



Conceptualizing Roles of Religion in Sustainability Transitions

by
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Abstract*

A burgeoning academic debate is tackling the role of religion in sustainability transitions (STs), namely, the ecology and religion debate (ERD). However, ERD lacks a social theory that conceptualizes potential roles of religion in STs in the context of non-religious social spheres. Based on social differentiation theory, this article develops such a theoretical approach. Focusing on the role of organized actors, the framework supposes that religion in STs basically becomes manifest in two ways: (a) religious actors acting as “service providers” for STs, contributing with specific functions to these processes (e.g. public lobbying, value dissemination); or (b) “non-religious” actors involved in STs employing religion in their communication, thereby creating “green religions.” The ways in which they can participate in STs depends on how the boundaries between the “religious” and “non-religious” are drawn in the given socio-geographical context. This approach orders existing insights on religion in STs and suggests potential avenues of research.

Contents

1	Introduction.....	2
2	Perspectives on Religion in Sustainability Transitions (STs).....	3
3	A Social Differentiation Theory to STs.....	6
4	Religious Actors as “Service-Providers” of STs.....	8
5	Religion among “Non-Religious” Actors in STs.....	12
6	Collaborations and Boundary Work.....	14
7	Beyond Western Boundaries.....	15
8	Discussion.....	16
9	References.....	18

1 INTRODUCTION

Academic contributions to climate change and sustainability transitions mostly focus on economic, political, and technological solutions. In this vein, they usually ignore one potentially important factor: religion. However, religion shapes the lifestyles of billions of individuals, arguably assumes a growing presence in the public sphere of modern societies (Casanova 1994; Davie 2010; Habermas 2008), and is increasingly taking a pro-active stance on climate change. Therefore, the ecology and religion debate (ERD), a burgeoning research strand related to religious studies, highlights the role

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of religion in Sustainability Transitions (ST) (cf. Clugston and Holt 2012; Roger Gottlieb 2008; Rasmussen 2011; Tucker 2008). Contributions to ERD often voice strong claims regarding the role of religion, supposing that it can facilitate STs in modern societies like no other social sphere. However, this debate demonstrates two shortages: it lacks (a) encompassing empirical studies that underpin its claims and (b) a theoretical model that conceptualizes the different roles that religion can assume in STs.

In order to know whether and in what way religion plays a role in ongoing STs processes, it is helpful to conceptualize beforehand what these roles could be. To this end, we need a theoretical approach that is sensitive for religion as well as the contributions of other social spheres to STs. Neither an approach that only focuses on the economy and politics nor an approach that exclusively takes religion into account is helpful for this undertaking, as the role that religion assumes is always embedded in a context of other social spheres with specific roles in the given ST process. Accordingly, such an approach integrates religion into a more comprehensive theoretical framework and relates the role of religion in STs to that of other social spheres.

The goal of this article is to present a preliminary theoretical framework for religion in STs that allows for (a) structuring the debate around religion and STs and (b) defining potential areas of research. It thereby addresses the following question: In what way can religion contribute to render Western societies more environmentally sustainable? To tackle this question, the preliminary theoretical framework conceptualizes the potential roles of religion in STs by combining insights from different fields of research such as religious studies, sociology, anthropology, sustainability transitions research, evolutionary research on religion, and, in particular, ERD. The theory resulting from this endeavor may serve as an orientation for empirical studies in the field. It goes without saying that the theory is open to modifications, as it constitutes a preliminary framework that is designed to serve as a toolbox for further empirical research.

Religion can be, in theory, many “things” and it may be even critically questioned if there is indeed a “thing” called “religion” (Bloch 2008; Woodhead 2011). Therefore, as a first step, this article mainly focuses on Christian traditions and organized actors prevalent in Western contexts. This focus will be opened towards the end of the article to other “religions” – in particular indigenous cosmologies – to describe the limitations of the framework and outline its potential for further development.

The article is structured as follows: the first section summarizes ERD’s perspectives on religion in STs and illustrates the need for a theoretical framework. This section also addresses the slippery undertaking of defining “religion” and “sustainability”. The following section briefly introduces the reader to social differentiation theory upon which the theoretical approach draws and applies it to STs. The article then portrays the different roles that religion can assume in ST processes, distinguishing between (a) religious actors acting as “service providers” for STs, contributing with specific functions to these processes, (b) “non-religious” actors involved in STs employing religious semantics and logics in their communication, (c) collaborations between both types of actors, and (d) then opens the perspective beyond Western ways of drawing boundaries between “religion” and “non-religion”. The final section discusses the scope of the approach and outlines research perspectives rooted in the theoretical framework.

2 PERSPECTIVES ON RELIGION IN SUSTAINABILITY TRANSITIONS (STs)

Sustainability transitions research defines Sustainability Transitions (STs) as “long-term, multi-dimensional, and fundamental transformation processes through which established socio-technical systems shift to more sustainable modes of production and consumption” (Markard, Raven, and

Truffer 2012: 956). STs are socio-technological transformation processes that endeavour to lead societies towards higher sustainability. While the need of a transition towards more sustainability is widely accepted among those engaged for STs, “sustainability” is a slippery term and its exact meaning is a highly embattled topic (cf. Chance and Andreeva 1995; Goldman 1995; Mebratu 1998). As such, narratives differ in terms of what sustainability is and what changes a transition towards “sustainability” must involve (Luederitz et al. 2016): some of the competing transition narratives highlight the importance of technological changes; others place an emphasis on economic incentives (“green economy”) or changes in values and lifestyles (“ecotopian visions”).

Therefore, this article relies on the broad definition proposed above and focusses on STs that seek to improve the long run durability of the ecological system. Taking the different notions of sustainability transitions for given, researchers can study how actors try to reach the things that they associate with “sustainability” and engage for “sustainability transitions”. In this vein, the present article portrays in what way religious and “non-religious” actors refer to religion in endeavors for transformations that improve, according to their understanding, environmental sustainability.

Academic contributions in sustainability transitions research have denoted the multi-scalar and multi-actor nature of these processes, highlighting the importance of activities on the international, national as well as regional/local levels and the involvement of different types of actors such as politicians, businesses, city administrators, citizen initiatives, researchers, and intermediaries (cf. Coenen, Benneworth, and Truffer 2012; Frank W. Geels, Marko P. Hekkert, and Jacobsson 2008; Hodson and Marvin 2010; Mattes, Huber, and Koehrsen 2015; Späth and Rohracher 2013; Späth and Rohracher 2013). Although scholars have studied the involvement of actors related to different social spheres, one social sphere that has, so far, been barely taken into account in sustainability transitions research (STR) is religion.

Nevertheless, given that STR has mostly concentrated on the evolution and the diffusion of particular sustainable technologies (e.g. solar or wind power) and the widespread understanding of STs as a primarily technological innovation process, the disregard of religion is unsurprising. Accordingly prevalent theoretical frameworks in STR such as Technological-Innovation-Systems (Bergek et al. 2008; M. P. Hekkert et al. 2007; Markard and Truffer 2008) and the Multi-Level-Perspective (MLP) (Frank W. Geels 2002; Frank W. Geels 2004; Frank W. Geels 2011; Frank W. Geels, Marko P. Hekkert, and Jacobsson 2008; Frank W. Geels and Kemp 2007; Geert Verbong and Frank Geels 2007; G.P.J Verbong and F.W Geels 2010) have developed sophisticated tools to explore how and under what circumstances new sustainable technologies develop and expand, significantly widening our understanding of these processes. However, this technological focus of STR obstructs a more encompassing understanding of ST processes that takes into account “softer,” cultural factors, such as religion.

Several facts suggest a potential relevance of religion for ST processes: for centuries, religion has played an important role in social transformation processes, hindering or spurring these changes; e.g. the U.S. Civil-Rights-Movement, the Iranian Revolution, the Anti-Communist Uprising in Poland, the Nicaraguan Revolution (Gardner 2003; Herbert 2002; Tucker 2006). Even under the supposed secularization process, religion continues to inform the lives of vast population segments. Some religious organizations even constitute major actors in the public sphere and frequently assume the role of moral watchdogs (Casanova 1994; Casanova 2008; Davie 2010; Habermas 2006). Against the backdrop of climate change, many religious groups have adopted pro-active positions in the public sphere while others intensified their previous public engagement (Gardner 2002; Gardner 2003; Lorentzen and Leavitt-Alcantara 2006; Wardekker, Petersen, and van der Sluijs, Jeroen P. 2009). This is, for instance, prominently illustrated by the encyclical “*Laudato Si: On Care for Our Common*

Home” of Pope Francis. Moreover, religion is increasingly taken into account by “secular” development actors such as the UN, World Bank, and national development organizations. These “secular” organizations nowadays collaborate on a regular basis with religious bodies and, in some cases, have even established specific departments dedicated to religion (GIZ 2014; Haynes 2007; Haynes 2014).

In contrast to STR, the ecology and religion debate (ERD), also known as religion and ecology debate¹, highlights the role of religion in STs (Clugston and Holt 2012; Kimmins 1993; Roger Gottlieb 2008; Rolston III 2006; Rasmussen 2011; Tucker 2006; Tucker 2008).

A seminal article from Lynn White (White 1966) in 1966 contributed to the development of ERD. In this article, White portrays Western Christianity and its anthropocentrism as the crucial source of the ecological crisis. Despite his extremely critical stance towards prevalent Western Christianity, White regards religion, instead of technology and science, as the solution to the ecological crisis: “Since the roots of our trouble are so largely religious, the remedy must also be essentially religious; whether we call it that or not” (White 1966: 1207).

Although White’s thesis has been subject to vast theoretical and empirical criticism (cf. Kanagy and Nelsen 1995; Michelle Wolkomir et al. 1997; Woodrum and Hoban 1994), it has led to an extended discussion about the ecological crisis among religious scholars and within religious organizations. In response to these discussions, ecological scholarship has thrived in the world’s major faith traditions (e.g. “eco-theology” in Christianity and “Islamic Environmentalism” in Islam). Moreover, an increasing number of religious organizations and initiatives dedicate themselves to environmental issues. This is, for instance, illustrated by massive coalitions of national religious organizations that seek to campaign for ecological awareness within and outside their churches, such as the “National Religious Partnership for the Environment,” the “Evangelical Climate Initiative” in the US, and “Operation Noah” in Great Britain (Haynes 2007: 124-129; Shibley and Wiggins 1997). Some scholars interpret the rising ecological awareness among existing religious traditions as an indicator for a “greening” process of religion (Kanagy and Willits 1993; Shibley and Wiggins 1997; Bron R. Taylor 2010; Bron Taylor, van Wieren, and Zaleha 2016): the “greening of religion”-hypothesis supposes that the world major faith traditions are tending to become more environmentally friendly. This hypothesis does, however, not imply that religious traditions have previously been anti-environmental: while some traditions are becoming “greener”, others such as Buddhism or indigenous religions are perceived as being already comparatively “green” (cf. Lorentzen and Leavitt-Alcantara 2006; Woodhouse et al. 2015).

Many ERD contributions posit that religion can be a critical factor for transitions towards more environmentally friendly societies. In particular, they point to the need for visions and moral attitudes that mobilize people for rendering societies more sustainable. While science, technology, and politics lack this capacity, religion appears to be a highly suitable candidate for filling this gap: religion can spread pro-environmental worldviews and values for advancing STs (Gardner 2003; Tucker 2006: 413-414, 416; Bergmann 2009).

However, wide-ranging and consistent empirical insights to underpin these claims are missing: while quantitative studies about the impact of religion on ecological attitudes which mostly focus on the US (cf. Barker and Bearce 2013; Biel and Nilsson 2005; Dekker, Ester, and Nas 1997; Djupe and Gwiasda 2010; Greeley 1993; Guth et al. 1995b; Kanagy and Willits 1993; Kanagy and Nelsen 1995; Sherkat and Ellison 2007; Michelle Wolkomir et al. 1997; Woodrum and Hoban 1994; Woodrum and Michelle J. Wolkomir 1997) show divergent results and suggest a need for more qualitative in-depth

¹ ERD is used as an abbreviation for the religion and ecology debate instead of “RED” to avoid confusion with “REDD+”.

approaches, there are hardly any encompassing in-depth studies based on qualitative and/or mixed methods exploring the claims of ERD.

Furthermore, in order to know where and what to research, more theoretical reflections about the potential roles of religion are necessary. So far, there are only a few theoretical systematizations describing the potential roles and resources of religion in STs. Gardner (Gardner 2003; Gardner 2006) presents such a systematization identifying the main capacities of religion for fermenting ST processes. However, as ERD focuses solely on religion, it falls short when it comes to contextualizing the ST involvement of religious actors in a wider social environment. Given that the social context is likely to influence the involvement of religion in STs, it is crucial to take it into account.

In order to inform empirical endeavours in the roles of religion in ongoing STs, we need a broad theory that conceptualizes the roles of religion in STs in the context of other social spheres that potentially contribute to STs. Therefore, the following theoretical reflections elaborate upon a framework that relates the roles of religion in STs to that of other social spheres.

3 A SOCIAL DIFFERENTIATION THEORY TO STS

In order to conceptualize and study the role of religion in the multi-actor, multi-sphere, and multi-scalar contexts of STs, a broad approach is employed that takes the various social spheres, actors and levels into account. This approach draws on social differentiation theory, as it can be found in different sociological approaches (cf. Bourdieu 2006; Fligstein and McAdam 2012; Luhmann 1997; Luhmann 2001). Differentiation theory describes modern society as divided into relatively autonomous social spheres. With rising societal complexity, social spheres have evolved in the course of social evolution around particular societal functions and/or topics. Examples of these social sphere are politics, arts, religion, law, economy. Centering on a specific function/topic (e.g. arts), the spheres have evolved distinctive semantics (e.g. concepts, jargons) and norms in the course of time to tackle the given topic/function. Operating along specific logics, the social spheres differ in their working principles, thereby creating boundaries against other social spheres, as these are based on other, often incommensurable, logics.

Depending on the specific theoretical sociological approach, these spheres have specific qualities and are described with different terminologies such as systems, fields, and/or social worlds. For instance, Niklas Luhmann's systems reproduce strong boundaries towards their environment and operate in an autonomous way, whereas the boundaries of Pierre Bourdieu's social fields are more permeable. Regardless of these disparities between the specific theoretical approaches, the basic concept of differentiation into relatively autonomous social spheres is of central importance for the framework of this article, as it allows firstly for a demarcation of the religious sphere from other social spheres and, secondly for studying the presence of religion among religious and "non-religious" actors.

Defining religion is a slippery undertaking that is highly controversial and involves a pervasive debate in the academic study of religion. The debate has led to an extensive amount of definitions, criticism over their Western bias, and even some efforts to abandon the term altogether (cf. Asad 2009; Bloch 2008; Klass 1995; Schäfer 2009; Woodhead 2011). However, given that (a) there are, at least in the Western context, specific phenomena usually described as "religion" and that (b) defining "religion" is essential for demarcating the specific area of study, the present framework provides a working definition that distinguishes between religious actors and religious communication.

As it allows for its relatively clear demarcation, the present framework draws upon Niklas Luhmann's systems theory to define the religious sphere.² According to systems theory, religion is limited to a specific social system in modern society that operates religious communications (Luhmann 1977; Luhmann 2000). Its main social function consists in transforming uncertainty (the "undefined") into certainty (the "defined"), thereby absorbing contingency. In order to fulfil this function, the system operates along the binary of transcendence and immanence. In the course of these operations, it (re)produces semantics in the form of symbols, narratives, rules, and norms. The production and administration of the semantics is often – but not solely – undertaken by specific organizations (e.g. churches) that are primarily related to the religious system. Besides its key social function, the religious system also undertakes "services" for other social spheres. Luhmann names, for instance, social outreach programs as a service that organizations related to the religious system provide for those partly excluded from the economic system (Luhmann 1972; Luhmann 1977). Hence, also in the case of STs, religion as well as other social spheres can theoretically assume the role of a "service-provider", contributing, additionally to its specific societal function, to STs.

In contrast to Luhmann's system theory, the present approach places an emphasis on actors. Here, the term "actor" refers to collective actors (e.g. organizations, movements) and individual actors in professional roles. Most actors are primarily related to a specific social sphere and therefore predominantly employ its logics and semantics. For instance, protest movements, most NGOs, political parties, and politicians are regarded as primarily related to the political sphere and are therefore, subsequently, described as political actors. By contrast, religious movements, pastors etc. are regarded as primarily related to the religious sphere and are therefore labelled as religious actors. Nevertheless, actors often participate in different social spheres at the same time and therefore may also use semantics related to these other spheres and even serve their functions. In this way, actors that are not primarily related to the religious spheres (= "non-religious" actors) may undertake religious communication. For instance, an entrepreneur in renewables may refer to religious narratives and values when describing his/her involvement in fighting climate change. Accordingly, the concepts of religion as understood in religious communication and in religious actors are not identical: religion may become manifest among "non-religious" actors while those actors that are usually described as "religious" also communicate in a secular fashion. This difference is of crucial importance, as it allows the consideration of religion beyond the strict boundaries of what is usually considered as "religious". Religion, as defined here, therefore, becomes manifest in the form of (a) religious actors defined as actors that are related to the religious sphere and label themselves as religious and/or are usually labeled by a wider public as such, (b) religious communication, which can be split in two subtypes: (b-1) communication that entails semantics that are in the Western context marked as religious (e.g. "Hell," "God," "redemption") and (b-2) communication that serves the transformation of uncertainty into certainty by referring to a super-/pre-natural force or state. This definition does not claim to be all-encompassing, as it potentially excludes phenomena that are described by other researchers as "religion". Nevertheless, it provides an approximation to the phenomenon usually described as "religion" in the Western context.

As STs imply encompassing changes that span different social spheres, they rely on functional contributions from actors related to various spheres and are likely to unfold in the course of the interaction between them (cf. Frank W. Geels, Marko P. Hekkert, and Jacobsson 2008; Hodson and

² Although Luhmann himself has dedicated a monograph, "Ecological Communication" (Luhmann 2004), to the topic, so far, little credit has been given to Luhmann's systems theory in debates on STs. Rather, it has been criticized as too abstract and lacking in empirical relevance (Mathur 2005). Partly agreeing with this criticism, this article employs systems theory as a toolbox and modifies its approach in order to reduce its abstractness and adapt it to the study of religion in STs.

Marvin 2010; Mattes, Huber, and Koehrsen 2015; Späth and Rohrer 2013; Späth and Rohrer 2013). Besides the different types of “non-religious” actors (e.g. businesses, research institutes, politicians, intermediaries) also religious actors may contribute in important ways to STs, as will be discussed below. However, given that STs strongly differ according to the given socio-geographic context, there are regional differences in the roles that specific social spheres assume for STs (cf. Mattes, Huber, and Koehrsen 2015; Späth and Rohrer 2013): the configuration of the given context (e.g. dominant transition narratives, norms on religious involvement) may favor contributions from specific social actors over others (e.g. dominant “green economy” narratives marginalize non-economic contributions). Also the way in which religion becomes manifest in STs will depend on the configuration of the specific socio-geographic context (Parker G 2015a). As such, some contexts and their predominant transitions narratives (e.g. technological concepts) may favor contributions from specific non-religious actors (e.g. businesses, engineering researchers). Even though this may indirectly lead to the marginalization of contributions from religious actors, it does not automatically imply the exclusion of religion from the given ST process: religion can also become manifest in the form of religious communication among non-religious actors that engage in the transformation process. Accordingly, two types of actors are relevant for conceptualizing the potential roles of religion in STs: (a) religious actors participating in STs, and (b) “non-religious” actors involved in STs. After describing these two types in the following sections, the article discusses how these two types of actors collaborate, bridging the sectoral boundaries between them, and how “religion” becomes manifest in STs in non-Western contexts.

4 RELIGIOUS ACTORS AS “SERVICE-PROVIDERS” OF STS

The Ecology and Religion Debate (ERD) suggests different ways in which religious actors may contribute to STs. These can be summarized along three potential functions (Koehrsen 2015): (a) Campaigning towards actors related to the media and political sphere (e.g. press statements, public activities, lobbying eco-friendly positions vis-à-vis governments); (b) “Materialization” of STs (e.g. energy efficient refurbishment of church buildings, installation of solar panels); and (c) Dissemination of values and worldviews that empower environmental attitudes and actions (e.g. preaching in church services, Sunday School). The following elaborations upon these three functions place a specific emphasis on Christian religious actors, as these constitute the most prevalent actors in Western contexts.

Public Campaigning

Religious actors can campaign towards actors related to the media and political sphere. This refers to the ongoing public dimension of religion (cf. Casanova 1994; Casanova 2008; Habermas 2006; Habermas 2008): religious actors can participate in public debates on sustainability (e.g. climate change) and thereby seek to influence public opinion on this topic. To this end, they communicate press-statements, public announcements, and public events towards the media which does or does not cover these statements and events, depending on its internal logic. An example for a declaration from a religious actor that has been widely covered by the media (TV-channels, newspapers, internet forums) is Pope Francis’ “Laudatio Si,” whereas statements from less visible religious actors will usually have less media impact.

Apart from the media-channel, religious actors can directly communicate their ecological positions to policy makers, as has been, for instance, illustrated by the success of the Evangelical opposition against attempts to undermine the Endangered Species Act in the US congress in 1996 (cf. Laurel Kearns 1997; Gardner 2003). Similarly, the rising number of religious actors present at the United

Nations and particularly at its climate conferences attempt to influence decision making processes via advocacy work (Kerber 2014; Haynes 2014). However, the general impact of religious actors on policy makers as well as public opinion may be weakened by the fact that their communication regarding STs is not unified (Laurel Kearns 1996; Wardekker, Petersen, and van der Sluijs, Jeroen P. 2009): while many churches in the US strongly lobby for pro-environmental policy, others take more reluctant and sometimes even hostile stances, worrying that ambitious climate policy will jeopardize efforts to reduce poverty in the global South.

So far, the study of the public involvement of religious actors has been mostly limited to the US, where it is thought to be overtly influential (Dewitt 2006; Djupe and Gwiasda 2010; McCammack 2007; Nagle 2008; Wardekker, Petersen, and van der Sluijs, Jeroen P. 2009), whereas in other parts of the world the extent and impact of such communication remains to be studied.

Interestingly, Leonard and Peppers (Leonard and Pepper 2015) report a high credibility of Australian religious organizations and leaders on issues regarding climate change. Further, in the backdrop of Pope Francis “*Laudatio Si*” in 2015, national politicians and journalists questioned Australian prime minister Tony Abbott on the dissonance between his strong Catholic identity and his arguably backward oriented climate policy (e.g. repeal of carbon tax), which disregards the Pope’s position (cf. Grattan 2015; Priestley 2015; The Guardian 2015). This example illustrates that the impact of religious actors should not be underestimated: although, political leaders may well act against the advice of religious actors, the public presence of statements emitted by religious actors may create a need for justification.

Materialization

Apart from public communication, religious actors can have an active stance in “materializing” STs by undertaking projects that “materialize” these transitions (cf. Cousineau 1997; Roger S. Gottlieb 2006; Harper 2011; Lorentzen and Leavitt-Alcantara 2006). This function refers to initiatives that render religious organizations more environmentally-friendly by, for instance, switching the energy consumption to renewables (cf. Oeku Kirche und Umwelt 2012; Umweltbüro der Evangelischen Landeskirche in Württemberg 2014). Moreover, initiatives to materialize transitions can also go beyond the boundaries of the given religious organizations and have a wider societal impact. For instance, Lee and Han (Lee and Han 2015) report the establishment of approx. 5000 recycling sites throughout Taiwan by the Taiwanese Buddhist organization Tzu-Chi (Lee and Han 2015). Another example is described by Gardner: Episcopal Power and Light (EP&L, now Interfaith Power & Light), founded by Reverend Sally Bingham, promotes the employment of renewable energy and the implementation of energy efficiency measures within and outside congregations, by offering energy-audits and energy supply from non-polluting sources (Gardner 2003: 170; Interfaith Power & Light). The cases illustrate that religious organizations can capitalize on their physical and financial assets as well as their social capital when materializing STs (Gardner 2003: 156-158).

Dissemination of Values

Religious actors can further disseminate values and worldviews that influence environmental attitudes and behavior. Departing from Lynn White’s famous argument about the destructive environmental impact of the Christian anthropocentric worldview, many authors stress the value/worldview-dissemination function as a unique function of religion in STs. As opposed to Lynn White’s original argument, most ERD scholars highlight the positive impact of religious values and worldviews on STs, as they can provide an ethical orientation and visions for handling the environmental challenges of our times (cf. Bergmann 2009; Gardner 2006; Roger Gottlieb 2008; Rolston 2006; Tucker 2006; Gardner 2003). For instance, Mary Evelyn Tucker states:

“(...) religions can encourage values and ethics of reverence, respect, redistribution, and responsibility for formulating a broader environmental ethics that includes humans, ecosystems, and other species. With the help of religions[,] humans are now advocating for a reverence for the earth (...)” (Tucker 2006: 401).

In the Christian context, religious actors may impart pro-ecological values and worldviews through sermons and religious teaching (cf. Djupe and Hunt 2009; Shibley and Wiggins 1997). The impact will depend on the number of individuals that the given religious actor can reach through these different channels. With decreasing numbers of practicing affiliates in Western Europe (cf. Bruce 2011; Davie 2006), the potential impact may be shrinking. Moreover, the impact will depend also on the ability of religious actors to shape the worldviews and values of their followers: even when citizens participate in religious services, it is still unclear how strong their impact will be on the attitudes and behavior of the given individuals, as religion competes with other socializing influences and worldviews (e.g. “consumerism”).

Quantitative studies about the impact of religion on ecological attitudes in the US and other places in the world show divergent results (cf. Barker and Bearce 2013; Djupe and Gwiasda 2010; Greeley 1993; Guth et al. 1995b; Hagevi 2014; Kanagy and Nelsen 1995; Kanagy and Willits 1993; Sherkat and Ellison 2007; Michelle Wolkomir et al. 1997; Woodrum and Hoban 1994; Woodrum and Michelle J. Wolkomir 1997). Woodrum et al. (Woodrum and Hoban 1994; Woodrum and Michelle J. Wolkomir 1997), for instance, contest the White-thesis and find a positive impact of religion on environmental concern in the US when controlling for the impact of fundamentalism and political conservatism. By contrast, Barker and Bearce (Barker and Bearce 2013) argue that US citizens who believe in an apocalyptic end of times theology are less likely to support pro-active government responses to climate change, given that apocalyptic theology shortens planning and investment horizons for its adherents. In the cases of Australia and Chile, scholars see no clear impact of religious belief and belonging on environmental attitudes, stating that religious and non-religious citizens show approximately similar attitudes towards the environment (Leonard and Pepper 2015; Parker G 2015b). However, when focusing on specific religious norms – such as the norms of Christian responsibility for the environment – there is a stronger relationship between religion and pro-environmental attitudes (Leonard and Pepper 2015). Other scholars assume that the ecological position of religious actors depends on the concrete environmental topic (e.g. genetically modified crops vs. pollution from crops Biel and Nilsson 2005). Further, the environmental position adherents assume is not only likely to depend on their faith tradition, but even on the branch and specific religious organization to which they belong within that faith tradition, as different ecological ethics compete within the same faith traditions (Laurel Kearns 1996; Wardekker, Petersen, and van der Sluijs, Jeroen P. 2009). Thus, members of particular religious organizations will turn out to be less favourable to STs than members of other religious organizations from the same faith tradition.

Conceptualizing religious actors as first movers, ERD barely considers an inversed direction of influence: religious organizations may adapt to the environmental attitudes of their religious constituency that have been nurtured by other channels (e.g. mass-media coverage of environmental topics). Below, the possibility of religious organizations adapting with their ecological positions to their social environment will be further considered in the context of evolutionary approaches to religion.

Other and Exclusive Functions of Religious Actors in STs

As this systematization refers only to the most discussed roles of religious actors in STs, it does not claim to be exhaustive. Apart from these dimensions, religious actors may contribute in other functions to STs. Furthermore, religious actors can also employ the functions in ways that block and/or question STs (cf. Laural Kearns 2012). For instance, when religious actors disseminate end-time theologies that view climate change as part of the welcomed apocalypse, their religious constituents are likely to accept rather than counteract climate change (Barker and Bearce 2013; Roscoe 2016).

ERD particularly stresses the third function as unique to religion in STs, underscoring its ability to shape the values and worldviews of actors in a pro-ecological way, unlike other social spheres, such as science (cf. Rolston 2006). Thus, ERD suggests that religion may assume functions in STs that other social spheres are unable to fulfil. However, empirical research indicates that there is no no exclusive function of religious actors in STs, as actors related to other social spheres (e.g. environmental groups) also help to spread pro-ecological values (cf. Koehrsen 2015). Nevertheless, religious actors may be prone to assume particular functions, in which they hold competences: while religious actors will face difficulties in evolving outstanding skills in the “materialization” of STs, its specific competence is the dissemination of worldviews and values (cf. Gardner 2003; Roger Gottlieb 2008; Rolston 2006; Tucker 2006). Therefore, religious actors in ST processes may focus on the dissemination of values and worldviews.

To what degree religious actors assume which functions in ST processes is an open question. Another question that arises is the impact of the engagement of religious actors in these functions. While it appears feasible to measure the concrete impact in the materialization role (e.g. by estimating reductions in CO2 emissions), the specific impact that an engagement in the first and third function has on the ST process in a given socio-geographic space is more demanding: it is hard to determine whether and to what extent public communication and value dissemination by specific religious actors has an impact on people’s actions and choices in STs.

The “Greening” among Religious Groups

Outlining the potential of religions in shaping STs, ERD perceives some religious traditions as more environmentally friendly (e.g. indigenous religions) and others as less (e.g. evangelical Christians). Moreover, the “greening of religion” hypothesis supposes that major faith traditions—in particular Christianity—are tending to become “greener” and show rising interest in contributing to STs (see for an overview Bron Taylor, van Wieren, and Zaleha 2016). Empirically, however, some groups are turning “green” while others hardly display greening tendencies. This raises the question of what factors lead religious groups to become environmentally friendly.

While ERD barely considers the reasons for the greening process, current debates on the evolution of religion provide potential explanations. Predominant evolutionist approaches regard the emergence of religion as a by-product of ordinary innate cognitive mechanisms (Atran and Henrich 2010; Sosis 2009). In the course of human history, social and ecological pressures have favored “pro-social religions.” These are religions that favor in-group solidarity and collaboration, thereby decreasing the probability of conflicts (Atran and Henrich 2010; Botero et al. 2014). Environmental risk, resource scarcity, competition between groups, and growing group populations created a positive selection environment for these types of religions (Botero et al. 2014). Through their collaboration-favoring traits, these religions favored group growth, higher social complexity, and the improvement of material living standards, thereby generating comparative advantages over groups embracing religions with less cooperative traits (Norenzayan et al. 2016).

Despite reducing an apparently ubiquitous dimension of human existence—Bloch speaks of religion as a residuum of the unique social dimension of human beings: “the transcendental social” (Bloch 2008)—to a simple by-product of human cognition, these approaches may help to understand the “greening” processes of religions by (a) highlighting the pro-social dimension of environmental friendliness, and (b) the adaptive potential of religions to their cultural and natural environments.

Rising environmental friendliness is not necessarily a pro-social trait of religion, given that its primary concern is not the collaboration with co-believers but the protection of the ecological environment. Nevertheless, concern for the ecological environment can further strengthen the pro-social characteristics of the given religious tradition, as it may alleviate potential conflicts over scarce resources and consumption opportunities (e.g. in-group conflicts over fossil fuels). Reducing the potential of in-group conflicts, groups with “greening” religions may improve their competitive advantage over other groups under the specific circumstances of rising resource scarcity.

Apart from securing in-group harmony, the green traits of religious traditions can also constitute adaptive responses to their ecological and cultural environment (cf. Hill 1988, Bron Taylor 2004; Wilson et al. 2016): perceiving human-caused environmental degradation as a threat for the well-being of the group, religions may integrate norms that seek to reduce this threat. Moreover, a cultural environment marked by rising environmental concern incites or strengthens these perceptions. As such, some scholars regard the wide reception of Lynn White’s (1966) environmentalism criticism of Western Christianity as a crucial trigger for the greening processes among Christian groups (Bron Taylor, van Wieren, and Zaleha 2016). Empirically, Christian groups have, however, reacted differently to this criticism and display varying tendencies to become environmentally friendly: adherents of conservative evangelical groups tend to show less concern for the environment than liberal mainline Protestants (Arbuckle and Konisky 2015; Barna Group 2007; Guth et al. 1995a). To consider these variances, an explanation for the greening patterns can draw upon sociology of religion which catalogs Christian groups according to their responsiveness to their socio-cultural environment as “sects” and “churches” (Johnson 1963; Dawson 2011). Following this classification, less responsive religious groups (e.g. conservative evangelical “sects”) will be less inclined to undertake a “greening” process than more responsive groups in the context of rising environmental concern. Consequently, the greening potential of religious groups depends, inter alia, on the environmental concern of the cultural context in which they are embedded and their predisposition to adapt to the cultural context. To explore this hypothesis, comparative studies between adaptive and non-adaptive religious groups in varying cultural contexts are needed.

5 RELIGION AMONG “NON-RELIGIOUS” ACTORS IN STS

The relationship of “non-religious” actors to religion in STs may assume two main forms: (a) religious communication among “non-religious” actors in the form of religious semantics/codes and the fulfilment of the religious function, and (b) collaboration with religious actors in ST projects (see below).

Some scholars suggest that actors not primarily associated with the religious sphere, i.e. environmental NGOs, may refer to specific religious values and/or employ religious language and reasoning (Johnston 2014; Nelson 2012; Bron Taylor 2004; Bron R. Taylor 2010).

Particularly interesting are the elaborations from Taylor (Bron Taylor 2004; Bron R. Taylor 2010; Bron Taylor 2013) around the concepts of “green religion” and “dark green religion.” While Taylor, with the term “green religion,” refers to the greening of institutionalized faith traditions (e.g. Christianity), “dark green religion” constitutes a less visible, non-institutionalized form of religion

that conceives of nature as sacred and therefore worth protecting. Often dark green religions becomes manifest among actors that express a feeling of connectedness with nature. Taylor distinguishes between naturalist and supernaturalist branches of dark green religion: supernaturalist forms of dark green religion regard nature as having consciousness and/or intelligence, whereas protagonists of the naturalist branches of dark green religion distance themselves from such ideas. Regardless of their supernaturalist or naturalist tendency, all types of dark green religion culminate in the core-belief in the sacredness of nature. Taylor suggests that dark green religion is (re)produced in what he defines as the “environmentalist milieu,” meaning “contexts in which environmentally concerned officials, scientists, activists, and other citizens connect with and reciprocally influence one another” (Bron R. Taylor 2010: 13-14). Constituting the hotbed of dark green religion, these contexts engineer, consolidate, and diffuse the concepts and values for the different branches and sub-branches of this new religion. Nevertheless, dark green religion is not limited to these contexts, as it constitutes, according to Taylor, an expanding religion that is spreading through different social spheres (such as the economic and mass media sphere; cf. (Bron R. Taylor 2010: 214-217; Bron Taylor 2013) and may well become a globally omnipresent “terrapolitan-earth-religion”. Following Taylor’s concept, one may think about “secular” forms of communication fulfilling a religious function and argue that some kind of religious function is necessary in the highly uncertain context of STs: religion may assume the function of reducing uncertainty by creating an ultimate justification in the otherwise highly uncertain context of STs (e.g. justifying the unconditional protection of the sanctity of nature).

Apart from “secular” language fulfilling a religious function, “non-religious” actors may also employ religious semantics related to institutionalized faith traditions. As the debate about “public religion” and “post-secularity” stipulates (cf. Casanova 1994; Casanova 2008; Davie 2006; Habermas 2008; Willaime 2008), actors particularly related to the media and political sphere (particularly protestant movements) have opened up towards religious communication. Accordingly, one may argue these “non-religious” actors are especially likely to employ religious semantics when engaging in STs. Employing religious semantics in other social spheres, rather than being bound to the logic of the religious sphere, “non-religious” actors are relegated to the logic of the sphere in which they are moving. As such, they may have to adapt the religious dimension of their engagement to this specific logic (e.g. adapting religious contents to a particular political discourse). However, it is an empirically open question whether and in what way they employ religious semantics and, if so, whether religious semantics are only used as attractive terminology or whether they do indeed assume a religious function.

As in the aforementioned case of religious actors in STs, difficulties arise when it comes to estimating the impact of religious communication among “non-religious” actors. In particular, among politicians one may wonder whether references to religion are not employed in a strategic manner while religion barely influences their decision making. Moreover, whether we are able to determine religion among “non-religious” actors will depend on our definition of religion: researchers employing broader definitions of religion will identify a higher presence of religion in STs than those employing more limited definitions. Accordingly, studying the presence of religion among “non-religious” actors implies developing a well-calibrated definition of religion and empirical indicators that fit this definition. For instance, defining religion by the reference to transcendence, excludes the naturalist branches of Taylor’s dark green religions, as these do not refer to transcendent forces. Further elaborating on the notion of transcendence, it might also consist in an immanent transcendence, in an “a-priori” inaccessible to empirical refutation, such as, for instance, the assumption of the “sacredness of nature.” Thus, the religious function consists in transforming

uncertainty by referring to an “a-priori.” In-depth studies of communications from “non-religious” actors would have to test the feasibility of this definition.

In sum, “non-religious” actors in STs may employ religious communications. However, it remains an open question to what degree and in what way they do so. In particular, research may explore whether actors involved in STs refer in some degree to the religious function, as there is a need to reduce uncertainty and justify the imperative need to protect the environment by some type of “a-priori.”³

6 COLLABORATIONS AND BOUNDARY WORK

ERD suggests that collaborations between religious actors and “non-religious” environmental actors are increasing (Gardner 2002; Gardner 2003; Haynes 2007), enabling both types of actors to complement their competences: while “non-religious” environmental actors bring in scientific and technical knowledge, experience and credibility, religious actors can contribute moral authority, influence on world-views, material and financial resources, and social capital. These assets convert religious actors into powerful partners when fighting environmental degradation and climate change. Thus, whenever religious actors convey unique assets in a given locality that can be successfully deployed to promote STs (e.g. community building capacity, providing a public forum), “non-religious” actors may strive for collaboration. On the other hand, religious actors may also pursue collaborations with “non-religious” actors and searching for missing technical, scientific or organizational competences (e.g. knowledge on energy saving strategies).

As these actors are primarily related to different social spheres, they usually employ different semantics and follow different logics. Thus, their collaboration is demanding and may involve “boundary work.”⁴ “Boundary work” is defined here as the active effort of actors related to different spheres to interact with each other against the backdrop of their differences in language patterns, worldviews, norms, and values etc. (Clark et al. 2011 // 2016; Gieryn 1983; Mollinga 2010; Star and Griesemer 1989). Religious actors may employ boundary work to cope with the perceived boundaries between the religious/“non-religious” by using concepts in their communication that are connectable to other spheres, and avoiding genuinely religious concepts. In particular, in Western Europe where religious actors frequently communicate in a secular fashion in the public (Köhrsen 2012), it is likely that religious actors also do so when interacting with actors related to other spheres in the courses of ST processes. For instance, Christian churches may employ the concept of “sustainability” in place of “integrity of God’s creation”, using forms of communication that are connectable in other social spheres and avoiding religious communication.

However, to what extent boundary work is necessary will depend on the given socio-geographical space. Socio-geographical contexts, morally and/or legally demanding a withdrawal of religion from public life and its relegation to the private sphere (e.g. the French *laïcité*), may lead religious actors to engage in ambitious boundary work, mostly abstaining from religious communication in STs. Similarly, these contexts are likely to constrain collaborations between religious and “non-religious” actors. By contrast, other contexts may encourage religious actors to communicate in a religious fashion and facilitate collaboration between religious and “non-religious” actors.

Moreover, the religious actors’ perception of the existing boundaries and acceptability of religious communication in “non-religious” contexts will influence their boundary work: a strong perception of

³ This “a-priori” may consist, for instance, of the need to preserve humanity.

⁴ In the study of the relationship between science and politics, the notion of “boundary work” has been mainly applied to the challenge of efficiently managing boundaries between researchers and policy makers (McGreavy et al. 2013).

boundaries is likely to lead religious actors to self-secularize their communication (cf. James 2009: 10-11).

While actors that are marked as religious may experience a greater need to secularize their communication in STs in order to be taken seriously, “non-religious” actors may experience this need to a lesser extent and be more prone to employ religious communication. Based on these assumptions, one may suggest a potential turn-around of the religious-secular divide in the Western European context: religious actors may primarily engage in a non-religious way in STs, whereas religion becomes mostly manifest among “non-religious” actors in STs. This turn-around-hypothesis describes a potential shift of religion away from religious actors and towards actors that are usually understood as secular (cf. Luckmann 1991[1960]). In sum, the interplay between religious and “non-religious” actors in STs may involve some kind of boundary work that potentially leads religious actors to communicate in secular language whereas “non-religious” actors experience less restrictions regarding the use of religious language. This boundary work will differ according to the specific socio-geographical context in which these actors move. As these are only theoretical suggestions, the influence of the perceived religious/non-religious-boundary on the way in which these actors engage in STs remains to be explored empirically.

7 BEYOND WESTERN BOUNDARIES

The focus of the aforementioned observations has been mostly on Western contexts where social differentiation and Christianity are prevalent. The framework that has been presented in this article is applicable to these contexts, but faces limitations in other contexts in which boundaries between social spheres and toward nature are spanned in a different way. An example for the latter is contexts where indigenous cosmologies are prevalent (Descola 2005).

Many of the cosmologies, that can be found in the Americas, Asia, and, Africa, do not involve a religious domain or concept of “religion” and lack clear distinctions between the religious and the non-religious. Moreover, attitudes towards “the environment” are shaped by a non-dualist cosmology: given that indigenous cosmologies perceive continuities between nature and culture, a nature and culture dualism is absent: human beings and many plants and animals have a common interiority and are therefore all considered persons (Castro 1998; Costa and Fausto 2010; Descola 2005); differences between them are “differences of degree, not of kind” (Descola 2005: 22). Ascribing personhood to other beings, these beings form part of the social universe as much as human beings do and, therefore, have to be treated respectfully. Norms demanding the respectful treatment of other beings are sometimes embedded in “cosmo-rules” which involve conceptualizations of sanctions in the case of non-conformance (Howell 2012): when not following through these rules, natural catastrophes (e.g. heavy storms) may occur and harm the perpetrator or the whole group. As such, “cosmo-rules” lead to concepts of causality radically different from that of Western worldviews: catastrophes and “bad luck” are not attributed to coincidence, but to violations against “cosmo-rules.”

Conceptualizing other beings (such as animals and plants) as part of the social universe, demanding respectful behavior towards them, and prefiguring potential sanctions in case of non-conformance, indigenous cosmologies appear to be thoroughly pro-environmental; a perspective often shared by ERD. A study on sacred forests in Zimbabwe reports, for instance, that in areas where traditional beliefs and leadership roles remain intact, forests have been subject to comparatively low forest loss (Byers, Cunliffe, and Hudak 2001).

Nevertheless, there are also critical perspectives on the potential of indigenous cosmologies for STs. Descola (2005: 32-34) points out that indigenous groups have not developed a specific understanding of environmental protection, as there is no distinction between the social and nature for them. Seeking to secure their land rights, indigenous groups would often use environmental protection discourses as a rhetoric strategy for placing their land claims on the public agenda. Empirically, the environmental impact of indigenous cosmologies is, however, not necessarily positive: when adapting new productive activities (e.g. cattle ranching), indigenous groups barely consider their environmental impact, often causing damage to the local eco-systems. Comparing different religious traditions in Latin America, Lorentzen and Leavitt-Alcantara (2006) also find little support for the assumption that indigenous religions are more pro-environmental.

From the viewpoint of these critical perspectives, arguments about the positive environmental impact of indigenous cultures sometimes appear to romanticize these cultures. However, even when indigenous cosmologies arguably do not lead to the expected pro-environmental behavior in non-western contexts, in Western societies, their romanticization may have positive environmental impacts: when being confronted with these cosmologies in Western media portrayals, “non-religious” actors may take them as an impulse to engage in STs and draw upon them to create their “dark green religions” (cf. studies on the media-representation of indigenous culture in the movie *Avatar*: Fritz 2012; Bron Taylor 2013). Therefore, research could study how indigenous cosmologies are portrayed by Western mass media (e.g. documentary films, publications in magazines such as National Geographic) and how these portrayals are adopted by actors engaged in STs.

8 DISCUSSION

This article has elaborated upon a preliminary framework of religion in STs placing an emphasis on the role of religion among actors in Western contexts. The aim of this framework is to provide an overview of ongoing debates, to assemble these into a heuristic that orders different roles of religion in STs, and raise perspectives for future research.

The framework draws upon a twofold definition of religion distinguishing between religious actors and religious communication. Apart from studying the role of religious actors in STs, this distinction allows for exploring the role of religious communication among “non-religious” actors engaged in STs.

Distinguishing between religious and “non-religious” actors, the framework conveys a heuristic that enables to classify different locations and roles for religion in STs that evolve along distinct logics. Religious actors can engage in the three above-mentioned functions in STs: a) campaigning, (b) “materialization,” and (c) dissemination of pro-environmental values and worldviews. They are bound to the logic of the given religious sphere and will in some occasions be forced to employ boundary work to interact with other social spheres. By contrast, “non-religious” actors are not limited by the logic of the religious sphere when referring to religion, but by the logic of the sphere in which they are primarily acting: they will have to adapt the religious dimension of their engagement to its specific working principles.

Although ERD primarily portrays religion as facilitating STs, religion is not pro-environmental per se (Ecklund et al. 2017). Depending on its values, worldviews and, in the case of organized religions, its organizational dynamics, religion can have a triggering, facilitating, or blocking effect on STs. Given rising environmental awareness in many parts of the world, religious groups are arguably turning increasingly “green” (Bron Taylor, van Wieren, and Zaleha 2016). However, to what extent a given religious group is sensitive to “greening” influences from its social environment will depend on its

general predisposition to adapt to its social environment. From an evolutionary perspective, turning green may improve the ecological fitness of a given religious group and its cooperative traits by avoiding conflicts over increasingly scarce resources (cf. (Norenzayan et al. 2016).

Finally, to what extent and in what way religion can have an impact on STs depends on the given socio-geographic context. Specific socio-geographic contexts are more favorable to specific roles of religion in STs, as their cultural configuration defines what manifestations of religion are regarded as appropriate. In some geographical spaces and social spheres, insurmountable boundaries toward “the religious” and its marginalization may broadly hinder the effective involvement of religion in STs, whereas other social contexts may facilitate its presence.

The context is important in a second way: as the presented framework draws upon a Western ontology which distinguishes between religious and non-religious spheres of society (e.g. politics, science, economy) and between nature and society/culture it is mostly applicable to Western contexts. In some cultural contexts “religion” and/or “nature” may not be distinguishable from other socio-cultural phenomena without enforcing our own classifications on these contexts (cf. Castro 1998). Depending on the groups and cultural contexts that we are studying, we need other classifications (cf. Bloch 2008).

Even in Western contexts, distinguishing the religious from other spheres of life is a slippery exercise, given the arguably dissolving boundaries of the religious sphere (Bourdieu 1987; Luckmann 1991[1960]). Scholars run the risk of neglecting a thriving plurality of new “religious” forms when focusing on a strictly defined religious sphere. For this reason, the difference between religious actors and religious communication has been introduced in this article. Although it does not render the approach universally applicable, it opens the perspective for the presence of religion beyond religious actors.

In order to further elaborate upon a comprehensive and empirically based framework, more research is needed. The preliminary approach has pointed out potentials for research regarding the (a) functions of religious actors in STs, (b) the role of religion among “non-religious” actors in STs, (c) the collaborations between both types of actors and the boundary work of religious actors in STs, and (d) the influence of non-western cosmologies in Western STs. Moreover, studies could address the role of religion on different social scales: international, national, and local scales. For instance, on the local scale, research could compare the involvement of religion in the urban low carbon transitions of different cities in various national contexts to determine in what way specific national and local factors influence the role of religion in these urban STs. In-depth explorations of the communication patterns of religious and “non-religious” actors involved in the urban ST processes could assess to what extent religious communication is prevalent among religious and “non-religious” actors involved in STs. Studying the activities of different social spheres and the roles of religion in specific local spaces provides insights about the relative importance of religion in the given STs, thereby placing religion in the context of other social spheres.

While ERD often focuses solely on religion and disregards its embeddedness in complex, socially differentiated societies, a framework based on social differentiation theory considers its embeddedness: where societies are socially differentiated, religion has to be seen in the context of other social spheres, their contributions to STs, and the boundaries between the “religious” and the other social spheres. The relative importance of religion in STs will depend on its specific embeddedness in the socially differentiated societies, as it shapes the way in which religion can effectively become manifest in STs (e.g. the prevalence of religion in the public, norms regarding its “appropriate” manifestation). Against the backdrop of high theoretical claims regarding the role of religion in ERD, research taking the embeddedness of religion into account may help to generate

empirically based perspectives on the relative importance of religion in STs and allow for more fully grasping the potentials and limitations of particular religious cosmologies in specific socio-geographic contexts.

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