

IRAS @ 60 and the Future of Religion and Science

with Karl E. Peters, “The ‘Ghosts’ of IRAS Past and the Changing Cultural Context of Religion and Science”; Michael Ruse, “Why I Am an Accommodationist and Proud of It”; Nancy Ellen Abrams, “A God That Could Be Real in the New Scientific Universe”; Whitney Bauman, “Religion, Science, and Globalization: Beyond Comparative Approaches”; Zainal Abidin Bagir, “The ‘Relation’ between Science and Religion in the Pluralistic Landscape of Today’s World”; Sarah E. Fredericks and Lea F. Schweitz, “Scholars, Amateurs, and Artists as Partners for the Future of Religion and Science”; and Willem B. Drees, “From Authority to Authenticity: IRAS and Zygon in New Contexts.”

THE “RELATION” BETWEEN SCIENCE AND RELIGION IN THE PLURALISTIC LANDSCAPE OF TODAY’S WORLD

by Zainal Abidin Bagir

Abstract. The attempt to expand the discourse of science and religion by considering the pluralistic landscape of today’s world requires not only adding new voices from more religious traditions but a rethinking of the basic categories of the discourse, that is, “science,” “religion,” and the notion that the main issue to be investigated is the relationship between the two. Making use of historical studies of science and religion discourse and a case study from Indonesia, this article suggests a rethinking of the categories, including giving more attention to indigenous religions.

Keywords: Ian Barbour; John Hedley Brooke; indigenous religions; Indonesia; Islam; Muslim; world religions

One of the motivations for speaking about the pluralistic landscape of our world today is to make the discourse of science and religion more inclusive in terms of the religious traditions involved. While this discourse originated in the Western Christian context, a first approximation of a more inclusive discourse would probably require making it, to borrow Robert Russell’s characterization, more international, intercultural, interreligious, and interdisciplinary (Russell 2004, xiii). The fact that journals on science and religion frequently publish works of self-critique and self-questioning

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of the field indicates that, for the better, the field's boundaries are not fixed and as such there remains the opportunity to expand it and make it more inclusive.

Taking a cue from discussions about religious pluralism, awareness of the pluralistic landscape would mean acceptance of diversity, which, as a consequence, would make it more challenging to find the common ground needed to sustain such a discourse. What distinguishes pluralism from relativism, as standpoints toward diversity, is that the former still, at some point, has to draw boundaries in one way or another. But when boundaries are drawn, what are the criteria? The danger has always been that the more powerful within a diverse field may, albeit inadvertently, hegemonize the other parties it wants to embrace. Boundaries are always contested. The question is how pluralistic, how inclusive are we prepared to be?

Being a pluralist may mean more than simply inviting more parties to the table; although that step is surely necessary, it is not sufficient. At some point, in expanding the science and religion discourse in a pluralistic landscape, we may need to be prepared not only to find some common ground—either in the topics discussed, the methodology used, or even the objectives of the discourse—but to question the ground itself. In this case, two pertinent and interrelated issues concern the very categories of “science” and “religion” and how they are related.

The problematization of the categories of “science” and “religion” has become commonplace as a number of prominent scholars have shown how they were invented in a particular Western Christian context. While we may provide justifications for the wider use of both these terms as understood today, pluralist awareness may require further rethinking. In turn, different conceptions of each of the categories imply different understandings of their relationship. No mere theoretical attempt without consequence, this rethinking suggests how the research agenda in science and religion discourse could be reconceived. We may even go further and ask what if the differentiation of “science” and “religion” does not exist in a tradition in the way it is assumed in current discourse, such that the question about how the two are related need not even arise. As I shall show later, this is a real possibility.

These questions may make those involved in the religion and science discourse wonder whether any attempt to expand it in the pluralistic landscape of today's world might not be futile. But these questions are intended to stimulate critical awareness about what does it take to create a truly pluralistic discourse. Whatever conclusions they may lead into, I believe it will enrich the discourse. In this article, I will start by trying to understand today's science and religion discourse and attempts to problematize it. I will especially discuss two directions in which the notion of “relation” between science and religion can be and has been questioned—one by reflecting on its (Western) history, and the other by looking at the case with the

indigenous religions, especially, in the particular context of Indonesia. The Indonesian context will serve my purpose not only in providing the illustration about the issue with indigenous religions, but also as it is a Muslim majority country—actually, a country with the largest Muslim population in the world.

WHAT IS THE DISCOURSE ABOUT? THE PROBLEMATIC “AND” IN
“SCIENCE AND RELIGION”

Important recent sources that describe the relatively new field of science and religion already show the awareness of today’s pluralistic landscape and call for an expansion of the field. However, as indicated earlier, further and more radical steps are needed and may start with problematizing the categories of “science” and “religion” and the nature of their relation—or whether the central question is indeed (only) about the relation(s) between the two. One of the first important insights to be gleaned from these sources is that science and religion *is* about the relation between the two, assuming that they constitute distinctive, if not mutually exclusive, areas.

The *Encyclopedia of Science and Religion* (Van Huyssteen et al., 2003) begins its description of “Science and Religion” by identifying the question in terms of *ways to relate the two areas* (Russell and Wegter-McNelly 2003). Gregory Peterson starts his article by emphasizing this issue: “A primary concern of contemporary scholarship on science and religion is the question of precisely how the two areas should be related” (Peterson 2003, 756). He sees the main issues in the discussion about the methodology concern how to give an account of the nature of both science and religion, and of how the truths found in the respective fields can be related to one another. This last assertion indicates another characteristic of the field held widely in the circles of science and religion, that is, almost exclusive attention on the “truths,” coming from the cognitive dimensions of the two.

A survey of recent discussions by important figures in science and religion in *Zygon@49*, a series of recent editions (2014) of the oldest journal in the field, shows that this understanding of the field represents the mainstream. Taking science and religion as a disciplinary field, Niels H. Gregersen suggests that its object of research is *the relations between science and religion in historical and contemporary contexts*. (Gregersen 2014, 420). While this may sound like common sense and not difficult to accept as a starting point for further inquiry, his next assertion goes beyond Peterson’s emphasis on the cognitive dimensions and may circumvent the complexities of the relations and, as such, radically shrink the possibilities for exploring them. “It seems to me that the programs within science and religion need to be committed to some form of metaphysical realism, that is that the world exists regardless of the observer, and consists of a variety of

mind-independent entities or objective relations (including also the observer's interpretations)" (Gregersen 2014, 423).

The issue is not about the validity of that metaphysical realism, or other alternative philosophical positions, but the assumption that science and religion is *about* (conceptual) views of the world. This seems to be too quickly reducing both enterprises to their cognitive contents or beliefs: science to scientific theories and religion to theological views. Gregersen may acknowledge other, noncognitive dimensions of science, such as practices (of the practitioners or communities of practitioners in both fields), but those seem to lie at the very margin, and study of them is simply one of the arms of the science-and-religion octopus (and Gregersen is actually not sure what such studies would contribute to the discourse) (Gregersen 2014, 427–28). I will later provide an illustration about the importance of looking at such practices in the relation between (practitioners of) science and religion; in certain contexts, it may be even more important and consequential to focus on the practices than the cognitive truths taken here as normative goals.

The article published as part of *Zygon@49* by the late Ian G. Barbour also assumes that "science and religion" is about *relation*. Barbour acknowledges that science and religion are not only about religious beliefs, and that there is a social context in which interplay between them takes place. However, when it comes to relation between them, each is understood mostly in terms of beliefs (Barbour 2014, 82–84). What we have seen so far is the wide agreement on the focus of the field as the *relation* between science and religion, assuming the clear differentiation between the two, and the focus on their cognitive dimensions. Yet, even if we regard beliefs as the most important part or dimension of science and of religion, there is another serious problem lurking here. As Willem Drees (2004) has reminded us from another direction, the "and" in "science and religion" deceptively gives the impression that the two are about ideas and, furthermore, similar in their cognitive kind and status. The typology that presents the two as being in conflict, independence, dialogue, or integration assumes a symmetrical understanding of science and theology, yet the reality may be different (Drees 2004, 372). The discussion so far should motivate us to look more deeply into what constitutes science, religion, and, as a consequence, science and religion.

Before discussing this further in the next section, another limitation of the present discourse is its grounding in the modern Western Christian context. This could of course be understood as a mere historical contingency. But when the field is expected to develop further in the pluralistic landscape of today's world, this characteristic needs to also be brought up. Indeed the call to be inclusive has already surfaced in recent science and religion discourse. The establishment of the International Society for Science and Religion in 2002 marks this awareness. In their assessment of the

field, Russell and Wegter-McNelly (2003) mention the need to bring in additional voices from the world's religious and indigenous cultures. But how open would the field, as they describe it, be for the new voices?

Barbour (2014) too says that the challenge for a journal like *Zygon* (he may as well refer to the science and religion discourse in general) is “the inclusion of greater *religious diversity*.” He sees that other religious traditions (such as Judaism, Islam, Hinduism, and Buddhism) have been involved in the enterprise and would like to see their inclusion in the pages of *Zygon* develop further, but still it seems that what he sees in them are beliefs. Yet, beliefs may have different significance or play different roles in different traditions. Moreover, even within each of the religions there are different traditions—ranging from the rationalist to the mystical strands, from the conservative to the progressive and liberal.

In the discussion so far, we may then conclude that how science, religion, and “science and religion” are understood turns out to be closely related to the possibility of making the field of science and religion more inclusive. Pluralist attempts to make the field more inclusive may suggest questioning of all three components. Three more specific points are needed here. *First*, “the inclusion of greater *religious diversity*” may have much wider scope than simply making the list of religions longer. Within each religion there are different traditions with different emphases on beliefs and practices and the interplay between them.

Second, all the examples mentioned above by Barbour are well-known world religions. Of course, these are examples, but just so that we do not miss out on important kinds of knowledge and wisdom, we need to explicitly acknowledge the variety that is usually called indigenous religions, which are still living realities in many parts of the world. Though in many places they tend to be smaller or even on the edge of extinction and, in most cases, are pressured and repressed by the ever larger and more dominating world religions, they (or fractions of them) are still there, surviving. (Examples from Indonesia that I will discuss later will be especially pertinent in this regard).

Third, when we try to include more religions, we will then also need to be open to the possibility that these religions may display quite different characteristics. The significance of theology in these religions, the scope of their worldviews, and the interaction between faith and knowledge may all be different, to the extent that the very distinction between science and religion may not even make sense.

In the next sections, I shall try to develop the claims made above, using illustrations from Indonesia, which show how different the agenda of the field of science and religion could be when pursued within different religious, cultural, and geopolitical contexts.

SCIENCE AND RELIGION: NEW HISTORICAL PERSPECTIVES

Historians have shown how “science” and “religion” as understood today results from reifications throughout the history of the past few centuries. History is always good therapy for essentializing tendencies in abstract discourses whether in theology, philosophy of science, or science and religion. A very promising starting point in this direction is John Hedley Brooke’s historical approach to science and religion (Brooke 1991; Brooke and Cantor 1998). It seems not an exaggeration to say that what John Brooke did for science and religion is similar to what Thomas Kuhn did for philosophy of science: producing a decisive transformation in the image of science and religion by which we are now possessed.¹

As Brooke says, “Without an understanding of the many meanings with which the words *science* and *religion* have been invested, attempts to establish definitive relations between them can easily be naïve. Conversely, definitions proposed for both *science* and *religion* sometimes reflect decisions already taken on the relations between them and how they are to be presented for polemical purposes” (Brooke 2003, 749).

This theme is raised and given further argumentation in a recent anthology dedicated to Brooke’s works (Dixon, Cantor, and Pumfrey 2010). The reification of science and religion can be traced back to the point when these categories emerged to name realities that previously were called by other names. Science has not had a fixed meaning over the centuries—it is different from previous studies of nature such as natural philosophy or natural history. Many recent works on the history of science show that science as a modern discipline emerged only in the nineteenth century. It was not a coincidence that the idea of an enduring conflict between science and religion gained prominence in this century too; one way to define science was by distinguishing it from religion, or even showing that the two are in conflict (Harrison 2010, 26–29).

Religion, too, as students of religious studies now usually learn quite early, was the result of reification around the same time science acquired its distinctive character. A classic study by Wilfred Cantwell Smith (1963) shows how Christianity was not regarded as a “religion”; it was primarily understood as faith or piety, not a systematic body of doctrines. Once Christianity became a religion, the next move was to identify “similar” religious traditions and call them “religions.” The encounter with other religious traditions took place especially in the nineteenth century through imperialism. The realities had always been there, of course, but their reification has a definite history. So, first, Christian faith was reified, and then, other traditions were reified as “religions”—using the standard of “religion” from the paradigmatic Christianity. Reification, for Smith, is “mentally making religion into a thing, gradually coming to conceive it as an objective systematic entity” (Smith 1963, 50). More studies have appeared

in the last few years, which have brought this historical insight to better understand how “world religions” or “eastern religions” were invented, usually in the image of the paradigmatic religion, the origin of reification, which was Western Christianity.

Another important line in the rethinking of “religion” is criticism of the modern secular tendency to conceive religion primarily as belief. Cantwell Smith has pointed out how this was not always the case in Christianity; later anthropologists such as Talal Asad have gone further in their idea of religion mostly as practice, not (propositional) beliefs. Another argument that strengthens the argument is raised by Golinski (2010) who takes up Bruno Latour’s notion of religion as performative, without beliefs.

So what we see here are separate developments in the construction of categories of science and religion. The *relation* between the two, undoubtedly, was constructed after the eighteenth century. The old debate on faith and reason was not necessarily a precursor of today’s polemical debate about science and religion. The two enterprises were so connected that “relation” between science and religion was not an issue. “‘Science’ and ‘religion’ were not independent entities which might bear some positive or negative relation to each other, and to attempt to identify such connections is to project back in time a set of concerns that are typically those of our own age” (Harrison 2010, 26).

Of course showing how the categories were constructed, and further detailing the construction of religion as primarily a matter of belief, is not a mere interest of historians. The least we can learn from such histories is that while terms are unavoidably constructed, the awareness of their constructed nature should help us to be more sensitive to the contestations behind them and as such avoid overgeneralized conclusions, which assume that, for example, “religion” means the same thing for today’s Christians, Muslims, and Hindus in different parts of the world. And behind such construction usually there is politics.

One of Harrison’s conclusions may seem rather disastrous for an attempt to expand science and religion discourse beyond its original Western Christian context. Considering the history of how categories of “religion” and “science” as well as their “relations” were born in a particular history of the West, he suggests that “science and religion” is primarily a Western problem (Harrison 2010, 41). Recent literature has shown how Islam and Buddhism have dealt with these issues as well, though probably in different ways, but others, such as Eastern religions, especially when they do not consider themselves to be “religions,” are in general indifferent. Would our pluralist awareness export alien problems to them, out of the good intention to be more inclusive of more religions?

As I will touch on again later, much of the issue of science and religion in the Muslim world is *not* the result of exporting a Western problem. The questions are responses to the Western science introduced to the Muslim

world through imperialism. While modern science has been exported from the West, the modern discourse on Islam and science that responded to it developed in the different contexts of colonized countries (cf. Kalin 2006; Iqbal 2007).

The concrete implications of the historical approach should be clear by now, and I will add more illustrations in the next sections. By taking up the case study of Indonesia, I will next examine whatever can be said about science and religion discourse in that context, and see how the preceding concerns about the boundaries of science and of religion and the politics involved in the reification figure in significantly here.

THE CASE OF INDONESIA

In this section, I will start by describing two main spheres of the existing science and religion discourse in Indonesia, which does not exhaust the whole area but sufficiently represents it, followed by specific discussion of indigenous religions that are quite relevant to the discourse but have not been studied as part of it. The first two areas may prompt us to ask Harrison's question—is science and religion discourse a Western problem? An important part of the discourse among Muslims in Indonesia, as a majority Muslim country, represents the Islamic discourse, which mainly responds to the introduction of modern science. While responding to modern science, the discourse itself cannot be said to be exported from the West. The next question then is, does such a discourse in a non-Western context display different characteristics? With regard to the third area, on indigenous religions, I will follow up the move of blurring of categories of science and religion and further discuss ways to expand the discourse.

Indonesia as part of the Muslim world. Indonesia is the largest Muslim country in the world: 87% of its population, which means more than 200 million people, are Muslims. Yet, it is also a diverse country that has recognized freedom of religion since 1945. Its Constitution does not mention any particular religion, but in practice it has privileged six world religions, which have been present historically (Islam, Protestantism, Catholicism, Hinduism, Buddhism, and Confucianism). These religions are administered by and receive funding from the Ministry of Religious Affairs, which itself has divisions addressing each of the religions—with the exception of Confucianism, which has a more complex history. What are now called indigenous religions of Indonesia have not been acknowledged *as* religions; instead, they are defined as *cultures*. I shall discuss this further later.

What is called “science and religion discourse” is comprised of several issues for Indonesians. In the past few years, an interreligious discourse on science and religion has developed with the participation of mostly Muslims and Christians. However, most of the time, the discourse has

developed separately within each religious community. Here, I shall look more into the Muslim discourse.

Much of the discourse related to science and Islam has followed the agenda of such discourse in the Muslim world in general, especially its English-speaking part. It may be too strong to say that such discourse in Indonesia was “imported” from other parts of the Muslim world, but we may discern that the various discourses have quite similar motivations. Discussions about Islam and science had existed for a long time, but they were seldom systematic; instead they were primarily concerned with the history of science in Islam, especially the period of the so-called “Golden Age.” Much of the discourse was apologetic. Another popular issue that frequently came up was self-critique on the backwardness of modern science in the Muslim world—usually contrasted with the strong and frequent normative injunctions on seeking knowledge of nature in the Qur’an. There is another issue that needs to be understood as the background of these discussions: whatever can be called as science and technology in Indonesia since the nineteenth century, almost all was imported.

In the 1980s and 1990s, a newer discourse flourished that was initially dependent on the translation of English books on Islam. Quite central here was the critique of Western science and the need to build a science based on some Islamic epistemology. We can see here topics that were popular among Muslim scholars in the United States and Europe, such as Islamization of knowledge and the creation of “Islamic science.” Works by such scholars figured in discussions of Islam and science in the 1980s and 1990s as Seyyed Hossein Nasr, Syed M. Naquib al-Attas, Isma’il al-Faruqi, and Ziauddin Sardar were made available in translation. More recently, works by Muslim scientists who are active in international science and religion discourse such as Bruno Guiderdoni, Mehdi Golshani, and, most recently, Nidhal Guessoum have also been translated.²

This kind of discourse shows that it was not imported from the (Christian) West to the Muslim world. Indeed, Nasr has criticized both Western science and religion strongly because, in his analysis, both have been secularized while he espouses a traditional perennial philosophy (*scientia sacra*). Other scholars are more receptive to modern science but attempt to discard the secular or even atheistic metaphysical implications of science. This point of view can be seen most clearly in Golshani. In any case, the science and religion discourse in Islam has a rather different shape and priorities, though the modern science was itself introduced by the West, initially during the time of colonization of Muslim lands by Western powers. It should mostly be understood as a Muslim response to the introduction of modern science.

It is interesting to note that while the popular discussion was on epistemology, philosophy of science and how Islamic values may play roles in science, issues such as evolution and creation have not been

popular until recently. The issue has become more prominent in the past decade or so, owing almost exclusively to the translation of books by the Turkish “creationist” Harun Yahya. And this discourse, as many authors have shown, is to an important extent imported from the American creationists (Bagir 2010).

Islamic universities and the need for an Islamic identity for sciences. Another direction in the development of science and religion discourse in Indonesia has arisen because of the recent transformation over the past decade of several out of tens of state Islamic colleges into full-fledged universities. Previously concentrating on studies of Islamic religious sciences, such as Quranic hermeneutics, Islamic theology, and Islamic law, they now also offer “secular” social and natural sciences.

Much of the reasoning for these transformations may have been practical. The universities had traditionally been the choice of graduates of religious high schools or *madrasa*. However, unlike the *madrasa* in many other parts of the Muslim world, the Indonesian *madrasa* have undergone the process of mainstreaming to the national curriculum, and, as such, there is now almost no difference between them and public high schools, except that in addition to the courses mandated by the national curriculum they provide additional hours for Islamic subjects (Azra, Afrianty, and Hefner 2007). Being mainstreamed to the national curriculum, their graduates now have more options to continue their education. While they previously did not have many options except to go to Islamic universities, they can now also go to the general universities if they want to pursue nonreligious subjects. This has put some pressure on the Islamic universities as admissions declined. Adjusting to this changing situation—and to the employment market—they had to change.

However, as the Islamic universities changed, they felt the need to assert some Islamic identity to distinguish themselves from other nonreligious public universities. Would the physics or medicine taught in these universities be different from those subjects as taught in the nonreligious universities? If not, other than the above pragmatic reasons, why should they offer these secular sciences? The need to answer these questions has pushed them to try to define a certain Islamic identity. Here, the literature on Islam and science that was already developed came in handy.

Some versions of Islamization of knowledge were considered and the development of Islamic epistemology was also discussed. A range of alternatives from the most radical to the most pragmatic was on the table, and there was no one single idea underlying the transformation of the different universities. Instead each university was trying to reformulate its identity. The most pragmatic would simply add Islamic ethics and broad knowledge of Islamic sciences as part of mandatory subjects all students are required to take but leave science education intact. The most idealist

thought of “Islamizing” sciences by developing, for example, certain kinds of “Islamic sociology” or encouraging the professors to “integrate” Islamic teachings into the natural sciences they teach. While the existing literature on science and Islam is relevant, the great difficulty they face has been that they must create curricula and syllabi that translate the ideas into more operational formats. While clearly all the universities have objectives they want to achieve, especially with regard to nonreligious sciences in terms of excellence in the sciences (and in the employment market in which their graduates will have to compete with graduates of nonreligious universities), the question is: How can Islam be “integrated” systematically into the day-to-day conduct of higher education? (Bagir 2006).

Indigenous worldviews: “Science and religion” discourse without “science” or “religion”. A more fundamental and radically different discourse that has been developed—not in the context of science and religion but rather within anthropology of religion and religious studies—concerns indigenous religions. As noted above, the expansion of the discourse of science and religion could be justified by the blurring of boundaries of religion. In Indonesia, the boundaries of what is called religion (*agama*) have been influenced by the existence of world religions and, with them, modernity (with rationalization as one of its main features) that was deployed under the rubric of developmentalism. The indigenous religions are not considered “(modern) religion” (*agama*) partly because they are deemed not sufficiently modern (Hidayah 2012).

The word *agama* is derived from Sanskrit but is actually intended as a translation of “religion” in its modern Western meaning. In his classic study of the modern notion of “religion,” Wilfred Cantwell Smith observes that “in modern Indonesia *agama*, from classical Sanskrit for ‘text,’ has come to be used for the Western notion of a religion” (Smith 1963, 58–59). The following quotation summarizes in more detail the situation of *agama* in Indonesia:

In Indonesia, the category “religion” has been appropriated in terms of “agama.” In truth, *agama* is the peculiar combination in Sanskrit guise of a Christian view of what counts as a world religion with an Islamic understanding of what defines a proper religion: divine revelation recorded by a prophet in a holy book, a system of law for the community of believers, congregational worship, and a belief in the One and Only God. . . . Moreover, far from being autonomous, *agama* is an integral part of a semantic field which it composes along with the categories *adat* (“tradition”), *budaya* (“culture”), *hukum* (“law”), and various signifiers involving political authority. (Picard 2011, 3)

This understanding of religion has a dubious legal-constitutional basis, but it has been effective in practice until today, with serious consequences for indigenous religions and syncretic religions in particular.

Although, since 1945, the Indonesian Constitution has had an article guaranteeing freedom of religion, this understanding of religion means that the nonworld religions are not protected *as* religion. In practice, the six recognized world religions (Islam, Protestantism, Roman Catholicism, Hinduism, Buddhism, and Confucianism) are privileged in the sense of being accommodated into the structure of the Ministry of Religious Affairs and receiving regular annual state funding. Other world religions (such as Judaism and Taoism), which have small numbers of adherents in Indonesia, are not accommodated in the structure of the Ministry, and as such do not receive state funding.

A further consequence is the putative obligation for every citizen to *have* a religion. For example, to be recorded as a proper citizen under the state administration, one has to fill in a column for religion on one's official identity card. A longstanding stigmatization of people who do not "have a religion yet," associated with the Communists, has meant that their civil rights are not fully protected. To be a full citizen, one has to have or at least associate with a world religion (and, moreover, with their "mainstream" versions). The right to freedom of religion and belief was significantly strengthened following the 1998 democratization, but the old definition of religion, hovering in the background, effectively remains in practice.

Where is the place in this scheme for indigenous religions that are present in many parts of Indonesia? The indigenous religions are not regarded *as* religion but (local) cultures. As such, members of such communities have to choose a religion to be considered a full citizen.

While association with a world religion has connected the Indonesian people with the outside world, thus providing them with familiar identification, local cultures connect them with the Indonesian past, which was "not modern" and as such was not interesting for the developmentalist regime in power from the 1960s to the 1990s. The 1998 political liberalization opened the way for reassertion of local identities, which previously were subsumed under one arch-national identity.

To return to the topic of science and religion, the question is whether such a discourse could include indigenous religions. Excluding them from the discourse because they are not "proper religions" is a sign of submission to the state definition of religion, which was a political decision. Similarly, even in academic circle, as shown by Wilfred Cantwell Smith and later scholars of religious studies, the definition of religion often leaves out the beliefs and practices of the indigenous communities. Yet, insofar as views about nature are concerned, the indigenous worldviews are very relevant in science and religion discourse. While we cannot abstract certain general characteristics out of the existing diverse local indigenous religions, observation of a few of them would quickly show how a certain view

of nature is a central part of their worldviews. If modern science is related to religion by way of their understanding of nature, then indigenous worldviews have much to say here.

The difficulty lies in the fact that the indigenous worldviews do not recognize the modern differentiation between science and religion. If the modern discourse “science *and* religion,” as discussed earlier, tries to find a certain relation—be it harmony, independence or conflict—this project immediately disintegrates when the two are not sufficiently differentiated.

A good example is the Ammatoa, a community of fewer than 5,000 people living in South Sulawesi today (Maarif forthcoming). For the Ammatoans, the social actors in the cosmos consist of human and nonhuman subjects/actors, who live together. This perception is, until the present day, effective in governing their everyday behaviors, including forest conservation. The “religion” of the Ammatoa is at the same time their “science,” which gives them an understanding of nature and tells them how to behave and “exploit” nature effectively but sustainably. It is at the same time the source of social-political governance that includes sets of regulations and punishment. Interestingly, as shown by Maarif (forthcoming), they came to interact with world religions, in this case mainly Islam, such that Islam has been an integral part of their being today, though it is a version of Islam that supports their religious ecology. This kind of dual identity defies state definition of religion and is not always treated well even in academic discussions.

This Indonesian history is by no means unique. The violence with which the modern definition of “religion,” as a political decision during the era of European colonialism, has encroached on indigenous communities in the faraway lands it colonized, such as the United States, Canada, Australia, and New Zealand, has done even greater damage. In Indonesia such communities have suffered violent hegemony and repression by the modern state for decades, yet some of them were still surviving when the authoritarian government was forced to step down.

As the example of the Ammatoans and a few other surviving communities show, discussions of religion and ecology, as part of science and religion discourse, need to take indigenous communities into account. Especially in the case of conservation of forest, which is at the heart of their worldviews and determine their survival or extinction, indigenous communities today are facing daunting challenges coming from global corporations with their hostile technology (Tsing 2004). Needless to say, doing science and religion in this kind of context would produce a radically different discourse, especially when the concern is not only to theoretically understand the relation between science and religion but also offer a better understanding of how the issues involved can help us in crafting possible futures.

WHAT IS “SCIENCE AND RELIGION” FOR?

This article began by problematizing “science” and “religion,” and the relation between the two as a central question in today’s science and religion discourse. The intention to expand the discourse by taking into account the pluralistic landscape that we know and experience today requires not simply inviting more participants from different religious traditions but also demands the expansion of the conceptions of “science” and “religion.”

The research agenda related to a Muslim response to modern science and the project of finding some Islamic identity in the teaching of modern sciences are relatively easier to accommodate, as we can still find parallels between them and the discourse as it develops today in the United States and Europe. However, even here, we need to understand the different context, which is determined by the introduction of modern science through colonialism as part of seemingly inexorable modernization. The reflection on indigenous religions may be seen simply as one among other agendas in religion and science, but, due to its radical blurring of modern categorizations of science and religion, it may as well be a primary guiding framework to help expand the discourse in a more pluralistic way.

At this point, an important question we need to address is (to return to a formulation posed by Drees): “What do we seek to do when we do religion and science?” He answers: “Although reflections on religion in a scientific age often seem to be driven by other questions, I suggest that a moral and motivational interest may be more prominent than is often recognized or acknowledged” (Drees 2004, 367). He lists the moral questions that drive many of the science and religion engagements, including “how the joint reflection of scientists, philosophers and theologians can contribute to the welfare of human community.” Understanding such motivation, and observing the fate of indigenous communities around the world, it seems natural to put them rather centrally in the science and religion discourse as they are among the most marginalized. Taking this issue seriously may help us to reformulate the boundaries of science and religion and, further, understand what is at stake in this discourse.

NOTES

This paper was presented at the 2014 Summer Conference of the Institute for Religion in an Age of Science, “The Future of Science and Religion in a Globalizing World,” Star Island, New Hampshire, August 2–9, 2014.

1. I am of course referring to Kuhn’s famous first words in his *The Structure of Scientific Revolution* (1962): “History, if viewed as a repository for more than anecdote or chronology, could produce a decisive transformation in the image of science by which we are now possessed.”

2. To get a fuller view of the kind of discourse that developed until around 2000s, see the most recent book by Nidhal Guessoum (2011), *Islam’s Quantum Question*. Part I of the book contains mostly critiques of trends on Islam and science in the Muslim world since the 1980s; all of the trends Guessoum observed were present in Indonesia, though not all became as popular as in the Arab world. Especially with regard to evolution, see Bagir (2010).

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