



The contribution of the study of religion and nature to adaptive co-management in polycentric climate governance

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Abstract

The latest developments in climate change science and policy counter the traditional political and economic global structure. In this paper, approaching climate change as a collective action problem, I focused on adaptive co-management (ACM) as an innovative management concept. I assumed that the ACM might help us to inaugurate an inclusive social-ecological contract among humans, and between humans and other species. With the aim of enhancing the concept of adaptive co-management, I benefitted from the analytical studies conducted in the field of religion and nature. I first reviewed the literatures on adaptive co-management, and on religion and nature. Further, I elaborated the concepts of religion, religiosity, and *Homo religiosus* as well as the development of the religion and nature discipline. I then scrutinized the religious dimension of the ACM, and evaluated the religious challenges to it, using the findings of selected studies. Finally, I discussed the implications of the human mind's comprehension of (ecological) reality. The conceptual discussion confirmed by the findings indicated that the hegemonic regime of truth still rests on an egocentric cosmology, and this attitude is independent of whether it relies on monotheistic faith or positivist science. In either case, human beings display the characteristics of *Homo religiosus*, connecting to reality in a dogmatic way.

Keywords Adaptive co-management, nature, ontology, polycentrism, regime of truth, religion.

1. Introduction

The increase in global average temperature must be kept below 2°C – ideally 1.5°C (UNFCCC, 2015:p.2). This is the target of the Paris Agreement, “the first-ever universal, legally binding global climate deal” (European Commission, 2015). The Agreement entered into force on 4 November 2016 after the threshold for ratification was achieved on 5 October 2016 (UNFCCC, 2016). As there was before, now, after the Paris Talks and the Climate Change Conference in Bonn, it is still uncertain how, and to what extent, states will react to the process, which would directly affect the future of global climate politics. Some countries, such as the Russian Federation and Turkey, have not ratified the Agreement yet. More importantly, some others, such as China and the United States of America (USA), which ratified it in 2016, are implementing contradictory national energy policies. The latest National Security Strategy of the USA indicates how the Trump Administration approaches the topic of energy security (The White House, 2017:p.22): “Unleashing these abundant energy resources—*coal*, natural gas, *petroleum*, renewables, and *nuclear*—stimulates the economy and builds a foundation for future *growth*” [emphasis added]. This zero-sum game approach to global politics (and the economy) overshadows collaborative climate action.

Recently, there have been many advancements in global climate change science and policy which contradict the competitive political and economic global structure led by traditional international actors as well as the state administrations. For example, a variety of policy-makers, activists, scientists, religious leaders, etc. share a common responsibility for the climate change in the face of a devastating climate crisis and human causes of it. Institutions and experts have devoted enormous time, money, and energy to projects dealing with social and natural science aspects of the climate change phenomena at local, national and transnational levels. As a result, climate governance, which brings states, transnational and international organizations, NGOs, municipalities, and local communities together, has become more polycentric (Jordan et al., 2015:p.4). Within this picture, states and state-led international organizations both seem to be major actors of global climate politics. However, there is also a strand of reasoning, which considers climate change as a collective action problem that must be also tackled at individual and local levels (Ostrom, 2009). The researchers in this camp, therefore, give emphasis to innovative management concepts, one of which is adaptive co-management.

Climate is a phenomenon related to global social-ecological systems, and therefore, it is complex and unpredictable (Jordan & Huitema, 2014:p.392). Swyngedouw (2011:p.71) argues that we cannot examine the climate change problem without asking probing questions about anthropogenic modernization. If we leave these questions aside, and focus only on the technocratic solutions, we cannot sufficiently address the catastrophic possibilities (ibid., p.75-76). Hulme makes a parallel claim when he insists that climate change creates an opportunity to review the terms of our relationship with this planet (2009:p.361). Similarly, *Sacred Ecology* (Berkes, 2008) investigates indigenous ways of knowing to tackle the climate change problem. In accordance with the claims of Berkes, Hulme, and Swyngedouw, I think that we must also focus on inclusive approaches to policy innovation and implementation. To this end, adaptive co-management might help us to initiate an inclusive social-ecological contract among humans, and between humans and other species. Moreover, the deep ethical aspect of climate change (Posas, 2007; Lyon, 2018; also see the interview with Bron Taylor, Campano, 2012) dictates that we think about this social-ecological contract. I believe such thinking is also a necessity “to solve climate change in the long run” (Ostrom, 2009:p.4).

In light of these concepts, I will aim to enhance the concept of adaptive co-management, and benefit from the analytical studies conducted in the field of religion and nature. In doing so, I use the perspective that emphasizes that human beings are still *Homo religiosus*, that is, religion has been a strong variable in the human story. I begin by surveying two bodies of literature. The literature on adaptive co-management focuses on issues related to sustainable approaches to “resource management” from a community-based approach, which is deeply related to the community’s comprehension of nature. The second body of literature emerged especially after Lynn White Jr.’s well known critique of western Christianity with ecological concerns (1967). Based on the literature review and supportive findings, I draw conclusions about how the concept of adaptive co-management can have a critical role for securing climate change adaptation and mitigation.

2. Conceptual Framework

2.1 Adaptive co-management

Adaptive co-management (ACM) is the updated version of co-management with adaptive skills. The subtitle of the book, *Adaptive Co-Management* (Armitage, Berkes & Doubleday, 2007), says a lot about the concept: “collaboration, learning and multi-level governance”. While the core principle of co-management is the participation of non-governmental actors in decision-making processes (in fact, “co-” stands for collaborative), the adaptive co-management has replaced the former to imply that collaborative management practice should also be adaptive to changing environments, and to the learning from local knowledge (ibid., p.1).

Alongside the remarkable collective work, *Adaptive Co-Management* (ibid.), there is a growing body of literature employing and/or analyzing the concept within various fields, e.g. sustainable tourism (Plummer & Fennel, 2009; Lai, Hsu & Wearing, 2016; Islam, Ruhanen & Ritchie, 2017), sustainable fisheries (Parlee & Wiber 2014; McClenachan, O’Connor & Reynolds, 2015), the resilience debate (Gunderson & Holling, 2002; Farhad, Gual & Ruiz-Ballesteros, 2017), conceptual discussion (Hasselman, 2017), and climate change (Plummer & Baird, 2013). Moreover, Huitema et al. (2009) focus on basin ecosystems from a perspective which combines the concepts of adaptive co-management and polycentrism.

As the merging of collaborative management and adaptive management, the ACM acknowledges the community-based approach to the commons as well as the complex and uncertain characteristics of social-ecological systems (Berkes, 2008; Armitage et al., 2009). Within this complexity and uncertainty, its social learning dimension apparently increases the capacity to respond to changes. This dimension also enables the ACM to create an interactive environment in which different actors perform at transnational, national and local levels.

Further studies identified characteristics about the ACM. For example, Plummer and Fennel (2009:p.154-155) distinguish four attributes of the ACM: “pluralism and communication; shared decision-making and authority; linkages, levels, and autonomy; learning and adaptation.” All of these attributes theoretically transform the management practice from government to governance. Nonetheless, Plummer and Baird (2013) particularly discuss the limits of adaptive co-management

in climate change governance. They emphasize the challenge of creating truly multi-level governance under the current international climate regime, and the importance of avoiding a one-size-fits-all approach to the implementation of the concept in the different bioregions. They present ten principles of successful ACM with a focus on the dimensions of resource, stakeholder, and scale (Plummer & Baird 2013:p.634-637).

There are other studies that focus on polycentricism within the ACM literature. For instance, Huitema et al. (2009) discuss the limits of the ACM and offer a well-defined application of it within the context of water governance. Their understanding of the ACM rests on four pillars as the attempt of a comprehensive response to the climate change: polycentric governance, public participation, experimentation, and bioregional (river-based) governance. As a definitive feature of the ACM, they argue, polycentrism means that the ACM operates in a variety of power centers. Public participation implies the engagement of governmental and non-governmental collaborators. Whereas experimentation suggests that management practice hinges on scientific methodologies and/or recognizes the incomplete subjectivity of knowledge. And lastly, the bioregional approach assumes that the boundaries of bioregions might transverse administrative boundaries under either a unitary river-based authority or a collaborative model. They conclude that researchers and practitioners should think more about adaptive co-management's feasibility in polycentric settings.

Obviously, there is an evolution from monocentrism to polycentrism in the management of social-ecological systems, and there is a parallel evolution from co-management to adaptive co-management in the literature. Overall the literature still overlooks the deeper cultural aspect of climate change since it mainly deals with economic wellbeing of humans. Yet, both the policy process and economic relations take place in this cultural context. For example, the preferences of individuals in daily politics are dependent on their ontological (or metaphysical, i.e., what reality is), epistemological (i.e., what I know about reality), and ethical presumptions (i.e., how I should behave), which intersect with the cultural aspect of the problem. Indeed, this cultural aspect is exactly what religion and nature studies has become interested in examining.

2.2 Religion and religiosity

According to the Eurobarometer 77 survey of spring 2012, only 5 percent of Europeans consider religion among the three most important values for them. This is a one-percent decrease compared

to the previous survey, the results of which were reported in autumn 2010 (European Commission, 2012:p.9). In addition, recent Pew research on the changing global religious landscape (2017) indicates that nearly one-third of the world population is Christian (31.2%), and 24 percent of the population is Muslim. Yet, the thought-provoking result is that people who are “non-religious,” in other words, who “do not have a religion,” compose the third largest group in the world. Besides, the percentage of people (5.7%) who identify themselves with folk religion is remarkable. These numbers lead to some questions.

Is it the same “religion” that 5 percent and the remaining 95 percent of Europeans have in their minds? What about those who are not affiliated with any Abrahamic religion, including non-religious people? What do a Christian and an indigenous person think about religion? More importantly, how many people really do think about religion? Answering these questions is difficult, maybe impossible, but dealing with the meaning of religion and an individual’s (religious) perception of reality might be helpful for the efforts to manage a sustainable social-ecological system.

A good starting place to think about religion is to understand the effect of Darwin’s *On the Origin of Species* [1859] on Western society. Darwinian ideas caused some important ontological and epistemological outcomes for various fields of science, and also influenced the emergence of some new scientific ones, one of which was “the science of religion.” In this respect, the Darwinian effect can be compared with the Copernicus effect. Both were revolutionary moments. Neither Copernican heliocentrism nor the Darwinian theory of evolution were original. Both were the outcome of knowledge accumulated over centuries. Both challenged (Biblical) knowledge, which was taken for granted for centuries, in their own ways. However, the audience of *On the Revolutions of Heavenly Spheres* [1543] was limited. It was dedicated to Pope Paul III with a note saying that the basis of the book was not physics (and philosophy), but mathematics. However, nearly three hundred years later, and possibly having the advantage of living in the Victorian age, when Darwin published his masterpiece, his audience was a much wider one, including non-scientists, and the book became a bestseller on its own terms. Thus, while Copernicus had a deep effect on a small number of literate people, Darwin led a wider audience to think about vitality, and about particular themes from biology to philosophy and religion in profoundly different ways.

Following the Darwinian disenchantment effect, coupled with the conditions of the post-Enlightenment Industrial Era, new scientific interests of religion emerged. Max Müller was one of those who thought that religion might be a subject of scientific inquiry. Although his contemporaries disproved Müller's assertions (Pals, 2015:p.10), he was the first who taught lectures on the topic, which were later published as *Introduction to the Science of Religion* [1873]. Today, there is a vast body of literature that focuses on religion through different theoretical lenses. Some studies employ substantive definitions, and explain religion as the beliefs or ideas of religious people. Others aim to understand how religion functions in life at individual or societal levels (ibid., p.11). For example, Tylor and Frazer, as the children of the Enlightenment, presented reductionist theories of religion. Their intellectualist theories strongly echoed evolutionary interpretations of religion from primitive to advanced forms of belief systems. Freud also made a reductionist attempt to understand from a psychoanalytical perspective why people believe in religion, while Durkheim explained religion within its societal functions, and Marx took its political-economic functions into consideration. It seems their reductionism partly stemmed from their non-religious ontological stances. On the other hand, Mircea Eliade's theory of the sacred or E.E. Evans-Pritchard's anthropological claims about primitive religions reflect their religious ontological assumptions. Indeed, the points of disagreement among the thinkers are also reflected by today's society.ⁱ Whether or not people think about religion, they have different ontological assumptions defining the borders of their epistemologies, and which therefore inform their ethical norms. And religion, in this or that way, has a place in this experience. Yet, still, what is religion?

Gottlieb, in the preface of *Greener Faith*, states that "religions are systems of belief, ritual, institutional life, spiritual aspiration, and ethical orientation that view human beings as more than simply their social or physical selves," and also mentions Buddhism to prove that the idea of a Supreme Being is not necessary to consider a set of teachings as religious (2006:p.VIII). On the other hand, employing Saler's concept of family resemblance, Taylor (2007:p.15-17) prefers to make a very long list regarding the characteristics of religion with an aim of non-reductionism.ⁱⁱ

Considering these resembling features, I think that religion is, first and foremost, about management both at individual and societal levels. Beliefs, rituals, the idea of the Truth, etc. are the means of dealing with the inner and outer nature of the self. This interpretation also corresponds with the etymological origins of the concept: "the Latin root *leig*, meaning 'to bind' or 'tie fast,'

or religare, which could be rendered ‘to reconnect’—from the Latin *re* (again) and *ligare* (to connect)” (Taylor, 2010:p.2). Moreover, the root of the Arabic word, *din*, which is used to mean religion, is d-y-n. Not surprisingly, it has four primary meanings such as mutual obligation, submission or acknowledgment, judicial authority, and natural inclination or tendency. These meanings indicate that a religious person is obliged to follow a specific way of life. The obligations can be clarified by a traditional religious congregation, for example, by one of the Evangelical churches, or by a non-traditional religious congregation, for example, by a science association, a political party or a sports club.

The traditional and non-traditional sources of obligations, offering their own “myth[s] of the Absolute” (Stenmark, 2015:p.924), might complement or contradict. Different myths of the Absolute help an individual to deal with uncertainties in life. Therefore, if one, consciously or unconsciously, frames reality through some of the “myth[s] of the Absolute”, s/he can be considered as a religious person, *Homo religiosus*, alongside the other definitions of *Homo sapiens*, *Homo economicus*, or even *Homo colossus* (“equipped with voracious technology,” see Catton, 1986).

Now, I can revisit the above-mentioned questions. The 5 percent and remaining 95 percent of Europeans, or Christians, Muslims, followers of folk religions, or non-religious people do not necessarily have the same idea of religion in their minds, but they might have a set of beliefs, through which they attach to and interpret their own realities. Since ancient times, *Homo religiosus* has re-valued or de-valued the beliefs of its time. Thus, I prefer to define religion, at individual level, as a performative system that connects an individual to life through their beliefs in the Absolute(s). In this sense, a person can be considered as religious if s/he has an unquestionable belief in a specific set of teachings. At societal level, on the other hand, religion means a binding social contract, based on some specific rituals and practices. While connection with reality through the sacred forms of knowledge about the Absolute constitutes primarily individual dimension of religion (so, this is always “my/our religion”), rituals help the individual to be a part of an order, which is a much more societal dimension (that is, the abstract idea of religion). Therefore, religiosity is an individual’s tendency to frame human reality through sacred ideas.

2.3. Religion and nature in 21st century

In line with the rise of global environmental awareness in the 20th century, religions and beliefs have grabbed both scholars' and practitioners' attention in ecological terms. Especially, "The Historical Roots of Our Ecologic Crisis" published by Lynn White Jr. in *Science*, in 1967, alongside the landmark works such as Rachel Carson's *Silent Spring* [1962], alarmed people from all walks of life. Starting from the emergence of the original Assisi Declarations (ARC, 1986), different religious groups and actors have made statements such as *Laudato Si* (Pope Francis, 2015), the Islamic Declaration on Global Climate Change (IFEES, 2016), or the Hindu Declaration on Climate Change (Oxford Centre for Hindu, 2015) with the aim of affecting environmental attitudes and behaviors of religious people. Despite its wider target group, including so-called non-religious people, the Earth Charter has also employed a religious vocabulary (Taylor, 2010:p.188, p.202).

In his short article, White (1967) convincingly argued that the Judeo-Christian cosmologyⁱⁱⁱ shaped the relationship of the medieval Western man with(in) nature, and therefore, affected the making of modern science and technology as a Western interference. As an alternative to the thousand-year-old tradition, he offered the cosmology of St. Francis of Assisi, who treated all animals, and humans, as the equal creation of God. And he made a solid impact on the subsequent literature, resulting in debates such as *dominion vs. stewardship in the Bible*. By doing so, he also challenged the idea that the ecological crisis is just a by-product of modern industrial society. So, it can be inferred that the Anthropocene does not point to a change of the hegemonic mentality but of the technological power to enable the dramatic transformation of nature in accordance with the mentality inherited from the past.

Taylor classified the studies in the literature according to their relationship with White's thesis. The first group includes the apologetical works, whereas the second group provides the confessional works. The third group comprises the works which are religiously indifferent to White's critique. In the final group, there are studies that are against White's assertions (2010:p.11-12). These apologetical and confessional works are seen within the attempts of the greening of Christianity, and the remaining belongs to a much devoted theological framework. Similarly, Berry (2013:p.456) emphasizes the apologetical strand in the related literature. Additionally, he refers to the sociological (especially Durkheimian) approaches that aim to explain the relationship between

religion and nature (mostly environmental attitudes and behavior), and the theoretical discussions of religion and ethics. All these works have varied in their ontological, epistemological and ethical stances. In these variations, religion is taken as a positive factor or a “dogmatic rigidity” (Tucker and Grim, 2001:p.3), or as a phenomenon that has “both supported and subverted the prevailing social order” (Taylor, 2015:p.8).

White insisted on a religious solution, since he considered the problem itself to be a religious one. More than 50 years after this assertion, the picture is not very promising despite the attempts for the greening of Christianity. Recent studies indicate that Christians’ interpretation of their religion is not getting greener (Taylor, 2016a; Taylor, 2016b; Taylor, van Wieren & Zaleha 2016; Konisky 2018). However, there is a long-term environmental trend, full of religious symptoms, which is labelled as *Dark Green Religion* (Taylor 2010). Today, many consider nature as sacred, and argue for a dark green ethics. Moreover, it is important to discuss the religious dimension of human ecology within different contexts. The edited volume of Veldman, Szasz, and Haluza-DeLay (2014) indicated that more case studies from a variety of geographies, which pay attention to non-Christian communities as well, are needed to better understand the link between religion and nature, and to take effective action against climate change. Yet, it is also clear that the questions related to our approach to nature, which we partially comprehend as our environment(s), are actually religious questions, in a so-called secular society (Berry, 2013:p.462). There are linguistic traces to support this interpretation. For instance, one can find a link between the common use of the word, *environment*, and White’s explanation about the roots of the ecological crisis. Environment is derived from the Middle French word, *environ*, which means “surrounding.” Middle French was spoken from the 14th century to the 17th century. In this respect, the evolution of Western language reflects the anthropocentric comprehension of nature, not as a holistic entity but as limited surroundings, which echoed around the world through religions.

In the 21st century, our cumulative scientific knowledge about the universe has enabled new directions of thinking, and also suggested a new, or at least updated, cosmology (both in physical and anthropological terms). The Earth is dynamic, complex, and evolving. It is an entirety of ecosystems; humans, including their inner nature (psychology), belong to this entirety. In simple terms, what goes around comes around. So, the question of whether the primary motivation of individual action is the idea of dominion or of stewardship matters, and this is a religious question.

Whether an individual perceives reality within an earthly cosmology (Abram, 2011), a universe-based cosmology, or a *Homo religiosus*-based cosmology will inescapably have implications for the sustainable management of resources.

3. Discussion

Scholars' interpretation of the ACM rests on several assumptions. Plummer and Fennel discuss the features such as “pluralism and communication; shared decision-making and authority; linkages, levels, and autonomy; learning and adaptation” (2009:p.154-155). According to this view, conflict between different actors will result in new solutions; a society will have an effective distribution of authority; the interdependency of actors at multiple levels will make management practices much more flexible; and finally, social learning and adaptation will increase the strength of actions and policies. Similarly, Huitema et al. (2009) use a four-dimensional design of the ACM, and emphasize the pillars of polycentric governance, public participation, experimentation, and bioregional approach.

First, if polycentric governance is defined as the non-hierarchical distribution of authority among (state) institutions, then one might suggest that there is a need for a non-hierarchical understanding at individual level as well. In this respect, it is understandable that Huitema et al. state the ACM might work better in monocentric contexts than in polycentric ones. However, there is no consensus on the definition of “better.” According to which themes shall we decide which management practice is successful? Does our practice successfully conserve the biological diversity as well? Further, public participation brings the top-down imposition of knowledge within a specific social-ecological system into question. How shall we, for example, share ecological realities with the public while some of these realities obviously conflict with their ontological stance? Moreover, experimentation can only be an effective part of management practice in a society, of which people mostly think and act in empirical ways. So, how do we convince people to question the Absolute(s) they believe in? Lastly, a bioregional approach necessitates an equal acknowledgement of indigenous knowledge and new scientific knowledge about the Earth systems. Is this practically possible? Below, I will use some findings to discuss these four points.

“Each society has its regime of truth, its 'general politics' of truth: that is, the types of discourse which it accepts and makes function as true; the mechanisms and instances which enable one to distinguish true and false statements, the means by which each is sanctioned; the techniques and procedures accorded value in the acquisition of truth; the status of those who are charged with saying what counts as true.” (Foucault, 1980:p.131)

There are three important stages in Western history: first, the transition from the pagan animist clans to the Abrahamic monotheistic agricultural communities; second, the rise of imperial communities supported by an empirical scientific understanding; and finally, the era of anthropogenic capitalist and industrialist societies. In each stage, the ruling powers attempted to put in place their own regime of truth (as a hegemonic cosmology). In this respect, belief in a monotheistic version of religion dominated the ontological, epistemological, and ethical assumptions in the first stage. At this stage, population was low and the management of resources (including “human resources”) was relatively easy. It was the ultimate truth that nature was created for human benefit as a separate entity. After that, kings, having the advantage of their material powers, became superior to the traditional religious authorities. This resulted in a modified regime of truth, based on many dualisms such as mind-body, good-bad, progressive-regressive, or science-religion, etc. This updated regime of truth held that science could help (white) man explore his environment and dominate nature. The idea of a nature-culture separation continued to be the bedrock of human attitudes and actions. Finally, the capitalist means of production paved the way for the capitalist-industrialist relations of production as the main determinant of the transformed regime of truth. The idea that everything in nature has a commodity value became the new ultimate truth. Meanwhile, Western modernization spread to different geographies of the world through colonialization, which enabled the export of its regime of truth. As a result, today, an average *Homo sapiens* might show complex characteristics, because of being a joint product of the Absolute truth(s). These truths are produced through hegemonic Abrahamic monotheism, positivist modern science, and anthropogenic interpretation of capitalism.

On the flip side, *Homo sapiens* shows similar traits of being dynamic, complex, and evolving as a micro representation of the Earth. In addition to this, “the human mind is probably the only biological entity capable of going beyond previous experience and familiar context, because it can extrapolate and invent, thus leading to innovative behaviour” (Grandjean et al., 2008:p.194).

Although the ability of human mind to extrapolate and to invent has been causing disastrous outcomes for the Earth for a long time, it might also have the capacity of learning from mistakes, and innovating responsibly. The idea of climate change, disconfirming the older narrative of the nature-culture distinction and leading to the concept of Anthropocene (Hulme, 2015:p.894), supports the necessity of urgent action.

Echoing Jordan and Huitema (2014:p.388), we should truly discuss “new and more innovative forms of governance.” Nevertheless, innovative forms of governance (and management) will be defective without innovative living styles. Therefore, I now focus on individual mental resistance against innovative types of living. I use “innovative” as an alternative to the ongoing regime of truth, which preaches the idea of domination, extraction, and commodification of nature. Although the idea of climate change made the nature-culture distinction impossible, and showed how we should treat the Earth holistically, there is still a resistance against this narrative. This same resistance prevents innovative forms of adaptive co-management as well. The term, climate change policy (CCS), has at least four closely interwoven dimensions: mitigation, adaptation, geo-engineering, and knowledge base expansion (AMS, nd). But how do we decide which knowledge is valuable enough to constitute the basis of our innovative efforts? If the main purpose is to create objective knowledge, e.g. supporting adaptive co-management in a specific bioregion, the appreciation of the link between human religiosity and the approach to climate change might lead important changes for research and policy.

White and his followers compelled attention to the results of Western thought, which treated nature separately from culture. They also showed how this thought was dependent on hegemonic religious understanding. I prefer to employ the phrase of “hegemonic religious understanding” because the religious understanding embedded in the ontology of Western society was once just one of many possibilities, and then, became hegemonic due to specific historical conditions. After becoming hegemonic, it allowed a specific combination of epistemology and axiology. This is also true for our nature-related epistemology and axiology, which determine our ecological relations. Therefore, the questions about how we interpret nature are related to realities, which we prefer to bind ourselves with (see Jenkins, 2017). For ages, religion has been the nub of the binding relationship we tied up in different contexts. In this sense, if an understanding of nature hinders the innovative approach to environmental management, it deserves much attention.

Scholars from both fields have partially shown how religion and nature studies and the ACM together might contribute to future research and policymaking. For instance, Fikret Berkes admitted in *Sacred Ecology* (2008:p.xvi) that what he had faced during his experience with the Cree Tribe was a different worldview than the established Euro-Canadian one, which also had a strong spiritual dimension, evoking admiration. This indigenous worldview is maintained from a belief that sanctifies nature, which distinguishes it from the Euro-Canadian one. Moreover, Berkes asked a simple question related to this: “with no government regulation, how come the Cree did not overfish, and how come the resources did not suffer from the tragedy of the commons?” (ibid., p.xv). Following this line of questioning, I assume that management is never just about the science of management. Rather, it implies that cosmologies, and that is, beliefs are among the strongest factors in the making of management choices along with material conditions. This is why Berkes, analyzing Cree fishing practices according to their adaptive management potentials, also wrote a passage from his interview with Mac Chapin. Indigenous knowledge (as a system of knowledge about nature) necessitates a change in our comprehension of social systems (as a regime of truth) (ibid., p.254). Such a change points to a revolutionary approach from ontological, epistemological, and axiological aspects. In this regard, one can find similarities between the religious emphasis in both Lynn White’s critique of Western modernity and Berkes’ framing of indigenous knowledge (or traditional ecological knowledge, TEK) in contrast to the Western system of knowledge.

Echoing this point, recent anthropological knowledge obtained from the field research on the Dukhans—a forager Turkic community living in Mongolian steppe—shows that the shamanistic tradition is definitely more ecologically-sound than today’s hegemonic Abrahamic monotheism.^{iv} The evidence indicates that the Dukhans have a strong belief in eco-justice. They do not wash their hands in a river to avoid polluting it or do not bury the dead since they accept that the bones might negatively affect the quality of soil. Furthermore, they have adopted some values similar to communitarianism and non-competitiveness. For these people, sharing game has become an ethical norm. As another practice, when reindeer antlers fall off, men search for them in nature. And if a man finds an antler, he must give it to another man who has also searched for an antler and takes the one the other man finds (Atlas, 2013). However, some members of the Dukhan community also behave marginally as some marginal members of modern society do so. I think this can be read as a reflection of the clash of cosmologies.

Similarly, a study of the ACM in tourism destinations highlights its religious dimension. In their case-study on Yushan Mountain, Taiwan, Lai et al. (2016) first emphasize that the representation of a mountain might be different among the members of a society, and they then attempt to test the role of different representations of Yushan Mountain on tourism governance. For this, they use three conceptual pairs such as natural & unnatural, sacred & secular, and self & other. Accordingly, they analyze what influence the beliefs and ideas of representation might have on society's management preferences (ibid., p.235). This study implies a major problem of management: how can people with different beliefs and ideas reach a consensus about the management of a bioregion, e.g., a mountain? How does a management practice seem like if people sanctify nature as a whole more than other potential objects of sacredness?

Taylor's assessment of the "possible influence of dark green religion" (2010:p.201-202) on society might guide us to answer those questions. Considering the urgency of the climate crisis, a majority might reach a consensus if dark green religiosity quickly spread, occupy the terms of our social contract within the Earth, and therefore, reflect by our management practices. This is an argument compatible with the adaptive nature of the ACM, too. However, as the literature proves, dark green religiosity only constitutes a marginal understanding within the dominant regime of truth. With regard to the environmental consciousness in (traditional) religious denominations, Haluza-DeLay (2014) distinguishes four categories of obstacles: paradigmatic, applicability, social critique, and conviction. The first obstacle points at theological understanding that hinders environmental concern. The second one signals the anthropogenic nature of priorities, for example giving priority to economic development over eco-justice. Third, social critique is not very common among these groups. Finally, they do not have adequate knowledge about the seriousness of ecological problems. These obstacles, produced by the dominant regime of truth, affect people who prefer to govern their life through a variety of the Absolute(s) at different degrees. For example, a person might attend church, the teachings of which are contrary to environmental ethics, and also love reading science. In such circumstances, theoretically speaking, this person does not need to face an obstacle stemming from the theological belief since his/her scientific knowledge balances this. However, if what s/he reads is an anthropocentric piece of science, which blinds him/her to indigenous knowledge or the idea of eco-justice, this might pose another obstacle against building of environmental consciousness.

Based on the above discussion, I agree with the main idea behind such a statement: “secular and sacred strategies of environmental management and conservation might not agree on what is ‘natural’ and ‘good’” (Sachdeva, 2016:p.2). But the above discussion also indicates that we need a much more comprehensive understanding of what is religious. According to this understanding, it becomes clarified that secular is the opposite of neither religious nor sacred. Secular constitutes a blurred regime of truth that appeared as an outcome of Western history. However, it could not totally replace the previous, equally blurred, religious regime of truth. This is why any regime of truth now harbors secular-religious ideas about the truth(s). And the idea of sacred is a very strong component of these regimes of truth. People believe in the sacredness of different things, but the practice of sanctifying is very common. So, what the human mind sanctifies matters for the feasibility of the ACM.

4. Conclusion

The human mind constructs and experiences reality as the interaction with external realities in a specific moment of history. Ontologically, it questions the meaning of life, and its place within life. It exists within specific ontologies, and understands reality through the epistemologies it conceives according to its ontological position. Moreover, ethical considerations rest on these ontologies and epistemologies. These domains do not form hierarchical levels of existence (of both human and thought), instead they constitute dynamic, complex, and evolving processes similar to how the Earth proceeds. So, the question is how the increasing knowledge about life on other planets might affect the regime of truth, and therefore, the hegemonic cosmology. An answer to this question has constituted the basic assumption of this paper.

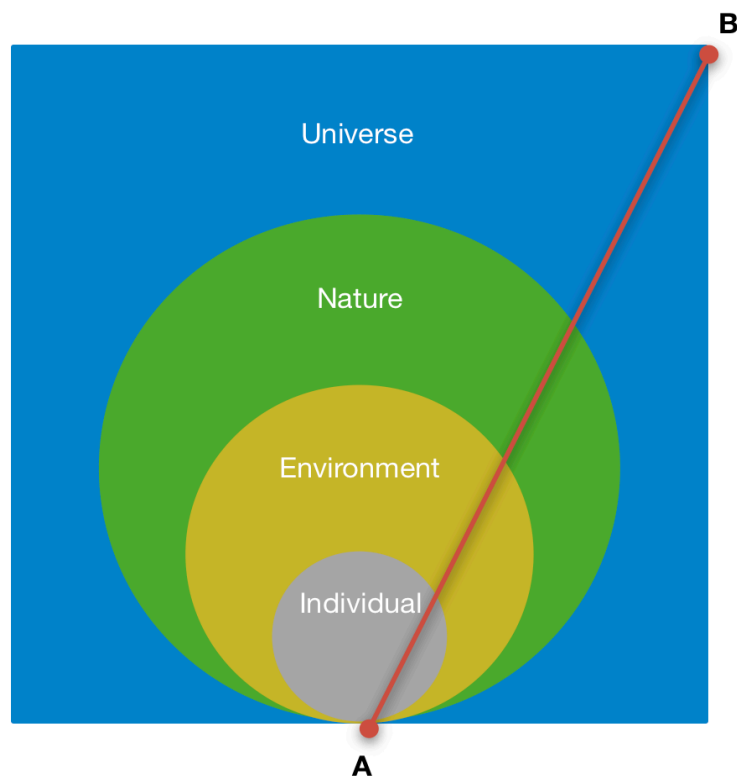


Figure 1. The human mind's comprehension of (ecological) reality.

Figure 1 draws attention to the different ontological positions of the human mind in respect to its interpretation of *Homo religiosus*' comprehension of reality. Where the human mind constructs its own reality on the line AB gives us the individual's cosmology in the physical sense, which, in fact affects the cosmology in the anthropological sense. The ACM, offering theoretically a more sustainable way of resource management, might practically suffer from religious obstacles, which are the reflections of different cosmologies. These reflections might be egocentric, fail to distinguish the concepts of environment and nature, or not fully understand the ecological realities of the Earth. In this respect, if climate change is considered to be a problem that stemmed from human-dominated Western culture, any design for a sustainable management practice should start with ontological questions.

The conceptual discussion on the limits of the ACM with regard to its religious dimension manifests that the hegemonic regime of truth is still founded on an egocentric cosmology. I argued that this tendency is independent from whether it is based on monotheistic faith or positivist science. In either situation, human beings present the attributions of *Homo religiosus*, connecting

to the (ecological) reality in a dogmatic way. This is how the mechanism of mythical thinking functions. Therefore, without the adoption of critical holistic thinking, the ACM cannot work effectively. Consequently, this research has two implications related to the research policies and practices.

First, ACM scholarship needs further research about the effects of the preconceived ideas of communities and government officers on their management approaches. Can climate change or the loss of biodiversity be solved under the current competitive (social-economic) system? Or should these problems be seen as an opportunity to stretch that system with a holistic cosmology? The experience so far proves that the former solution did not work very well. Therefore, climate governance entrepreneurship (see, for example, Boasson & Huitema, 2017) might also seek to investigate the possibilities for the latter solution. Second, the debate of religions, environments, and cultures gives us enough knowledge to use in our holistic conceptualization of ecological governance. However, institutional bodies such as the European Research Council (ERC) should financially support, not only technocratic in-system projects, but also proposals of a critical holistic thinking for the wider society. Changing the vision behind research policies will accelerate the questioning of the unquestionable to create an ecologically just society.

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ⁱ There is a similar dispute among the members of today's scientific community about the roles science and religion play in the solution of societal problems. For example, the proponents of New Genesis, Epic of Evolution, etc. argue that people need a new myth, "scientific realities" can satisfy this need, and science is a strong candidate to replace religion. However, scholars such as Lisa Sideris (2015) state that such a science vs. religion dualism is problematic, because it implies that science (as religion did before) can show us the Truth (a capital "T"). For a satisfactory discussion, see also other articles in the JSRNC issue "Contesting Consecrated Scientific Narratives" (Vol. 9, No. 2, 2015).

ⁱⁱ The characteristics of religion (Taylor 2007: 15-17): **1)** Beliefs in or concern about (and regarding) supernatural beings or spirits, or dramatically extra-ordinary forces, which are sometimes explicitly understood as divine or holy or conceptualized with a similar cognate. **2)** Division of the world into sacred and profane objects or domains or spaces. **3)** Ritual acts and forms, often focused on sacred objects or spaces, but sometimes also having to do with seemingly mundane matters, such as birth, food preparation and consumption, and death. **4)** Beliefs and practices about and believed to be related to earthly and/or otherworldly destruction, and/or redemption/salvation/healing (where healing may alternatively be physical, emotional, spiritual, or all three). **5)** Practices and techniques including trance and other extraordinary states of consciousness. **6)** Processes and pressures that seek to get individuals or groups to alternate or retain religious allegiances and belief systems—conversion experiences and the failure or reversal of such experiences. **7)** Affective feelings and experiences of awe, mystery, shame, love, empathy, devotion, hatred, or rage, which tend to be evoked through ritualizing or other routinized practices, and are generally believed to be conducted in the presence of sacred beings, places or things, or in concert with their wishes. **8)** Beliefs in and practices (often, if not usually, with strong anthropomorphic dimensions) related to communicating or communing with supernatural or divine or extraordinary powers, or ultimately meaningful beings, or spirits, or forces. **9)** Understandings of the cosmos and the place of the earth and people and other living things in it, often understood as having ultimate meaning or as being some kind of holy order; such understandings may provide a sense of well-being, belonging, and/or connection between individuals and the wider spiritual/ethical communities with whom people feel associated. Such religious understandings help people to cope with life's inherent difficulties and find meaning, especially in the face of anomic realities such as suffering and death. **10)** Ethical understandings of the proper place for people and other living things in the world; these may promote or hinder social solidarity (i.e. identify morally considerable kin groups) and/or function to serve the economic, prestige, and power interests of some individuals and groups more than, or at the expense of, others. **11)** Beliefs and practices which divide humans (and/or other living things) into hierarchical classifications and reinforce the same distinctions, which often involve the labeling of some people as divine (or at least as having special lines of communication with divine beings or places), others as ordinary

(or human), and others as evil (or subhuman), thereby legitimating the repression of the latter. **12)** Beliefs, including narrative cosmogonies and cosmologies, which are not empirically demonstrable but are strongly reinforced through education, reinforcement/reward, penalties for deviance, and other social means. **13)** Sacred narratives (written or oral), which are often understood to have been given to people in some special/holy way, from some special/sacred place, for some special/holy purpose. **14)** Spiritual leadership, religious specialists, and physical/spiritual healers, who teach and assist seekers and devotees, and sometimes resist or fight (either directly or by example, exhortation, and administration) perceived, spiritual adversaries. **15)** Beliefs and practices that govern (and sometimes consecrate) the ways people use and transform their various habitats, and that sometimes tend strongly to reinforce or work against certain forms of socio-economic organization (namely, beliefs and practices that shape and influence their environments). **16)** Beliefs and practices that draw directly and indirectly on natural symbols and events for various characteristics of the lifeways and practices related to some or many of the above characteristics (namely, beliefs and practices shaped or influenced by their environments).

ⁱⁱⁱ In this paper, cosmology, unless otherwise stated, means a culture's shared understanding (as in anthropology), not a theory of universe (as in physics) (Sideris, 2015:p.141).

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