

# The cognitive science of religion: philosophical observations

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**Abstract:** The cognitive science of religion seeks to find genuine causal explanations for the origin and transmission of religious ideas. In the cognitive approach to religion, so-called intuitive and counter-intuitive concepts figure importantly. In this article it is argued that cognitive scientists of religion should clarify their views about the explanatory and semantic role they give to counter-intuitive concepts and beliefs in their theory. Since the cognitive science of religion is a naturalistic research programme, it is doubtful that its proponents can remain neutral on important ontological questions.

## Introduction

In recent years the so-called cognitive science of religion (CSR) has gained a prominent position in the study of religion. Some see it as an heir of structural anthropology (many of its proponents are French), but the core feature of the cognitive approach to religion is the strong emphasis it lays on the empirical research that is being performed in cognitive and evolutionary psychology and cognitive science in general. In fact, the results of these branches of science are in many ways the starting point of CSR. Consequently, it is not uncommon to see the cognitive scientists of religion call their approach the *scientific* study of religion. With the aid of genuine causal and culture-independent explanations the cognitive science of religion seeks to throw new light on the much debated questions concerning the origin, representation and transmission of religion. The cognitive structures of the human mind are taken to be the ground for these explanations. By supporting their case with ‘hard’ empirical research the proponents of CSR think they are justified in calling their approach scientific, especially in comparison with the traditional hermeneutic and phenomenological studies of religion.

In what follows, I examine critically some of the philosophical assumptions made in the theories of the cognitive science of religion. To anticipate my critique, a strong commitment to the naturalistic, cognitive-scientific research programme brings with it implicit philosophical suppositions that lead to some obvious problems. In the first part of the essay I give a short explication of the central concepts of the cognitive science of religion and then I take a closer look at the so-called counter-intuitive representations and their role in CSR.

### **The cognitive intuitions of mind**

As far as both theory-construction and the nature of explanation are concerned, *counter-intuitive* beliefs, representations, and concepts figure prominently in the writings of cognitive scientists of religion. Evidently, counter-intuitiveness finds its meaning in relation to intuitiveness. What, then, are meant by intuitive beliefs and concepts in the cognitive science of religion?

Cognitive scientists of religion usually follow cognitive psychologists by speaking of intuitive physics, intuitive biology, and intuitive psychology. The idea is that in the human mind there are essentially unconscious, innate cognitive structures that deal with information about the outside world by classifying it in different ways. The mind's classification and explanation of phenomena depends on the ontological type of the information. The term used for this in cognitive sciences is the 'domain specificity' of cognitive functions. A stronger way to put the matter is to say that the mind is 'modular': the mind consists of informationally encapsulated cognitive modules each of which process information pertaining to its specific domain. A reflex can be taken as an example of a simple module. Cognitive structures are ultimately produced by natural evolution and are thus independent of cultural factors. Therefore, people raised in different cultures have essentially similar cognitive structures. According to cognitive scientists of religion, this makes it possible to find culture-independent explanations for religious phenomena as well.

Intuitive physics, biology, and psychology are based on 'ontological categories'. Pascal Boyer has given several classifications of these categories. There is some variation in his analyses, but according to one version, ontological categories are animals, tools, persons, plants, numbers, and natural objects. Sometimes Boyer also includes (partly replacing the aforementioned classification) abstract objects, artefacts, and events in his list.<sup>1</sup> It should be noted that the categories do not refer to ontological categories in a philosophical sense. In other words, the point is not that these ontological kinds really exist in the world. They are first of all mental categories that exist and process information in the human mind. In fact, what they do is more important than what they are.

As for Boyer and other cognitive scientists of religion, ontological categories are essentially to be regarded as inference systems by means of which the human

mind produces intuitive knowledge about different kinds of objects. We process information differently depending on whether the object is a human being, an animal, an artefact, or an inanimate object. The job of the categories is, as it were, to tell us what sorts of inferences we are allowed to make regarding the perceived objects (of course, most of the inferences happen unconsciously). If I see an animal, I automatically think that its behaviour is goal-directed; this is also the way I explain the animal's behaviour. When I am in contact with other people, I have a 'theory of mind' that tells me that other persons also have beliefs and representations of the world. The inferences pertaining to solid physical objects are constrained by intuitive physics; one important feature of the latter is conceiving causal relationships between objects.<sup>2</sup>

The categories given in the previous paragraph present no exhaustive list. For instance, psychologist Steve Pinker distinguishes between ten intuitive-cognitive categories; they include an intuitive economics and a sense of probability, among others.<sup>3</sup> This shows that there are widely conflicting views among cognitive scientists and psychologists about the degree of modularity in the human cognitive system.

Cognitive scientists of religion emphasize that there is empirical evidence for the existence of different intuitive categories and inference systems. According to Boyer, the support comes from four quarters.<sup>4</sup> Some experimental studies show that normal adults have intuitions about various aspects of their environment that are based on specialized principles (e.g. causation). Secondly, the studies of cognitive development have shown that some of these principles function very early in infancy, making it possible to handle information quickly. Thirdly, there are now better brain-imaging techniques that can tell us with more precision which parts of the brain structures are active during different types of tasks. And fourthly, neuro-psychologists have discovered several cognitive pathologies that impair only some inference systems while leaving the rest intact.

For example, it has been discovered that people's brains show different kinds of activation when people are presented with novel artefact-like or animal-like pictures. If the artefact resembles a tool, there is activity in the pre-motor cortex, which is involved in planning movements. In other words, there is a specific system in the brain that automatically tries to find out how to handle tool-like objects. There is also evidence to the effect that people who suffer from autism do not have 'a theory of mind', or at least that the theory they use works very differently compared to normal persons. Autistic persons usually cannot form mental representations of other people's representations. To mention a further piece of evidence, it has been observed in tests that both Maya and North American (Western) subjects use similar inferences in non-scientific, 'folk-biological' classifications.<sup>5</sup>

Given the empirical evidence, it is plausible to hold that the cognitive structure of the human mind is, at least to a certain extent, modular. It is important,

however, to note that the modularity thesis can be interpreted weakly or strongly. The strongest form says that the mind is ‘massively’ modular. This means that in the cognitively structured mind there is a specific, informationally encapsulated processor for every type of problem the mind can solve. The task of each processor is to deal exclusively with a certain domain and problems related to it. There is nothing in the mind that can decide which solution to a problem is best in light of the totality of a creature’s beliefs and utilities.<sup>6</sup>

Massive modularity of mind is hardly a plausible thesis and, in any case, it is an assumption not made in the cognitive science of religion as far as religion is concerned. Religiosity is not regarded as a separate cognitive domain.<sup>7</sup> Hence, in the following analysis of CSR, the modularity of mind refers to a more moderate and less clear-cut thesis of domain-specific cognitive functions. The beliefs produced by these functions form the different categories of intuitive physics, biology, and psychology (and possibly intuitive sociology). The intuitive-cognitive domains are, then, only loosely circumscribed in relation to each other and also to counter-intuitive beliefs and this is not without its consequences when a cognitive niche is sought for religion.

### **Religion and counter-intuitive concepts**

Central to the cognitive account of religion is the claim that it is the counter-intuitive concepts and ideas that are essential in attempts to define and understand religion. Given the above discussion of intuitive cognitive domains this means that religious concepts and the inferences implied by them, at least to a certain extent, break the principles of intuitive physics, biology, and psychology. This claim, however, has to be made more specific.<sup>8</sup>

To take an example, a ghost or a disembodied spirit (that is considered to affect living people’s activities) is an idea that can be found in many religions. Ghosts clearly have properties that contradict the expectations of intuitive physics: they seem to appear out of nothing, they can go through solid objects, etc. But a ghost is also taken to be a *person*. This means, among other things, that a ghost in some way sees the person who perceives him or her. It is assumed that a ghost knows to whom he or she wants to appear and a ghost often communicates with the perceiver; in other words, a ghost has intentional states. Thus, although the concept of ghost violates some assumptions of intuitive physics, it also preserves other expectations related to the fact that ghosts are regarded as persons. While a ghost is a disembodied being, it is still a person. This combination makes it possible to use the ghost concept in various kinds of inferences; that is, it is a cognitively rich concept.

In general, counter-intuitive concepts retain the ontological template on which they are based (e.g. a person), but they are also given an additional qualification, which is in conflict with the relevant ontological category (a ghost is a

*disembodied* person). However, the conflict must not be too deep and serious; religious concepts may not arbitrarily contradict common-sense assumptions of the world. In sum, counter-intuitive concepts preserve all the information included in the relevant ontological base category, but they also carry counter-intuitive information.

What, then, is precisely the relationship between counter-intuitive ideas and religious beliefs? Cognitive scientists of religion have for the most part given up attempts to define religion – at least if ‘definition’ is taken in a strict sense. The role of counter-intuitive concepts in defining religion is often expressed by saying that counter-intuitiveness is a necessary, but not a sufficient condition for religion.<sup>9</sup> What else is needed? Ilkka Pyysiäinen, for example, stresses the social role of religion: by means of religious beliefs a human community interprets, organizes, and explains life, the world, and the nature of human beings.<sup>10</sup> In other words, religion plays an important role in communal life.

But now the main theses of CSR begin to sound quite familiar. On one hand, supernatural ideas are part of religion; on the other hand, religion has an important social dimension. However, this interpretation unduly simplifies the basic tenets of the cognitive science of religion. In what follows, I take a closer analytic look at the nature of counter-intuitive concepts and ideas and their role in circumscribing the religious domain. Then I examine the function of counter-intuitive concepts in the explanations of CSR as well as their semantic nature.

### *The role of counter-intuitive concepts in religion*

Counter-intuitive concepts cannot be defined without reference to intuitive-cognitive domains and the beliefs implied by the latter. As was noted above, there are different views regarding the degree of modularity of the human mind. Consequently, it is not easy to give a clear-cut definition of counter-intuitive concepts either. This, however, does not imply that no class of counter-intuitive concepts exists or that these concepts cannot have any function in scientific theories and explanations. The problem concerns more the role counter-intuitiveness is given in explaining religion.

First, it should be noted that counter-intuitive concepts are not to be identified with the concepts referring to supernatural or paranormal phenomena. Counter-intuitive ideas also abound in art and fiction; the same holds for psychotic states and beliefs connected with them. Of course, cognitive scientists of religion admit this. But now the problem of ‘defining’ religion re-emerges inside the sphere of counterintuitive concepts: if counter-intuitiveness is a necessary condition for distinguishing between religious and non-religious beliefs, on what grounds do we draw a distinction between religious counter-intuitive concepts and other counter-intuitive concepts?

The proponents of CSR think that the idea of *meta-representation* offers an answer to this problem.<sup>11</sup> A related concept is decoupling, which refers to the

ability of the human mind to represent the same phenomenon or event in different contexts.<sup>12</sup> Let us take a closer look at the idea of meta-representation. Normally, in a waking state, there are different desires, beliefs etc. in the human mind; in short, the mind has intentional states with various contents.<sup>13</sup> By means of the contents the states represent the world and its varying states of affairs. Representations are not ‘direct’ mental deliverances of the world; they are not ‘presentations’, but can represent the same state of affairs in a different way. Now, there are also (higher order) meta-representations, that is, representations of representations in the mind. For instance, one often has desires and beliefs about one’s own beliefs.

This implies that religious (counter-intuitive) beliefs are represented in a certain kind of meta-context. A religious person not only believes that (a) ‘Jesus is the Son of God’, but also that (b) ‘“Jesus is the Son of God” is true because it says so in the Bible’. I have here reformulated Pyysiäinen’s example.<sup>14</sup> In the (b) sentence, the meta-context comes after the part that equals the (a) sentence. The person thus believes that the belief about Jesus’ godly status is true. According to Pyysiäinen, the characteristic feature of religious representations is that their meta-contextual truth claims are given an absolute status. Some authority (e.g. the Bible) guarantees this status of absolute truth. In the meta-context of religious authority counter-intuitive beliefs are considered undeniable truths despite the fact that in other contexts the same beliefs are not held to be true. For example, an animal can mysteriously change its species during a religious ritual, although this is not believed to be possible outside the religious domain. In fact, the authoritative meta-representation is the real object of religious belief. Pyysiäinen writes: ‘it is the metarepresentation that is the primary object of belief, not the individual embedded beliefs’.<sup>15</sup>

Is the meta-context with its absolute truth-status sufficient for distinguishing religious counter-intuitive beliefs from other counter-intuitive representations? It is clear that scientific statements or aesthetic ideas are not understood as absolute truths. In this regard there really seems to be a difference between religious and other counter-intuitive beliefs (although not *all* religious beliefs are held to be absolutely true either).

There is a problem, though. Cognitive scientists of religion emphasize that the theory of religion they propound is a *causal* theory as distinct from the traditional hermeneutic-phenomenological and cultural accounts of religion.<sup>16</sup> The cognitive approach tells us that there are evolution-based (unconscious) cognitive structures in the human mind which causally explain different types of beliefs and behaviour. This cognitive account applies to religious representations too. Above, I pointed out that, according to CSR, the core feature of religious beliefs is their meta-representative nature. However, meta-representations are also representations. It follows that the cognitive scientists of religion should be able to give a

causal explanation to meta-representations as well. But here the cognitive account ends up in trouble.

First, it is problematic to regard the religious meta-representations or meta-contexts as the real object of belief. The meta-context implies the idea of authority that renders the original belief a status of absolute truth. Now, the meta-context in itself does not necessarily include any counter-intuitive claims, which, on the other hand, were above taken to be the essential feature of religious beliefs. For instance, the sentence ‘Every statement in the Bible is true’ is not explicitly a counter-intuitive claim. Perhaps one wants to argue that the sentence implicitly contains a suggestion to a counter-intuitive agent, that is, to God, who ultimately warrants the truth of the Bible. But now we are going in a circle: counter-intuitive concepts are needed to back the status of meta-representations, when originally the relation should be the other way round.

Secondly, related to the preceding paragraph, the meta-context includes not only the relevant meta-representation (the belief that the first-order belief is true), but automatically also the *justification* (by an authority) for the original belief (representation). Thus, the meta-representation, like any other representation, should be amenable to causal explanation, but it also plays a justificatory role in the original religious belief. Now, a question arises about the relationship between the meta-representation and the original belief.

If, following Pyysiäinen, the meta-representation is the primary object of religious belief, then it has to be somehow ‘included’ in the original first-order belief. Since we are here speaking of a person’s conscious beliefs, this relationship can be expressed by saying that if a person believes that  $p$  (the original belief), he also believes that  $q$  (the meta-belief or meta-representation). However, this implication undoubtedly refers to a conceptual, i.e. to an entailment relationship and thus appears to fit well with the justificatory role of the metarepresentation. If this is accepted, then it is implausible at least to argue that there is a causal relationship between the meta-representation and the original belief (or vice versa). How, then, should the causal origin of the meta-representation be explained? Why cannot the meta-beliefs have independent causal explanations?

As I noted above, in Pyysiäinen’s analysis, the original belief and the meta-representation are closely – conceptually I assume – connected together. This means that they should also have a common causal origin. The original, first-order belief cannot be brought about without the presence of meta-representation. But this surely seems too strong. Why cannot there be a change in a person’s religious beliefs so that he or she now entertains different justificatory metarepresentations for his/her original religious beliefs? When a belief A is brought about, it is connected with and supported by the meta-representation C and no longer the meta-representation B. In fact, the problem lies in the (assumed) conceptual relationship between the original belief and the meta-representation. If the tie between these representations really is a conceptual one

(an entailment), then any religion with its characteristic beliefs becomes more or less a closed conceptual system. As far as justificatory meta-representations are also conceptually linked together, individual beliefs cannot be changed or revised without the whole system being replaced with another system. This seems to be an implausible result.

My conclusion is that the idea of meta-representation is – at least in the above form – too ambiguous to function as a conceptual tool that distinguishes between religiously counter-intuitive representations and other counter-intuitive beliefs. If one still wants to argue that the characteristic feature of religious ideas is the absolute epistemic status given to them, this claim must be grounded in some other way than by referring to the causally efficient cognitive structures of the mind. If this is accepted, then a natural choice is to stress the importance of religious beliefs in an individual person's psychology or the unifying role religion has in communal life. However, now explaining of religion by means of counter-intuitiveness seems to be reduced to more traditional psychological or sociological theories and it was these theories that the cognitive approach was assumed to replace. I do not mean to suggest that counter-intuitiveness has no role in explaining religion, but the role does not have the importance the cognitive scientists of religion hold it to have.

#### *Religious explanations and semantics*

I argue that in Pascal Boyer's theory, the role of counter-intuitive beliefs in social interaction remains unclear. Boyer's interpretation of the role of religious counter-intuitive concepts is fairly radical. For example, the idea of God as an intentional agent is not actually needed in explanations. As I understand Boyer, religious persons may explain their own and other people's behaviour with their God-concept(s), but, *ultimately*, the real explanations of religious behaviour should be sought elsewhere. Still, the God-concept is transmitted in a culture efficiently, while gods are easily represented and the God-concept can be linked to many kinds of inferences, that is, it is an inferentially rich concept.<sup>17</sup>

The latter feature is connected with another interesting aspect of Boyer's theory. Boyer theorizes that the special role of gods in a culture is highlighted by the fact that gods have full access to *strategic information*. By this concept Boyer refers to the information that is important in view of social relations. To put the matter in cognitive-theoretical terms, strategic information activates the mental systems that control the social interaction between people.<sup>18</sup> A being that sees and knows everything (or at least knows much more than humans) has a useful role when moral rules need to be given support. However, in Boyer's view, religion *per se* is not necessary in order to account for and support morality for the latter is actually based on the intuitive rules that govern social interaction. On the whole, religious concepts are parasitic upon intuitive ontologies, but the normal



human mind, due to its cognitive systems, produces counter-intuitive religious concepts.

If we really want to explain the origin, dissemination, and persistence of religious ideas, it is not enough merely to refer to a certain kind of constitution of the human mind; the cognitive scientists of religion state their case in more specific terms. There are differences in the concepts and beliefs produced by the human mind. In general, the concepts that activate more inference systems, fit better into their expectations, and trigger richer inferences are more probably acquired and transmitted than material that is poorer in these respects.<sup>19</sup> The same applies to counter-intuitive concepts. But now one wants to ask a further question.

What is actually the point in saying that the concepts and ideas that have a great inferential potential persist in a culture more easily than less fertile concepts? Mere inferential richness hardly suffices as a full answer to this question. Inferential richness in relation to what? Boyer links religious concepts especially to the social-inference systems of mind. For instance, gods are supposed to have more strategic information than people; that is, gods' knowledge of social relations in a society is superior to human beings. However, now it is plausible to argue that the richness of those efficiently transmitted concepts (in this case religious concepts) is based on the fact that they have a *useful* role in social life. They persist in a culture, *because* the many inferences and beliefs (be they true or false) they produce are socially beneficial: they can be used in explaining, grounding and justifying certain kinds of (acceptable) behaviour.

If religious ideas and concepts are useful in communal life, they obviously realize some function and this means that religious representations also have some causal role to play in the network of social relations. But then it is plausible to argue that religious concepts are needed in functional and causal explanations of social/cultural life. And this conclusion conflicts with Boyer's claim that religious counter-intuitive concepts are basically by-products of our cognitive structure and therefore have no independent role in genuine cultural explanations.

Perhaps Boyer would reply that my rendering of his views is too simplistic. He does not claim that religious beliefs are without significance for people's lives in a community. Admittedly, Boyer says that belief in gods and in the activity of spirits is relevant (although not irreplaceable) when people themselves seek explanations for their misfortune.<sup>20</sup> However, neither in this case have the religious beliefs ultimately any explanatory role. Boyer argues that when people try to find explanations for their failures in life there are already some cognitive systems working in their minds; these are the intuitive systems that govern the nature of social interaction. Since gods are taken as persons, they too are understood as partners in the social 'game' and since gods have exceptional abilities, they can also punish people for transgressing the social and moral rules.<sup>21</sup> But seen from

the outside by a cognitive scientist of religion, it is the 'social module' of the human mind which has the real causal and explanatory force and this module does its job whether or not gods are included in the picture.

Boyer's theory seems to imply that religion is a kind of by-product, an epiphenomenon of human cognitive structures. There is an analogy here with the psycho-physical epiphenomenalism that is sometimes regarded as a possible (but not so welcome) solution to the mind-body problem. According to the psycho-physical epiphenomenalism, the real causal efficacy that explains human actions and behaviour belongs to neurological and not to mental states. Similarly, Boyer's 'cognitive epiphenomenalism' (that is also explanatory epiphenomenalism) says that the explanatory power of religious concepts is only apparent: ultimately, it is the intuitive cognitive structures that causally explain human religious ideas and behaviour. Intuitive physics, biology, and psychology are grounded in these structures that ultimately (in the standard physicalistic interpretation) reduce to brain states.

I think we have here a more general problem concerning the theories of the cognitive science of religion. The starting point in CSR appears to be that intuitive and counter-intuitive concepts are cognitively and causally on the same level. Both are brought about by our mind's cognitive structure, which has been fashioned by natural evolution. And still – especially in Boyer's theory – only intuitive representations based on the mind's cognitive modules have a real explanatory role. It should be remembered that there is no special module for religiosity according to CSR. Hence, at least intuitive beliefs are causally effective; how about counter-intuitive beliefs? Boyer hardly denies that many individual religious beliefs are causally relevant in explaining a person's actions. If, for example, a person believes that gods have forbidden him or her to eat a certain food, he or she (depending on the person's other beliefs) refuses to eat that food. But why should we then reject any causal role for religious beliefs in cultural explanations?

The problem can also be seen in the semantic ambivalence of the core concepts in the cognitive science of religion. Cognitive scientists of religion think that intuitive physics, biology, and psychology are a result of a long evolutionary process. But they do not clearly explicate the semantics they relate to counter-intuitive concepts. Representations and concepts are said to be connected to the role they have in the activation of different inference systems in mind. The 'successful' representations are those that make the activation of several inference systems possible and thus produce more inferences than other, short-lived representations. Taken in a literal sense this conception leads to a sort of inferential role semantics, where a concept essentially finds its meaning as a part of a larger system of inferential relations – the reference to an external object in the world is of secondary importance.<sup>22</sup> This view is amenable to an instrumentalist interpretation of mental representations.

In this interpretation it is not the truth-value of representations and beliefs, i.e. the correspondence with the facts in the world, that is decisive. The crucial point is how well representations serve as a means for reaching goals that are important for a creature to advance the survival of an individual or a species. However, it is not credible to suppose that cognitive scientists of religion interpret the evolution-based intuitive representations in instrumentalist terms. Firstly, in general, this is a very implausible starting-point as far as the connection between evolution and semantics is concerned. Rather, the relationship goes the other way round. Representations are useful from the point of view of evolution, because they (or at least most of them) are *true*. Of two creatures in nature it is the one with a more truthful and reliable picture of the world that survives and propagates its genes.

Secondly, the cognitive science of religion is a naturalistic research programme. Philosophical naturalism also seeks to naturalize the concept of truth. In broad strokes this means that a belief is true if it stands in a right kind of causal connection to the object it represents. Thus, from this perspective also, of crucial importance is the relationship between the representation and the world, i.e. the referent that produced the representation. One should also remember that cognitive scientists of religion want to provide us with genuine causal explanations for religious phenomena. The explanatory role is reserved for the cognitive structures of the human mind. It would be strange indeed to argue that these structures may not ultimately bear any real causal relationship to the world. My conclusion is, then, that cognitive scientists of religion take intuitive representations as referring to the real events and states of affairs in the world and consider these representations and beliefs initially true descriptions of the world.

How should the semantics of *counter-intuitive* beliefs be analysed? Here in particular CSR emphasizes the inferential role of concepts. Apparently, truth-conditional semantics does not fit very well with counter-intuitive concepts, while many of the counter-intuitive beliefs are obviously false, and probably most of them have an unclear truth-value anyway. On the other hand, religious counter-intuitive beliefs are also cognitive claims: people who hold them regard them as true. They have been produced by the same cognitive system as intuitive beliefs that are regarded (for the most part) as true. Why does the same cognitive system created by natural evolution bring about true beliefs in one case and (obviously always) false beliefs in another case?

Cognitive scientists of religion try to settle this problem by arguing that they leave open the question of whether the religious categories refer to genuine entities, that is, whether the religious claims are ultimately true or false.<sup>23</sup> The same holds for the claims concerning the possibility of genuine miracles.<sup>24</sup> However, this implies at least partly giving up the naturalistic research programme in view of counter-intuitive beliefs. It is less credible to base one's explanation of religion on the results of evolutionary theory and evolutionary

psychology, if one after all leaves the possibility open that there really exist counter-intuitive (non-physical) agents having the ability to exert influence on the physical world.

There is a further point. Above, I noted that Boyer is an explanatory epiphenomenalist (or reductionist) in respect to religious concepts and their explanatory power. Now, if he nevertheless wants to regard the existence of non-physical agents as an open question, his position seems strange or even inconsistent. Can one really argue that religious explanations should be naturalistic and at the same time hold it possible that there may exist non-naturalistic agents? In the philosophy of mind, for example, the relationship is usually the opposite: non-reductive physicalism implies being non-reductionist about psychological explanations (because conscious mental states are taken to have real explanatory power) but being reductionist about the ontology of psychological states (since they are ultimately regarded as physical brain states).

A related problem is that there are plenty of counter-intuitive concepts also in modern science. Some theories in physics contain direct paradoxes in view of common sense and 'folk physics'. But even viruses and bacteria are problematic entities in this respect. They cannot be seen by the naked eye and yet they are causally highly efficacious. In which category of intuitive physics or biology should they be located? Cognitive scientists of religion hardly want to argue that the counter-intuitive, frequently verified scientific claims are not true or that their truth-value remains highly suspect. If a scientific claim is true, a plausible way to interpret it is in the context of scientific realism implying that the objects referred to in the claim should be taken as genuinely existing entities. How, then, should we ultimately draw the distinction between the religious counter-intuitive beliefs and the counter-intuitive claims found in scientific theories?<sup>25</sup>

I suppose that the cognitive scientist of religion has two alternatives. First, he could argue that besides religion we should also leave the truth-value of counter-intuitive claims in other domains undecided. But as I argued in the previous paragraph, this is not a plausible option. Secondly, he may try to take the religious counter-intuitive beliefs as essentially true. This does not fit well with the tenets of cognitive science of religion either. Above I also pointed out that intuitive beliefs are held to be true in CSR. This is supported by the fact that intuitive physics, biology and psychology form the basis for the corresponding scientific theories and the cognitive scientist of religion hardly denies the truth of the latter.<sup>26</sup> If, then, there are contradicting intuitive and counter-intuitive beliefs about the same object, the latter beliefs cannot be taken as true. In all, the semantics of (counter-) intuitive concepts in the cognitive science of religion remains unclear.

I will sum up the preceding discussion. First, cognitive scientists of religion should clarify their views about the role counter-intuitive concepts and beliefs have in the explanations of religion. Do religious counter-intuitive beliefs have

any independent explanatory function with respect to intuitive beliefs? The reply to this question also has an effect on the role of counter-intuitive concepts in the attempts to 'define' religion. Secondly, one should make clear the ambiguities regarding the semantics of religious counter-intuitive concepts. How do they differ from other counter-intuitive and also from intuitive concepts as far as meaning and reference are concerned? Do they have meaning but no referent? Cognitive scientists of religion often point out that they can remain neutral on the ontological questions of religion, because the object of their study is the human mind and its 'representations'. But representations and related categories often involve implicit presuppositions about the nature of truth, reference and world-relations. Scrutinizing these questions also helps cognitive scientists of religion to clarify their relationship to philosophical naturalism.

### *Unconscious intuitions*

One feature that has received little attention in the theories of the cognitive science of religion is the relationship between conscious and unconscious beliefs. CSR supports its basic claims with the results of cognitive science and cognitive psychology. In these branches of science, cognitive systems producing intuitive beliefs are essentially unconscious; the systems are already active in small children. Now, if, following CSR, it is the intuitive systems of mind that also explain the existence of religious beliefs and ideas, we must regard these systems as operating unconsciously.<sup>27</sup>

But how plausible is it to argue that, when explaining religion, on the deepest level we find unconscious beliefs and representations as causative factors? In itself it is not unusual to explain human behaviour with non-conscious beliefs; from its own theoretical assumptions, psychoanalysis also takes unconscious desires and beliefs to have a strong influence on peoples' actions. However, it is important to ask to what extent we really can explain human behaviour by unconscious mental states, and this question is not explicitly dealt with in the cognitive theories of religion. Of course, in religious studies it is highly recommended to look for genuine causal explanations instead of mere hermeneutic and phenomenological accounts, but the latter perspectives cannot be overlooked either. We cannot gain a realistic overall picture of human behaviour without paying serious attention to the way people themselves understand their cultural situation and the beliefs and representations related to it. Conscious beliefs and intentions can function as genuine causes and hence as genuine explanations for peoples' behaviour as well. This view can be supported by evolutionary observations. Why should nature have provided humans with the ability to have *conscious* representations, if conscious states do not have any real causal significance in the survival of individuals or species? Here, the cognitive scientists of religion should at least be aware of the nature and limits of their ultimate explanations.

One should also keep in mind the recent philosophical discussion of the so-called *qualia*, i.e. the role of qualitative experiences in analysing consciousness. Many philosophers think that it is the *qualia* (e.g. the experience of pain) that are the core feature of consciousness; in general, there is something ‘it is like to be’ a conscious being. Even though it is possible to argue that *qualia* by their nature are representative states (for example, pain represents and gives information of a certain bodily state), no realistic theory of consciousness can overlook the qualitative, phenomenological aspect of *qualia*. In religion these qualitative features manifest themselves especially in religious and mystical experiences that from the point of view of the religious person are often vitally important for his or her faith.

Furthermore, if we study religious and mystical experiences essentially (or only) as information-carrying (even unconscious) states (as CSR basically does), we bypass the experiential side of those occurrences; that is, we dismiss the experiencer’s point of view. This is because, as far as information is concerned, the person’s subjective-qualitative experiences viewed from his or her own perspective carry no special explanatory significance; information is an ‘objective’ category. But have we really offered a sufficient or even interesting explanation for the person’s deep religious experience, if we neglect the experiencer’s point of view? The cognitive approach, which first of all aims at explaining religious behaviour by (unconscious) information-carrying states, seems to pay too little attention to the experiential side of religion. As far as this aspect of religion is concerned, there is a wide gap between the explanation given by the cognitive theorist of religion and the description given by the religious person him- or herself.

In view of the nature of consciousness the theorizing about meta-representations in CSR can be seen in a new light. It is interesting to note that there are philosophical theories which purport to explain consciousness as a relation between first-order (unconscious) mental states and second-order states; these theories are often called higher-order theories of consciousness.<sup>28</sup> On the other hand, the capability to have second-order representative states is sometimes taken to be a criterion for personhood. Perhaps, then, we can explain the need of cognitive scientists of religion to speak about meta-representations by their intuitive (unconscious?) belief that there should be a proper place for conscious states in the explanations of the cognitive science of religion?

### **Conclusion**

The cognitive science of religion seeks to find genuine causal explanations for religious phenomena by basing its claims particularly on the investigations of cognitive science and cognitive psychology. This approach has already brought about some interesting results in the study of religion. At the same time, however,

the cognitive science of religion has to take into consideration the special nature of the religious domain. This it does by underlining the importance of so-called counter-intuitive concepts and beliefs in religion. On the other hand, intuitive cognitive structures of the human mind figure prominently in the explanations of the cognitive approach to religion. The problem is that the role of intuitive and counter-intuitive concepts in scientific explanations as well their semantic relations remain unclear.<sup>29</sup>

## Notes

1. See Pascal Boyer *Religion Explained: The Human Instincts that Fashion Gods, Spirits and Ancestors* (London: Vintage, 2002 [2001]), 69–75; Ilkka Pyysiäinen *Magic, Miracles and Religion: A Scientist's Perspective*, Cognitive Science of Religion Series (Walnut Creek CA: AltaMira Press, 2004), 42–43.
2. Boyer *Religion Explained*, 109–115.
3. Pyysiäinen *Magic, Miracles and Religion*, 41.
4. Boyer *Religion Explained*, 115–134.
5. Scott Atran 'Modes of thinking about living kinds: science, symbolism, and common sense', in David R. Olson and Nancy Torrance (eds) *Modes of Thought: Explorations in Culture and Cognition* (Cambridge: Cambridge University Press, 1996), 220–222.
6. Jerry Fodor *The Mind Doesn't Work That Way: The Scope and Limits of Computational Psychology, Representation and Mind* (Cambridge MA & London: MIT Press), 64. In his book Fodor criticizes (ch. 4) the idea of massive modularity; he considers it philosophically incoherent and empirically implausible. For instance, if there are modules related to social interaction in the mind, there also has to be a system that has already recognized the situation as social prior to the activation of the modules. But this requires *thinking* which brings inductive and abductive (inference to the best explanation) reasoning with it. This requirement is a problem for the classical computationalism that is module-based and not sensitive to a system's global features.
7. See e.g., Ilkka Pyysiäinen *How Religion Works: Towards a New Cognitive Science of Religion*, Cognition and Culture Book Series (Leiden, Boston MA, & Cologne: Brill, 2001), 20.
8. See Boyer *Religion Explained*, 70–87.
9. E.g. Pyysiäinen *Magic, Miracles and Religion*, 39.
10. *Idem How Religion Works*, 227; *idem Magic, Miracles and Religion*, 46–47.
11. Scott Atran *In Gods We Trust: The Evolutionary Landscape of Religion*, Evolution and Cognition (Oxford: Oxford University Press, 2002), 107–113; Pyysiäinen *Magic, Miracles and Religion*, 72–77, 126–129.
12. See Boyer *Religion Explained*, 146–154.
13. It is plausible to argue, however, that not all states of consciousness are intentional (e.g. pain states do not seem to be 'about' anything).
14. See Pyysiäinen *Magic, Miracles and Religion*, 72.
15. *Ibid.*, 77. On meta-representations in relation to cultural explanations, see also Dan Sperber *Explaining Culture: A Naturalistic Approach* (London: Blackwell, 1996), 87–92.
16. See, for example, Pascal Boyer *The Naturalness of Religious Ideas: A Cognitive Theory of Religion* (Berkeley CA & London: University of California Press, 1994), viii.
17. Boyer writes (*Religion Explained*, 191): 'Such agents [gods] are not really necessary to explain anything, but they are so much easier to represent and so much richer in possible inferences that they enjoy a great advantage in cultural transmission.'
18. *Ibid.*, 173.
19. *Ibid.*, 187. According to Scott Atran (*In Gods We Trust*, 97), those supernatural concepts that are better than others for cultural transmission and retention in human minds have the following features: (1) they are more attention-arresting; (2) they have greater inferential potential; (3) they cannot be processed completely; and (4) they are more emotionally provocative.
20. Boyer *Religion Explained*, 230.
21. *Ibid.*, 229–230.

22. Inferential role semantics has been widely accepted in cognitive science as Jerry Fodor notes in his book *Concepts: Where Cognitive Science Went Wrong*, Oxford Cognitive Science Series (Oxford: Clarendon Press, 1998), 35.
23. Boyer *The Naturalness of Religious Ideas*, 91.
24. Pyysiäinen *Magic, Miracles and Religion*, 88.
25. If a cognitive scientist of religion considers religious counter-intuitive beliefs by default false, what happens if empirical research shows that ghosts and poltergeists are real phenomena? Obviously these phenomena still remain counter-intuitive, but at least they can no longer be explained as illusory by-products of our cognitive structure. It should be remembered that the so-called paranormal phenomena are also being investigated scientifically and it is possible that some of them will turn out to be real. It is rational to keep this alternative open and not exclude it on cognitive-scientific or metaphysical grounds.
26. However, in one place Boyer says that apart from passing the question of the truth-value of religious ontologies he does the same in respect to the 'spontaneous natural ontologies' (*The Naturalness of Religious Ideas*, 91). My point is that, given the observations above, this cannot be a sensible view for a cognitive scientist of religion to take.
27. It is interesting to note that there is no entry for 'consciousness' or 'awareness' in the indexes of Boyer's *Religion Explained* and Atran's *In Gods We Trust*.
28. See, for example, William Seager's critical exposition of these theories in his book *Theories of Consciousness: An Introduction and Assessment*, Philosophical Issues in Science (London & New York: Routledge, 1999), ch. 3.
29. I am grateful to Peter Byrne and an anonymous reviewer for this journal for helping to improve this essay. A Finnish version of this article has been published in *Teologinen Aikakauskirja (Finnish Journal of Theology)*.