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Free Will, Moral Responsibility and the Sciences : A Brief Overview

Visala, Aku Olavi

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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 (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-and-theology between secularization and postmodernism

Years ago, this Bulletin often reported on conferences and workshops organized to deal with issues in our field and to offer updated approaches to the topics of our interest. The task was difficult and few colleagues were ready to engage in such a demanding exercise. As a result that section has been fading away, and finally just our ECSR is being systematically reported.

However, last end July I attended an interesting conference organized by the Ian Ramsey Centre for Science and Religion in Oxford. The general title was: “A Postsecular Age? New Narratives on Religion, Science and Society”. The issue of science and secularization is highly relevant for the dialogue between science and theology. Indeed, if Max Weber’s thesis about the strong secularizing effect of science proves true, this would be bad news for us. The thesis points to some corrosive effect on religious beliefs by science diffusion. Science as an ‘acid’ is an image quite frequently used, most recently perhaps by Daniel Dennett and applied to evolutionary theory.

The question now is whether we enter a different stage in the relationship between science and religion in which the dominant negative outcome gives place to a more complex reality in which scientific development does not necessarily result in religious retreat, but in new integration and even in renewed religious or spiritual outlooks. The abused label ‘postsecular’ somewhat announces this new stage and a change in the old ways in which scientific and economic progress would mean a decline in religious figures.

However, the Oxford Conference revolved around a more postmodern stance and devoted many presentations to the way the ‘religious’ and the ‘secular’ are narrated, or even ‘constructed’. Such a move led me – and others – to think about the use of postmodern approaches to science-and-theology. Several books have been published applying that perspective. Somehow they try to deconstruct the dominant ‘narratives’ or ways to present the current tensions, and to show alternative paths in which science and religious faith can be described in a completely different fashion.

I remain unconvinced about such an approach and its utility for the dialogue between science and theology. This is a personal opinion and it would be worthwhile to start some debate concerning that issue. I am not the only one. Our colleague Jay Feierman offers in this issue a review of a new title by Shaefer that follows a similar path. He reviewed recently another book by Graham Ward, and in that case too he showed his disquiet in the face of views hard to digest for a scientifically formed mentality. An-

other example was the book by Cunningham *Darwin's Pious Idea*, here reviewed by Neil Spurway, and that I have to review for a different Journal. This book caused some stir in us because of the author's exaggerated flexibility at interpreting evolution and its theological reception, again in a postmodern mood.

My point is that we have to pay attention to such developments, but I am not sure whether they really help to improve the level of the ongoing debates and the very demanding task we are involved trying to learn from science to update theological elaboration; or trying to learn from theology as an inspiration for scientific research. There are urgent tasks looking for good proposals, and postmodern thinking appears limited, especially if we choose to follow the rigorous and demanding epistemological conditions that are the hallmark of science, and a healthy corrective to rhetorical abuse or excessive idealism.

The current issue offers an extensive review describing the ongoing discussion on free will. This is a highly relevant issue for us, since the implications derived from assuming or opposing free will are huge for the understanding of human beings and many theological principles. This is, besides, a typical question where science, philosophy and theology are deeply intermingled, and hence becomes a ground for an excellent interdisciplinary exercise. The young Finish scholar Aku Visala is an expert in this field and his contribution helps to better confront that issue.

Lluís Oviedo
Editor

Article Reviews

Free Will, Moral Responsibility and the Sciences: A Brief Overview

Aku Visala, Academy Research Fellow, University of Helsinki

There are many problems related to free will, not just one.¹ We have a number of interrelated questions and issues that have to do with how we see ourselves in relation to the physical world. How do our actions come about? How much influence do we have on our characters? Are my thoughts determined by non-conscious brain events? Can I be responsible for my actions, if the causes of my actions are beyond my control? Given what we know about how physical nature and our brains work, can we offer scientific answers to such questions at all?

What I will offer you next is an overview of recent debates about free will and science. I will begin by framing the debate in a non-standard way by dividing the positions on the table into three different groups. I will then go on to introduce a few accounts of free will and responsibility from each camp.

A Clash of Two Pictures

As I already mentioned, there are many problems and issues that are discussed in the free will literature. I think that the debates can be best understood, if framed in the following way. Questions about free will and moral responsibility have their roots in attempts to reconcile two pictures we quite intuitively have: the first is of physical nature and the second of ourselves.² The first picture is a somewhat simplified interpretation derived from the physical sciences. Nature, as it is revealed to us, seems to consist of physical events, mechanisms and laws that govern their behaviour. Agent-like processes can be explained by invoking mechanisms that are purely physical and make no reference to minds, goals, intentions, decisions or values. On the basic physical level, there are no choices, intentions, decisions or any kind of mental phenomena, but simple, brute causation.

The second picture is a picture of ourselves as acting, wanting, thinking, rational and responsible agents. We have the capacity to adopt goals,

¹ Useful introductions to recent philosophical debates on free will include at least the following: McKenna & Pereboom 2016; Beebe 2012; Fischer, et al 2007. Kane 2011 is the most comprehensive one to date.

² My categorisation is inspired by some remarks made by Michael McKenna and Derk Pereboom (2016, 43-45).

choose between various ways of achieving them and understanding the consequences of our actions. We are able to evaluate our reasons for wanting things and embarking on different courses of action. It also seems to us that we are, at least partly, responsible for the kinds of people we are. We have some basic influence over our emotions and impulses and in time we can shape our characters. Indeed, these reasons are why normally function adults in most circumstances can be held accountable for our actions: we blame and praise each other on the basis of our actions and characters.

Problems with free will arise when we try to fit these two pictures together: nature (including us) as a physical system with underlying deterministic physical causes and ourselves as free and responsible agents. What I will suggest next is that positions in the free will debate can be taken to represent three different strategies that involve relating these two pictures to one another. The first strategy is to *eliminate*, that is to reject, one of them completely. Usually this involves rejecting the everyday view of agency in favour of the scientific view. The second strategy is to *insulate* the two pictures from one another or at least hold onto the tension and reject elimination and attempts to build a bridge between the pictures. Finally, the third strategy, *reconciliation*, aims to build a bridge between these two pictures. This usually leads to attempts to “naturalize” agency and freedom in such a way that they are not fundamentally in conflict with our picture of the deterministic and mechanistic physical world.

My characterization of the free will and science debate is an alternative to the standard way of classifying accounts of free will. I think it is fair to say that the standard classification is based on the *compatibility issue*. That is to say, it begins from the question whether free will is compatible with determinism. The three main positions defined along these lines are libertarianism, compatibilism and free will skepticism. According to the *libertarians*, free will and moral responsibility require determinism to be false, or conversely, that indeterminism is true. In addition, the libertarian maintains that we indeed have free will. Opposed to this, the *compatibilist* argues that there is no conflict between determinism and free will: we can be morally responsible and free even if determinism were true. Finally, there are *free will skeptics* who are critical of both compatibilism and libertarianism and conclude that we have no free will or moral responsibility.

Free Will and Determinism

It is useful to define the two basic terms “free will” and “determinism” a bit more carefully. A standard definition of free will in contemporary debates is that free will is a control condition for moral responsibility. So *free will is an ability or power of persons to have control over their actions in a*

way that allows for the attribution of moral responsibility.³ The link between free will and moral responsibility is crucial here: my actions and I can be appropriate objects of moral judgments and attitudes if and only if I have performed those actions freely and when my character traits are, in the appropriate sense, under my control. Conversely, I cannot be held responsible for actions I have not performed freely or character traits that are not under my control.

The definition above leaves the exact nature of the kind of control one needs for moral responsibility open. There are many accounts of what this control consists of. Philosopher Alfred Mele usefully suggests that we divide the proposals into three groups: free will “light”, free will regular and free will premium.⁴ *Free will lite* is the view that free will only requires that one makes rational and deliberated decisions and is not under external or internal compulsion or the subject of undue forces. Some philosophers, however, maintain that free will lite is not enough for moral responsibility: we need a stronger notion, *free will regular*. What is needed is for the world and our brain to be such that there are alternative possibilities open to us at the point of our decision. In other words, it is not enough to act rationally and free of compulsion but the world must exhibit deep openness so that our decisions can influence it. Finally, *free will premium* is the view that even deep openness is not enough: in order to exert control over our actions, our actions must be uncaused products of non-natural or supernatural reasons or some such. Free will premium, therefore, entails that we are somehow above and beyond the physical. As we will soon see, how we think about free will and science depends heavily on the kind of free will we want to defend.

Another central term in the debate is *determinism*. In its simplest form, determinism is the thesis that at any single point in time, only one future is physically possible. Conversely, indeterminism is the denial of this thesis. There are big questions, however, that loom behind seemingly innocent terms like “possible” and “physically”. The basic idea can be fleshed out in different ways. One is to invoke something like physical causation and laws of nature: for every event, there is a physical cause that, in conjunction with the laws of nature, makes its effect necessary. So, given the laws of nature and the past physical events, there is only one way that the future can go. However, some philosophers worry about the notion of causation at work here, since many agree that there can be probabilistic causation. To solve this issue, another way of defining determinism has emerged. Here determinism is understood logically rather than causally. Determinism, in this view, is the thesis that the set of all true propositions about the past and

³ McKenna & Pereboom 2016, 8.

⁴ See, e.g., Mele 2014a, 1-2.

laws of nature at some point in time entails the truth of all sentences about events after that time.⁵

Universal determinism outlined above is far from uncontroversial, at least scientifically. Quantum indeterminacy, complexity and chaotic systems theory suggest that there might be indeterminacy at the basic physical level. Although this might seem as good news for those who defend the thesis that free will is incompatible with determinism, things are not that simple. Even if indeterminism would be true on the basic physical level, we have good evidence that determinism, or “near-determinism” is true at the level of brains, social environments and other human affairs. The progress of biology, social sciences, neurosciences and psychology has produced massive amount of information about the genetic, cognitive, social and neurological causes of human behaviour. The kinds of causes of human action these approaches have been finding are still outside the control of individual persons. So the main issue, I would contend, is not really whether determinism or indeterminism is supported by contemporary physics, but rather the suggestion of contemporary neurosciences and biology that there are many different kinds of non-voluntary causes that influence our decisions and actions.

Strategy I: Elimination

One strategy to resolve free will problems is to eliminate our everyday picture of agency, responsibility and free will. The main reason for elimination is the ever-increasing scientific knowledge about the determinants of human behaviour. The most important ones are neuroscientific results that suggest that conscious decisions to act are never the causes of our actions.

Eliminativist approaches are usually more popular among scientists than philosophers. Of the three eliminativists that I will briefly mention here, the first is a psychologist and the second a cognitive neuroscientist. The psychologist is Daniel Wegner, whose *The Illusion of Free Will* (2002) is probably the most comprehensive defence of eliminativism to date. Compared to Wegner’s book, Michael Gazzaniga’s *Who’s in Charge? Free Will and the Science of the Brain* (2011) is a lighter read. Gazzaniga, a cognitive neuroscientist, argues that we cannot have free will with the brains we actually have.

Both Wegner and Gazzaniga give a lot of evidential weight to a series of studies by Benjamin Libet and others. From the 70s onwards, Libet and others following him have conducted various experiments about the relationship of conscious decision-making and brain events. Without going into the details, Libet-style experiments involve the measuring of brain activity

⁵ On defining determinism, see, e.g., McKenna & Pereboom 2016, 16-24.

in some way (e.g., EEG, fMRI) and its timing in relation to the conscious decision to act. The act measured in the experiments is usually something like basic motor movement, like flexing of one's hand, such as in the original Libet experiment.⁶

The standard interpretation of these results suggests that before the conscious decision to act, the brain has already prepared in some way for the decision. What Libet, as Gazzaniga and Wegner, conclude from this is that it is the neural activation that is causing both the action and the conscious decision to act. In other words, neural causes precede the action and make it inevitable; conscious decision to act is just an illusion or epiphenomenal and does not play an active role in the causal chain.⁷ For Gazzaniga, for example, when we consciously account for our actions, we are providing *post hoc* rationalizations, that is, we invent rational reasons for actions that were caused by non-conscious, non-voluntary processes.

Gazzaniga and Wegner both emphasize that in order for us to have free will, that is, control over our actions, we must make conscious decisions that somehow cut the flow of physical causation in the brain. This is crucial: in order for us to have free will, we need something like non-determined, conscious intentions or causes intervening in normal brain processes. Since the experiments reveal nothing like this and conscious decisions to act look epiphenomenal, Gazzaniga, Wegner and others conclude that we have no free will.

In addition to Libet-style studies, Wegner invokes a number of experiments about illusions of agency. I do not have the space here to discuss these experiments in any detail.⁸ Suffice it to say that they reveal a few uncomfortable facts about our sense of our own agency. One is that, at least under experimental settings, an illusion can be created that we are acting, moving our hands, for instance, when actually we are not. Another set of experiments that Wegner refers to has to do with social psychology. Many social psychology experiments, like the Milgram experiments and the Stanford Prison experiment, suggests that our immediate environment, not our own decisions, determines our actions.⁹

⁶ For classical Libet experiments, see Libet 1985, 2004. More recent Libet-style experiments include Soon, et al 2008; Fried et al. 2011.

⁷ Libet-style experiments have sparked an extensive debate about the role of consciousness in decision-making and action. See, e.g., Pocket, Banks, Gallagher 2006.

⁸ Wegner describes many such experiments in detail. See Wegner 2002.

⁹ For Milgram's experiments, see Milgram 1974. For Paul Zimbardo's account of the Stanford Prison experiment, see Zimbardo.

After reviewing experimental results, Gazzaniga and Wegner make a crucial assumption: that all our actions are caused in the same way. It follows from this that if there are cases where we are wrong about the causes of our actions and decisions or are unable to comprehend their origin in the brain (as Gazzaniga suggests), all our actions could be like this. In other words, both Gazzaniga and Wegner suggest that their results apply to all human actions, not just the relatively simple actions the studies are about (moving of hands, etc.). None of our actions are products of conscious reasons, but are instead caused by factors outside our control and conscious awareness (brain processes, social environment).

Finally, let me introduce one philosopher, who is an eliminativist: Derk Pereboom. To begin, Pereboom sides with the libertarians: if determinism were true, we could not be free or morally responsible. After arguing for this conclusion (via a series of arguments from certain kinds of manipulation cases I will not address here), he goes on to criticize the alternatives to free will skepticism. Pereboom maintains that libertarian accounts have no reasonable answer to the problem of luck: if indeterminism were true, rational action would be equally problematic, because genuine indeterminism means randomness and randomly caused actions cannot be considered rational. So Pereboom concludes that we should reject free will and moral responsibility.

According to Pereboom, the main problem for eliminativists is not strictly speaking philosophical or scientific, but practical and ethical.¹⁰ How to live without free will and moral responsibility? Gazzaniga thinks living without free will is not a problem, because we can still be morally responsible. Many philosophers, however, consider the link between moral responsibility and free will rather solid: if free will goes, moral responsibility goes as well. This is exactly how Pereboom sees it and in his *Living without Free Will* (2001) and *Free Will, Agency and Meaning of Life* (2014) suggests ways in which many of our everyday practices of moral praising and blaming, punishment and reward could survive without basic moral responsibility. Not only are such practices undermined by free will skepticism but the challenge goes much deeper: what are we to make about love, personhood, meaning of life and friendship without moral responsibility and freedom? Pereboom addresses all these issues and his basic strategy is to try to show most of our valuable practices and life-goals do not require basic moral responsibility but can be maintained for some other valuable reason. For instance, punishment can be justified by referring to its beneficial effects. Similarly, our practices of blaming and praising can continue because

¹⁰ Other free will skeptics include Galen Strawson (1986), Ted Honderich (1988) and Saul Smilansky (2000).

they serve the goal of shaping individuals towards morally desirable directions.¹¹

Strategy II: Insulation

The insulation strategy has its roots in a famous paper “Freedom and Resentment” (1962) by philosopher Peter Strawson and his subsequent development of what is sometimes called the *multiple viewpoints argument*. After describing the free will debate like I did above – that is, a clash of the scientific picture of the physical world and our everyday picture of free agency – Strawson suggests that these pictures represent something like two viewpoints upon the same subject matter. They give us access to different aspects of reality. So, on the one hand, we are indeed describable and explainable scientifically. But, on the other hand, the everyday picture opens us up to different kinds of facts about ourselves. Truths from each perspective, according to Strawson, cannot be used to justify or discredit the truths of the other perspective. Thus, we can hold onto both pictures at the same time: as parts of physical nature, we are like all other physical beings; as parts of a human world of reason, mind and morality, we can be viewed as free and responsible.

Another version of the insulation strategy closely resembling Strawson’s is developed by philosopher Roger Scruton and neurologist Raymond Tallis.¹² Both Scruton and Tallis emphasize that human beings can be viewed from two points of view: as human organisms whose operations can be explained along the lines of the physical picture, and as persons. When we view humans as persons, we bring in concepts that do not really map onto the explanations of the physical and behavioural sciences. We use teleological and intentional notions like reason, consciousness, responsibility, duty, purpose and meaning that are personal and moral, not scientific.

Free will, on this view, is the human capacity to “own” one’s actions and take one’s actions as representing what one is. Free actions are, thus, actions that can be made sense of in terms of a person’s reasons to act. Furthermore, because reasons and purposes are not causal notions, they cannot be made sense of in scientific, physicalist terms. Thus, all attempts to see human free actions in purely causal, neuroscientific terms will fail: they remove the whole context of meaningful action and the agent’s reasons for acting thus losing the possibility to judge whether an action was free or not. Given this, it is no surprise that Gazzaniga and others cannot see a mean-

¹¹ A short summary of Pereboom’s account of living without free will can be found in McKenna & Pereboom 2016, 276-284

¹² Scruton presents his view in many different places. See, for instance, Scruton 2012. Tallis’ views can be found in Tallis 2011.

ingful difference between conscious free actions and non-conscious actions at the level of the brain.

The work of philosopher Alfred Mele can be taken to represent the insulationist strategy. Mele's aim is to demonstrate that scientific results do not warrant the eliminativist conclusion. Mele's work, developed in the context of action theory, philosophy of mind and the free will debate, is the gold standard for all the work so far on free will and science. His main books include *Autonomous Agents* (1995), *Effective Intentions: The Power of Conscious Will* (2009) and *Free Will and Luck* (2006).¹³ Mele does believe that we have free will but is willing to settle, if needed, for free will light. As to the issue of libertarianism versus compatibilism, he remains an agnostic.

Mele's response to Libet-style experiments is that the activation of the brain's readiness potential before the conscious awareness of the decision could be explained in many different ways than assuming that the readiness potential in fact represents the brain already having made the decision. The activation of the potential could be seen as, for instance, the brain's way of preparing to make a decision. Nothing in Libet-style experiments rules this possibility out.

Mele also points out that Gazzaniga and others offer no reasons for the thesis that we can generalize over all actions on the basis of experimental results. Morally relevant actions in our everyday life seem to be quite different than random decisions to flex one's wrist in experimental settings. They often involve conscious deliberation, being attentive to reasons for different courses of actions and a number of complex social emotions. To emphasize this point, Mele draws attention to the actual instructions given to the participants of Libet-style studies. The tasks are, for the most part, random hand movements or pickings. It is questionable whether such random pickings even qualify as intentional actions compared to rich and complex moral actions of everyday life. So it seems that generalizing from results of this kind is unwarranted.

One of Mele's central points against the eliminativists is that they set the bar for free will extremely high. Recall how both Wegner and Gazzaniga assumed that in order to have free will, one must have some kind of non-physical influence on one's brain states. This account of free will is what I earlier dubbed as free will premium. So if the only option of the defender of free will is to be a mind/body dualist, no surprise that Wegner and Gazzaniga see very little prospects for free will! What Mele points out is that we have no reason to accept such a high standard. Why not settle for

¹³ He popularizes his view in some of his later works, like Mele 2014a, 2014b.

free will regular or even free will light? Gazzaniga and Wegner give no argument why they adopt free will premium and offer no argument against free will regular or light. This is curious, Mele contends, because both light and regular free will might be quite compatible with what, for instance, Gazzaniga says about brain functioning.

Finally, a very robust, way of following the insulationist line is to maintain that the physical picture of nature is incomplete or at least not fundamental. Most often mind/body dualists maintain that for us to have control over our actions requires that our actions are partly uncaused physically and have their source in something beyond the physical, namely, the soul or the self. One such dualist and libertarian is philosopher Richard Swinburne. In his book, *Mind, Brain & Free Will* (2013) he argues that because it is highly unlikely that the sciences will ever develop laws and explanations that can deterministically explain human behaviour, it is likely that there is something else at work in human action than simple physical causation. Swinburne thinks that this something else is the agent herself: we are non-physical souls that can exert control over our actions in ways that are scientifically unpredictable. We do this controlling when we decide to perform an action in a situation where our desires and goals are, roughly speaking, of equal weight.

So on Swinburne's view, our free will consists of having a non-natural power to weight-in on difficult decisions. For the most part, our decisions flow from our emotions, reasons and desires. Sometimes, however, we encounter situations where we are uncertain, difficult moral problems that require conscious deliberation, for instance. In such situations, we might have good reasons for a number of different, but equally possible courses of action. This is where the soul comes to play: it decides which course of action to follow and that in turn influences the kinds of desires and beliefs the agent has in the future. Without this kind of influence, Swinburne maintains, we could not be held morally responsible.

Strategy III: Reconciliation

By reconciliation, I refer to attempts to reduce our picture of ourselves as agents to the standard picture of the physical world or vice versa. Under this description, the reconciler is in the business of building a bridge between the two pictures in such a way that as little as possible is modified or reworked in each.

In the free will debate, there is a very large group of theories and approaches that are standardly labeled as *compatibilist*. Compatibilism comes in many forms but they are all in agreement that the standard, deterministic picture of the physical world is compatible with humans having free will most of the time. So the compatibilist will argue that even if determinism

were true, we could be in control of our actions. The compatibilists often go for something like free will light: having free will does not require deep openness, a power to act otherwise or having ultimate control over the causes of one's actions. It is enough that our actions follow somewhat unified psychological structures (beliefs, desires and goals) and that we exhibit responsiveness to reasons. In the last decade, compatibilist theories have multiplied very quickly and we currently have at least a dozen or so contenders.¹⁴

One main group of compatibilism is called *reasons-responsive theories*, which have been developed, for instance, by John Martin Fischer and Mark Ravizza in their joint book *Responsibility and Control: An Essay on Moral Responsibility* (1998).¹⁵ The main idea behind reasons-responsive theories is that an action is free when the agent is performing the action in a rational way. This means, among other things, that the agent takes into account her goals, reasonable ways of getting to those goals and is able to reflect reasons for and against the appropriateness of her actions. People acting on compulsive desires, like addicts or severely mentally ill, would not qualify as having free will in this sense. Similarly, actions springing from phobias or psychoses would not be free. However, most of our everyday actions, like my taking a bus to work this morning, would qualify as free, because if I had been presented with some reasons why the bus was a bad idea this morning, I would have taken another bus, or a taxi. This is a very simplified example, but the basic idea is there: my action of taking the bus can be said to be free because it exhibits a basic responsiveness to reasons. Notice, again, that this way of understanding free action does not require that the person would have access to genuine, deep alternatives, so it is compatible with determinism.

Philosopher Daniel Dennett has put forward an influential compatibilist theory that, to some extent, resembles reasons-responsive theories. Dennett's account has been developed over a long period of time (from the early 80s onwards) and he has been deeply involved with the philosophical debate. It attempts to be interdisciplinary and take into account scientific results: not just Libet-style neuroscientific results (with which Dennett is not impressed), but locating free will in a network of psychological, evolutionary and biological accounts of agency, human mind and consciousness. Dennett develops his views in a number of books including his recently re-

¹⁴ McKenna & Pereboom (2016) introduces 10 compatibilist theories. Currently influential accounts include Carolina Sartorio's (2016), Gary Watson's (2004), Dana Nelkin's (2011) and Kadri Vihvelin's (2011) theories.

¹⁵ Fischer has defended and developed the view in his later works. See, e.g., Fischer 2012.

printed and revised classic *Elbow Room: The Varieties of Free Will Worth Wanting* (2015, orig. 1984).

Dennett begins by suggesting that everyday belief-desire explanations of action are invaluable. We routinely explain actions by invoking goals and beliefs. Dennett sees this as taking a certain kind of attitude towards persons and other complex entities: *the intentional stance*. There are also other kinds of stances that we could adopt, the design stance (that we apply to tools and machines) and the physical stance (that we take towards basic physical entities). Like Strawson, Dennett then argues that the truth of determinism would have no impact on how we apply the intentional stance. In other words, even if we concluded that, under the physical stance, people can be seen as physical entities, whose basic components operate in purely deterministic ways, we would still continue applying the intentional stance to people. The intentional stance is the best way to account for normal human behaviour regardless of whether determinism is true or not. Dennett thinks that it is this practical applicability of the intentional stance that justifies our attitudes of moral praise, blame, punishment and reward, not the other way around. In other words, we should not begin from some general account of persons as having souls or deep agency. We should, instead, take entities as people regardless of their deep metaphysical status, if the intentional stance really explains and predicts their actions. Therefore, attempts to develop forms of agent causation or mind/body dualism to rescue free will are clearly off the mark, in Dennett's mind.

For Dennett, freedom consists of having an ability to control one's conduct on the basis of rational considerations. This means that a person is capable of exercising free will if she has the capacities of critical self-evaluation, self-monitoring and self-control. In his *Freedom Evolves* (2003), Dennett goes on to argue how such capacities could evolve from simpler capacities that many non-human animals have. The difference between highly developed capacities of humans and the more basic capacities of simple animals, such as insects, is that humans are able to adjust their goal-directed behaviour flexibly in different environments. For most simple animals, behaviour is mechanistically caused by the triggering stimuli. This is the case even in situations where the hard-wired behaviour might be wholly inappropriate and lead to death. Humans, however, can adjust, evaluate and improve their behaviour taking into account multiple sources of information: culture, environment, other people, goals, and so on. Beings of this kind would, clearly, have an enormous adaptive advantage over simpler beings, such as insects.

Another ambitious account following the reconciliation strategy is that of philosopher Nancey Murphy and neurobiologist Warren Brown. In their book *Did My Neurons Make Me Do It? Philosophical and Neurobiological*

Perspectives on Moral Responsibility and Free Will (2007), they argue against neurobiological determinism and reductionism and maintain that human have free will in the sense of free will light: human agents have the capacity to influence and redesign their own character and actions to such an extent as to be morally responsible. They borrow their criterion for freedom and responsibility from Alasdair McIntyre (2001) who maintains that free will is based on the capacity to evaluate one's reasons for acting in the light of the concept of the good. Not unlike Dennett, Murphy and Brown then go on to explore the kinds of basic cognitive capacities a being needs to be able to act freely in this sense. They maintain that one would need at least a sense of self, the ability to create and evaluate counterfactual scenarios, predict the future and a capacity for symbolic language.

The notion of *emergence* does most of the heavy lifting in the Murphy-Brown account. When systems become complex enough, they develop features that cannot be analyzed simply by reference to the functions of their constituent parts. That is to say, complex systems develop emergent functions. These functions can, through feedback loops, have effects on the basic constituent parts of the organism. This *downward causation*, according to Brown and Murphy, is a common feature of complex biological organisms. The human brain is exactly this kind of complex system, whose operations cannot be explained by invoking the basic physical level alone. This is how free will can emerge.

Brown and Murphy end up adopting a view of free will that is close to Dennett's view. A more ambitious way to use emergentism is by philosopher Timothy O'Connor.¹⁶ O'Connor is a libertarian who thinks, unlike Dennett, Murphy, Brown and others, that free will is not compatible with determinism. He goes for something like free will regular, or even free will premium. On the Murphy-Brown account, we have emergent biological functions that make free will possible. According to O'Connor, we can make the scientific case for the emergence not just of functions but of agents. On this view, free will cannot be reduced to any kind of physicalistically conceived basic function of the agent. Instead, free actions are actions that are directly caused by the agent by a special, emergent power of the agent that has no antecedent causal determinants. Hence, O'Connor's view and other like it are usually called *agent causal theories* in the free will literature.¹⁷

¹⁶ See O'Connor 2002.

¹⁷ Other contemporary agent causal theorists include Helen Steward (2014) and Randolph Clarke (2003). In addition to agent causal theories, there are other types of libertarianism, including the influential event-causal theory of Robert Kane (1996).

Here the agent causalist comes very close to adopting something like free will premium, where free will is thought to require a special kind of non-natural influence. Indeed, some of the theories I discussed under the label insulationist strategies, like that of Swinburne, are agent causal theories as well. What makes O'Connor's theory different is that O'Connor does not want to add non-physical or non-natural souls into his account. Instead, he maintains that agent causal powers can be accounted for scientifically, by invoking the notion of strong emergence. This would involve modifying our picture of the physical world, but not denying its primacy, like Swinburne and others do. For O'Connor, we are real entities with emergent causal powers that our basic physical parts lack. We are nevertheless composed of nothing more than basic physical entities and forces.

Finally, I want to briefly mention one reconciliation strategy that closely resembles non-reductive physicalism, but is based directly on neuroscientific findings. This strategy consists in looking at basic brain functions and locating free will inside the brain. Peter Tse argues in his book *The Neural Basis of Free Will: Criterial Causation* (2013) that there is a special way in which neurons regulate the flow of information. This, according to Tse, makes genuine downward mental causation possible and leaves space for qualia and other conscious mental phenomena to be realized in the brain. Unlike Murphy and Brown, Tse thinks that the basic processes of the neurons are genuinely indeterministic and allow for not just free will light, for which Dennett and others settle, but for at least free will regular or even free will premium.

Bibliography

- Beebe, H. 2013. *Free Will: An Introduction*. London: Palgrave Macmillan.
- Clarke, R. 2003. *Libertarian Accounts of Free Will*. New York: Oxford University Press.
- Dennett, D. 2015. *Elbow Room: The Varieties of Free Will Worth Wanting*. New Edition. Cambridge: The MIT Press.
- Dennett, D. 2003. *Freedom Evolves*. London: Penguin Books.
- Fischer, J. M. 2012. *Deep Control: Essays on Free Will and Value*. New York: Oxford University Press.
- Fischer, J. M., Kane, R., Pereboom, D. & Vargas, M. 2007. *Four Views on Free Will*. Oxford: Blackwell.
- Fischer, J. M. & Ravizza, M. 1998. *Responsibility and Control: An Essay on Moral Responsibility*. Cambridge: Cambridge University Press.

- Fried, I., Mukamel, R. & Kreiman, G. 2011. "Internally Generated Preactivation of Single Neurons in Human Medial Frontal Cortex Predicts Volition", *Neuron* 69: 548-562.
- Gazzaniga, M. 2011. *Who's in Charge? Free Will and the Science of the Brain*. New York: Harper Collins.
- Honderich, T. 1988. *A Theory of Determinism*. Oxford: Clarendon Press.
- Kane, R. (ed.) 2011. *The Oxford Handbook of Free Will*. Oxford: Oxford University Press.
- Libet, B. 2004. *Mind Time*. Cambridge, MA: Harvard University Press.
- Libet, B. 1985. "Unconscious Cerebral Initiative and the Role of Conscious Will in Voluntary Action", *Behavioural and Brain Sciences* 8: 529-566.
- Kane, R. 1996. *The Significance of Free Will*. Oxford: Oxford University Press.
- MacIntyre, A. 2001. *Dependent, Rational Animals: Why Human Beings Need the Virtues*. Chicago: Open Court.
- McKenna, M. & Pereboom, D. 2016. *Free Will: A Contemporary Introduction*. New York: Routledge.
- Mele, A. 2014a. *Free: Why Science Hasn't Disproved Free Will*. Oxford: Oxford University Press.
- Mele, A. 2014b. *A Dialogue on Free Will and Science*. New York: Oxford University Press.
- Mele, A. 2009. *Effective Intentions: The Power of Conscious Will*. New York: Oxford University Press.
- Mele, A. 2006. *Free Will and Luck*. New York: Oxford University Press.
- Mele, A. 1995. *Autonomous Agents*. New York: Oxford University Press.
- Milgram, S. 1974. *Obedience to Authority*. New York: Harper & Row.
- Murphy, N. & Brown, W. 2007. *Did My Neurons Make Me Do It? Philosophical and Neurobiological Perspectives on Moral Responsibility and Free Will*. Oxford: Oxford University Press.
- Nelkin, D. 2011. *Making Sense of Freedom and Responsibility*. Oxford: Oxford University Press.
- O'Connor, T. 2002. *Persons and Causes: The Metaphysics of Free Will*. Oxford: Oxford University Press.
- Pereboom, D. 2014. *Free Will, Agency and Meaning of Life*. New York: Oxford University Press.
- Pereboom, D. 2001. *Living Without Free Will*. Cambridge: Cambridge University Press.
- Pockett, S., Banks, W. & Gallagher S. (ed). 2006. *Does Consciousness Cause Behaviour?* Cambridge: The MIT Press.

- Sartorio, C. 2016. *Causation and Free Will*. Oxford: Oxford University Press.
- Scruton, R. 2012, "Neurononsense and the Soul", in J. Wentzel van Huyssteen & Erik Wiebe (eds.) *In Search of Self: Interdisciplinary Perspectives on Personhood*. Grand Rapids: Eerdmans: 338-356.
- Smilansky, S. 2000. *Free Will and Illusion*. Oxford: Oxford University Press.
- Soon, C. S., Brass, M., Heinze H. J. & Haynes, J. D. 2008. "Unconscious Determinants of Free Decisions in the Human Brain", *Nature Neuroscience* 11: 543-545.
- Steward, H. 2014. *A Metaphysics for Freedom*. Oxford: Oxford University Press.
- Strawson, G. 1986. *Freedom and Belief*. Oxford: Clarendon Press.
- Strawson, P. 1962. "Freedom and Resentment", *Proceedings of the British Academy* 48: 187-211.
- Swinburne, R. 2013. *Mind, Brain and Free Will*. Oxford: Oxford University Press.
- Tallis, R. 2011. *Aping Mankind: Neuromania, Darwinistis and the Misrepresentation of Humanity*. Durham: Acumen.
- Tse, P. U. 2013. *The Neural Basis of Free Will: Criterial Causation*. Cambridge, MA: The MIT Press.
- Vihvelin, K. 2013. *Causes, Laws and Free Will: Why Determinism Doesn't Matter*. New York: Oxford University Press.
- Watson, G. 2004. *Agency and Answerability*. New York: Oxford University Press.
- Wegner, D. 2002. *The Illusion of Conscious Will*. Cambridge: The MIT Press.
- Zimbardo, P. "Stanford Prison Experiment", <http://www.prisonexp.org>.

Incarnation between theology and science

Niels Henrik Gregersen (ed.), *Incarnation. On the Scope and Depth of Christology*, Minneapolis: Fortress Press, 2015, pp. 397, ISBN: 9781451465402; \$ 44,00.

By Sybille C. Fritsch-Oppermann

Since Niels Henrik Gregersen introduced the idea of “Deep Christology”, i.e. “Deep Incarnation”, to those active in the study of and exchange between science and theology, it has been taken up in many ways and quite a bit has been written about it. Also critique and reservations have been formulated (as for example by John Polkinghorne in the afterword to the present volume).

The volume grew out of a symposium sponsored by the John Templeton Foundation and organized together with the Faculty of Theology at Copenhagen University. It was held in Elsinore (Hamlet’s city) on August 26-29, 2011.

In the introduction Gregersen points to the ‘*logos ensarkos*’, the Logos incarnate in the whole creation as cosmic Christ. All those working with the idea of ‘Deep Incarnation’ hold in common that the dichotomy between particular and universal is not very helpful. Even if in Jesus in particular and in a unique way the particular and the universal are consistently intertwined, this does not exclude his relatedness to, relevance for and effect on other creatures. The question to be asked then is: how is he present for them? Active, as structuring or informational principle of cosmic evolution? Or passive, suffering with and standing in for (all) that is in it? (p. 8)

The articles following this introduction, as Gregersen points out, are often cross-referenced. But to assist the reader’s orientation he concludes the introduction by presenting a very helpful typology for the different views of incarnation offered in Elsinore.

PART I – Creation and Incarnation: New Testament and Early Church Perspectives

Richard Bauckham reflects on the Incarnation and the Cosmic Christ, i.e. how the incarnate One is related to all things, and suggests that we think of the world in terms not only of the evolutionary process and emergence but also in terms of diversity and ecological inter-relatedness. Following this, being in Christ can be ‘unpacked’ in relational terms (no longer as a kind of inclusion in his human nature), which also seems to be more scientifically satisfactory.

As the particular human Jesus is the ecological center of all creation, enabling all things in their inter-connectedness to find their unity and wholeness in relationship to God, which will be perfected as eschatological destiny to be realized in new creation., “The risen Christ, the firstborn of the new creation, is thus also the goal of creation.” (p. 57).

Gerald O’Collins, SJ, (“Word, Spirit, and Wisdom in the Universe: a Biblical and Theological reflection”), suggests that we draw attention to the biblical material that concerns not only the Logos but also Sophia. Both are intelligible, ‘revelatory’ principles; their presence embedded in the informational ‘mathematical’ structures of the universe expressing its intrinsic intelligibility. But it also transforms things. In particular the unique beauty of Sophia is not only revelatory but also changes the world. Yet Sophia promises an even richer scriptural background.

John Behr introduces to the debate Athanasius’s classic treatment of the topic of incarnation as a reciprocal and transforming dynamic, effected through the paradoxical reversal of the cross. Emphatically it is not a one-way event located in the past but a transformation of all that to which the Word comes.

Torstein Theodor Tollefsen argues that, for Saint Maximus the Confessor, trying to combine Christian faith and Neo-Platonist Philosophy, i.e. bringing together creation and incarnation, the world had a beginning, but the plan of the creator did not. God’s Wisdom somehow contains the beings he makes and this knowledge or Wisdom is conceived in the Logos, the 2nd hypostasis. It is many *logoi* however, keeping them together as source of creation, the basic ‘truth’ or reality of all beings. The divine will enter into this pattern since these *logoi* are predeterminations and acts of divine will.

For Maximus, even though he was not a strict nominalist, universals disappear when particulars do. But for him there is a more powerful bond uniting beings: the actualization of a movement of love. Their integrity is thus guaranteed; a certain providential and soteriological dynamics of movement is made possible.

Self-enhancement is sinful - but particularity and diversity is willed and as such shall not disappear in the consummation of the ages. Then salvation and its concept is not limited to human beings.

PART II – Deep Incarnation: Perspectives from Contemporary Systematic Theology.

In a first chapter *Jürgen Moltmann* interprets the “God is all in all” of Cor.15:28 as the eschatological future of the world: “It is only in the eschatological end that God will be in all that is.”(p. 119) However, he urges us to develop anthropology in the light of cosmology. The Hebrew *basar* and

kol basar ('flesh' and 'all flesh') could then be taken even as "all beings". "Like the Old Testament *Shechinah*, the divine Spirit indwells all the living so as to fill everything with primal livingness. It is the Spirit of God that makes hoping human beings yearn for the redemption of the body from the fate of death, and the oppressed nonhuman creation sigh for redemption from transience." (p. 129)

In the end however the Spirit poured out is not God incarnate and it is humanity which moves towards the reign of God in a certain soteriological dialectic. Here Moltmann refers to a soteriological patristic axiom: "God became human so that we human beings might become God" (Athanasius, Inc. 52). As far as I understand this contribution Moltmann is not saying anything about non living beings.

A contribution of *Elizabeth A. Johnson* ("Jesus and the Cosmos: Soundings in Deep Christology") on ecological ethics follows.

And *Denis Edwards* ("Incarnation and the Natural World: Explorations in the Tradition of Athanasius") again addresses deification in the patristic tradition. His conclusion is, that, if God is engaged with every aspect of ongoing creation, it cannot be of a general kind but has to be seen as special divine action that engages with the particular in a kenotic way. Divine action then involves the historical, the unpredictable and the specific – all living (!) creatures and, in a unique interpersonal way, human beings. Again the *providentia Dei* is not seen for any non-living being.

Celine Deane-Drummond ("The Wisdom of Fools? A Theo-Dramatic Interpretation of Deep Incarnation") suggests that we construct a dialectical balance between Deep Incarnation, as predicated on Christology, and the idea of Divine Immanence, as on the belief in God as Creator. This would mean to take the Hebrew stress on history as seriously as the Hellenistic cosmological elements of Christian faith. Moreover Wisdom, Sophia, suggests that we think through how to unite the particular with the universal – although there is a real temptation to move away from concrete uses of Wisdom to more speculative metaphysical interpretation (Deane-Drummond gives Bulgakov as an example). Instead of explaining Deep Incarnation as ontological extension of the enfleshment into all of creation, she suggests the method of theo-dramatic interpretation, i.e. to take a boundary position between historical and ontological accounts of Christology (partly following Hans Urs von Balthasar here).

Christopher Southgate ("Depth, Sign and Destiny: Thoughts on Incarnation") introduces the church as a prolongation of the incarnation and from here develops an ethics for a time of serious ecological crisis. He sees Christ incarnate both as a sign of the being of God and as a sacrament of the salvation and ultimate destiny of creation – and the church as eschatological

community, the community of redeemed believers as the body of Christ incarnate and risen. “We [Robinson and Southgate] have suggested that Jesus’ life, taken as a whole, was – in terms of C. S. Peirce’s taxonomy of signs – an “iconic qualisign” of the being of God, a sign resembling the object through its sheer quality rather than being related by some convention” (p. 211). Considering a wider Ecological Ethics, Southgate asks “What about those of other faiths?”, and argues that the deepening of Christian theology of the nonhuman world by means of a characteristically Christian trope of incarnation just draws us away from other religions. But, whoever manifests self-giving love even from no faith position has been touched by the life of God. This brings him to a definition of church as any community freed from narrow self interest.

Niels Henrik Gregersen (“The Extended Body of Christ: Three Dimensions of Deep Incarnation”) also refers to Athanasius (*De Incarnatione* 16): The Word (*Logos*) spread himself everywhere – *Logos* here in the sense of Wisdom and Word: God, by assuming the particular life story of Jesus also conjoined the material conditions of all flesh, shared and enabled the fate of all (!) biological life forms. He experienced the pain of sensitive creatures from within (sparrows and foxes). So deep incarnation presupposes a radical embodiment reaching into the roots of material and biological existence as into the darker sides of creation. If I am not mistaken Gregersen also addresses also non living beings when he develops the concept of Deep Incarnation in three dimensions:

- *materiality
- *sociality
- *divine-creaturely suffering.

For him the divine stretch between God Father and his eternal Son – mediated by the Spirit – is the presupposition for the divine reach into the depth of creation. And in questioning the chronocentric orientation over against nature, space and eternity he argues, that, although accepting time, we should move beyond a chronocentric worldview (Paul’s apocalyptic world view): “This theology of the cosmic body of Christ is not only about creation theology but about an ongoing reconciliation between Creator and creature” (p. 244).

PART III - Divine Presence and Incarnation: Scientific and Philosophical Perspectives:

Holmes Rolston III (“Divine Presence – Causal, Cybernetic, Caring, Cruciform: From Information to Incarnation”) confirms that it is indeed already a startling claim that God became flesh in the person of Jesus, but that it needs *at least* a person. He then asks what about animals? Although they show little evidence of having religious experiences, some ‘presence’

seems to follow if the Spirit animates all life. If we enlarge “incarnate” with “embodied” it is easier to ask whether God might be embodied in animals. Further, if “soma” means “body” and refers to heavenly and human bodies, biologically plants have “soma” but not flesh. And even if we seldom think of plants as animated they are organic and God might be embodied in them. The question of God’s incarnation into non-living beings, into plants, is addressed very explicitly and very creatively from the point of view of philosophy of nature.

“Plants ‘respire’ and are upheld by divine power, but this is not yet incarnation” (p. 256). How about non-respiring matter? Pure mathematics is not even embodied, much less incarnate – not until it becomes applied mathematics, mixed into matter and energy (p. 259). And p. 260: “Within physical cosmology, the factual claims may be mathematical, based on values in equations, but the cosmological interpretation of these facts is not.” (It is historical, metaphysical, theological). Does it refer to immanence or incarnation? John sets Jesus in a cosmic framework, but did he also claim that Jesus transformed it? Since God became material did Jesus thereby incarnate all matter?

p. 264f: Rolston continues by noting that Gregersen seeks a “strong continuity between the historical figure of Jesus and the cosmos at large.” That cannot mean that the life of Jesus affected distant galaxies, altering their nucleosynthesis. It might mean that the life of Jesus reveals at depth what the cosmological and evolutionary history, on certain of its trajectories, is tending toward: complex beings capable of suffering love. Perhaps all we need to claim is that Jesus revealed something about events preceding him in natural history and gave humans some hope about events yet to come.”

Genes have a *telos*, are ‘teleosemantic’. Evolutionary biologists thus deal with two more or less incommensurable domains: information and matter. The gene is a package of information ... there is more where once there was less. For scientists the superintending, supervening process is cybernetic. For theologians, what is added to matter-energy is *Logos*.

Evolutionary natural history has generated caring. A neural animal can love and experientially evaluate environment, sometimes even more complex and sophisticated can learn and acquire behaviour. Then the Logos must in some sense have been ‘present’ in the genes of Jesus. And sharing his genes for example with chimpanzees etc – he had the signature of evolutionary history. But this is not the point of John's prologue. For John the Logos has become flesh, entered sarx, i.e. all life on Earth (instead of all cosmic matter).

p. 279: “Persons have unique careers that interweave to form storied narratives in cultural heritages...to be a person includes a dimension of ‘spirit’. Where there is reflective, sacrificial suffering love, there is spirit. There is spirit where there is a sensing of the numinous, the sacred, the holy. There is spirit where there is awe, a sense of the sublime.” The question remains: might this imagination become incarnation? In the end the divine Logos only is incarnate when such sacrificial suffering love is deeply embodied – and fully only in Jesus Christ life, death and resurrection.

The cross of Christ can be said to fulfill that evolutionary cruciform world – although the cross of Christ does nothing to transform the evolutionary process. And this maybe is also because in biology there simply is no sinfulness – nothing horribly broken about nature – perhaps natural history is already glorious enough.

We however have staggering possibilities, able to think vastly more thoughts than there are atoms in the universe ... with escalating powers for good and evil.

Stuart Kauffman (“Natural Incarnation: from the Possible to the Actual”), one of the leaders and pioneers in the field of complexity theory at the Santa Fe Institute, New Mexico, introduces himself as a Jewish agnostic. As a biologist, he calls his paper speculative since in it, although himself a scientist, he is “Reinventing the Sacred” –the title of one of his books: he is seeking a sense of God in the natural creativity of the living world. Like Gordon Kaufmann, with whom he has taught together at Harvard Divinity School, Kauffman views God as natural creativity; unlike Gordon Kaufmann however, not of the universe *as a whole*.

Even beyond “Reinventing the Sacred” Kauffman sketches a possible natural interpretation – based on a new interpretation of quantum mechanics – of the Christian doctrine of the incarnation of a God who is outside of space and time in the physical world. He then, and even more speculatively, describes consciousness and its possible connection with quantum measurements in our brains – perhaps in synaptic molecules. If evidence is found for it, then: a) quantum measurements are necessary but not sufficient for qualia to arise; b) they are both necessary and sufficient.

Kauffman goes for b) as being correct, although he cannot demonstrate it neither and neither does he believe it!

Hypothesis therefore is: wherever in the universe quantum measurements occur, so do (proto)qualia.

Of course the wave-particle duality does not obey Aristotle’s law of the excluded middle (which has been true for all classical physics). But again C.S. Peirce becomes helpful in the debate: actuals and probables obey

the law of excluded middle, possibles do not. As a result Kauffman constructs *a new dualism*: the world consists of ontologically real actuals and ontologically real possibles, truly linked, i.e. united by quantum measurement – and conscious experience is associated with it. Possibles becoming actual however are not to be measured in the known way. *In analogy, natural incarnation would be such an event and not need the action of any theistic God.*

Kauffman's next question is whether the universe is observing itself. Mind as a quantum coherent or partially decoherent process can have consequences for brain, but these consequences are not causal. If we then identify consciousness with quantum measurement it buries the mystery of what consciousness is in the further mystery of what measurement is. But if there is no mechanism for measurement (cf Conway and Kochen: "Strong Free Will Theorem") at least we 'know' why consciousness remains a mystery.

Argued from a neuroscience point of view, what is called 'non-locality' in physics leads to the hypothesis that anatomically unconnected brain areas can be quantum entangled. Via measurement of the entangled quantum processes (and hence with associated qualia) derived from a single quantum system we can have a unity of consciousness. Then quantum measurement is both necessary and sufficient for qualia and a final 'unity of qualia' in the abiotic universe seems not impossible.

Information theory as we know it does not apply to evolution of the biosphere, hence to the becoming of the universe. But if we imagine that protoqualia in the universe are entangled we could conceivably get a unity of protoconsciousness. Freedom emerges with measurement – and so we could have a means to affect the actual world. This idea of an 'I' might even suggest the idea of a theistic God.

Dirk Evers ("Incarnation and Faith in an Evolutionary Framework") elaborates incarnation as God's transformative presence in creation in terms of the doctrine of justification by faith alone. The latter implying a fundamental inter-relatedness of divine presence and human existence – and thus referring to a relational understanding of God and creation in an evolutionary framework. Evers suggests that God overcomes the spiritual distance between him and human beings through incarnation then. The cross can be seen as hermeneutical key to God's transformative presence.

Humans are humans (special?) because of this justification. They develop and lead their lives as naturally social and cultural animals. And so the cognitive distance for human beings is partly overcome through incarnation (although God is present for the whole world). This broader concept of incarnation, even if taken as normative, does not imply any timely or religiously bound exclusivism.

Robert John Russell (“Jesus: the Way of all Flesh and the Proleptic Feather of Time”), the founder and director of The Center for Theology and the Natural Sciences in Berkeley, stresses the importance of physics and cosmology for a reformulation of Christian theology (besides evolutionary and molecular biology and others). Following Gregersen’s “Deep Incarnation” into the very tissue of biological existence, the system of nature, Russell argues that:

1. Since all biological organisms are physical entities we should think of the divine reach as even deeper than biology, namely into the underlying physics of our universe with its cosmic fine-tuning for life. And if the divine reach extends into physics, the physics of the flesh of Jesus, the fine-tuning making the evolution of flesh possible. Also since the physical preconditions for life, created by God *ex nihilo*, include inevitable suffering (addressed as “natural evil” and in “natural theodicy”) they may also help to explain the soteriological dimensions of incarnation in a new light.

2. However, there is faith in incarnation because of the faith in resurrection. In following thoughts of Moltmann, Pannenberg and Peters interpreting resurrection as a proleptic event in which the extraordinary eschatological future is manifest in the midst of our ordinary future, Russell states that the former is neither radically continuous nor discontinuous. Instead it is a radical transformation of the *futurum* into the *adventus*. Again the linear character of time is at stake. Since the theological concept of prolepsis leads to a physical concept of time as multiply-connected. In the light of the challenge of natural theodicy Russell suggests finding this proleptic temporal structure in all moments of time, i.e. not only relevant for human beings.

3. The evolutionary history of moral and immoral behaviour in non-human and human animals is manifest in context-specific ways, but the physics of the universe has to be seen as an underlying and remote precondition for its possibility.

When talking about natural evil and natural goodness, sin at this level is no longer a helpful concept.

In addition: eschatological future connects points as if proleptically to sequential present moments. They might be experienced as perpendicular to time as in mystic and apophatic tradition of the numinous presence of the risen Christ. But also parallel to time, i.e. kataphatic.

If physics of this fine-tuned universe offers a precondition for the possibility of prolepsis this calls for an *interaction* of theology and science. So what is called “theology of nature”, for example by Barbour, is then to reformulate theology in the light of science. Theology can, by contrast, lead to interesting insights and suggestions about research programs in science as well.

The volume ends with an Afterword by the well-known mathematical physicist and theologian *John Polkinghorne*. Polkinghorne expresses reservations about an approach to thinking about God's relationship with creation that stresses the concept of incarnation to the extent expressed in the preceding chapters. Although there is a sincere theological need to express divine presence within the travail of creation in an act of redemptive solidarity between Creator and creatures, Polkinghorne warns us not to blur differences in ontological status between God and humans (world). Because of God's aseity there can be everlasting hope wholly independent of whatever may be the present state of the created universe. Finally, the deep connection between Creator and suffering creation is best pursued within a Trinitarian setting.

And it ends with a reflection of *Niels Henrik Gregersen* on, once again, "Opportunities and Challenges" of the concept of "Deep Incarnation". He suggests, along with many others, that we should distinguish but not separate Incarnation from Creation, and likewise not the Work of Christ from His Being-There, and why we should not think about Resurrection in chronocentric terms. For Gregersen "[D]eep incarnation is thus a proposal for a Christology that responds to being a victim, not only to being a sinner"(p.379). God comes to mind in coming to flesh.

Reviewers facit: Although on the specific question of "Deep Incarnation" this volume is a compendium for what is important in the ongoing dialogue between theology and natural science in general. It should be in every theological library. And it should be used.

Book Reviews

Celia Deane-Drummond, Sigurd Bergmann and Bronislaw Szerszynski (eds.) *Technofutures, Nature and the Sacred: Transdisciplinary Perspectives*, Farnham, UK: Ashgate, xv + 289 pp. ISBN 978-1-4724-4410-3 (hdbk), £65.

This book gathers some of the papers presented at the fourth biennial conference of the European Forum for the Study of Religion and Environment (Sweden, May 2013). As the title already suggests and the introduction underlines, the distinctive feature of this work lies in trying to relate three thematic areas of huge interest at present: philosophy of technology in a broad sense, environmental studies and religious studies. While joint treatments of any two of them are common in the literature, efforts to intertwine all three of them are quite rare, although such an approach brings considerable gains both in analytical refinement and in critical potential. This transdisciplinary vocation extends also to cultural and social studies, since culture and social relations are aspects that necessarily modulate all three above-mentioned disciplines. Another outstanding feature is the inter-religious or at least non-exclusively Christian character of this initiative. Being so ambitious and gathering such a wide range of authors (13), it is no wonder that the present volume shows a marked heterogeneity; in spite of that, it has more unity than one would expect and offers as a whole a useful summary of the state of play of the running discussions in this extraordinarily important issue.

An informative introduction (offering relevant summaries of all chapters) gives way to three parts: *Theories, Religious Narratives, Practices*, each one containing four papers. A contemporary mythological narrative written by Bronislaw Szerszynski as an evocative synthesis rounds the book, which also includes a comprehensive bibliography, up.

Part I establishes the theoretical framework for the discussion. Walther C. Zimmerli reflects on the historical evolution of technology (which should be understood as culture), as well as on the impact of technological innovations on our understanding of responsibility and on the challenges this poses to ethics. He considers it necessary to move from a principled ethics to an applied ethics and encourages the reader to develop a pragmatic model of applied procedural ethics of responsibility towards extra-human nature. Maria Antonaccio strives to give a new orientation to the discussion on technology and humanisation of nature, which she considers detrimentally dominated by the issue of the independence of nature from human action. She draws on M. J. Radin's analysis of commodification as a social process in order to highlight the question of whether a specific technology respects or suppresses (either destroying or making inaccessible) certain

goods associated with human experience of nature which have become an integral part of our horizon of meaning. Humanisation through technology represents a threat not only for non-human nature, but for human flourishing as well. Fionn Bennett tries to vindicate M. Heidegger's hermeneutical philosophy of technology, exploring the way in which some extra-technological aspects of Heideggerian thought inform his discourse on technology. He underlines Heidegger's enigmatic, Hölderlin-like statement that technology is "supremely perilous" but, for the same reason, also a "source of salvation". Finally, Peter Scott insists on how important is to understand technology as culture. His aim is to develop a theology of technology. As a first step in this direction he analyses the difficulties that such an enterprise encounters in the three spheres that structure any theological anthropology: self-relatedness, wholeness and world-relatedness. This allows him to make some suggestions for a critical reconstruction of these theological ideas, for which purpose he draws on a differentiated concept of God.

In Part II several theological or religious motives gain prominence, although narrative character is not paramount in all chapters. Nor is the difference in approach from the papers of Part I always clear enough. Lisa Sideris examines the way in which some of the most prominent scientists involved in the Manhattan Project used religious and mythological narratives about innocence, hubris, fall and wonder to describe, rationalise and legitimate a research that culminated in such a human and environmental catastrophe. Sideris pays special attention to the motive of wonder, which she evaluate from a moral point of view, and warns against a too-literal understanding of the statements of the scientists about their innocence and ignorance of the consequences of their work. Basing on ideas of Maximus the Confessor and some modern Orthodox theologians such as Ware and Zizioulas, Francis van der Noortgaete tries to outline an iconic-liturgical approach to human technology in nature. The notion of the "iconicity" of nature and a priestly anthropology lead him to propose that technology must be seen and implemented not as deployment of an autonomous power over nature, but as a call to a non-hierarchic relation and collaboration between humans and non-human nature by being creative in God's likeness. Sigurd Bergmann criticises the thesis of the value-neutrality of technological innovations and contends that they must be conceived of as physical outcomes of complex social processes about the production and sharing of power between humans, but also between human and non-human life forms. This allows him to carry out an extension to technology of the Marxian concept of "fetish". A historical examination shows that it was precisely through fetishisation that Modernity incorporated classical animism, transforming it simultaneously. But since this process has led to a sort of life-denying idolatry, it must be resisted and overcome. A possible way to achieve this aim would be through a neoanimism which understands technology as a life-enhancing

gift instead of as a tool to have dominion over life. This would allow to connect with the Christian experience of the Holy Spirit, the Spirit of life and to develop an ecological pneumatology. Finally, Celia Deane-Drummond ponders on the effects of technologisation of life, focusing on transhumanist projects to enhance human abilities and indefinitely extend human lifespan. Such projects not only presuppose a distorted, reductive view of human condition; they also foster a merely instrumental consideration of animals, which ignores any limit to the transformation of their nature, opening the door to a post-animal, even trans-animal society. The author sees in Hans Jonas' metaphysical philosophy of life a possible corrective to transhumanism. Completed with practical wisdom or prudential reasoning it could form the basis of a theological anthropology abreast of the times.

Part III introduces different practices aiming to prevent the risks associated with technology and set its huge positive potentialities free. David Gormley-O'Brien starts from the fact that the consumption of the average suburban home in the English-speaking world today is unsustainable both for economic and ecological reasons. He argues that there is a need to recover certain aspects of homemaking prior to the industrial era and update them in the light of technological innovation. Rehabilitating homemaking both requires and lays the ethical and theological basis for a global cultural change. Forrest Clingermann and Matthew Kearnes, in two independent chapters, deal with the challenge of geoengineering, that is, the deliberate and large-scale modification of climatic systems in response to anthropogenic climatic change. Both papers are very critical of geoengineering. The first one adopts an obvious theological approach and considers that geoengineering lacks the humility to fulfil the aspiration to a material salvation building on human ability to balance individual and social flourishing in the atmosphere. Its inability to listen to nature in meaningful ways makes it distort or invert the sacred. The second paper starts from a sociological perspective, but it arrives at theological conclusions too. Following Milbank, the author questions any fundamental separation between the secular and the theological when trying to understand science and technology sociologically. From here he moves forward to an archeological analysis of religious roots of economy, much along Agambes' lines, which allows him to explore how geoengineering is situated in a biopolitical project that seeks to extend forms of economic valuation to the Earth as a whole. Finally, Zemfira Inogamova-Hanbury examines spiritual and economical practices among Kyrgyz, Kurdish, Turkish and Uzbeks farmers and how such practices contribute to their identity and resilience.

This last part has great interest, even though the range of presented practices is necessarily limited. It is only natural that the stress lies on "ecological" issues, but it might have been enriching to pay attention as well to

bioengineering, to the problem of energy production and consumption or even to artificial intelligence (in its medical applications, for example). Criticism is important, but not enough; positive, alternative practices are much needed. Papers presenting practices of this kind (homemaking, Central Asian farmers) suffer perhaps from some romanticism. However, that is in essence the key question when facing these matters: how can we really bring it about that current technology, inserted in a thick net of economic, social and cultural interests, should be truly life-enhancing? In order to go beyond a mere desideratum, it is no doubt necessary to work out illuminating *theoretical frames*, motivating *religious narratives* and transformative *practices*. The book edited by Bergmann, Deane-Drummond y Szerszynski is a valuable contribution to this goal, a useful set of suggestions to keep moving forward along this track.

José Manuel Lozano
Independent Scholar

Paul Cassell, *Religion, Emergence, and the Origins of Meaning: Beyond Durkheim and Rappaport*. Leiden: Brill, 2015, 203 pp., ISBN 978-90-04-29365-6 (hdbk) \$109.00 €84.00

This book, as its author recounts in the preface, began as a “vague idea” (p. vii) of his about religion. It is the condensed version (after “hard work”, p. vii) of a doctoral dissertation. The basic idea of the book is that religion can be explained as an emergent phenomenon (in that respect, the book is entirely unoriginal). In the book – after a “primer” on emergence and semiotics, based largely on work from Terrence Deacon – two canonical authors in religious studies, sociologist Émile Durkheim (1858–1919) and anthropologist Roy Rappaport (1926–1997), are reinterpreted in the light of recent emergence theories. Before I assess what the reader in the end gains from this critical exegesis and update, let me outline the overarching approach towards religion.

The aim of emergence theories of religion is to “provide natural explanations for what has traditionally begged for supernatural explanation” (p. 3). Religions can be seen as an example of “systems whose organizational dynamics use signs to maintain themselves and navigate their environment, without the need for divine help” (p. 3). The divine, instead, represents an

emergent quality of these systems. Authors such as Durkheim and Rappaport have already offered emergence theories of religion, but Cassell sees value in updating their accounts based on the latest writings on emergence theories (mostly focused on biology).

According to Cassell, good theories of religion must explain “why the experiences resulting from religious participation can be such a powerful source of personal transformation” (p. 10) and why they give the impression of transcendence. Ritual and myth must play central roles in such theories. Durkheim and Rappaport do not yet offer good theories of religion. Cassell points out that Durkheim “is not able to theoretically distinguish politics from religion” (p. 12) and that Rappaport “does not adequately explain how ritual and myth... create meaningful religious experience” (p. 12).

After his introductory chapter, six chapters follow, distributed over two parts (on the emergent dynamics of religion and the emergence of meaning in religion, respectively). Chapter 2 introduces and revisits Rappaport, Chapter 3 gives the primer into emergence and semiotics, and Chapter 4 describes religion’s emergent characteristics. The latter two chapters are quite difficult to plough through for a reader not well steeped in the theories that Cassell describes. They describe religion as an emergent social phenomenon, “where mythic beliefs about the divine (a form of culturally-passed down memory) are taken up in ritual (a cultural practice) to link synergistically the psychological experiences of individuals and the dynamics of group organization” (p. 107).

Part 2, “focus[ing] more on the question of religion’s meaningfulness, following Durkheim’s approach” (p. 107), is more accessible and starts in Chapter 5 with an interesting rendering of the arguments of evolutionary biologist David Sloan Wilson and philosopher Daniel Dennett that religion has no meaning. Cassell claims that both authors have ignored any emergent experiences, values, or meaning associated with religion. In Chapter 6, he then adds Durkheim’s “account of the emergent qualities of religious community participation” to the mix, in order to be able to conclude in Chapter 7 with “a fuller account of these emergent qualities” (p. 107).

The last chapter of the book, titled “Varieties of Religious Meaning”, is the most interesting one, even though it is not clearly structured. The general gist of his illustrations of the way in which religions have meaning is that from positing the divine as true in religious ritual something valuable is leveraged to individuals. Here Cassell discusses how religion can offer therapeutic truth (healing physically and psychologically; resolving unresolvable via hope; creating better selves; evoking novel blends of emotions) and social orientation.

I doubt, however, that the reader in the end has gained much insight from Cassell's exercise. Philosophically, the book is not very systematic and the author tries to compare and combine too many theories with too many other theories. That being said, there are a couple of really deep insights contained in the book and readers who are well-versed in Terrence Deacon's works may find it of use.

Arthur C. Petersen
University College London

Donovan O. Schaefer. *Religious Affects: Animality, Evolution, and Power.* Durham, NC: Duke University Press, 2015, 286 pp. ISBN 978-0-8223-5990-6 (pbk). \$18.61 (Amazon, USA).

From Donovan O. Schaefer's personal web page we learn that he has a B.A. from the interdisciplinary Religion, Literature and the Arts program at the University of British Columbia, masters and doctoral degrees in Religion from Syracuse University, and then he did a post-doc at Haverford college as a Mellon Fellow during which time he founded the Religion, Affect and Emotion Group at the American Academy of Religion. Since 2014, he's been at Oxford University as a lecturer and tutor in the Ian Ramsey Center for Science and Religion.

In his first book, *Religious Affects: Animality, Evolution and Power*, Schaefer attempts to show how religion is something other than a linguistic construct or a set of beliefs about what is or isn't true. Instead, he proposes that we need to think of religion in "its animality," as being determined by embodied emotions rather than words. That's all very good. It is obvious that religion is composed of religious beliefs, emotions and behaviours.

Schaefer could have approached the emotional aspects of religion from a variety of scientific, methodological naturalism perspectives. In my own simple world, if religious behaviour, religious beliefs and religious emotions are at three corners of a triangle, change any one corner and that will have an influence on the other two corners. With an emphasis on the emotional, that's his book in one simple sentence. The three items at the three corners of the triangle - religious behaviours, beliefs and emotions - are fundamentally biological entities that could be explored within the rich field of the bio-behavioural sciences. That's how I would have written the book. Schaefer, by contrast, writes like a literary social scientist who is almost oblivious to the rich biological literature on what he writes.

Rather than approaching religious affects (or religious emotions) scientifically, Schaefer took a literary approach. He went with something called "affect theory," which he describes on his home page as an approach to culture, history and politics that focuses on non-linguistic forces, or affects. It is primarily used today in art critique, which in the opinion of this reviewer, is where it should stay. He goes on to say that "Affects make us what we are, but they are neither under our 'conscious' control nor even necessarily within our awareness - and they can only sometimes be captured in language."

He claims that his new book, *Religious Affects*, offers an introduction to affect theory that's accessible to a range of backgrounds and shows how it can be linked to other conversations happening in the humanities - including Michael Foucault's 'analytics of power'. He goes on to say that affect theory helps us to understand power by encouraging us to think of power as theater. Really? Power as theater? Are there not real power relationships outside of theater, including those that occur within religious institutions? One does not model reality with theater.

Affect theory is a little known literary cult or pop psychology. It derives from the writings of the late psychologist Silvan Tomkins, who even has an Institute named after him today with a web page containing upcoming talks and information about his rational therapeutic methods, now more in favor with non-scientific psychoanalysts and therapists than with evidence-based practitioners. Tomkins *opus magus* is a four volume work, originally published in 1963 and now republished by Springer as *Affect, Imagery, Consciousness: The Complete Edition, Volumes I - IV* (2008, pp. 1352).

Although Schaefer says his new book should be "accessible to a range of backgrounds," my own background in zoology, evolutionary behavioural biology, medicine and psychiatry did not find the book accessible at all. It was actually painful, almost agonizing for me to read. Much of it was written from a post-modernism literary perspective that I have trouble digesting. The book is embellished with quotes from arcane literary works and sources about which I was neither interested nor knowledgeable. It is not a book on the science and theology interface or even on the science and religion interface. Rather, it is a book that looks at religion from a not well accepted, unscientific pop-psychology cult theory that finds a home more in rational therapeutic based, non-scientific psychoanalysis and counseling than in the scientific study of religion.

The book contains an Introduction and 7 chapters that have names with almost no systematic relationship to one another, such as Intransigence, Teaching Religion, Emotion and Global Cinema, Compulsion, Savages, etc. The last chapter, A Theory of the Waterfall Dance, is the author's anecdotal

evidence that chimpanzees have a primitive type of awe-based affect religion to things like waterfalls. There are 40 pages of end notes, 17 pages of Bibliography, and 6 woefully inadequate pages of Index.

The book appears to be a part of a thematic series by Duke University Press. The first in the series was *The Affect Theory Reader* edited by Melissa Gregg and J. Seigworth (2010). That book probably explains why the current book was published. It is an application of the first book to religion.

In the 3 pages of Acknowledgements in the beginning of the book the author thanked 146 people by name. The list of names looked more like the credits scrolling down the screen in a movie than what one is used to seeing in academic acknowledgements in scholarly books. That long list of movie-like credits was a clue for me that I was not going to like this book. It is not a book I can recommend to anyone. But that's just my opinion. There are two positive endorsements on the book's back cover. On Donovan O. Schaefer's personal web site, there are positive, few-word excerpts from *The Atlantic*, *The Times Literary Supplement*, *Journal of the American Academy of Religion*, *Journal for Cultural and Religious Theory*, and *Religious Studies Review*. So by mentioning these favorable snippets, I believe I am balancing my rather negative view of the book with other reviews that appear to be more favorable.

Jay R. Feierman
New Mexico

Radek Kundt, *Contemporary Evolutionary Theories of Culture and the Study of Religion*, London, Oxford UK, New York: Bloomsbury 2015, pp. 179; ISBN: 9 78-1-4742-3224-1

The author is assistant professor for the Study of Religions at Masaryk University in Brno (Czech Republic). He aims at a critical assessment of the different ways of using evolutionary theory for explaining religious phenomena. Kundt distinguishes between a loose Darwinian meta-framework or Generalized Darwinism on the one hand, “applicable to all sorts of phenomena besides biology”, which uses no more than a basic idea of adaptation and competition to explain whatever there is to explain, and, on the other hand, theories which claim to apply the causal interactions of biological evolution to cultural developments. Generalized Darwinism, he proposes, is sometimes even extended to a Darwinian Monism or Universal Darwinism, which has little to do with science. It offers endless “possibilities for pointlessly redescribing ordinary cause-and-effect sequences using the verbiage of natural selection.” (cited from S. Pinker, 2012, on p.7). The

biological theory of selection however (called neo-Darwinian by the author) explains specific processes using the concepts of random phenotypic variation, fitness, heritability etc. Kundt's thesis is that theories of cultural evolution which do not comply with this framework gain nothing by using biological terms.

The book consists of a substantial introduction, and three main parts. The first part (ch. 1 and 2) describes the role of Darwinism in the history of Religious Studies, and the resulting "Classical Cultural Evolutionism". The author identifies five typical errors found in its various manifestations, namely (a) linking any evolutionary process with progress, (b) connecting evolutionary processes with the concept of teleology, (c) overuse of unverifiable statements, meaning what Stephen Jay Gould once called "adaptationist storytelling", (d) linking the evolutionary process with the concept of rigid unilinearity, or a fixed pattern of development, (e) linking sociocultural evolutionary processes with the development of individual personality.

The second part (ch. 3 to 5) endeavors to match evolutionary theories of religion against "neo-Darwinian theory". Kundt describes, and criticises, three types of contemporary cultural evolutionism and their application to religion, which evade the traditional errors mentioned above: group selection accounts, dual inheritance accounts, memetic accounts. Group selection accounts propose that competition, and selection, of cultural traits operate at a group level; e.g. that religion developed because of its beneficial effects for the community. As a mayor proponent, the author cites the biologist D.S. Wilson among many others. (This review cannot do justice to the numerous citations, and remarks, which in this, and the following chapters, relate to many sources.) Dual inheritance accounts stress the feedback effects of culture onto the gene pool of a given social unit, and put forward instances of gene-culture coevolution. Mayor proponents are P.J. Richerson and R. Boyd. A genetic basis for a religious disposition, by such an account, could have evolved because non-compliance to moral norms affirmed by a proto-religion, would have led to social disgrace and lowered the chance of reproduction. Memetic accounts propose that specific instructions to generate technological, social or behavioural products can be regarded as a second set of replicators beside genes. They influence the fitness of their bearers, and therefore undergo evolution according to the principles of selection theory. Such memetic accounts date back to R. Dawkin's "Selfish Gene", and have been expounded by S. Blackmore et al.

The third part of the book (ch. 6 and 7) presents the author's rejection of all theories which propose an autonomous, or genuine, process of cultural evolution. The alternative is an "Evolutionary Study of Culture Without Cultural Evolution" (EWCE). It proposes that the architecture of the human

mind predetermines the characteristics, and the success, of cultural variations including religious systems. Culture, and religion, are thus explained as products of “evolutionarily evolved minds” (p.119), that is by evolutionary psychology. Religion might nonetheless be adaptive, or it might be a mere by-product of cognitive evolution, or some combination of both. In any case, to the author it is futile to search for religion-specific evolutionary dynamics. He bases his opinion, among others, on the work of A. Norenzayan and S. Pinker.

As a reviewer with a biological background I found reading the book sometimes taxing. In my opinion, the author's “neo-Darwinian theory” does not depict the current state of evolutionary biology in full. Moreover, it is often presented in too simple terms. On page 88 (during a discussion of Meme theory) it is stated that “the impact of the gene can be neutral (if the interest of memes is different from the interest of genes), but it can also be useful (if the interest of memes is in agreement with the interest of genes) or harmful (if the interest of memes is opposite to the interest of genes).” Such a description of genetic-cultural coevolution recalls the verbal mannerisms of R. Dawkins from the seventies. On p. 44 (during the discussion of altruism in group selection) one finds the following passage: “Standard individual-gene selection predicts that individuals will behave altruistically only if this altruism ultimately leads to an advantage for their gene (either in themselves or in their relatives). They (individuals) will be restrained/reluctant towards its extreme self-sacrificing form.” I myself would put it like that: Standard Selection theory predicts that the genetic basis of altruistic behaviour remains or spreads in the gene pool because its phenotypical expression results in a fitness advantage relative to genetic traits which express as less altruistic behaviour. When the author sets out (parts 1 and 2) to examine if any current theory of religion complies with such a concept of individual-gene selection, one knows the result beforehand: No one stands up to scrutiny. It cannot be otherwise, because cultural variations, between individuals, families or groups, are all goal-orientated, not “random”, although unintended side effects may, and often do, occur. Their heritability is of a Lamarckian, not Darwinian, type at best, and the proposed replicators (cultural group traits, memes etc.) patently have other characteristics than genetic information. Moreover, the concept of biological fitness cannot be transferred to cultural developments. If people prefer cultural trait B to A, for whatever reason, the population will switch to B. But no fitness ratio can be ascribed to A and B; B's spread has to be explained in different terms. To me, this valid critique does not make EWCE a satisfying solution. That the genetic prerequisites of culture evolved by the natural processes of biological evolution, and culture (including religion) developed differently, is probably true. But I remain unconvinced that the interaction between them can be reduced to effects of the evolution of

cognitive abilities. And I remain thoroughly unconvinced that this interaction is sufficiently described by the author's statement that "the innate psychological mechanisms of our current stone-age minds... shaped our religious beliefs and behaviour in the past, as they do so even today." (p.119). There might be more to the human mind than that.

The strength of the book is the critical analysis of the many, often fragmentary, theories in its field. It is a programmatic work, and offers neither empirical research nor novel explanations of any religious (or other) phenomena. Taken as such, it seems useful to me.

Hansjörg Hemminger
Germany

Tim Lewens, *Cultural Evolution: Conceptual Challenges*, Oxford, New York: Oxford University Press, 2015, pp. 205, ISBN: 978-0-19-967418-3; € 49,00 (Hdbk.).

Questions about how to relate nature and culture have challenged many specialists for a long time, and for many it has become an intractable issue. The feeling often is that such interaction has been explained according to dominant intellectual and academic fashions. Two big movements have clashed in fierce combat, each trying to provide certainty and understanding: on the one hand biological reductionism, as for instance in the versions of sociobiology – first – and evolutionary psychology – later; on the other hand, social constructivism. However some signs revealing a more open mood perhaps can point towards some type of integration. Indeed "gene-culture co-evolution" has become a quite common and broadly accepted model to explain how both dimensions are linked. In any case, it is too early to declare peace between very contentious factions. Some attempts to deal with culture reveal once more reductivist strategies and maneuvering to render and interpret cultural phenomena in biological terms as a result of selective or adaptive evolution.

Lewens' new book could not be more timely. His work is a badly needed contribution to help tackle that thorny issue, and to introduce constructive nuances that could better explain the complexities involved in cultural dynamics. This is a very central point in several interdisciplinary settings, one of which is the new scientific study of religion. Furthermore, theology being primarily a cultural activity, then the study of culture carries great relevance.

Cultural Evolution is a critical essay that reviews in depth the available positions, displaying wide erudition on the stated subject and related topics.

The author's aim is to assess the main proposed versions of how culture can be understood in evolutionary ways. Nine chapters expound the book's content in orderly and summarized mode. The present review will try to introduce the main points, especially considering their relevance for the science-and-theology dialogue.

The first chapter is devoted to a description of three main theories dealing with culture in evolutionary terms: the historical approach; cultural selectionism, sometimes resorting to replicators – *memes* – and describing selection as a competition; and the kinetic theory, stressing the centrality of learning between individuals. 'Cultural epidemiology', which looks at the 'contagion of ideas', can be included in the last model. This taxonomy helps in distinguishing among proposals and also helps to avoid too early dismissals. The author then turns to the most promising model, the kinetic theory of culture.

The kinetic theory is broader than the selectionist one, and following its main proponents, Boyd and Richerson, cultural phenomena move beyond 'aggregated products of individual interactions' to assume an informational view that can be mathematically modeled (25). The first steps point to a rebuttal of alternative theories, like the one based on *memes* and their contagion, creating 'viruses of mind' and thereby rendering humans passive hosts. Selectionist models, then, entail competition, and this is not always the case among cultural units. Other objections against evolutionary theories of culture require assessment, but often problems arise because of misunderstandings regarding human nature, and a 'progress' representation of historical change with ambiguous consequences. The population models rather resort to 'conformist bias' and learning processes in human interaction. A pragmatic interest in pushing social sciences towards more scientific and reliable progress appears to be motivating some who are proposing that model.

Chapter 3 is devoted to an analysis of culture as information. Such a task presents difficult challenges. After reviewing several proposals, Lewens defends a 'don't ask, don't tell' approach, after confronting the many weaknesses. Indeed that concept appears as too broad, and can be viewed, following Mesoudi, as 'knowledge, beliefs, attitudes, norms, preferences and skills' (49). In any case, the proposed analysis reveals that information can be transmitted by different means as it does in the one based on selection; it requires an interaction with 'socially structured environments'; and can resort to external storing means.

Chapters 4 and 5 can be considered digressions on 'human nature', whose relevance is apparent in an essay about cultural evolution, since that nature has many times been viewed in contrast with culture. The idea is pervasive in biological and human sciences, looking for constant and uni-

versal traits. However, many scholars in the evolutionary camp refuse such an approach. The deep analysis in these pages from many authors clearly invites one to reject too strong a distinction between the natural and the cultural, when humans are involved. Imitation and learning emerge as plausible proposals, however only a 'libertine', i.e. very broad and fuzzy description of similarities, could satisfy that search. The same applies to descriptions of gene-culture co-evolution, again moving beyond strong distinctions. Interestingly the criticism extends to Pascal Boyer and his well known cognitive analysis of religion. The proposed integration is apparent in proposals like 'Developmental systems theory', describing how diverse processes result in bringing out many traits. Even the concept of 'innateness' becomes problematic from that perspective, as well as the distinction between individual and social learning.

Chapter 6 examines 'cultural models' and how cultural evolution can be modeled. This approach means models describing 'how beliefs and values are transmitted among individuals, and how this process generates and maintains differences among groups' (106). The analysis shows a circularity that affects its robustness. Even 'conformity models' appear as circular and too simplified. This skepticism gives place to the next chapter and its analysis of 'populations, people, and power'. Indeed power dynamics could reveal how individuals aggregate in populations. However tensions arise again between the macro- and the micro-level and about the heuristic power that evolutionary theories can exhibit. Possibly, 'networks analysis' can provide some healthy correctives.

'Cultural adaptationism' is the title of the last thematic chapter. In this case, early environments in which humans evolved carry maximal importance to explain the direction assumed by cognitive and cultural evolution. Once more skepticism arises over such explanations, which often simplify that context and become too speculative. In the end, they appear to lack explanatory force. To give a more promising result such approach should integrate more contributions from other disciplines. Adaptive processes become more complex and are the result of many interactions. All this justifies a need to assume a more 'eclectic synthesis', one that includes developmental and historical views. Only when the biological and social sciences are integrated will there be a promising path to better understand how culture evolves, beyond sheer adaptive strategies.

The last chapter deals with the proposed eclectic program by means of a case study: emotions. The discussion in these pages clearly claims that it overcomes a too-restricted approach under the promise of more scientific results. The reductive program appears as faulty, since culture in many cases influence how emotions are expressed and understood; an essentialist view would lack that necessary perspective. The conclusion reveals what

can be learned from this set of theories. Beyond selectionist and adaptive theories, phylogenetic models can, at least to some extent, help us to better grasp constraints affecting historical processes, but they cannot provide complete explanations.

This book is not easy reading. Many distinctions and nuances need to be followed in detail to learn about opportunities and limits of current theories on cultural evolution. There are few original contributions, most of the book being concerned with testing and evaluating other authors' models. However, it is an important book that helps to clarify a very sensitive field affecting in many ways social and human sciences. Indeed the recorded conclusions are very instructive and invite some applications. The first one is general and concerns how cultural activities cannot be reduced to sheer biological ones, even if biological knowledge and factors are important and a component that should not be ignored. This means that a good knowledge of human cultural phenomena requires a true interdisciplinary engagement, the recommended 'eclectic approach'.

The second application is more concrete and concerns the new scientific study of religion, especially what is called 'Cognitive Science of Religion'. Those who are familiar with its developments can recognize how many of the basic tenets have been targets of strong criticism by Lewens' review. If he is right, then a large part of that cognitive endeavor needs deep revision, since the program did rely – and still does – on biological explanations of religion as a cultural entity. Even recent attempts to account for the cultural and historical dimension try to explain it in very reductive ways, neglecting many factors involved in religious evolution. In that sense, Lewen's book should be read together with Radek Kundt's *Contemporary Evolutionary Theories of Culture and the Study of Religion*, reviewed above. The latter was published a few months later and covers similar ground, but is more focused on the study of religion, and arrives at analogous conclusions about it.

It is expected that this book might contribute to a better balance in the relationship between sciences and humanities, something urgently needed after many unfortunate excesses. That balance will be the result of more – not less – rational understanding, or deeper knowledge in our research and dialogue between science and theology

Lluís Oviedo
Antonianum University, Rome

Suzan Mazur. *The Paradigm Shifters: Overthrowing 'The Hegemony of the Culture of Darwin'*. New York: Caswell Books, 2015, 220 pp; ISBN 978-0-692-52613-2 (pbk) \$18.00.

What are the sources of variation in the natural world? Darwin could not know, and did not claim to. But it is the subject of this book, whose subtitle I find objectionable, yet whose content has much that is interesting.

It consists of a series of interviews with a diverse selection of experimentalists working on sources of variation, and some theoreticians thinking freshly about the subject. The interviewer, Suzan Mazur is an American science journalist who (assuming the back-cover photograph is recent) is quite young and who certainly has a youthful taste for sensationalism. She seems to want her interviewees to characterize the majority of their peers as a sclerotic scientific/political establishment, their minds closed to new findings and the consequent new ideas. There may be some limited justification for this view, but the tone of the book is seriously one-sided – there are no interviews with members of that presumed establishment. Indeed, only two are directly named: Jerry Coyne (Chicago) who vigorously defends traditional views, is implied here to be a purblind obscurantist, whose “behavior in defense of Darwinian scenarios” Mazur presumes to call “obnoxious”. The other named exponent of traditional thinking is one Richards Dawkins. They both happen to regard evolutionary theory as refuting religious ideas, but it is their scientific stance, not their theological position, that is the issue here.

So, if we attempt to look beyond the sensationalism, the distortions, and the inexcusable bias, what is the substance of the book? If there is a valid stalking-horse it is much less Darwin than Neo-Darwinism – the “Modern Synthesis” of Darwin’s ideas with those of Mendel, and a group of population geneticists centred around R.A. Fisher in the early 1930s. Given genetic variation, caused by random mixing in sexual reproduction and occasional mutations of the genes themselves, natural selection would result in the gradual emergence of forms sufficiently new and separate from their forbears to be identified as new species. Natural selection was emphatically Darwin’s idea, but only a few of this book’s contributors take issue with it – and when they do their criticism is neither consistent nor clear. This is inevitable because (as I’ve put it before in these pages) *natural selection cannot not occur!* Darwin did also believe that the accumulated effect of variations which were individually small could account for the whole of current biological diversity, and it has become increasingly evident that not all the variations which have in fact occurred were small. Much of the positive material in this book consists of evidence about sources of much larger variations. But, before rejecting Darwin’s notion as a “hegemony”, it would be judicious to consider what Darwin himself was contradicting. It was the concept that only separate, Divine creative acts

could explain the variety of living forms. No contributor to this book would fail to side wholeheartedly with Darwin there, but Suzan Mazur never thinks to draw this out. For her, consensus makes bad copy.

Perhaps the first valid criticism of Neo-Darwinism is that it concentrated on the properties and distribution of genes, transmitted from precursor to subsequent generations. This stance had nothing to do with Darwin, who had no concept of the gene; by contrast it could quite properly be said to have begun with Mendel, writing only seven years after *The Origin of Species* first appeared. It reached its highest point in the mid-century work of Crick & Watson, and the “central dogma” of molecular biology, namely that all information flow was from the DNA gene, via RNA to the protein constructed from that template. When this dogma was expounded by Crick, contrary evidence was already being reported by C.H. Waddington, whose word “epigenetics” recognized the modification of rigid, one-effect only genetic mechanisms by the history of the progenitors – exposure to starvation, temperature extremes, etc – and the circumstances of the progeny’s development. By about 1980, the fact that only perhaps 5% of animal genes worked in the simple, Mendel-Crick way, had led some to describe the rest of the DNA as “junk”. But it wasn’t junk: in large measure it was the route by which the performance of the Mendel-Crick genes was epigenetically modified.

Another criticism of the Neo-Darwinists, arguably even more major, is that they thought almost entirely in terms of multi-cellular organisms and sexual reproduction. It would be in a sense justified, but ridiculous, to implicate Darwin in this, because he simply did not know of bacteria, let alone viruses and yet more primitive agents, and had very limited knowledge even of the larger single-celled organisms. Yet the Modern Synthesists could have spread their nets more widely, had they been so inclined: it was surely a limitation of interest rather than knowledge which led them to focus on relatively advanced species?

What were thus overlooked, for at least two generations onward from the 1930s, were a fascinating range of mechanisms and processes, studies of which provide almost all the experimental substance of the present book. While we may still think in terms of genes, as a Mendel or a Crick might have recognized them, it is now beyond dispute that bacteria and other unicellular organisms can transfer these not only “vertically” to their progeny, in cell division, but “horizontally”, between contemporaries. The transferred DNA now functions in the recipient organism along with the genetic material which was there before: a massive species-change has occurred. And if we look beyond the genes as such, those viruses which carry DNA, and often largely consist of it, clearly bring about substantial changes when they invade a host cell’s genome. (Viruses containing only RNA may cir-

cumvent that route.) In a complex animal or plant such an invaded (“infected”) cell is usually regarded simply as malfunctioning, but a free-living single cell may survive, or even flourish, with its properties significantly changed. Clearly, such mechanisms must be taken into account in an overall view of species change – and hence of evolution. And it is coming to seem probable, not just possible, that in the past if perhaps not currently such effects occurred at least occasionally in multi-cellular organisms too. So yes, the “Modern” (1930s) Synthesis needs very considerable extension.

But this is universally recognized. I know no currently-practising geneticist or developmental biologist who is not very aware of such expansions of their fields. Where they healthily and rightly differ is over how fast and how uncritically to modify their thinking. There is great value in exploring to the fullest extent possible the ability of an established model to explain new findings. That at least some practitioners should hasten slowly, in this way, is an essential process, if the science concerned is not to be unfruitfully destabilized. That is why it was so very wrong of Mazur not to interview some of those who question how radical the changes in thinking need to be. She simply has no sense of the proper process of science, the essentiality of there being two sides in a debate.

Those she does talk to start with Chicago microbiologist James Shapiro, whose book *Evolution: A View from the 21st Century* is seminal. He lays the groundwork thus: “The conventional view is that the genome is a read-only memory (ROM) system that changes only by copying errors. ... The contemporary idea is that the genome is a read-write (RW) storage system that changes by direct cell activity. How cell-control circuits guide that change [in] activity is the scientific issue of the moment”. Equally eminent was the late Carl Woese; interviewed very near the end of his life, he pays tribute to Shapiro as his successor, while making many points of his own about the very earliest stages of life on earth – it was he who first recognised the archaea, as a form distinct from both bacteria and eukaryotes, as well as the process of horizontal gene transfer noted above.

I can mention only three more of the 19 people interviewed by Mazur. One is the Israeli evolutionist Eibi Nevo:

“[E]volution theory ... evolves with our better understanding of the world. Clearly the genomic era contributed dramatically [Yet] now it is clear that the remarkable developments in regulation by non-coding [‘junk’] DNA and epigenetics have contributed dramatically ... regarding nonrandom ... or adaptive mutations, the genome as a read-write memory system, and ... what James Shapiro calls natural genetic engineering.”

Those comments concern what DNA does. In counterpoint, to represent

modern thinking about where it comes from, let me quote New York cell biologist, Stuart Newman:

“You can’t look at a straight line of descent anymore because viruses and other entities are coming in at all stages of evolution. ... You really can’t track linearly from primitive form through changes in the genome to later forms because entities are now understood to be coming in laterally from other forms.”

The scientists speak with balance, generosity and perspective – all properties strikingly lacking in what Mazur writes herself. A further case in point, with the widest sweep of all, is this comment from the British-born physicist, and collaborator of Woese’s, Nigel Goldenfield.

“Life is inherently self-referential .. like a computer program that can overwrite .. itself as it runs. The notion that the program is the data and the data is the program, the idea that .. the rules that govern life are themselves changed by the rules – that’s self-referentiality. It gives you a description of the physical system that behaves in a mathematical way .. quite unlike any other system we’ve ever studied.”

ESSSAT readers will sense that there’s challenging theological material here, but Mazur is not the interviewer to draw it out. In fact, there is just one direct comment on theology, but it’s a good one, and it’s satisfyingly made by Carl Woese himself: “I do not like people saying that atheism is based on science, because it’s not. It’s an alien invasion of science”.

Neil Spurway
University of Glasgow

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

Niels Gregersen and Mikael Stenmark, eds.,

Naturalism and Beyond: Religious Naturalism and Its Alternatives

Leuven: Peeters, 2016

This book offers a critical analysis of the varieties of contemporary naturalism - from scientific naturalism to religious naturalism. What are the claims of naturalism apart from its denial of 'the supernatural'? What are the distinctive modes of thought within contemporary religious naturalism? Some argue for a science-based worldview, others for a cosmic view of reality that includes human engagement and religious commitment - with or without God-talk. The book shows how an appeal to what is beyond empirically validated facts resurfaces within most varieties of naturalism

Robert Audi

Naturalism, Normativity and Explanation

Copernicus Center Press, 2016

This book critically examines philosophical naturalism, evaluates the prospects for naturalizing such normative properties as *being a reason*, and proposes a theory of action-explanation. This theory accommodates an explanatory role for both psychological properties such as intention and normative properties such as having an obligation or being intrinsically good. This overall project requires distinguishing philosophical from methodological naturalism, arguing for the possibility of a scientifically informed epistemology that is not committed to the former.

Marcus du Sautoy

What We Cannot Know: Explorations at the Edge of Knowledge

Fourth Estate, 2016

The author investigates how leading experts in fields from quantum physics and cosmology, to sensory perception and neuroscience, have articulated the current lie of the land. In doing so, he travels to the very boundaries of understanding, questioning contradictory stories and consulting cutting edge data. Is it possible that we will one day know everything? Or are there fields of research that will always lie beyond the bounds of human comprehension? And if so, how do we cope with living in a universe where there are things that will forever transcend our understanding?

Alister McGrath***Re-Imagining Nature: The Promise of Christian Natural Theology***

Wiley-Blackwell, 2016

Reimagining Nature is a new introduction to the fast developing area of natural theology, written by one of the world's leading theologians. The text engages in serious theological dialogue whilst looking at how past developments might illuminate and inform theory and practice in the present. This text sets out to explore what a properly Christian approach to natural theology might look like and how this relates to alternative interpretations of our experience of the natural world, feeding into current debates about the relationship between science and religion.

Travis M. Stevick***Encountering Reality***

Fortress Press, 2016

The book argues for a new appreciation of T. F. Torrance on epistemology and reality. According to Torrance's realism, all authentic knowledge involves the nature of the object impressing its inherent rationality on the mind. Consequently, knowledge involves thinking in accordance with the nature of the object. Stevick explores the place and function of "ultimate beliefs" in epistemology, as well as the question as to whether such beliefs imply a retreat to either foundationalism or fideism. The inescapability of ultimate beliefs in all human knowledge requires a shift in the traditional notion of objectivity.

Sean Carroll***The Big Picture: On the Origins of Life, Meaning, and the Universe Itself***

Dutton, 2016

Sean Carroll beautifully articulates the world view suggested by contemporary naturalism. Thorny issues like free will, the direction of time, and the source of morality are clarified with elegance and insight. The Big Picture shows how the scientific worldview enriches our understanding of the universe and ourselves. A reliable account of our knowledge of the universe, it is also a serene meditation on our need for meaning, which can be achieved without theistic beliefs.

Stephen M. Barr***The Believing Scientist: Essays on Science and Religion***

Eerdmans, 2016

The author addresses a wide range of questions about the relationship between science and religion, providing a beautiful picture of how they can coexist in harmony. In his first essay, he challenges the widely held idea that there is an inherent conflict between science and religion. He goes on to analyze such topics as the quantum creation of universes from nothing,

the multiverse, the Intelligent Design movement, and the implications of neuroscience for the reality of the soul.

Cosmological issues

Judith L. Corey

Light from Light: Cosmology and the Theology of the Logos

Fortress Press, 2016

Cosmology and theology share a long-held relationship with one another, explaining as they do the constitution of the world and the interaction of forces. The author explores the history of this relationship, from ancient prescientific and theological explanations through contemporary science and philosophy. In this history, a particular problem is highlighted by the author: the prevalence of dualism – from Aristotelian philosophy to modern mechanistic conceptions, many of these accounts presume a sharp, absolute dichotomy between matter and spirit, and the material world and the divine

Robert B. Stewart

God and Cosmology: William Lane Craig and Sean Carroll in Dialogue

Fortress Press, 2016

The question of God and cosmology is far from abstract. Structured as a debate, the 2014 Greer-Heard Forum focused on the issue of God and cosmology and its impact on life and self-understanding. Christian philosopher William Lane Craig and atheist cosmologist Sean Carroll presented their views before a packed crowd of more than nine hundred people. Spirited, civil, and often humorous, the debate highlighted not only their positions, but the full range of possibilities.

Paul Wallace

Stars Beneath Us: Finding God in the Evolving Cosmos

Fortress Press, 2016

In ways both confident and gentle, *Stars Beneath Us* brilliantly shows God's presence in the ever-evolving cosmos. Relying on his upbringing as a Baptist, his doctoral work in experimental nuclear physics and gamma-ray astronomy, and his ordination to the gospel ministry in the Cooperative Baptist Fellowship, Paul Wallace weaves a book unlike any other in faith-and-science literature. Instead of engaging the debates of natural theology or proofs for the existence of God, this is a call to courage for those who fear a true encounter with the cosmos will distance them from God.

Anthropological issues

**Gregg A. Ten Elshof, Steven L. Porter & Thomas M. Crisp (Eds.)
Neuroscience and the Soul: The Human Person in Philosophy, Science
and theology**

Eerdmans, 2016

In this book fourteen distinguished scholars grapple with current debates about the existence and nature of the soul. Featuring a dialogical format, the book presents state-of-the-art work by leading philosophers and theologians – some arguing for the existence of the soul, others arguing against – and then puts those scholars into conversation with critics of their views. Bringing philosophy, theology, and neuroscience together in this way brings to light new nuances and significantly advances the ongoing debate over body and soul

New scientific study of religion

Smith, Aaron C. T.

Cognitive Mechanisms of Belief Change.

Palgrave Macmillan, 2016

Belief change lies at the heart of all human aspirations. Beliefs guide our lives and to a great extent, determine our success, satisfaction and happiness. The book explains how certain ideas and concepts steal a place in the mind because they latch on to hardwired ways of thinking, experiencing, and behaving. Concepts throw light upon the mind's desires, which in turn casts a kaleidoscope of silhouettes against the walls of thought, with those taking distinct shape forging the outlines for beliefs to inhabit. Beliefs are critical to our sense of meaning and identity.

Ina Wunn, Davina Grojnowski

Ancestors, Territoriality, and Gods: A Natural History of Religion

Springer, 2016

This book sets out to explain how and why religion came into being. In contrast to the current, but incomplete approaches from disciplines such as cognitive science and psychology, the present authors adopt a new approach, equally manifest and constructive, that explains the origins of religion based strictly on behavioural biology. They employ accepted research results that remove all need for speculation. Decisive factors for the earliest demonstrations of religion are thus territorial behaviour and ranking, coping with existential fears, and conflict resolution with the help of rituals.

Brian J. McVeigh

How Religion Evolved: Explaining the Living Dead, Talking Idols, and Mesmerizing Monuments

Transaction, 2016

The author offer an updating of “bicameralism.” First proposed by the psychologist Julian Jaynes, this theory postulates that an earlier mentality existed: a “human” (the brain’s left hemisphere) heard voices of “gods” or “ancestors” (the brain’s right hemisphere). Therefore, ancient religious texts reporting divine voices were recountings of audiovisual hallucinations—a method of social control when early populations expanded. As growing political economic complexity destabilized god-governed states in the late second millennium BCE, divine voices became inadequate.

Practical issues

George Zarkadakis

In Our Own Image: Will artificial intelligence save or destroy us?

Pegasus Books, 2016

The book explains AI’s history, technology and potential; its manifestations in intelligent machines; its connections to neurology and consciousness, as well as what AI reveals about us as human beings. *In Our Own Image* argues that we are on the brink of a fourth industrial revolution – poised to enter the age of Artificial Intelligence as science fiction becomes science fact. Ultimately, Zarkadakis observes, the fate of AI has profound implications for the future of science and humanity itself...

Announcements

6th Conference on “The Structure of Credition”

Epistemology, Networks, and Translation

Graz, 23rd – 26th of November 2016

With the 6th conference on “The Structure of Credition” in 2016 we will start the second phase of the Credition Research Project. In the first phase we were interested in a broad approach to an understanding of the believing process in order to explore whether the model of ‘credition’ is appealing.

In the second phase of the Credition Research Project we want to critically scrutinize the *model of credition*. Therefore we intend to invite colleagues to present critical remarks and stimulate its further elaboration.

Coordination:

Angel Hans-Ferdinand, Rüdiger Seitz, Peter Holzer, and Anne Runehov

Presenters:

Hans A. Alma, Sabine Bergner, Ivan Collagè, Elpine Boer, Christoph Jäger, Ingrid Malm Lindberg, Laura Marschner, Lluís Oviedo, Ray Paloutzian, Armin Schnider, Aku Visala and Roman Zaviyskyy

More information at:

<http://credition.uni-graz.at/de/credition-basic-research/congress-2016/presenters/>

Invitation to participate in a survey on values in the study of religion (VISOR)

The VISOR Project is grounded in our awareness that scholars in various disciplines who study religion have values of myriad sorts, some of which are at the very heart of their research and others tangential. We think it would be helpful for scholars who study religion – whether from religious studies, theology, anthropology, psychology, sociology, languages, biology, cognitive science, history, or other – to learn what their values are. Which ones are primary and secondary? Which are unimportant? Do values differ among scholars who teach in different kinds of institutions, e.g., a state university versus a theological seminary? For more information and to fill the questionnaire, go to the following link:

<http://www.visorproject.org/>

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Web Page: www.esssat.eu

President:

Dr. Dirk Evers
E-mail: president@esssat.eu

Secretary:

Lotta Knutsson-Bråkenhjelm
E-mail: secretariat@esssat.eu

Membership Secretary & Treasurer:

Dr. Roland Karo
E-mail: treasurer@esssat.eu

Editor of ESSSAT News & Reviews:

Dr. Lluís Oviedo
E-mail: loviedo@antonianum.eu