies of empire. By tracking the secularization of religious pluralism in science fiction, astronomical research, and, finally, socialist theory, Guimont demonstrates the links between pluralism, imperialism, and radical political projects.

The second section, "Authority and Minority," concerns how power dynamics operate at a more focused and local level. Chapters in this section, for example, tackle the themes of how dominant institutions interact with minorities; or how missionaries relate to indigenous populations; or how intermediary figures, or go-betweens, play an important role in how the relationship between evolution and religion unfolds in local contexts. This section begins with Navarro's chapter "Evolution in Times of Political Transformations: Science, Religion, and the Media in Restoration Spain (1874–1898),"

which focuses on the role of the Catholic Church and its enemies, largely republicans and liberals, in the debates surrounding evolution. Navarro points out that the debates in the period of turmoil just after the restoration of the monarchy in 1876 were as much about politics as about a scientific theory and its religious implications. Navarro pays special attention to how the controversy played out in the pages of periodicals, with their satire and cartoons, which allows him to analyze the ways in which evolution was used at a popular level. Silva also considers the interplay between the powerful Catholic Church and its opponents, but this time in Argentina, in his "Argentine Positivism on Evolution and Religion in the Late Nineteenth Century." In this case, the opponents were positivists, though Silva notes that one group of Comtists was more congenial to some Catholic thinkers. Here again the scientific and religious issues were linked closely to discussions about what kind of education was needed most by the country, one based on a scientific curriculum or one based on the humanities and the classics. Gold brings us back across the Atlantic to Egypt in her "Prehistoric and Primeval Pasts: Antique Chronology and Civilizational Progress in Semicolonial Egypt." She delves into how the study of human antiquity in Britain and Egypt offered both scientific and religious explanations for human origins. Approaching the topic through the eyes of Joseph Hekekyan, a Europeanized, Catholic, Turkish-Armenian, and Cairo-based civil engineer, Gold shows that nineteenth-century Egyptian treatises on primeval chronology were crucial landscapes for debating the topic of human origins as well as for establishing scientific authority. In the final chapter in this section, titled "Evolution, Religion, and Racial Politics in New Zealand, 1814–1930," Stenhouse tackles the topic of how colonial politicians, men of science, and settlers read Darwin as sanctioning the extinction of the indigenous population and how some missionaries and Māori leaders contested that reading. By placing science, religion, politics, and race within this analytic framework, Stenhouse shows that the racial science and politics of the post-*Origin* decades in New Zealand fed into a larger secularizing process solidifying the cultural authority of laymen, often with ties to Anglicanism.

In the third and final section, "Appropriation and Response," the chapters focus on the appropriation of evolutionary ideas or responses to key evolutionary publications in this period. Emphasizing appropriation and response counteracts the outdated dissemination and passive reception models of Darwin and evolution. Many of the chapters take a transnational approach to the topic and open up understudied geographic and religious contexts for examination. In their collaborative piece titled "Evolution and Religion in Transnational Contexts: Britain, Japan, and China, 1859–1920," Fan and Lightman argue that new global spaces developed in which British, Japanese, and Chinese intellectuals actively grappled with the ramifications arising for various world

religions as a result of evolutionary theory. British figures such as Thomas Henry Huxley and Spencer engaged extensively with Eastern religions in working out the broader significance of evolutionary theory, while Japanese and Chinese intellectuals turned to these two evolutionists to understand Buddhism, Confucianism, and Daoism. Though disruptive to traditional religious belief systems, evolution provided these global intellectuals with a new way to make sense of a rapidly changing world. Yoshida and Weldon's chapter, "The Jōdo Shinshū Embrace of Science in Late Meiji and Taishō Japan: Science, Secularism, and Buddhism in the Thought of Ishikawa Seishō and Fujikawa Yū," explores how two religiously devout Japanese scientists, Ishikawa Seishō and Fujikawa Yū, tied together a modern scientific worldview with their Buddhism. The authors assert that appropriation of evolutionary theory was more easily accomplished by them than by Christian intellectuals since Buddhism rejected hardened dogmas, embraced naturalism, and perceived the world as in a state of continuous transformation. As a result, Japanese Buddhists rarely became involved in aggressively anti-scientific movements. At the same time, they were concerned about the rise of secularism in the scientific community and promoted Jōdo Shinshū Buddhism as a way to counteract it. Wan's study, "Cosmic, Theistic Evolution and Kang Youwei: 'The Martin Luther of Confucianism,'" examines a Chinese intellectual who appropriated cosmic evolutionism in order to modernize Confucianism. Like Robert Chambers and Herbert Spencer, Kang endorsed a systematic view of nature in which the evolutionary process connected all phenomena, including scientific, religious, cultural, and political, in a united whole. But unlike Chambers and Spencer, he grafted evolutionary theory onto Chinese religious traditions rather than onto Christianity. Yalçınkaya's "Evolution and Constructions of Islam in the Ottoman World, 1870–1920," shifts the focus from Buddhism and Confucianism to the appropriation of evolutionary theory in Islam. He argues that debates on evolution in this context are better understood as part and parcel of a much broader discussion on materialism that led to the revival of esoteric traditions within Islamic thought. In this story, periodicals, not books, played a crucial role in how Muslim intellectuals engaged with evolutionary ideas. Unexpectedly, Ernst Haeckel and Ludwig Büchner are the important evolutionists, not Darwin. Haeckel takes center stage in Halverson's account of American biologists, evolution, and religion. Titled "'Science Is Justified by Works, Not by Faith': American Biologists and Ernst Haeckel's Evolutionary Science and Religion," this chapter demonstrates that while Haeckel may have been one of the most well-known evolutionists of his time, his concept of monistic religion gained little traction in the United States. American biologists viewed Haeckel's work as too speculative and radical but were, nevertheless, attracted to Herbert Spencer's synthetic philosophy as re-envisioned in

somewhat religious terms by their fellow countrymen John Fiske and Edward Youmans.

We conclude with a coda, which discusses how our overall goal in the volume is to move the history of science and religion field forward by shifting the emphasis from complexity to a transnational approach. Throughout the volume we have pointed to how diverse evolutionary theories, not just the Darwinian one, were appropriated by global intellectuals; how we need to consider diverse religious traditions in order to move away from the emphasis on Christianity; and how it is essential to integrate scholarship on empire, colonialism, indigeneity, and race into our analysis of nineteenth-century science and religion. Recent works have called for critical approaches to the topic of science and religion as well.[21] Once we have a better grasp of the transnational dimensions of science and religion in this period, we may begin to work toward a big picture that operates at the global level.