

ESSSAT News & Reviews

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*European Society for the Study
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Instructions to Authors

ESSSAT News and Reviews publishes academic style book-reviews and article-reviews, or articles describing the current developments in a sector of science-and-theology through the analysis of recent publications.

The fields covered are:

- general developments in science-and-theology;
- philosophical and epistemological issues;
- cosmological and physical (e.g. quantum) issues;
- evolutionary and biological questions;
- anthropological areas;
- the scientific study of religion;
- historical studies in the field of science-and-theology
- practical or ethical issues.

Book reviews should normally be of 700-1500 words. Review-articles should be kept between 3000 and 4000 words. In both cases contributors are asked to bear in mind that the majority of readers will not be specialists in the same field, and will not have English as their first language.

This publication will favour the Chicago Style Citation format.

Submissions and all correspondence should be sent to the Editor, Lluís Oviedo: loviedo@antonianum.eu

From the Editor

Science, theology, and many conferences

I imagine at this time of the year many colleagues will be filling their diaries with dates of upcoming conferences, workshops, international seminars, research committees and the like. The academic dimension of a topic of study is today clearly related, among other things, to the frequency of high-level events it elicits, the capacity to attract colleagues or to give rise to many research programs, and to organize engaged communities devoted to the study of the topic. These are simple observations in the so-called 'sociology of science' that apply to every academic field, and give some indications of its vitality and relevance.

There are other 'performance indicators' as to whether an academic discipline or sub-discipline is thriving or struggling – alive and growing or suffering a serious decline. One is the number of recognized papers and books being published in the field. By this criterion, science-and-theology is 'alive and kicking'. Publications in the field steadily increase year after year, symptomatizing good health. Another measure, already mentioned, is the number of academic events that are organised around the issues. Recent years have seen an increase of such initiatives in our field. Often not only money but time is too short for any one person to attend all the fascinating meetings and conferences being organized around the world.

Most academic organizations devoted to the dialogue between science, religion and theology mount periodical conferences. The pattern is sometimes biennial, sometimes even annual. Considering only English-language events, ESSSAT has adopted the model of a big conference taking place every second year. However there are organizations like the Ian Ramsey Institute, in Oxford, which for several years has put on an excellent conference every mid-July; also in Britain, but at varying venues, the Science and Religion Forum treats a different topic each year in early September. In the USA, the Institute of Religion in an Age of Science (IRAS) organizes its own workshop every summer. Perhaps most illustriously of all, the big Conference of the International Society for Science and Religion will take place in Vienna at the end of August, 2015. We publish punctual information about such major events at the end of our Bulletin, as a way to encourage participation and communication among ESSSAT members and the many others who may be interested in any of these forums. In addition, of course, there are many more local initiatives, like research programs and groups based in single universities, with their own programmes of seminars, lectures and other projects. Regrettably it is impossible to publish information about all this broad effort taking place at many levels, and in diverse cultural and linguistic settings.

This state of affairs is excellent for the pursuit of the science-and-theology endeavour. It opens up the possibility of true dialogue, discussion and exchange happening at different levels of academic life. Such activities can implement and extend the range of interdisciplinary contacts between the sciences and humanities, pointing *inter alia* to theological implications of science, and scientific implications of theology.

Many people over the years have suggested that the relevance of a discourse is embodied in its ability to bring about a broad communicative process, involving many participants in the dialogue, and to extend its range beyond the restricted circles of elites and academia. Academic discussion and exchange concerning issues of science and theology has now reached a high and vigorous standard. What remains desirable, and arguably urgent, is the effort to extend that dialogue beyond academic circles, in order to reach more and more people, believers or not, who are affected by the possibility that science and faith can meet, and need not conflict.

* * *

ESSSAT News has devoted many pages in recent years to the ‘cognitive science of religion’, and it was a substantial aspect of our 2010 Conference in Edinburgh. I am convinced that this topic has direct relevance for the dialogue between science and theology. Many books are being published, and the field is moving quickly. This issue starts with a general assessment of current tendencies in that field by our colleague Tom Uytterhoeven. Some of the reviews in this issue also deal critically with the topic, and themselves amply illustrate its diversity. My hope is that we can contribute serious arguments to the debate, and so demonstrate the engagement of science-and-theology in this endeavour.

Lluís Oviedo

Article Review

Evolutionary Explanations of Religion and Theology: A Review

By Tom Uytterhoeven, KU Leuven

1. Introduction

What does evolution teach us about the origins and nature of religion? This question is not an easy one to answer, since the literature in the field of evolutionary studies of culture is vast, ever growing and offering a multitude of theories. This article will not attempt to reduce this multitude to a few theories, let alone propose one final theory. Instead, it will offer a roadmap, in order to enable the reader to navigate through this immensely fascinating field. As our compass we will use an overview, provided by Kevin N. Laland and Gillian R. Brown, which gives us a sense of the historical, methodological and epistemological ties between different approaches (Laland & Brown 2011). An alternative overview can be found in e.g. *Darwin's Cathedral: Evolution, Religion, and the Nature of Society* (Wilson 2002, 43-46). Wilson makes a distinction between evolutionary theories of religion that regard religion as an adaptation, and others that do not. Yet another approach is offered by Jeffrey Schloss (2009, 2-25). Schloss makes a distinction between cognitive accounts of religion, Darwinian accounts of religion, and co-evolutionary accounts of religion, attempting thereby to circumvent conceptual problems regarding the concept 'adaptation'.

One particular religious phenomenon will serve as an example for the implications of evolutionary explanations of religion, namely walking spiritual pathways in the Southern Alps. In the region of South Tyrol, Italy, throughout the diocese of Bozen-Brixen, more than twenty spiritual walkways are laid out. As the accompanying brochure (Seelsorgeamt Diözese Bozen-Brixen/Ufficio Pastorale Diocesi Bolzano-Bressanone) states: "These spiritual pathways are not just hiking routes. They are alternative roads to the inner being. In walking them, we do not just reach our destinations: we also discover the meaning of our lives". Indeed, each spiritual pathway is marked by either panels with suggestions for meditation, or chapels, or a church at the beginning or the end of the walk. Each pathway also has its own theme, giving the walker suggestions to meditate on Christ, the sacraments, the Virgin Mary, the Stations of the Cross, the virtues, etc. The pathway near the city of Brixen, which will be our 'case study' is not very long. It consists of eight stations, and can be walked in about one hour. Its theme is 'Christian Europe and its Saints' and it ends at a church dedicated to St. Cyril. At settled times members of the catholic community in

Brixen climb the mountain to celebrate the Eucharist in that church. For the detached observer this raises quite a few questions. Why do people do this? Why construct buildings in such remote places as the ledge of a mountain, without any material use, at significant financial cost and demanding hard and difficult construction work? Why gather with a number of people to read old texts out loud or sing old songs on a steep path? Why adorn the environment with symbols? What do people actually do when they go out on a spiritual walk? Our roadmap, guiding us into the wide open field of hypotheses and possible answers that are offered to these questions from an evolutionary perspective, will discuss a selection of ‘sample works’, offering an indication of what an evolutionary explanation of religion amounts to.

2. *The Look of God*

An interesting example of an ethological approach to religion is offered by Thomas Ellis’s (2009) article “*Natural Gazes, Non-Natural Agents: The Biology of Religion’s Ocular Behaviors*”. Ellis observes differences between people of Abrahamic religions, who generally bow their heads when communicating with God, and practitioners of e.g. Hinduism, who try to establish ‘eye-contact’ with their deities. In his article, he traces these differences back to their biological roots: “Biologically speaking, religious beliefs and behaviours betray a natural history and foundation. ... I argue that religion’s ocular behaviours indicate the natural agents upon which the non-natural agents or deities are modelled.” This brings Ellis to construct a fourfold typology of how deities are conceived, based on four agent models: “(1) attachment figure, (2) intertribal rank-superior, (3) conspecific aggressor (an aggressor of the same species), (4) extra-specific aggressor (an aggressor of a different species)”. Predicting to which model a certain agent would belong, was one of the problems our ancestors had to solve in order to survive. Interpreting body language, linking it accurately to intentions, was the main solution to this problem. Eye movements in particular were key, Ellis argues. Using contributions from evolutionary psychology (modularity of the brain) and cognitive science (intentional stance), Ellis suggests three types of ocular behaviour, more or less forming a continuum. This continuum ranges from friendly eye movements, expressing affiliation through “an open exchange of gazes,” to hostile eye movements, expressing antagonism through “a desire not to engage in visual exchange for fear of harm”. A third type is not explicitly situated on this continuum and concerns “warning signals”. Based on these three types of ocular behaviour, Ellis argues that: “... the Abrahamic god is understood to be a Lord, a king, that is, a male, intertribal rank-superior. Approaching the rank-superior god – for instance, through petitionary prayer – one naturally averts one’s gaze by closing the eyes and/or bowing the head”. Ellis furthermore analyses scriptural mentions of God’s gaze and human’s way of

looking at God, on one hand, and empirical data from an ethological perspective, on the other hand, both pointing to different aspects of social interchange. He comes to the conclusion that: "... the Abrahamic god is not only ontologically strange – as all gods are – but more importantly often modelled upon the intertribal rank-superior and as such the religious practitioners' ocular behaviours reflect those of the intertribal rank-inferior". Similar analysis is made of ocular behaviour in Hindu practice and of the folk-myth of the 'evil eye'. Ellis argues that the former suggests that Hindu deities are attachment figures, whereas the latter is concerned with aggressor-deities.

Based on Ellis's proposal, an evolutionary rationale behind the construction of spiritual walks in the South-Tyrolean Alps might be suggested. If one supposes that the Christian God is modelled upon the social category of an 'intertribal rank-superior,' this status would obviously be stressed by having to walk up to Him. Pausing at chapels or the Stations of the Cross to pray, hands clamped, eyes closed and head bowed down, would only enhance the feeling of being an 'intertribal rank-inferior'. One could also argue that pictures of Saints in the chapels along the spiritual pathway at Brixen, with the eyes of these holy men and women gazing upon the suppliant, serve as strong reminders of the difference in status between God and humans. Theologically this obviously raises some questions as to whether this does not neglect a longstanding tradition within Christianity to see God foremost as a loving God, and as to whether, or to what extent, Christian faith in the Incarnation of the Son of God still confirms a difference in rank between God and human creatures. How to interpret Bible verses, as e.g. Matt. 14:19 ("Let the little children come to me, and do not hinder them, for the kingdom of heaven belongs to such as these."), in the light of a hypothesis that assumes religion confirms status differences?

3. Costly Signalling

Some scholars (Laland & Brown 2011, 75-103, see also e.g. Henrich 2009, Sosis 2003, and Sanderson 2008) propose the hypothesis that ritual stems from what is called 'costly signalling'. Costly signalling is a general biological phenomenon. Well-known examples are the long tail of a peacock, the antlers of male deer, and the elaborate structures of bowerbirds. In each of these cases, the behaviour serves to signal information to the environment unequivocally. Moreover, it is impossible to lie. The peacock cannot falsely claim to be in excellent health: the poor state of its tail will betray the ailing bird. Applied to culture, the theory of costly signalling claims that ritual behaviour serves to filter out free riders in a community. By demanding energy-consuming or unpleasant actions (circumcision, sacrificing part of your crops, listening to a boring sermon) as condition for full membership a community assures itself of the sincere commitment of all its

members. Someone who does not show this commitment through participating in costly ritual will not be allowed to benefit from in-group sharing of resources (Sosis 2003, 100). This, according to the costly signalling hypothesis, supports group cohesion.

Moreover, as Sosis suggests, investing energy in costly display could well serve to strengthen belief. He poses the question as to why people could not just perform rituals without actually believing in the doctrine on which those rituals are based. In answering this question, Sosis points to the importance of internalization: people who believe in the righteousness of their actions will perform these actions, regardless of whether external supervision is present. He further argues that ritual is able to transmit values, to ensure their internalization, and thus to influence behavior. This internalization is indeed key, according to Sosis, because it makes a difference to how the cost of a ritual is perceived. Eating only salads at a barbecue could be easy, when one believes that God asks us to abstain from eating meat, that this abstinence is in line with one's belief that humanity has to act as a steward for creation, and that God, in return for fulfilling this task, will grant eternal grace. But if one only abstains from eating that delicious grilled steak because membership of the church is good for one's career, the temptation might just be felt a little bit harder... Whoever falls for such temptations, endangers his or her group membership. On the other hand, if temptations from outside the group are strong enough, this could of course lead to a gradual loss of members and to the ultimate dissolving of the group. Sosis explains that costly rituals are therefore not only aimed at keeping free-riders out, but also at keeping the faithful fenced in. In this regard, Joseph Henrich's contribution could be an interesting addition (Henrich 2009). He sees a relation between costly signalling and social learning. To assess whether an informant – someone from whom one can potentially learn something – is lying, Henrich argues, members of a group will take the actions of that informant into account. They will look for any inconsistency between what is proclaimed (“Live a sober life!”) and what is performed (living in a palace), and will decide whether or not to put their trust in a potential informant accordingly. This is of particular importance for the social transmission of altruism, Henrich contends (2009, 248): “Developmental research on the cultural learning of altruism shows that a model's verbal statements (‘exhortations’ or ‘preaching’) to make costly charitable donations have little or no impact on learner's donations unless such statements are accompanied by the model actually making costly donations himself.” This initial connection between verbal expressions of altruism and altruistic behavior has evolved, through natural selection at the group level, into a connection between social behavior and belief in social values. In short: groups that pray together, stay together – but only because prayer stimulates them to act together.

Applied to the Brixen spiritual pathways, theories based on costly signaling could offer a few suggestions. A strenuous hike up to the mountain top could well serve as an indicator of one's loyalty towards the Brixen parish. Walking a spiritual path could be a signal of how sincere a model's (a parent's, a teacher's, a priest's ...) beliefs are, making these beliefs in turn more attractive for new learners (children, adult converts, etc.), and enabling beliefs to influence the social behavior between members of the group. A major question theology will have to take up when considering research like this, is how religion can make constructive use of its apparent social influence, without lapsing into becoming a dangerous source of between-group aggression (cf. Henrich 2009, 255).

4. *Minding the gods*

Evolutionary psychology (Laland & Brown 2011, 105-138) obviously focuses on the human mind as it seeks to explain religion, but that is not to say it does not take social structures into account. A good example is Michael Winkelman's discussion of shamanism (Winkelman 2002). Starting from the presupposition that the universal features of shamanism are part of a universal, evolved human psychology, Winkelman strives for the development of a 'neurotheology'. He describes the shaman as: "[...] the charismatic leader with informal political power, reflecting the dynamics of a band-level organization", thus implying a connection between individual mental abilities and social functioning. This becomes even clearer when Winkelman discusses shamanic ritual, arguing that it helped individual members of a group to situate themselves, both within the social group they belonged to, and within the larger world this group in its turn was part of. He goes on to say that shamanism has been favoured by natural selection because of the healing powers of its rituals, both on the individual and the communal level. Internalization, so important in costly signaling theories, plays an important role in shamanism as well, enabling individuals to integrate and structure different elements in a self. Winkelman points to different effects, both on the biological and the social level, of shamanic community rituals. He draws the conclusion that, taken together, these effects result in a socio-psychological healing of the people involved in the rituals.

Although the South Tyrolean spiritual walks are not shamanistic rituals as such, these walks might have comparable effects, both physiological, psychological and emotional. This would mean that the ritual of walking a spiritual pathway did not itself evolve under the influence of natural selection. Rather, it is a side-effect of evolved structures in our body, in particular in our brains. Walking helps our brain to reduce stress and anxiety (e.g. Tyrväinen *et al.* 2014), which makes it conceivable that walking became a highly valued and often-repeated activity, leading to it becoming integrated in what we now call rituals. One could then argue that walking a spiritual

walk in the South Tyrolean Alps is comparable to an exercise in mindfulness, and thus could well do without the religious background that currently informs it. For, as in the case of mindfulness, which draws from religious, mainly Buddhist, meditation practices to offer a secular technique to reduce stress and anxiety, walking could similarly draw from the concept of spiritual pathways. Does this imply that theological explanations concerning spiritual pathways, which cluster around 'searching for/encountering God', are merely superficial justifications, rather than disclosures of the deeper meaning of this kind of walking?

5. Driven by Memetic Desires

Aspects of cultural evolution (Laland & Brown 2011, 139-164) are used by Philosopher Daniel Dennett to construct his philosophic analysis of and critique of religion (Dennett 2006). Following Richard Dawkins (1976, 2006), Dennett proposes to see culture as composed of different basic building blocks, analogous to genes. These cultural building blocks are called 'memes'. They are under the influence of natural selection like their biological counterparts, and determine human behavior. The extent to which they succeed in doing so determines their reproductive success, and this in turn determines the course of cultural evolution. One of the strategies memes developed through the course of evolutionary history, Dennett hypothesizes, is to encourage humans to gather in groups (Dennett 2006, 147-151). By doing so, they exchange ideas. Or, rather, ideas have more chances to move from one brain to the next when many carriers of human brains are gathered in one place. It is a peculiarity of this proposition that Dennett sees religious behavior as a current adaptation, not of humans, but rather of those memes that drive humans to perform certain rituals. Analogously to Dawkins, who takes a gene-centric perspective on biological evolution, Dennett assumes a meme-centric perspective on cultural evolution.

In any case, what causes ritual behavior is natural selection. Rituals have a function, but no meaning other than their survival value for the cultural elements they (help to) transmit. Why do people celebrate the eucharist on a mountain top? Why do they carefully place religious symbols at the side of mountain pathways? People do these things as the result of an unconscious drive, the drive of natural selection on ideas. Any conscious intention – e.g.: belief in God, loyalty to a cultural tradition, desire to pray – is an epiphenomenon on top of that drive. This implies, even more explicitly than in our former discussion of evolutionary psychology, that theology does not offer explanations of religious behavior (Why do we pray? What does it mean to pray?), but rather offers justifications in hindsight (What acceptable reason can we give to ourselves and others for our praying?). In other words, a cultural-evolution perspective seems to imply that theology can no longer contribute to our understanding of religious behaviour, un-

able though it is to offer more than ‘just so-stories’.

6. *Building Groups*

David Sloan Wilson develops an evolutionary explanation of religion that focuses on social relations (Wilson 2002). Returning to an argument on between-group competition, already put forward by Charles Darwin, Wilson argues that the psychological mechanisms that make us prone to ritual behavior are determined by a physiological, genetic basis, evolved in response to the demands of our environment on evolutionary adaptedness. Genetically, he suggests, humans are hardwired to lead social lives, guided by principles of what is right and wrong in a social context. But that does not necessarily mean that there is just one, genetically determined moral system, Wilson adds. This leads him to propose a multilevel selection theory, implying that natural selection affects the evolution of life not only at the genetic level, but also on other levels, e.g. the cultural level, a concept that is discussed at length by Laland & Brown (2011, 165-193). According to Wilson, multilevel selection theory allows us to take innate cognitive mechanisms into account, to recognize the often-subconscious nature of human behavior, to see social groups as units of selection, and to accept the group level as the most important level on which evolution takes place. What he suggests, is that religious behavior supports the cohesion within social groups through *cultural* selection, not through *biological* selection. This cohesion then gives such a group an advantage in the competition between groups. Wilson discusses the establishment of Calvinism in Geneva during the second half of the sixteenth century. His conclusion (Wilson 2002, 111) is that: “Calvin’s church included a code of behaviors adapted to the local environment, a belief system that powerfully motivated the code inside the mind of the believer, and a social organization that coordinated and enforced the code for leaders and followers alike.” The same explanation – adaptation to the local environment – is used to shed light on Balinese ritual, Jewish religious instructions, and Christian charity. In general, Wilson does not treat ritual itself, but rather the different means by which religious communities try to influence and control the behavior of their members. A clear example is the use of catechism, which, according to Wilson (2002, 93), “... may truly qualify as ‘cultural genomes,’ containing in easily replicated form the information required to develop an adaptive community.” What Wilson seems to imply is that rituals do have a function, but they have no meaning other than the survival value of the social group that performs them. If they do not fulfil that function, they will cease to exist.

Applied to spiritual walks, this line of reasoning offers us a hypothesis for both the origin and the future of these walks. It is obvious that Wilson would explain the spiritual walks in South Tyrol as a result of cultural

group selection: in establishing and maintaining them, one could argue, Christian communities in Brixen-Bosen bolstered their sense of identity, their social cohesion. At the same time, in the light of declining numbers for these communities, one can wonder whether, and if so in what form, spiritual walks will survive as religious rituals? Could it be that these walks will only survive in a secular form, as we suggested in our discussion of an evolutionary psychology approach to religious behavior? And, if so, would they enable new forms of community to emerge? For theology, this points to interesting questions about revelation and about divine presence.

7. Pluralism in Evolutionary Approaches

In their concluding chapter, Laland & Brown argue that the different evolutionary approaches to culture are complementary, rather than contradictory. Of course, each approach has a different focus, stressing the importance of a different level of explanation (the gene, the group, the psyche, etc.), but this does not amount to “fundamental differences of opinion” (Laland & Brown 2011, 209). What do amount to such fundamental differences of opinion, Laland and Brown argue, are views on what exactly culture is, or more precisely, views on how cultural information is acquired and transmitted.

Laland & Brown propose that the complementarity they argue for is inherent to evolutionary approaches, since a complete evolutionary explanation will always have to answer the same four questions. Nikolaas Tinbergen was the first to stress that a complete evolutionary explanation of an organism's features has to answer questions about its function, its ultimate causes or evolutionary history, its immediate or proximate causes (e.g.: input from the current environment), and the life cycle of the organism in question (Laland & Brown 2011, 205). An evolutionary explanation also asks whether the feature we are studying is an adaptation and/or is adaptive. A feature is an adaptation when it is selected for by natural selection, which is roughly another way of saying that the feature emerged because it contributed to the reproductive success of the organism that has this feature. One could argue that an adaptation is an expression of the relation between an organism and its environment. As such, an adaptation can get out of sync with that environment. It could be that the demands of the environment no longer require that particular feature for an organism to survive. In that case the adaptation is no longer adaptive, i.e., presently contributing to the survival of the species in question. The species can live without that feature, or with the feature if that does not affect its survival chances negatively. So the term ‘adaptation’ says something about the origins – the past – of a feature, while ‘adaptive’ tells us about the present of a feature. If survival value has been the rationale behind the origin of a given trait, it can be either a current adaptation, or a past adaptation. If natural selection did not

lead to the emergence of a trait, then that trait can be either an 'exaptation' or a dysfunctional by-product. Only in the cases of a current or a past adaptation did natural selection directly determine the origin of the trait. In an exaptation a body structure or behavioural pattern has changed function, meaning that natural selection might have prepared the ground for a trait to appear, but that the original selective reason for the emergence of the trait does not affect its current reproduction (Gould & Vrba 1982). Feathers are a classic example. An exaptationist explanation argues that feathers, as a modification of dinosaur's scales, were selected for because they helped dinosaurs to regulate their body temperature. Once feathers emerged, they were used by some species of dinosaurs for a whole new purpose: to help them escape predators or catch prey by gliding through the air. Natural selection has had no influence on the origin of a trait that is considered to be a dysfunctional by-product. Laland & Brown (2011, 92) present a clear overview of the four possibilities for an evolutionary analysis of a given feature, like ritual behavior. According to their summary, a behaviour that is both adaptive and an adaptation is called a current adaptation, defined as "an adaptation that has remained adaptive due to a continuity in the selective environment". A behaviour that is not now adaptive, but still is an adaptation, is a past adaptation, or "an adaptation that is no longer adaptive due to a change in the selective environment". When behaviour is adaptive, but cannot be said to be an adaptation, it is categorized as an exaptation: "a character that now enhances fitness but was not built by natural selection for its current role". Finally, when behaviour is neither adaptive nor an adaptation, it is a dysfunctional byproduct, or "a character that neither enhances fitness nor was built by natural selection". What becomes clear from this scheme is how an evolutionary explanation of ritual focuses on its functionality. In so far as religious ritual can be explained by the use of evolutionary models, an assessment of its past and current functional value has to be made.

To turn back to the spiritual walk, we can now list several possible explanations. From ethology, we learn that ritually climbing a mountain might express a hierarchical relation between humans and God. Although using and interpreting body language, when done in social interactions, could be beneficial for one's survival chances, ritualistic behavior would probably be better labelled as a dysfunctional by-product of the evolution, by natural selection, of social abilities. Behavioural ecology pointed to the benefits for social cohesion of ritualistic behaviour. This suggests ritual to be a current adaptation, unless one sees a central role for religion in between-group aggression, which would make religion, in our current context, a past adaptation. Evolutionary psychology suggested ritual to have a healing effect, building as it does on evolved body and brain structures. This perspective leads us to see ritual as an exaptation. Cultural evolution offers an intriguing choice. When one takes a meme-centric perspective, ritual actually is a

current adaptation, offering memes a possibility for reproduction. But taking a gene-centric, or at least anthropocentric perspective, ritual would be either an exaptation or a dysfunctional by-product of the evolution of culture. Multilevel selection theory, like behavioral ecology, pointed to the relation between group cohesion and ritual, suggesting that ritual is a current adaptation. In each case, these explanations seem of course reductionist and oblivious to the explanation any Christian in Brixen would offer for his or her participation in a spiritual walk. From a theological point of view the importance of survival value for a religious tradition can thus be questioned. Can the pragmatism of natural selection be reconciled with belief in a God who tells us that: “I have indeed seen the misery of my people in Egypt. I have heard them crying out because of their slave drivers, and I am concerned about their suffering. (Exodus 3: 7)”?

8. *From Past to Future*

There is a tension between theological conceptions of Christian tradition, and evolutionary approaches to religion. We have seen how the Christian community in South Tyrol intends the spiritual paths through their mountains to be a way to ‘discover the meaning of our lives’. But it also became apparent, through our discussion of different evolutionary approaches, and of their possible application to the case of spiritual walks, that an evolutionary explanation does not take this intention into account. Ara Norenzayan’s methodological note might be pertinent in this regard (Norenzayan 2013, 14-15, italics by author): “To get some answers, I will occasionally turn to religious texts, and to shamans, priests, and preachers. But more importantly, religion’s imprints on human nature are not so much found in dogmas in texts and teachings, but in *natural religion* – the thoughts and behaviors of believers. When teachings matter (they exist only in some religious groups and only in recent history), they matter only as lived interpretations and understandings by believers.” In other words: what happens in the field of theology is only of limited interest to the scientist who studies religion. Theology is only one of many sources for the scholar of religion, and not even the most important one.

Granted that science has its own, autonomous role to play in humanity’s continuous attempt to understand the world, this still raises the question as to what role theology can play in religious believers’ continuous attempt to understand their tradition. Moreover, in devaluing the importance of theology, evolutionary approaches of religion seem to run the risk of inflating the importance of the past. If the origin of a religious ritual is said to be e.g. the need for cooperation within groups, does such explanation then imply that this religious ritual is ‘nothing but’ an evolutionary answer to said need? Is the origin of religion (the past form of a religious tradition), indeed still defining religion today (the current form of a religious tradition)?

Without claiming that scientific studies of religion in general are inherently reductionist in nature, I would argue that this is indeed an important source of tension between evolutionary studies of religion and theology.

A possible solution to this tension could be offered by Robert Bellah's 700-page study of religion (Bellah 2011). Since this book is presented as an evolutionary study, it might come as a surprise to notice that only the first two chapters are explicitly devoted to the evolutionary origins of culture. The remaining seven chapters are concerned with 'axial age theory', offering a range of examples from different cultures. The main idea in Bellah's book is that religion developed through cultural evolution, eventually becoming a cultural tool that enables people to criticise and change the society they live in (Bellah 2011, 268). Bellah identifies the period in history where religion entered this stage of its development as the 'Axial Age', referring of course to Karl Jaspers's coinage of that term (Jaspers 1953). The ability to reflect critically on the world is, according to Bellah's analysis, a determining element for talk about 'axial religions'. Bellah also argues that, although we can discern different general patterns or 'stages' in the evolution of religion, this does not mean that earlier stages are replaced by following stages, but rather that they are integrated into the latter. This implies that traits of earlier stages can still be noticed in current religious behaviour. Therefore, it seems hard to pinpoint the nature of a present cultural phenomenon by establishing its origin. There is a difference between the implication, e.g. offered by evolutionary psychology, that our origins determine how we behave today (see for a critical discussion, Laland & Brown, 2011, 105-138), and what Bellah (2011, 267) presents as one of his central principles: "Nothing is ever lost". The former implies that the past, the present and the future are essentially the same, mere variations on a theme. The latter implies that the present entails the past, builds on the past and passes on its legacy to the future.

In other words, however surprising Bellah's somewhat implicit use of evolutionary theory might be, it points us to a seemingly forgotten aspect of Darwinism: its historical character (Cf. Gaddis 2002, Beatty & Desjardins 2009, Ingold 2002). An evolutionary explanation of religion is primarily instrumental in embedding religion into the deep history of humanity, improving our understanding of religious experiences as part of human experience, without reducing religion to a function, at either the biological or cultural level of reality. Illustrative of this point is Bellah's remark on the evolutionary origins of love (Bellah 2011, 72): "That parental care would lead to social bonding, the possibility of individual friendship, and even, eventually, to marriage and the family, are all unforeseen, and, though in turn adaptive, have given rise to meanings that go beyond adaptation. To find the origin of love in the adaptations of the earliest mammals and birds is not to reduce it to those origins but to marvel at the ways of nature in

leading to something so central to our lives.” Far from reducing life’s phenomena to their origin, Bellah leaves ample room for the creativity that marks cultural history.

This review of different evolutionary approaches to religion and their relation to theology suggests that a delicate interaction is needed between theology and evolutionary studies of religion, if we are to understand the complexity of religion as part of humanity’s history. For science, this subtle dialogue could be instrumental in avoiding reductionist interpretations of research that would fail to engage fully with the richness of religious experience. For theology, this nuanced conversation could be beneficial in gaining a deeper understanding of the tradition it studies and, perhaps even more important, to communicate that tradition to the world in an intelligible way, to bring a message to our current world about (Schillebeeckx 1969, 79): “the reality of Jesus Christ, the Lord, the absolute and gratuitous presence of the Living God”.

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Book Reviews

Ara Norenzayan, *Big Gods: How Religion Transformed Cooperation and Conflict*, Princeton, NJ, Oxford: Princeton University Press, 2013, pp. 248; ISBN: 978-1400848324; \$ 29.95 (Hdbk.)

In his book, the Canadian professor of psychology, Ara Norenzayan, defends the thesis that the evolution of large-scale human societies can be explained by the rise of prosocial religions in the Holocene period 12,000 years ago. These religions facilitated the Neolithic Revolution and the spread of agricultural lifestyle. By the term 'religion' Norenzayan thinks of a "complex amalgam of traits and inclinations, grounded in recurrent, ordinary intuitions and packaged together by cultural evolution over historical time" (158). Focusing on prosocial religions he has specific religious traditions in mind which invented so-called 'Big Gods': supernatural beings which regulate the moral behavior of human beings. The hypothesis of the book is that belief in these morally concerned deities might have provided a powerful social tool for the policing of freeriding behavior: people play nice when they think God is watching.

Free-riding is widely suggested to be the main reason for the decline of cooperative action. As field studies and experimental evidence have shown, it can be effectively prevented by social monitoring and punishment in local communities and small groups. But as communities (*Gemeinschaften*) turn into societies (*Gesellschaften*), anonymity becomes the dominant pattern of interaction. Consequently, the problem arises that no one is regularly watching and therefore free-riding increases. According to Norenzayan, the psychological mechanism which can solve this problem is provided by prosocial religions with Big Gods. Big Gods are powerful, all-knowing deities. They not only watch but are also believed to intervene. Remarkably, what Norenzayan has in mind when he talks about Big Gods is not only monotheism. As he contends, the features of monotheism (singularity and creator status of God) "may be historical accidents, rather than critical features of Big Gods" (130). Although Christianity and Islam are the world's largest prosocial religious communities, there are also non-monotheistic prosocial beliefs like the belief of the Kwaio people from Solomon Islands whose ancestor spirits, the *adalo*, bring good luck to those who are good and misfortune to those who violate group norms.

Furthermore, Norenzayan stresses that the link between morality and religion is not self-evident or naturally stable. He argues that Big Gods were culturally selected for the prosocial advantages they offered in the scaling-up of social groups. However, they are not a natural human universal or a product of genetic adaptation. Hence, Norenzayan argues that the term 'religion' should not be identified with facilities enhancing prosocial

behavior or even morality. Rather, the culturally evolved link between prosociality and the commitment to Big Gods is relatively novel and contingent. As groups expand in size and complexity and scarcity problems arise, religion acquires a moral dimension. But from an anthropological point of view, supernatural agents are not typically involved in the enforcement of social norms. Small groups regularly only know deities with limited facilities. They build local solidarity without appealing to moralizing supernatural agents. Thus, the belief in supernatural agents is a potent cause, but not the sole cause that led to the evolution of human societies.

Throughout the book Norenzayan combines the study of religion's social function (Durkheim, Turner, Rappaport, Wilson) with the cognitive science of religion (Boyer, Barrett, McCauley *et al.*) in order to study religion in a third way. In most parts he summarizes, analyses, and criticizes important studies on the topic and builds them together into a bigger picture. By doing so, he is mostly relying on scientific commonalities whereas critical or controversial discussion of the findings is neglected. An exception is his discussion of the question whether experimental findings on prosociality could be artefacts of the applied methodologies: 96 percent of the research has been done with Western, educated, industrialized, rich and democratic (WEIRD) people.

Norenzayan builds his own approach primarily on the cognitive science of religion. Therein mindreading functions are considered as the basis of religious belief. Deities are perceived as personified beings with mental states that anticipate and respond to human needs and deeds and monitor their actions. Norenzayan sees the link between mindreading and religiosity affirmed by experimental evidence that shows that a deficit in mentalizing skills as occurs in autistics and very often also in other male persons makes those affected less religious. Furthermore, he includes in his account the insights of social surveillance studies which see the feeling of being watched as a powerful mechanism to boost prosocial behavior. According to Norenzayan, the step from powerful people monitoring social free-riders to powerful gods watching human beings when no one else is watching is not that big. Unfortunately, concerning this last point his hypothesis stays a little bit vague. He does not discuss in detail the fact that intervention and punishment by supernatural beings is not of the same kind as the social punishment of fellow human beings. It is not directly visible and does not occur promptly after the violation of social norms. Hence, some doubt is left concerning his thesis that it is such an effective substitute for human punishment. Furthermore, as Norenzayan himself remarks, the thought of the omniscience of a supernatural being is somewhat counterintuitive. As experimental evidence has shown, the abstract idea of god as an impersonal force is not very common. Instead, people tend to see gods merely as persons who are more likely to know some things than others.

In the middle part of the book, Norenzayan concentrates on the question of how prosocial religions can help to build networks of trust and solidarity among people. As studies on signaling behavior have shown, signals of sincere belief in Big Gods have a deep impact on trust-building among humans. Ample data from survey studies shows that, all over the world, in societies with religious majorities believers are trusted more. In contrast, atheists are perceived as a specific threat to cooperation. They are even distrusted to the same degree as rapists. Thus, signals of the absence of the belief in Big Gods can lead to severe moral distrust among people.

The last part of the book deals with the currently highly debated topic of religion and social conflict. Norenzayan gives the well-tempered argument that in social conflict, Big God religions take up the role of the fire department and the arsonist at the same time. They can build peace among people but are also important players in war and violent conflict. Unfortunately, the last point has not been subject to systematic scientific study yet, but there are several hints that the social cohesion religion creates does also set up boundaries between those who can be trusted and those who cannot. Thus, religion may lead to intergroup violence. The dealing with the topic suffers, as Norenzayan admits himself, from the lack of solid scientific data. But as the progress of the scientific study of prosocial religion documented in the book shows, there is good hope that these lacunae will be filled up in the future.

The concluding chapter of the book presents modern secular society as a direct outgrowth of prosocial religions. Norenzayan himself traces the rise of secularism back to the groundbreaking innovations of monotheistic religions (especially Christianity). Following the French philosopher Marcel Gauchet, he names two inner moves of monotheism which ultimately led to atheism: first, the invention in modern times of a distant god who created but did not actively manage the world and thus allowed it to be reduced to a material world of cause and effect. Second, the denigration of false gods in the light of the one and only God, which established a perspective leading to denial of the existence of any gods at all (atheism). Finally, Norenzayan proposes that secularism has to be differentiated into mind-blind atheism, analytical atheism and apatheism (indifference to religious belief). To develop this hypothesis further, he refers to findings showing how the intensity of human religious beliefs can be influenced by the style of thinking (intuitive v. analytical) as well as the experience of the perceptual fluency or otherwise of information. Thus, triggering analytical thinking by processing information that is difficult to understand can lead to a decrease in belief in God. Norenzayan argues further that there is something illegal or at least 'not so nice' about the secular institutions of Western societies, when he says that "they encroach on religion's job and precipitate its decline" (54). Thus, he sees prosocial religions and secular welfare states as competitors in a life-or-death struggle. In the final statement of his book, he expresses

indecision as to whether secular societies or prosocial religions are superior in terms of cultural longevity.

Norenzayan has produced a well-written book. Many references to his own research show that he himself has contributed a great deal to clarifying the most virulent and pestering questions concerning the contribution of religion to the rise of prosociality. Nonetheless, it remains a weak point of Norenzayan's argumentation that the effectiveness of the intervention of Big Gods in social interaction is not as easy to measure as the direct social punishment of human beings. Furthermore, it could be asked whether the Christian God should be declared to be a 'Big God' of the kind Norenzayan has in mind. The thought of God as an omniscient and omnipotent being has been questioned in current Christian doctrine. Nevertheless, the empirical findings that believers see God as a personal being with very high but still limited facilities could be an interesting clue for a 'weak' understanding of God's potency to transform and change the world.

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David Ray Griffin, *Panentheism and Scientific Naturalism: Rethinking Evil, Morality, Religious Experience, Religious Pluralism, and the Academic Study of Religion*, Claremont, CA: Process Century Press, pp. 308; ISBN: 978-1940447032, \$ 18.00 (pbk.)

David Ray Griffin has for several decades argued for a process-panentheistic engagement with theology and science. For Griffin, two extremes have to be avoided if there is to be a fruitful dialogue between theology and the natural sciences: supernaturalistic voluntarism and reductive materialism. This book is a collection of eight (somewhat) revised essays, and, while it constitutes an overall case for process-theism it should also be considered as a summary of Griffin's most impressive work.

Griffin's aim is two-fold. Firstly, to deliver an account of God that can do justice to both religious experience and one of the major presuppositions of the great religions – namely, that God performs specific acts in creation. Secondly, to construct an account of God which is consistent with the basic presuppositions of science; in particular, the unbrokenness of the laws of nature.

In chapter 1 Griffin seeks to establish panentheism as a *postmodern revelation*. It deserves to be considered postmodern not only in that it goes beyond the theism of early modernity, but also because it rejects two basic

tenets of modernism. These are a mechanistic view of nature and a sensationist view of perception, according to which sensory perception is the only acceptable source of knowledge. Moreover, panentheism is *revelatory* since it results from a direct experience of God.

Chapter 2 tackles the issue of divine activity in nature which, according to Griffin, is the major source of conflict between science and religion. The problem is to construe divine action so that there are no interruptions in the causal web. Griffin reviews two possible solutions to this problem. One solution would be to say that the language of divine activity is non-referential, meaning that it does not refer to anything external. Griffin, however, deems this solution as inadequate and I agree with his assessment that the non-referential route leads us to a place where there is no “way of saying that particular attitudes, such as love and a concern for justice, are enjoined upon us.” Another solution would be to accept naturalism, not in an ontological sense, but as the proper method for doing science. In this way one could still maintain the idea that God, on occasions, supernaturally intervenes in reality. However, this is on the condition that the statement “God intervenes in reality” is not a scientific claim. For Griffin, however, this does not work as naturalism entails something stronger than methodological procedures. It is part and parcel of the very nature of the scientific worldview. It is for this reason that Griffin rejects the supernaturalistic science developed by Philip Johnson and Alvin Plantinga. A supernaturalistic science will never be accepted by the scientific community given its commitment to causal closure of physical reality. Interestingly, Griffin does not reject *theistic science* as such. He even argues for the possibility of a theistic science based on naturalistic theism.

Naturalistic theism could satisfy both the religious believer and the scientific community. God does, on this view, act in reality, even bringing about events that some would perceive as miraculous. However, the divine influence never interrupts the natural laws governing the universe. Thus, God’s action is formally, but never qualitatively, different from ordinary physical processes. This is an important distinction for Griffin, which I will come back to.

In chapter 3, Griffin seeks to show how panentheism can shed some light on the issue of “cosmic design”. For supernaturalism this is a yes-or-no issue; either the universe was designed, or it wasn’t. However, as Griffin shows, when one follows Whiteheadian process theology things get more complicated. Process theologians, given the intrinsic ontological relationship between God and physical reality, reject the theological doctrine of *creatio ex nihilo*. God did not create out of absolute nothingness, but rather out of no-thing. That is, there was no pre-existing substance that God worked with when bringing about this specific universe. Process theology

also rejects design arguments that are based on anthropocentric assumptions; that the universe was created solely for human beings or that human beings were inevitable. This anthropocentric tendency is, according to Griffin, evident in Paley's infamous design argument. If one assumes these beliefs about God and humanity, then the answer to the design-question has to be "No".

However, there are ways in which Griffin would affirm that the universe is designed. For example, humanity can be considered intended in the sense that the universe, or the divine aim, seems to be directed towards a greater richness of experience, in that it has brought about certain conditions which allowed the emergence of creatures, such as ourselves, with complex modes of experience. Another sense in which Griffin affirms design within our universe concerns the contingent cosmic constants that we find in the universe and /the natural sciences depend upon.

In chapter 4, Griffin explores the process-standpoint with regard to the problem of evil. The problem, if one assumes theistic voluntarism and the idea of God as all-good, omnipotent and omniscience, is to explain the occurrence of evil, even horrendous evils. This is not possible according to Griffin, who argues that process-theodicy provides a far more satisfying account. God, on this view, has no monopoly on power. Indeed, even matter has a degree of power, i.e. self-determination, and so offers resistance to the divine will. Consequently, given that God's power is limited, different evils are to be expected.

Chapter 5 focuses on the topic of religious experience. Sensationalism is criticized for not being able to account for several phenomena and beliefs that we in our human practices tend to assume. These beliefs are, among others, mental causation and rational activity. Drawing on the philosophy of Whitehead, Griffin postulates experience and agency at the "lower levels" of reality. Any phenomenon that has the capacity for self-determination is a bearer of experience. This would include bacteria as "experiencing" beings. Thus, for process philosophy, in contrast with materialism, mental reality and experience is not a problematic anomaly in need of explanation. It is indeed a fundamental part of reality.

Chapter 6 is devoted to the issue of the naturalistic influence on the study of religion. Some have suggested that the academic study of religion requires hard naturalism, or 'eliminativism'. On this view, when one explains religion one necessarily explains away religion. In this chapter Griffin provides an excellent overview of various types of naturalism. He reaches the same conclusion about the academic study of religions as he did with regard to the natural sciences. That is, the only thing that is required for the scholar of religion, like the biologist or physicist, is to exclude supernaturalist interventionism. A materialist version of naturalism is not

needed, indeed it cannot account for some of our most basic assumptions about reality.

Moral realism and how to account for objective moral properties is discussed in chapter 7. Griffin argues that materialism, because of its commitment to sensationism, is unable to account for moral properties or for our knowledge of these properties. Here process philosophy offers a great advantage for the moral realist through the idea of non-sensory perception; it allows for the apprehension of non-physical normative principles. Griffin concludes that the seeming conflict between the scientific worldview and our moral presuppositions is not due to science as such, but rather to a materialist reading of science.

In the last chapter of the book, chapter 8, Griffin outlines a process-pantheistic approach to religious pluralism, drawing heavily on the work developed by John Cobb. Unlike John Hick's form of religious pluralism, which Griffin argues lead to a "debilitating relativism", process philosophy encourages "complementary pluralism", according to which religions express complementary truths. For example, to say that Jesus was the Christ does not mean that we have to deny the Buddhist idea of the Buddha as the Enlightened One. Moreover, in denying supernaturalist interventionism, process theology can avoid the doctrine of scriptural infallibility, which has been used to justify an oppressive form of exclusivism.

Griffin should be applauded for his work in the dialogue between science and religion. His critique of materialism is excellent and I agree that any serious metaphysics must allow for common sense ontology and the presuppositions we inevitably make in many of our human practices. On the critical side, I would like to challenge Griffin's view of divine causation. He claims that God works solely through natural causation, meaning that there is no supernatural causation within the natural order. However, if there is no ontological difference between God's action and the regularities of nature, as he says, why introduce God-talk at all? For God-talk to be justified (that God caused X to happen instead of Y), it seems to me that there needs to be some ontological (i.e. qualitative) difference between divine causation and natural causation. This does not mean that we have to say that God interrupts the causal chain, but we might have to say that there is an extra-natural influence operating within the natural order. If this challenge stands then perhaps process theology is closer to supernaturalism than Griffin seems to suggest in this otherwise valuable addition to his output.

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David Wilkinson: *Science, Religion, and the Search for Extraterrestrial Intelligence*. Oxford and New York: Oxford University Press, 2013, pp. 225; ISBN:978-0-19-968020-7, £25.00 (Hdbk.).

I looked forward to reading and reviewing this book for a number of reasons. David Wilkinson is a skilled communicator who has been active in the science and religion field for some years and I was sure of an interesting read. Also the whole area of the search for extraterrestrial intelligence (SETI) seemed to me to be filled with people with very definite but contradictory views, held often with some vigour. I looked forward to some elucidation and I was not disappointed.

David Wilkinson's initial training was as a theoretical astrophysicist. He gained a PhD in the study of star formation before training for the Methodist ministry. He has served in a variety of appointments, gaining on the way another PhD in systematic theology, and is now Principal of St John's College, Durham. At present much of his work is in the relation of the Christian faith to contemporary culture and in my experience he is as likely to illustrate a talk with the latest song from Lily Allen as with a NASA photograph. He has given us here a book that is a serious academic treatment of SETI and its relation to the Christian faith, with an extensive bibliography that is also eminently accessible to the interested layperson, whether a Christian believer, marginally confused or right outside a faith community.

To anticipate one of his conclusions, stated several times throughout the book, SETI is a topic that the Christian believer and particularly the theologian ought to be interested in and enthusiastic about. It is not and cannot be a threat to faith, for we believe in a God whose creation is magnificent, vast and of infinite variety. He quotes various sources old and new who agree and find it incredible that such a God would restrict him (or her) self to one small exercise in intelligent life.

However he is also a firm believer in Fermi's paradox, "If they existed, they would be here" (see chapter 7), but nuances it in terms of intra and extra galactic Extra Terrestrial Intelligence (ETI). The problems of communication between galaxies are so immense that we have no means of knowing if ETI exist in other galaxies or not. On balance, he thinks there is ETI, but not in our galaxy – where Fermi's paradox applies.

This book will disturb both the casual enthusiast for 'of course there are lots of civilisations on other planets' and also the Christian believer who cannot believe there could possibly be other civilisations elsewhere. Speculation about life in other worlds is no new thing: the possibility of little green men on some other planet or some other galaxy has occupied many

writers, both of popular fiction and more serious reflection. Wilkinson does a good job in gathering a great deal, if not all, of the evidence together.

He then turns to the Drake equation, which itemises the many factors involved in estimating the likelihood of intelligent life existing in our galaxy. Not surprisingly he finds some interpretations of this equation lacking in good experimental foundation; nevertheless he gives it a sympathetic treatment, along with the strong and weak anthropic principals.

A major stimulus to SETI has been the discovery of exoplanets, planets outside our solar system, some of which might have suitable conditions for life to form, and he devotes a chapter to the search for these. At several points he warns that there is a huge difference between the possibility – or even the actuality – of a life form and intelligent life as we would recognise it. As he has put it elsewhere, “It’s a long way from an amoeba to an accountant”.

The first seven chapters would be of interest to anyone with even the slightest interest in SETI. The last four are more specifically aimed at the Christian believer and theologian, with chapters on SETI and the Christian understanding of Creation, and SETI and the Christian understanding of Redemption.

It is this chapter that serious conflict might arise, as he faces the question, “Did a Cosmic Christ die for each extra-terrestrial civilisation; or was the death of Christ on the cross a once-for-all event for the whole of creation?” He interestingly observes that Roman Catholic writers have consistently been more sympathetic than Protestants to multiple atonements and speculates why this might be. Wilkinson himself seems to rather favour the position of Origen, who saw Christ’s redemptive work as having a transcendent action which, through time, permeates the whole of creation but which nonetheless needed to find actual corporeal expression in the death of Jesus on the cross. He quotes with approval John Polkinghorne who wrote, “If little green men on Mars need saving, then God will take little green flesh... He will do what is necessary”, and himself concludes with “The Christian conviction is that the God, encountered in Jesus, will do what is necessary”.

The Heaven’s Gate cult believed that they would be taken up to a space ship and transported to heaven: a view Wilkinson claims to be rather similar to popular views of dying and going to heaven. He has no truck with this, as owing more to Greek myth than Biblical theology: as Christians we enter, through the singular event of the resurrection of Jesus, into God’s New Creation.

This is a fine climax to this short but well resourced book that demands that theologians should rejoice in the sheer joyous and profligate abundance

of creation and therefore seriously observe it. It is a present creation that will be caught up into God's new creation, a sacramental one when all things become one in Christ and towards which the whole of creation "groans and strives, looking for the revealing of the children of God". David Wilkinson has done us a great service by showing that serious investigation of the possibility of there being intelligent life elsewhere in the universe is entirely compatible with Christian theology: indeed, should be a stimulus to worship.

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* * *

Aku Visala. *Naturalism, theism and the cognitive study of religion: religion explained?* Farnham, UK: Ashgate, 2011, 228 pp; ISBN 978-1-4094-2426-0 (hdbk) £65. Also available as e-book.

Aku Visala is one of ESSSAT's most highly regarded younger members. Readers of this journal may recall his fine article-review of March 2013. His first book ought therefore to have been reviewed here considerably sooner than 3 years after it was published. It is no fault of the editorial team that this has not happened.

Dr Visala is Finnish, and did his doctoral work under the supervision of Simo Knuuttila and Ilkka Pyysiäinen in Helsinki. He then moved to Oxford, to join the Cognition, Religion and Theology unit headed by Justin Barrett and Roger Trigg. This book appeared during that time. From Oxford he went on to Princeton and is now at Notre Dame

The book is a philosophical critique of modern work in the cognitive science of religion, CSR. ESSSAT's own conference in Edinburgh (2010), entitled *Is Religion Natural?*, focused on CSR, and two of our lead speakers then, Pyysiäinen and Barrett, figure prominently in the present book. Others to whom repeated reference is made include Scott Atran, Jesse Bering, Pascal Boyer, Daniel Dennett, Thomas Lawson, Robert McCauley, Harvey Whitehouse and the two Wilsons – David Sloan and Edward O Wilson.

With such authors in mind Visala begins: "The last 20 years have seen a major surge of research into the origins, mechanisms and function of religious belief and behaviour. This surge is for the most part a result of the emergence (or re-emergence) of the 'naturalistic' perspective in the study of religion ... Some philosophers and scientists have taken these new approaches to be the final nail into the coffin of reasonable religious commitment. The suggestion seems to be that since we have finally been able to produce a true materialistic and naturalistic explanation for the emergence

of religious beliefs and practices, we can now free ourselves from the grasp of ancient gods and spirits. This time explaining religion has genuinely amounted to explaining it away. While these claims are based on new theories, the claims themselves are not in any way new: they echo the claims that have been made on each occasion a new explanation of religion has emerged since the time of Marx and Freud. Is anything different this time?"

He goes on to recognise that some things are indisputably different. Knowledge of human biology and evolution, psychology and neuroscience, anthropology and culture, have all advanced immensely since those early critics, so that philosophers and theologians who still refer to them as representative naturalistic critics are seriously out of touch. But the tacit philosophical assumptions underpinning the anti-religious conclusion have probably changed a lot less, although the formal academic debates in the relevant fields have moved forward as much as the sciences have.

Visala gives lucid summaries of the most prominent ideas in CSR – notably the ‘Hyperactive Agency Detection Device’ (HADD), which most CSR theorists and probably all popularisers contend make every human being disproportionately inclined to assume a conscious and probably malign agent behind every new or uncomprehended phenomenon. The argument is that, even if this assumption is correct only 1% of the time, over the millennia it has had immense survival value: we waste only a little energy if we run away from what is actually inert, but we waste our lives if we do not run away from a hungry carnivore. Yet such an inbuilt disposition clearly makes us prone to sense a spirit, demiurge or deity in response to extremely limited evidence.

As *H. sapiens* increases in sophistication, some of the ideas prompted by the HADD will be recognized as conflicting with intuitions derived from other aspects of experience. Radical conflicts between the two will not be tolerated, but relatively mild ones may be, and when they are they will stand out as significantly challenging and potentially important. If such ‘Minimally Counter-intuitive Ideas’ (MCIs) become accepted, first perhaps by an individual but ultimately by his/her society, they will be of the essence of any religion which results. In the limit, they are encapsulated into creeds: “On the third day He rose again from the dead ...”.

HADD and MCIs are keystones in the attempt of many CSR proponents to denigrate religious belief. But how justified is this? Like Barrett (who is unusual amongst CSR researchers in being a theist), but on different grounds, Visala contends strongly that it is not. His grounds are essentially philosophical.

To read him effectively requires appreciable familiarity with modern work in the philosophies both of mind and of science. In the latter case, his

concerns are with the concepts of law and explanation, and with reduction, specifically of psychology to neuroscience and thence ultimately to physics, as against the independence both of questions and answers at different explanatory levels. Space will allow me only to hint at his treatment of these matters. However I happen, for another project, to have been reading substantially, in recent weeks, in the philosophical literature concerning law and explanation. On this basis I envy the easy command with which Visala moves through the field. It would not be correct to suggest that his analysis is easy: the argument is tightly wrought. But every individual sentence is lucid and uncomplicated. The result is, in my judgement, an appreciable achievement. And there are only a very few hints that English is not the writer's mother tongue.

The heart of the argument is the debate between extreme ('eliminative') materialists and the 'non-reductive' or 'emergent' materialists to whom Visala is much closer. The problem with the reductive position is encapsulated in the following dichotomy:

- *Causal closure*: Every physical occurrence has a sufficient physical cause.
- *Exclusion*: An effect which has more than one cause is over-determined.

Adding a mental to a physical cause would thus over-determine it, and so confuse the issue. This, in highly abbreviated form, is the 'exclusion problem', by which eliminative materialists seek to demonstrate the incoherence of opposing positions.

Visala's answer to this problem is that it is caused by hidden assumptions of 'strict naturalism'. This stance is neither required nor desirable if we recognize that accounts of phenomena at levels of analysis many times more complex than those of particle physics (biological, psychological or social/ecological phenomena) need not be, *and won't be best served by being*, reduced to their physical fundamentals. He terms this contrasting viewpoint 'broad naturalism'. So Visala resolves the apparent impasse in the philosophy of mind by delving back to its source in divergent concepts of naturalism.

Now we are at the nub. Does the possibility, at least in principle, of giving a causal account of a thought process invalidate the formulated thought which results? No-one makes such a claim if the causal account is at the same level as the thought itself – logical links to antecedent considerations are universally accepted as strengthening, not weakening it. Should the thought's biological links to its neurophysiological substrate be viewed any differently? They are simply the mechanisms by which it comes about in the world, and there should be no reason why tracking these latter back to the level of molecular or even particle physics could invalidate it either.

To assume that such tracking-back, if it were in fact achievable, would invalidate it, is to commit what Visala and a co-author have elsewhere termed “the fallacy of organic antecedents”. If one singles out religious thoughts for such attention, one ignores the fact that every thought of which a mind on earth is capable could, by the same principle, be similarly tracked downward to the substrate level – ‘reduced’, in the philosophical sense used above. To conclude invalidity from such a possibility, real or theoretical, constitutes *reductio ad absurdum*. The *reductio* results from attempting to answer an unconstructive question.

That last paragraph possibly embodies more of my thinking than Visala’s, but I allow myself this luxury to point out one more merit of his book – that it does not pretend to have answered all questions on the topic, but challenges its readers to go on thinking about it for themselves. Ludwig Wittgenstein, at an age which I suspect was not far different from Aku Visala’s now, believed that he had answered all significant philosophical questions in one short book. Visala has no such arrogance. He has presented a thorough and astute analysis, from all reasonable sides, of one very challenging group of questions. This is quite enough. If it prompts the reader to extrapolate to other fields with related problems in theology or in the philosophies of science and mind, that will be one measure of its worth. The other will be if that reader looks out for the name of Visala on future books. I shall most certainly do so.

Neil Spurway
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Steffan Klein. *Survival of the Nicest: How Altruism Made Us Human and Why It Pays to Get Along*. The Experiment, 2010 [German], 2014 [English], 253 pp.. ISBN 978-61519-220-5 (Pbk), \$11.73 (Amazon.com).

Steffan Klein holds a Ph.D. in biophysics. He is one of Europe’s most influential science writers and a former editor at *Der Spiegel*. His books, which include the #1 international best seller, *The Science of Happiness*, have been translated into more than twenty-five languages. He lives in Berlin with his family. The book under review originally was released in German in 2010. The English translation edition, which was released in 2014, is seriously out of date in this fast moving field regarding the evolution of cooperation.

A paradigm-bursting tsunami rolled over the (W.D.) Hamiltonian, kin-selection (also known as ‘inclusive fitness’) model of how cooperation

could have evolved, with the 2010 publication of Martin A. Nowak, Corina E. Tarnita, and Edward O. Wilson's article in *Nature*, "The Evolution of Eusociality." The term 'Eusociality' means a social system in which multiple generations live together and some individuals (like celibate clergy) forgo their own reproduction for the benefit of the group. The *Nature* article was accompanied by 43 pages of online, supplementary material consisting of mathematical proofs and arguments for the authors' multi-level-selection alternative to Hamilton's kin-selection (characterized as 'inclusive fitness') model.

The original *Nature* paper caused such controversy in the biological sciences that 150 of the world's leading social biologists co-authored a rebuttal, "Inclusive Fitness Theory and Eusociality," *Nature* 2011 Mar 24; 471 (7339): E1-4; author reply E9-10. doi: 10.1038/nature09831. All of this, the original *Nature* article and the 150-authored rebuttal, occurred after the 2010 German edition of *Survival of the Nicest* went to press. Nothing appears to have been updated in the 2014 English translation to reflect the current controversy. All the references in the Bibliography in the 2014 English translation edition of *Survival of the Nicest* are from before 2010.

Over the past ten or so years there have been a number of other popular (i.e., trade) books written and edited by the leaders in the field on the subject of the evolution of human cooperation and eusociality stemming from the 2010 *Nature* article. They include E.O. Wilson's *The Social Conquest of the Earth* (2012), Martin A. Nowak (with Roger Highfield) *Supercooperators* (2011), and Martin A. Nowak and Sarah Coakley's (eds.) *Evolution, Games and God* (2013). All three of these books were reviewed by this reviewer in previous editions of *ESSSAT News*. So what does Stefan Klein bring to this topic that has not already been said and debated by the previous writers and their critics: his best selling author's name and a not so subtle inter-mingling of his own political values with the out-of-date science!

The book is divided into two parts. Part I is called YOU AND I. Part II is called ALL OF US. There is a short Epilogue entitled The Joy of Giving. After a six and a half page Introduction there are 203 pages of text, a three and a half page Epilogue, thirteen pages of end notes, eighteen and a half pages of the somewhat out of date references in the Bibliography, and six and a half pages of a woefully inadequate, apparently mindless, computerized Index that does not include any of "eusociality", "kin-selection", "multi-level selection" or "religion."

There are also several statements in the book that seem incredible to this reviewer. These statements have no endnote or references to back them up. An example is on page xiv of the Introduction: "Serious depression is on a rapid rise in most countries, including Germany, where I live. Within a single year, the risk of young people becoming clinically depressed has

more than tripled." In other places in the book he tells a story about human niceness based on the miniscule exception rather than on the norm, such as how some Germans helped and hid Jews in Germany during the Holocaust.

If the book can be summarized in a few sentences it is a rebuttal, already ancient history, of strict gene selection in favour of selection at the level of the individual and group. It is the argument that niceness in human beings is an adaptive strategy and that groups of nice cooperators will do better than groups of selfish egoists. However, Klein's approach, which is primarily the telling of stories, is done without the elegant narratives for the same arguments, backed up by mathematical proofs, of Nowak *et al.*

Klein's book veers off the straight scientific path when he gets into areas that are more a matter of values than of science. In general, there are perspectives, beliefs and biases that we all have on everything from economics to politics to religion. There is no reason for the reader to have to be informed about Klein's political leanings in a popularized trade book about a scientific topic. Given all of the above, the recommendation of this reviewer is that if the reader wants to learn how and why we are, primarily by nature, nice (with obvious exceptions), the best place to learn about this is in one of the three books previously mentioned in this review. Klein's book, already seriously out of date, adds nothing new and does not address the kinds of issues germane to science and theology.

Jay R. Feierman

* * *

Elizabeth A. Johnson, *Ask The Beasts: Darwin And The Love Of God*. London: Bloomsbury, 2014, xviii & 323 pp.; ISBN 978-1-4729-0373-0 (Hdbk) £18.99.

Elizabeth A. Johnson is Distinguished Professor of Theology at Fordham University (NY), and her book is the outcome of a 150th anniversary celebration of Darwin's 'Species' (1st Edition). Her thesis is that faith in God should, as an intrinsic element, be exemplified in a love of the natural world, such that ecological sensibility and care of it become central to [our] moral life.

She begins with Holmes Rolston's triple bang postulate: the Big one – the origin of the universe, the second – the origin of life on earth, and third, the origin (or maybe emergence) of *H. Sapiens*. It is with the second bang that this book is concerned, a theme which '*is still making its way into religious consciousness*'. So the question is put: '*What is the theological meaning of the natural world of life?*' (xiv). This second bang originated and

evolved in the absence of mankind, yet now its future is in jeopardy because of the effects of the third bang – mankind’s misuses of the resources provided and of the animals it contains. This community of life *‘is part of God’s beloved creation and its ruination an unspeakable sin’* (xiv). Johnson’s plea is to heed the words of Job (12.7): *‘Ask the beasts and they will teach you: speak to the bird of the air, the plants of the earth, and the fish of the sea and they will instruct you’*. The content of the book entails *‘dialogue between Darwin and the Christian story as an articulation of the ineffable God of mercy and love, in the Nicene Creed’* (xv). Johnson asserts that a theology supportive of an ecological ethic for creation can be effected between the two realms of science (reason) and the life of faith (xvi).

Chapter 1 is concerned with essentially that relationship – between science and theology, whether conducted through a variable vocabulary of conflict, independence, true dialogue, integration, or practical co-operation. Chapters 2-4 then proceed to examine Darwin’s theory, and the difficulties he faced in publishing his proposals. It seems hardly necessary for those readers who are likely to spend time looking at this review to specifically identify and rehearse those well-known details. The conclusion is that *‘life evolves’*, and that the Theory points to the grandeur of creation, a drama which is within the very heart of God (121).

Chapter 5 and 6 talk about God and his relationship to the second bang, creation being sustained by his hand. (122). Johnson bemoans the progressive loss of concern for the environment, having been displaced by more urgent matters involving the church, especially its attention given over to sin. Now, creation came to be seen as a given, rather than as gift (127), and thus progressively ignored by the church. We are given the vocabulary (134ff) reflective of God’s spirit – Wind, Water, Fire, Flight, and Wisdom. But I continue to object to the implication that Wisdom is a female figure (141) simply because the appropriate nouns in Greek and Hebrew happen to have that gender. Maybe this appeals to the feminist movement. If that is a logical conclusion, then would every seaman (*nauta*) and likewise every farmer (*agricola*) have to be female to qualify for the job, simply because they derive from First Declension nouns in Latin? The former Regius Professor of Hebrew here in Oxford had words to say about this gross misuse of language. The Hittite language does not have a feminine gender category, although as James Barr pointed out, they knew precisely how to conduct themselves in reproductive technologies. He also mused at the prospect of an army (Heb. *Milhamah*, Fem.) with its contained *lehem* (bread) associated with marching on its belly? – perhaps!

The discussion then ultimately turns to how the Godhead intervenes in the continuing creation, without being seen to interfere with the *‘laws’* which, through our discovery, govern the workings of the universe.

My ears did begin to prick up with Chapter 7 after much previous usage of words such as grandeur, beauty, love, and image-of-God typologies. Here it was acknowledged that there is pain and suffering associated with Creation. Pain is so often abused. But it is perhaps useful to remember that it serves important, even vital, physiological roles, and its absence can be damaging, as with people with (primary) Congenital Indifference to Pain, and secondary causes like chronic lepromatous leprosy, autoimmune and severe diabetic neuropathies, and syringomyelia. They are always very useful to have in our sights. Writing this just before Christmas, I am fully reminded how grim and gritty life is, and has been, for so many humans, and presumably animals, throughout the entirety of evolutionary time. And, on another Christmas Day that is etched into my memory, and only a day or so after I had medically qualified, I was battling with a youth with acute leukaemia. While the band played carols and everybody was trying to be “merry and joyful” at the other end of the ward, this young lad had bled. He had bled into his tongue, into the insides of his mouth, his gums and around his teeth, his lips, and haemorrhaged across the back of his throat so that he could hardly swallow: it looked as though he had been gargling blackcurrant jam. Yes, do not be deluded, life for many is extraordinarily gritty and demoralising, and I suppose after tramping the wards for forty five years, one becomes inured to the sights and sufferings of disease, degenerations and dysfunctions – as an essential part of life’s rich fabric.

Why, then, is it so easy to talk of being made in God’s image, while many would turn away in revulsion at the sight of a slobbering, brain-damaged child splayed out in a wheelchair? Is that, and those similarly disposed, not part of God’s creation, too? I applaud Frances Young for making her brain-damaged son Arthur, rendered severely anoxic during parturition, a prominent feature of both her priestly ministry and professional life as theologian. That’s just the kind of thing required to stop us from coming over all wobbly about creation’s splendour. We do need correctives to stop us romanticising. Myself, I rather prefer McCord Adams and her approaches in dealing with intrinsic and extrinsic damage (“*Horrendous Evils...*” and “*Christ and Horrors*”). Interestingly, Young would not want Arthur to be transformed when he puts on immortality – ‘he would not be Arthur’. Now that’s a thought - arising straight from the heart.

Johnson’s book continues to wrestle with theodicies which accommodate these kinds of inexplicable (*where was God?*) disasters (186ff) and the role of the ‘Christic paradigm’ (199ff.), the Resurrection, and the life to come (chapter 8). What will be transformed of Paul’s groaning creation – animals? Plants? Even Ebola virus, or the *mycobacterium tuberculosis*? – they’re also part of God’s wonderful creation, aren’t they?

And where will it all be housed? At present, there are 7 billion people on this planet (excluding dogs, talking parrots, and electric eels): but just how many evolutionary ticket holders are there waiting and lined up for this dispersal, after heaven and earth have disappeared? Johnson talks about some of the possible models of human evolution (Chapter 9), but in this scenario, she does not indicate a possible cut-off between the first (evolutionary) man, and the last chimpanzee. If we're going to have to 'love' creation, as Johnson intends us to do, then our approaches would certainly have to be profoundly modulated by the severe contingencies outlined in these preceding paragraphs.

So, *'this book'* contends Johnson at the beginning of her final Chapter 10, *'has been making the case in dialogue with [not between, as earlier stated] Darwin's theory of evolution that loving life on Earth, far from foreign to the living tradition of Christianity, is actually supported by its core beliefs about God revealed in scripture and condensed in the creed'*. Well, yes – but didn't we already know that? - despite her berating the church and its members for only paying lip service to these lofty ideals. Or congratulating the theologians who, belatedly, have come to realise that there is more to Genesis than simply man's 'dominion' over the earth. The problem is the community of the third bang. Just think Kyoto, and the failure of some nation states to even concede on global warming through political, ideological or economic grounds.

It is easy to project notions of grandeur, splendour – even pain and suffering – into abstract concepts seen through a rose-tinted glass, but which seem not to have a robust, cutting-edge relevance or influence with life as lived - at the end of a deathbed, on a ward round, in a diplomatic bag, or even through a British minister's governmental red box. But notice that even the second bang does not have the loving preservation of life at its centre of operations either: there have been extensive glaciations that have mercilessly wiped out flora and fauna, and the pre-Cambrian massive extinction is another obvious example. And who knew or even cared (other than the scientists reporting it) that over 5,000 gorillas have been exterminated during this recent West African Ebola outbreak? Unfortunately although we might ask the beasts, in response they have had rather little to say about these developments or to advise what could be done about the catastrophe which envelops them – and us.

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Peter J. Richerson & Morten H. Christiansen (eds.): *Cultural Evolution: Society, Technology, Language, and Religion*. Cambridge, MA & London, UK: MIT Press, 2013, pp. 485; ISBN: 978-0-262-01975-0 (Hdbk) £ 31.95

‘Cultural evolution’ has become a hot topic in recent years. This label embraces a set of theories and research programs which try to develop theses linking genetic endowment with socio-cultural environment, or gen of cultural phenomena. We could perceive here two rather different avenues: a first that tries to include cultural inputs to explain evolution, especially of humans, assuming the thesis of ‘niche construction’; and a second that goes in rather a different direction: how the evolutionary dynamics of adaptation and selection could explain many aspects of cultural change. In any case, a consistent line of research is trying to conjoin biological evolution with cultural expressions, displaying distinct methods and fields of application.

The book under review gathers a consistent group of scholars that have applied such principles in greater or lesser measure. It is a kind of ‘proceedings’ from a conference held in Germany in May 2012, bringing together 48 specialists from several fields: from cognitive sciences to biology, anthropology or history. The result is an interdisciplinary exploration of four fundamental fields of application of the idea of ‘cultural evolution’: social structure, science and technology, language, and religion. Our interest is most focused on the section devoted to religion, but it is convenient to take an initial look at the whole project.

The Editors of the book offer in their Introduction a general view of the state of this ‘work in progress’. The four selected sections are justified, as perhaps those most familiar to the gathered scholars, but are not the only topics to be studied under this approach. A tentative definition is offered, showing that societies are characterized by a set of cultural variants that change over time, due to many factors – or forces – biasing the entire process in one direction or another. A brief history of this line of studies is then provided. The Editors do not introduce the many contributions collectively, but offer a useful abstract at the beginning of each chapter. Each section comprises 4-6 chapters in all, and interestingly, the last one gathers a kind of broadly shared view by many authors active in that field, showing the current state of research and the directions for further research.

Issues like social structure, science or technology, and language are clearly objects of ‘cultural evolution’ and to some extent it is possible to show transformations throughout history reflecting adaptive pressures, and resulting in many expressions more or less adapted to their changing environments. The case of religion is similar, and the historical record can inform every student about how much religions have evolved through the centuries and how far changes can be perceived in certain religious forms as compared with others.

The study of religion from the point of view of ‘cultural evolution’ is considered in four chapters; two of them are quite similar and even signed by the same authors: E. Slingerland, J. Henrich and A. Norenzayan, names familiar in the field of ‘cognitive-evolutionary study of religion’ (and one reviewed separately elsewhere in this issue). Both chapters deal with the issue of religion and prosocial behaviour. The first points to “The evolution of prosocial religions”, and the second to a synthesis of the arguments and overview of ongoing research. After years of theory building, and many empirical and experimental studies (a personal survey found about 150), several results can be stated. One of them is that we cannot apply the thesis of the prosocial effects of religion as a universal explanation of its origins and great expansion, but only as limited to some forms of religion though particularly those more universally oriented. Many questions remain unanswered: whether every religious form – even those in small social groups – enhances forms of cooperation of short range; whether secular societies need some kind of ‘transcendent’ reference in order to provide support to strongly held moral values; or why religious affiliation *per se* is not prosocial, though promulgating religious concepts could result in prosocial behaviour. Some answers are offered when the model of ‘cultural evolution’ is applied to religion, showing that many pressures would favour religious forms enlarging the range of moral commitment beyond the boundaries of smaller social units.

A different chapter in the section devoted to religion deals with ‘Proximate causation and development in religious evolution’. H. Whitehouse, a well-known anthropologist in the field of the cognitive study of religion, presents a model inspired by C.H. Waddington’s metaphor of ‘evolutionary landscapes’, which shows peaks and valleys influencing long-term processes. These occur at different levels: epigenetic, cognitive-developmental, and social-historical, conforming a multi-level dynamic of religious evolution. A case of study of a Cargo Cult is proposed to test this framework. In his conclusion the author complains about the ‘silo effect’ that has isolated from one another neurologists, cognitivists and social scientists each involved in the study of religion, and pleads for a model able to interconnect these different aspects.

The last chapter offers a synthesis and is signed by 17 authors, among them many of the most quoted names in the new scientific study of religion. The title is clearly general: “The cultural evolution of religion”. After attempting an operational definition of religion, and stating its complexity and variation, the authors propose nine theses in an attempt to reflect some consensus on what is perceived as an unavoidable dimension in the new scientific study of religion. It is interesting that several of the theses refer to religion as a ‘meaning system’, operating on symbolically coded information that becomes relevant for social action and practical issues, interacting

with other social ‘meaning systems’ and environmental factors, and giving place to many expressions. This line follows the anthropology of Clifford Geertz, and more recent proposals by R. Paloutzian and Armin Geertz. Then the rest of the chapter presents different scenarios in which religion can be seen through an evolutionary lens: ritualized behaviours, over-imitation, synchrony, ritual signalling... Some cases are tested, like ‘super-human policing’, witchcraft, and the ‘cultural evolution of moralizing gods’, with an example from China. The ‘shift from imaginistic to doctrinal mode of religiosity’ and the ‘credibility-enhancing displays’ are also suggested as fitting into this framework of cultural evolution.

The collected studies demonstrate an interesting and healthy start to the new scientific study of religion. It is worth quoting a sentence at the end of the section on religion: “Yet much research suggests that religion is not an aberrant disease or a childish illusion, but rather that it may be one of the cornerstones of the evolution of large-scale complex human societies” (403). Such claims need to be welcomed in such a context as ours, in which science is open to religion, and religion welcomes the inputs of scientific research. This is a good symptom of an attitude that avoids involvement in one-sided disqualifications, or uses of science to dismiss religion, which at the same time entail rebuttals from religionists and theologians of a science, justly perceived with great suspicion.

Some caution however grows in the reviewer’s mind after reading this very enriching collective effort. In my opinion the plural character of the book reveals two different programs: one inchoate, but not pursued; another explicit, and receiving most attention. Perhaps this distinction reflects the one remarked at the beginning of the review, between two different programs lumped under the same label. Indeed if religion is assumed as a ‘meaning-system’, its evolution will have to do much more with how this meaning is required and provided through the history and the changing circumstances, in its constant interaction with other meaning-systems and environmental factors. In that case, its doctrines or contents cannot be left aside, as has mostly happened in the current research. Indeed, as Whitehouse notes regretfully, the main line of investigation continues to follow a very reductive, single-level pattern. For what remains the standard model, the important consideration seems to be how far a set of variables can explain the variations in religions throughout history. There is much less interest in how individual minds and their cultural scaffolding interact to process information that is relevant when the transcendent dimension is sought, and how this interaction draws forward the course of social evolution – a point well recognised in the classic sociology of Max Weber.

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Gillian K. Straine, *Introducing Science and Religion: a Path Through Polemic*, London, Society for Promoting Christian Knowledge, 2014. ISBN 978-0-281-06873 (pbk) £10.99

For those acquainted with the field of science and religion it might seem superfluous to add yet another ‘introduction’ to the already large pile of ‘religion-and-science books for the general public’. Some of the introductions do indeed fail to offer a clear guide into a complex landscape, where both dead ends and long winding roads tend to lure scholars into wasting their time and energy without getting anywhere further on their travel. But even in the face of these failed attempts, we must acknowledge that good introductions are still needed, since, fortunately, there are always newcomers to the field of science and religion.

The book under review offers such an introduction, consisting of seven chapters, and completed with endnotes, a list of suggested reading, and an index. The author, an Anglican priest with a PhD in physics, states in the ‘Introduction’ to her book that it aims to offer a more nuanced picture of the relation between science and religion than the black and white sketches offered in popular media. To do so, she argues (p 1), the reader needs “an introduction to the techniques of both science and religion, and the historical background to the events that shape the present-day debates.” That immediately highlights the structure of the book.

The first two chapters concern science, and religion, respectively. The chapter on science leads the reader, through a brief account of the recent history of science, to two insights on the nature of science. First, Straine argues for a dynamic view of science, which acknowledges its provisional character. Second, she points to the importance of imagination and creativity in scientific research. Both insights suggest (13) that we “leave behind the security of the stereotypical scientist who deals with facts and delivers security”, and see science as a passionate search for understanding. The chapter on religion starts with a discussion of the diversity of definitions for religion, which Straine problematizes (15) “because we need to understand how Christianity comes to knowledge, the information of religion that can be placed alongside the information of science.” Although the limited scope of an introductory work could legitimate the choice to limit the discussion of religion, and of the relation between religion and science, to the epistemological level, one could also argue that, precisely because of the introductory character of the work, some discussion of this choice is relevant to the reader. Granted, Straine goes on to discuss the Bible, reason, tradition, and religious experience, but even her discussion of religious experience concerns exclusively the role of that experience in gaining knowledge about God. One could wonder whether other aspects of religious experience might not deserve equal consideration, thus adding to

the depth and complexity of the relation between science and religion. At least, one could ask why Straine does not argue for her choice explicitly, pointing out to the reader that other elements of religion are not discussed.

In the third chapter, Straine offers an historical overview of the relation between science and religion, aimed at debunking popular myths about this relation. The main proponents in each time-period are presented concisely, exposing as fictions the ideas that religion and science are *a priori* in conflict, with religion standing in the way of scientific progress, or that religion and science are completely separate fields. This is further developed in the fourth chapter, which deals with the conflict model. Straine first discusses four areas of difference between religion and science: epistemology, methodology, the application of science, and the social context of each field. She then examines the historical roots of the conflict paradigm, discussing the influence of John William Draper (1811-82), Andrew Dickson White (1832-1918), and Thomas Henry Huxley (1825-95). While Straine points to Draper and White's flawed historical accounts of the relation between science and religion, she also situates the emergence of the conflict model within broader socio-political developments, of which Huxley's attempts to professionalize and secularize science was but one example. Straine then goes on to discuss new atheism, which she describes as the current inheritors of the nineteenth century 'conflict-myth'. A discussion of creationism and intelligent design (ID) completes the chapter, concluding with the observation that the conflict model has vast appeal, but blends questions about the relation between religion and science with political agendas.

The fifth chapter forms the core of the book. Straine presents different modes of interrelationships between science and religion, relying on Ian Barbour's typology. Here, the reviewer would want to place a second caveat to his general approval of Straine's book. Although Barbour's work has been of pioneering importance, and still is influential in the field, his typology of the relation between religion and science is not the only one available. Newcomers to the field could benefit from even a brief mentioning of alternatives. Straine's dependence on Barbour implies that the models of independence, dialogue, and integration are discussed consecutively. Straine does so in an intelligible manner. She focuses the discussion of each model on its impact for a theology of God. The sixth chapter presents cosmology, evolution, quantum mechanics, and consciousness as testing grounds for the independence, dialogue, and integration models of the relation between science and religion. Straine concludes her book with a strong plea for an abandonment of the conflict model, leaving room for diversity in relating science and religion, a diversity that allows experience and contextuality to inform this relation.

This book offers a clear introduction to the field of science and religion although, as implied above, this review has two criticisms. First, religion is reduced to its cognitive aspects, concerning only the way it offers information about the world and about God. Second, the book does not explicitly mention alternatives to Barbour's typology of possible relationships between religion and science. These are rather minor criticisms on a book that succeeds in introducing a complex field in a concise manner. It would serve well as study material for undergraduates in theology or religious studies. The book thus deserves its place on the large pile of introductory works, even if readers, after closing it, only remember that: "By studying religion and science we enter into the project of working out our world, knowing, implicitly or otherwise, that God is somehow part of the package" (138).

Tom Uytterhoeven
KU Leuven

New books relevant for Science-and-Theology

All the titles in this section are available for review; interested colleagues please contact the Editor to request one or more books.

General issues

Joseph A. Bracken

The World in the Trinity: Open-Ended Systems in Science and Religion
Fortress Press 2014

The author argues that the failure of theology and science to generate cohesion is the lack of an integrated system of interpretation of the Christian faith that consciously accords with the insights and discoveries of contemporary science. He utilizes the language and conceptual structures of systems theory as a philosophical and scientific grammar to show traditional Christian beliefs in a new light that is accessible and rationally plausible to a contemporary, scientifically influenced society. This account opens new possibilities for rethinking the God-world relationship, the Trinity, incarnation, creation, and eschatology.

Andrew Steane

Faithful to Science: The Role of Science in Religion
Oxford University Press 2014

Science and religious faith are two of the most important and influential forces in human life, yet there is widespread confusion about how, or indeed whether, they link together. This book describes this combination from the perspective of one who finds that they link together productively and creatively. The situation is not one of conflict or uneasy tension, or even a respectful dialogue. Rather, a lively and well-founded faith in God embraces and includes science, and scientific ways of thinking, in their proper role. Science is an activity right in the bloodstream of a reasonable faith.

Michael Bergmann, Patrick Kain (Eds.)

Challenges to Moral and Religious Belief: Disagreement and Evolution
Oxford University Press 2014

Three main questions are addressed: Can one reasonably maintain one's moral and religious beliefs in the face of interpersonal disagreement with intellectual peers? Does disagreement about morality between a religious belief source, such as a sacred text, and a non-religious belief source, make it irrational to continue trusting one or both of those belief sources? Should evolutionary accounts of the origins of our moral beliefs and our religious beliefs undermine our confidence in their veracity? This volume places challenges to moral belief side-by-side with challenges to religious belief.

E. Brian Davies***Why Beliefs Matter: Reflections on the Nature of Science****Oxford University Press 2014*

The book argues that ‘absolutist’ ideas of the objectivity of science, dating back to Plato, continue to mislead generations of both theoretical physicists and theologians. It explains that the multi-layered nature of our present descriptions of the world is unavoidable, not because of anything about the world, but because of our own human natures. It tries to rescue mathematics from the singular and exceptional status that it has been assigned, as much by those who understand it as by those who do not. It concludes with a penetrating criticism of many of the recent contributions to the often acrimonious debates about science and religions.

Sam Harris***Waking Up: A Guide to Spirituality Without Religion****Simon & Schuster 2014*

Harris argues that there are important truths to be found in the experiences of contemplatives—and, therefore, that there is more to understanding reality than science and secular culture generally allow. *Waking Up* is part seeker’s memoir and part exploration of the scientific underpinnings of spirituality. No other book marries contemplative wisdom and modern science in this way, and no author other than Sam Harris—a scientist, philosopher, and famous sceptic—could write it.

Davis McLeod***The Reason for all Existence,****O Books 2014*

The Reason for all Existence endeavours to explain why there is existence, rather than nothingness, by dissecting the fundamental principles/concepts of all existence, such as infinity, absolute zero and the ideas of good and evil. Familiar, earthly examples of these concepts are used along with their basic descriptions, so that the reader can better see how these concepts work and relate to the entirety of existence. The Reason for all Existence should give individuals a clear idea of the reason why they exist at all, while aiding them to direct their life in a positive way.

Leon N. Cooper***Science and Human Experience: Values, Culture and the Mind****Cambridge University Press 2014*

Does science have limits? Where does order come from? Can we understand consciousness? Written by Nobel Laureate Leon N. Cooper, this book places pressing scientific questions in the broader context of how they relate to human experience. Tackling a diverse spectrum of topics, from the

conflict of faith and science to whether understanding neural networks could lead to machines that think like humans, this book will captivate anyone interested in the interaction of science with society.

Cosmological issues

Victor J. Stenger

God and the Multiverse: Humanity's Expanding View of the Cosmos
Prometheus Books 2014

Cosmologists have reasons to believe that the vast universe in which we live is just one of an endless number of other universes within a *multiverse*—a mind-boggling array that may extend indefinitely in space and endlessly in both the past and the future. Stenger reviews the key developments in the history of science that led to the current consensus view of astrophysicists, taking pains to explain essential concepts and discoveries in accessible terminology. The author shows that science's emerging understanding of the multiverse—consisting of trillions upon trillions of galaxies—is fully explicable in naturalistic terms with no need for supernatural forces to explain its origin or ongoing existence.

Klaas Kraay (Ed.)

God and the Multiverse: Scientific, Philosophical, and Theological Perspectives
Routledge 2014

In recent decades, scientific theories have postulated the existence of many universes beyond our own. The details and implications of these theories are hotly contested. Some philosophers argue that these scientific models count against the existence of God. Others, however, argue that if God exists, a multiverse is precisely what we should expect to find. Moreover, these philosophers claim that the idea of a divinely created multiverse can help believers in God respond to certain arguments for atheism. These proposals are, of course, also extremely controversial. This volume collects together twelve newly published essays – two by physicists, and ten by philosophers – that discuss various aspects of this issue. Some of the essays support the idea of a divinely created multiverse; others oppose it. Scientific, philosophical, and theological issues are considered.

Hud Hudson

The Fall and Hypertime Hardcover
Oxford University Press 2014

Frequently, alleged irreconcilable conflicts between science and religion are instead misdescribed battles concerning negotiable philosophical assumptions--conflicts between metaphysics and metaphysics. Hud Hudson pro-

vides a two-stage illustration of this claim with respect to the putative inconsistency between the doctrines of The Fall and Original Sin and the deliverances of contemporary science. The tension in question emerges through a study of the many forms the religious doctrines have assumed over the centuries and through a review of some well-established scientific lessons on the origin and history of the universe and of human persons.

Evolution studies

R. Paul Thompson, Denis Walsh (eds.)

Evolutionary Biology: Conceptual, Ethical, and Religious Issues

Cambridge University Press 2014

Evolution is an intrinsic and central component in modern biology. Such a theory has far-reaching implications. In this volume, eleven distinguished scholars address the conceptual, metaphysical and epistemological richness of the theory and its ethical and religious impact, exploring topics including DNA barcoding, three grand challenges of human evolution, functionalism, historicity, design, evolution and development, and religion and secular humanism.

Stephen H. Webb

The Dome of Eden: A New Solution to the Problem of Creation and Evolution

Cascade Books 2014

This book argues that biological descriptions of evolution are inherently moral, just as the biblical story of creation has biological implications. A complete account of evolution will therefore require theological input. The book does not try to harmonize evolution and creation. Harmonizers typically begin with Darwinism and then try to add just enough religion to make evolution more palatable, Webb provides a theory of how evolution and theology fit together, and he argues that this kind of theory is required by the internal demands of both theology and biology. The Dome of Eden also develops a theological account of evolution that is distinct from the intelligent design movement.

Anthropological Issues**Edward O. Wilson*****The Meaning of Human Existence****Liveright 2014*

Wilson grapples with these and other existential questions, examining what makes human beings supremely different from all other species. Wilson takes his readers on a journey, in the process bridging science and philosophy to create a twenty-first-century treatise on human existence—from our earliest inception to a provocative look at what the future of mankind portends. Continuing his groundbreaking examination of our “Anthropocene Epoch,” which he began with *The Social Conquest of Earth*, here Wilson posits that we, as a species, now know enough about the universe and ourselves that we can begin to approach questions about our place in the cosmos and the meaning of intelligent life in a systematic, indeed, in a testable way.

Luciano Floridi***The Fourth Revolution: How the Infosphere is Reshaping Human Reality****Oxford University Press 2014*

Floridi argues that the explosive developments in Information and Communication Technologies (ICTs) is changing the answer to these fundamental human questions. As the boundaries between life online and offline break down, and we become seamlessly connected to each other and surrounded by smart, responsive objects, we are all becoming integrated into an ‘infosphere’. He argues that we must expand our ecological and ethical approach to cover both natural and man-made realities, putting the ‘e’ in an environmentalism that can deal successfully with the new challenges posed by our digital technologies and information society.

Celia Deane-Drummond***The Wisdom of the Liminal: Evolution and Other Animals in Human Becoming****Eerdmans 2014*

This book charts a new direction for theological anthropology in light of what is now known about the evolutionary trajectories of humans and other animals. The author presents a case for human beings becoming fully themselves through their encounter with God, after the pattern of Christ, but also through their relationship with each other and with other animals. She explores various facets of humans and other animals in terms of reason, freedom, language, and community, and engages with a range of scientific disciplines including animal behavior, ethology, and cognitive psychology.

Donald J. Tellinghuisen, Paul Moes

Exploring Psychology and Christian Faith: An Introductory Guide

Baker Academic 2014

Introductory psychology courses can raise significant questions about the nature of being human. Christianity, with its emphasis on humans made in the image of God, has a clear perspective. Psychology offers answers too, but they are often subtly implied. This introductory guide, drawn from more than fifty years of classroom experience, provides students with a coherent framework for considering psychology from a Christian perspective. The authors explore biblical themes of human nature in relation to all major areas of psychology, showing how a Christian understanding of humans can inform the study of psychology. Brief, accessible chapters correspond to standard introductory psychology textbooks, making this an excellent supplemental text. End-of-chapter questions are included.

New scientific study of religion

Wesley J. Wildman

Religious and Spiritual Experiences

Cambridge University Press 2014

Wildman offers a spiritually evocative naturalist interpretation of the diverse variety of religious and spiritual experiences. He describes these experiences, from the common to the exceptional, and offers innovative classifications for them based on their neurological features and internal qualities. His account avoids reductionistic oversimplifications and instead synthesizes perspectives from many disciplines, including philosophy and natural sciences, into a compelling account of the meaning and value of religious and spiritual experiences in human life. The resulting interpretation does not assume a supernatural worldview nor does it reject such experiences as positive affirmation of this-worldly existence.

Historical issues

G. R. Evans

First Light: A History of Creation Myths from Gilgamesh to the God-particle

I.B.Tauris 2013

Ancient cultures resorted to myth and symbolism to tell vibrant stories about human origins. Later civilizations added philosophical and scientific explanations: but these are not definitive. The nature and meaning of existence - the why as much as the how questions - are in the end mysterious. In

this book, G R Evans explores the world's myriad creation stories against the background of the biggest question there is: what are we doing here? the author surveys polytheist, monotheist and dualist ideas about supernatural power. Tracing the history of humanity as it has struggled, over many millennia, to make sense of itself, *The Creation Myth* will attract students of religion, history and philosophy and general readers alike.

Stefaan Blancke, Hans Henrik Hjermitsev, Peter C. Kjærgaard (Eds.)
Creationism in Europe

Johns Hopkins University Press 2014

For decades, the creationist movement was primarily situated in the United States. Then, in the 1970s, American creationists found their ideas welcomed abroad, first in Australia and New Zealand, then in Korea, India, South Africa, Brazil, and elsewhere—including Europe, where creationism plays an expanding role in public debates about science policy and school curricula. In this, the first comprehensive history of creationism in Europe, leading historians, philosophers, and scientists narrate the rise of—and response to—scientific creationism, creation science, intelligent design, and organized antievolutionism in countries and religions throughout Europe.

Practical issues

Ronald M. Green, Nathan J. Palpant (eds.)

Suffering and Bioethics

Oxford University Press 2014

This book seeks to place suffering at the centre of bioethical thinking once again. Among the questions its contributors explore are: What is the meaning of suffering? How does it relate to pain? If there can be pain without suffering, can there be suffering without pain? Does suffering require advanced cognitive abilities? Can animals suffer? Many believe that we have strong obligations to relieve or minimize suffering; what are the limits of these obligations? Does the relief of suffering justify the termination of a patient's life, as proponents of euthanasia maintain? What is the bearing of suffering on the cherished bioethical principle of autonomy?

Announcements

International Congress on Science and/or Religion: a 21st Century Debate

(Vienna, 27-29 August 2015)

The Science and Religion Debate in Current Social Context

The progresses of modern sciences and technology have led to remarkable insights into the nature of universe and human life, challenging or transforming the former traditional worldviews and narrations. Sigmund Freud University and the International Society for Science and Religion share the view that the dialogue between religions and modern sciences remains crucial for the 21st century to analyze and examine these challenges that arise at the interface of science and religion.

The aim of the conference is to bring these various scientific perspectives into dialogue with the study of how religion is understood by the faith traditions of the world. How does science affect how religion is regarded? Does it confirm or invalidate the perspective of faith, or does it lead religious people to revise their understanding of religious practices and experience?

The conference will provide a space to discuss the achievements of sciences and its impact on traditional religious beliefs and worldviews. Different viewpoints, and the perspectives of different mediating disciplines will be brought to bear on these key issues.

In invited lectures and discussions, internationally renowned scholars and researchers will consider the crucial questions of how sciences and or/religions, can contribute to our worldviews and way of life in the 21st century.

Registration includes name badge, congress folder, program booklet and book of abstracts.

The Congress participation certificate includes confirmation of 30 hours-Continuing Professional Development (CPD).

- Abstract/workshop/panel submission deadline: 8th January 2015 (extended)
- Notification of workshop/panel/abstract acceptance date: 1 February 2015
- Poster/ Full text submission deadline: 20 March 2015
- Notification of full text paper acceptance date: 20 April 2015
- Early registration deadline: 1 May 2015

More information: <http://congress-2015.sfu.ac.at/>

The Human Difference? 2015
Ian Ramsey Conference, Oxford, 22-25 July

Details

Conference themes (advance information)

Is a human being little more than an animal, or little less than a god? Do human and non-human animals differ in degree or in kind? Humans often name themselves with Latin binomials—*homo sapiens, economicus, scientificus, socialis, moralis, or liturgicus*—are any or all of these terms compelling? Or are they adequate to capture the complexity of our self-understanding in a post-Darwinian world? By what kind of processes or events did species differences arise? Is it sufficient to say that, courtesy of our distinctive biology, we have come in part to escape our biology? How does the question of species change our understanding of religion—in humans and other animals? Is the term ‘person’ just a label for a human being, or is it, too, troubled by the Darwinian revolution? Is the human capacity for moral choice and a bent towards ‘evil’ distinctive to our species? The 2015 Conference “The Human Difference?” will bring experts together from anthropology, biology, philosophy, psychology, and theology, to present and debate the implications of recent research. Further information, keynotes, CFPs, and registration details to be confirmed shortly

Conference key dates and times

Wednesday 22 July 2015

2:00pm Registration opens

8:00pm Introductory presentation by Prof. Alister McGrath

Saturday 25 July 2015

5:00pm Final event

7:00pm Final dinner

Sunday 26 July 2015

10:00am Departure of those staying overnight

<http://www.ianramseycentre.info/conferences/2015-human-difference-irc-conference-22-25-july.html>

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