Cognitive Science of Religion

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Cognition, Culture and Religion

The Ontogenetic Role of Culture and its Consequences in the Study of Religious Experiences

Abstract: The present paper is both a critical analysis of the reductive problems inherent in an evolutionary approach that surfaces in the Cognitive Science of Religion (CSR) and an appeal for an enactive turn that can enhance CSR by better accounting for religious experience – i.e. the phenomenologically experienced realities that are entailed in religious belief. First, we discuss CSR and a basic evolutionary presupposition: that religious experience is based on a universal architecture designed by natural selection, which includes the notion of domain-specific processing mechanisms. We then discuss how Cultural Psychologists conceive of the ontogenetic role of culture by arguing that religious cognition does not solely develop out of evolution. As we propose, CSR can be studied with a view to the evolution of cognition that can account for the ontogenetic role of culture and language constituting phenomenologically immediate realities. Finally, we discuss enactivism as an ideal alternative for such a shift. Enactivism conceives the relation between the evolution of cognition and the ontogenetic role of culture as embodied: a non-reductive relation in which cognition and culture shape each other. This approach allows for CSR that acknowledges the fact that religious experiences constitute non-representational but lived experiences.

Keywords: Religious Experience, Evolutionary Psychology, Cultural Psychology, Enactivism, Cognitive Science of Religion.

Introduction

In one way, the Cognitive Science of Religion (CSR) considers religious experience to be a consequence of prior processing mechanisms developed during our evolutionary history, which does not give much place for culturally specific content and religious experience. In another way, – the type of which this paper will support – CSR can include phenomenologically immediate cultural and religious experiences and the embodied cognitive mechanisms that entailed with it. In what follows, we will present the former CSR approach, its theoretical problems, and an alternative approach that we will argue offers a more robust cognitive study of religion[1]. Before delving into this discussion, we will introduce what is at stake in this discussion by referring to an example: Cormac McCarthy's novel in dramatic form: *The Sunset Limited.* McCarthy's play is a single-scene dialogue between two characters named Black and White. Black is a Christian believer who intervenes when White – a disillusioned university professor – attempts to kill himself by jumping in front of a subway train. In order to illustrate the claims made herein, consider how the following excerpt illustrates Black's experience of Jesus as a phenomenologically experienced irreducible part of life, experienced in the same way that one takes for granted mundane realities like wearing a coat.

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WHITE: Do you really think that Jesus is in this room?

BLACK: No. I don't think he's in this room.

WHITE: You don't?

BLACK: I *know* he's in this room. It's the way you put it, Professor. Be like me asking you do you *think* you got your coat on. You see what I'm saying?

WHITE: It's not the same thing. It's a matter of agreement. ... Can you see Jesus?

BLACK: No. I can't see him.

WHITE: But you talk to him.

BLACK: I don't miss a day.

WHITE: And he talks to you.

BLACK: He has talked to me. Yes.

WHITE: Do you hear him? Like out loud?

BLACK: Not out loud. I don't hear a voice. In don't hear my own, for that matter. But I have heard him.

WHITE: Well why couldn't Jesus be in your head?

BLACK: He is in my head.

WHITE: Well I don't understand what it is that you're trying to tell me.

BLACK: I know you don't, honey. Look. The first thing you got to understand is that I ain't got a original thought in my head. If it ain't got the lingerin scent of divinity to it then I ain't interested[2].

Consider the basic distinction between Black's experience of Jesus with verisimilar objectivity and White's incredulity. Although they could very well symbolize two different ways of conceiving the relation between cognition and religious experience, what is important to us is rather Black's experience of his relation with Jesus. We will discuss this particular example. For now, let us begin our theoretical discussion.

CSR emerged in the early 1990's as an interdisciplinary attempt to find a universal cognitive platform for religious phenomena[3]. CSR has generally[4] drawn upon evolutionary psychology[5] and domain specific cognitive processing mechanisms[6] to propose that there are many universal processing mechanisms that cumulatively produce religious phenomena like Black's religious commitment. Researchers in the CSR have tended to use such influences to position themselves within a debate over whether or not universal

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2 McCarthy, *The Sunset Limited.*
3 Barrett, "Cognitive Science of Religion".
4 We use the notion "generally" because CSR is a diverse field and there are, of course, exceptions to every case. Our intention is to offer an avenue for CSR that removes itself from a particular kind of evolutionary psychology.
5 Cosmides and Tooby, "Cognitive Adaptations".
6 Hirschfeld and Gellman, "Towards a Topography".

cognitive mechanisms undergird cross-cultural religious diversity[7]. Generally speaking, culturally specific expressions of religion – such as a belief in a particular entity like Jesus – are taken to exist because they capitalize upon *universal* cognitive architecture created by evolution.

As pointed out by Reber[8] and one of the authors of this work[9], there is a significant shortfall in the presuppositions underlying such approaches to religion - and as the reader might notice, our intention to use McCarthy's quote is precisely to highlight such a shortfall. Reber described an "overabundance of papers focussed solely in exposing and rejecting religious, spiritual, and supernatural truth claims"[10] and argued that, while such findings aren't inherently problematic, undergirding paradigms excluding religious aspects of life lead to an incomplete approach. Reber claims that an aspect of life that is central to many people's experiences is simply bypassed. By this he means that psychologists need to recognize that the *very realities* in which religious people live are different from that of many researchers. This approach means to recognize and account for the way that humans shape the verisimilar realities constitutive of religious experience. That is, it means to recognize the specific reality embodied in Black's belief in Jesus *and not just religious phenomena in general*. We expanded this work by specifying what sort of psychology would be appropriate for Reber's vision and did so using CSR as an example[11]. We addressed how culture and cognition are ontogenetically entwined in order to develop a *Pragmatic Cultural Psychology of Religion* that showed how proponents of CSR, in general, bypass the immediate role that culture plays in the constitution of religious realities. In other words, while CSR is fantastic in reference to studying cognition, it is relatively mute when it comes to lived religious phenomena as it shows up in everyday life. CSR runs the risk of being without means to grapple with the way that religion involves the constitution of phenomenologically experienced realities that are centrally important to religious believers. It focusses on general underlying architecture, but the phenomena we're referring are *precisely* what can be addressed if CSR research is to have pragmatic value in making sense of the everyday lives of religious practitioners.

The purpose of this paper is to harness the previous work done by us and Reber in a direction that can expand CSR into a more robust form of research, one that can better account for the ways humans shape the realities they experience. Hence, since we seek to offer an approach to cognition that can account for culturally shaped meaning and experience that constitutes phenomenologically immediate realities, our following argument will be divided into three main points. First, we will summarize CSR to illuminate the ways in which some forms draw upon evolutionary psychology. As we will describe below, appropriation of evolutionary psychology leads to an approach that only includes culture as a phylogenetic feature of the environment. We will propose how the ontogenetic role of culture is bypassed when there is a focus on domain-specific processing mechanisms and that rectifying this bypass is necessary to expand CSR. Second, we will present how culture and cognition are ontogenetically entwined and what constitutes the realities we are discussing. This discussion will include a presentation of some potentially generative themes that are already featured in some work in CSR. Third, an *enactive*[12] approach to cognition will be discussed and used as a means to explain how CSR can be expanded to account for culturally specific experiences like what we have seen as Black's verisimilarly *objective* experience of Jesus. By providing an alternative paradigm of cognition that accounts for both phylogenetics and a meaningfully ontogenetic role of culture, we hope to offer researchers a way to work within the realities of their religious participants and still have a theory of cognition. Overall, our proposed approach enables a CSR with greater representational and computational power in addition to practical applicability[13].

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7 Barrett, "Cognitive Science of Religion"; Boyer, *Religion Explained*; Cohen et al., "Common Criticisms"; Guthrie, "Animal Animism"; McCauley, *Why Religion*.
8 Reber, "Secular Psychology"; Slife and Reber, "Implicit Bias".
9 Cresswell, "Can Religion"; McLean et al., "Psychologists Finding".
10 Reber, "Secular Psychology", 195.
11 Cresswell, "Can Religion".
12 Maturana, "Biology of Language"; Maturana and Varela, *Tree of Knowledge*; Varela et al., *Embodied Mind*.
13 E.g., McLean et al., "Psychologists Finding".

CSR, Evolutionary Psychology and Domain-Specific Processing Mechanisms

As mentioned above, researchers in CSR have tended to position themselves within a debate over whether or not universal cognitive mechanisms undergird religious diversity[14]. The consensus is that such universals exist and provide a cognitive platform that enables religious phenomena. For example, Bering[15] explains that humans have a cognitive default to believe in an afterlife on the basis of an already-present ability to form representations of others' minds. From this specific perspective, this would mean that because *The Sunset Limited*'s Black can form ideas about what is in the minds of others, this capacity can be generalized to conceive of the voice of some sort of super-agent speaking to him. This claim is an example of one cognitive ability that, when added to others, contributes to a capacity for religious representation which epiphenomenally manifests as Black's personal relation with Jesus.

The concern that emerges in CSR is where such abilities comes from. Because of this, evolutionary psychology can be invoked, especially the work of Tooby and Cosmides[16]. Evolutionary psychology proposes that recurrent challenges to survival in a Pleistocene environment allegedly produced adaptive changes that better enabled an organism to pass its genes into the next generation[17]. This view purports the idea that selection is *the only* causal process that propels a population towards developing functional adaptations[18]. This claim means that the impact of recurrent environmental conditions structure the design of adaptations[19]. In reference to cognition, evolutionary psychologists go so far as to say that there is no warrant to believe that selection favoured something other than genetically-encoded solutions to environmental challenges faced by Pleistocene hunter-gatherers[20]. In other words, the structure of the Pleistocene environment caused corresponding adaptive organization of cognition.

Evolutionary psychologists make the claim that a dualistic nature-nurture view "expresses only a premodern version of biology, whose intellectual warrant has vanished"[21]. Their case is that there is nothing in evolutionary psychology that corresponds to concepts like genetic determination *or* environmental determination. The environment is taken to regulate the shape of human cognition by way of natural selection and the expression of any given phenotype relies upon interaction between genes and environment. In other words, evolution "shapes the relationship between genes and the environment such that they both participate in a coordinated way in the construction and calibration of adaptations"[22]. It is because of the supposition that the environment – including culture – impacts human cognitive architecture over time that evolutionary psychologists resist charges of biological reductionism.

Consider, however, the direction that evolutionary psychologists take in light of the foregoing passage:

> ... culture is a manufactured product of evolved psychological mechanisms situated in individuals living in groups. Culture and human social behaviour is complex and variable, but not because the human mind is a social product, a blank slate, or an externally programmed general purpose computer. Instead, human culture and social behaviour is richly variable because it is generated by an incredibly intricate, contingent set of functional programs that use and process information from the world, including information that is provided both intentionally and unintentionally by other human beings.[23]

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14 See, for example, Barrett, "Cognitive Science", 1; Boyer, *Religion Explained*, 3; Cohen et al., "Common Criticisms", 113; Guthrie, "Animal Animism", 39; McCauley, *Why Religion*, 13.

15 Bering, "Folk Psychology".

16 Cosmides and Tooby, "Cognitive Adaptations"; Cosmides and Tooby, "Domain Specificity"; see also Barrett, *Why Would Anyone*; Bering, *Belief Instinct*; McCauley, *Why Religion*; McCauley and Lawson, *Bringing Ritual*; Sperber, "Intuitive and Reflective".

17 Cosmides and Tooby, "Domain Specificity", 86.

18 Tooby and Cosmides, "Psychological Foundations", 57.

19 Ibid., 61-62, 69.

20 Cosmides and Tooby, "Domain Specificity", 87.

21 Tooby and Cosmides, "Psychological Foundations", 21.

22 Cosmides and Tooby, "Domain Specificity", 86.

23 Tooby and Cosmides, "Psychological Foundations", 24.

The implication of this view is that a system could not respond to its outer environment without presence of mechanisms designed in order to create that connection[24]. Lying beneath variable behaviour are universal mechanisms, so that "superindividual interactions depend intimately on the representations and other regulatory elements in the head of every individual involved and, therefore, on the systems of computation inside each head"[25]. While resisting the charge of reductionism, these authors give cognitive processes shaped in phylogenetic terms nearly exclusive primacy[26]. Culture merely works as part of the natural environment to establish mechanisms over phylogenetic time in a way that makes the specifics of Black's beliefs in Jesus irrelevant, since his belief would be rather explained by universal cognitive mechanisms evolved during the Pleistocene era. Thus, one leg of the bipedal theory that CSR builds itself upon claims that religion occurs as a result of the operation of evolutionarily designed mechanisms.

While there some debate and disciplinary diversity, in general, CSR's other leg can easily become domain-specificity[27]. Domain-specificity refers to the scope of a given mechanism's function insofar as cognitive abilities are treated as designed to handle specific types of information[28]. In the words of Barrett and Kurzban: "we define domains as individuated by the formal properties of representations because, we believe, this is the only possible means by which brains systems could select input"[29]. This claim means that a given mechanism responds to a particular input that fits its scope. Such a position echoes others who describe domain specificity as "a genetically specified computational device in the mind/brain (henceforth: the mind) that works pretty much on its own inputs pertaining to some specific cognitive domain and provided by other parts of the nervous system (e.g. sensory receptors or other modules)"[30]. Input that is relevant to an organism is specified in terms of being relevant to one or more domain-specific mechanisms. When evolutionary psychologists claim that natural selection is purported as the only explanation for functional organization of our cognitive mechanisms, what they mean is that natural selection creates domain-specific mechanisms[31]. The results are the aforementioned evolutionarily designed constraints placed on an organism's capacity to respond to the environment: "...an organism's behaviour cannot fall within the bounds of the constraints imposed by the evolutionary process unless it is guided by cognitive programs that can solve certain information processing problems that are very specific"[32]. Seen through this lens, Black's everyday experience of the presence of Jesus would be an external, cultural interpretation of cognitive programs originally designed for different adaptive tasks.

Just because information is processed differently in different contexts – and we can imagine how Black behaves in novel ways in new situations – does not mean that domain specificity is ruled out. Proponents of domain-specificity would argue that one would expect integration and interactivity of information from multiple sources and, once some mechanisms are in place, their output could be input for other mechanisms[33]. Novelty that we see in the immediate situation is often explained on the basis of actual versus proper domains[34]. A *proper domain* refers to a domain that mechanism is designed for[35]. The selection of input a formed in proper domains is constituted by representations pertaining to the Pleistocene era. As such, the proper domain refers to formal rules specifying content of Pleistocene era. It is in this manner that Tooby and Cosmides would claim that Black's architecture is "'pre-equipped' (that is, reliably develop) with specialized mechanisms that 'know' many things about humans, social relations, emotions and facial

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24 Ibid., 28, 116.

25 Ibid., 47.

26 Derksen, "Human Nature", "Realism, Relativism".

27 Barrett and Kurzban, "Modularity in Cognition"; Hirschfeld and Gellman, "Towards a Topography".

28 Hirschfeld and Gellman, "Towards a Topography".

29 Barrett and Kurzban, "Modularity in Cognition", 630.

30 Sperber, "Modularity of Thought", 40.

31 See Cosmides and Tooby, "Domain Specificity", 88.

32 Tooby and Cosmides, "Psychological Foundations", 97.

33 Sperber, "Modularity of Thought".

34 Barrett and Kurzban, "Modularity in Cognition", 35.

35 Sperber, "Modularity of Thought", 50 ff.

expressions, the meaning of situations to others, the underlying organization of contingent social actions such as threats and exchanges, language, motivation, and so on"[36].

Obviously, a character like Black does not exist in a Pleistocene environment anymore but we can imagine that he still functions reasonably well. *Actual domains* refer to any range of stimuli that can satisfy the proper domain's input conditions. For example, consider Bering's discussion of the input of a Hyperactive Agency detection device[37]. This device serves as an example of a domain-specific mechanism often invoked in CSR. It involves a supposed device that is specialized for detecting agent-directed activity as its proper domain. Different input criteria other than just seeing a human or animal can also serve to trigger this device. Wind may move a shrub and the device kicks into gear and creates a suspicion of agency. The actual domain is the movement of the shrub, but the result is a supposed mechanism that produces the perception of agency underlying movement in a way that such ubiquitous agency establishes a potential belief in a super-agent. In sum, a mind so conceived can organize input into information relevant to the organism and hence handle diversity. In this particular example, then, Black's phylogenetic Hyperactive Agency detection device would kick into gear in a way that is only later – ontogenetically and culturally – framed as an everyday presence of Jesus.

Implications

CSR research consistently addresses the notion of a "tool kit" approach that draws upon core rules for processing represented stimuli. There is, of course, debate about the number of mechanisms involved, where some authors argue for a few domains of core knowledge[38] and others argue for massive modularity[39]. Regardless of the number of mechanisms involved, it appears to us that few if any researchers in CSR argue for domain-general processing mechanisms or generalized cognitive abilities. For example, Barrett claims that "human mind/brains exhibit a number of functional regularities regarding how to process information. These functional regularities are also known as domain-specific inference systems or 'mental tools'"[40]. Boyer similarly asserts that the mind "comprises lots of explanatory devices, more properly called *inference systems,* each of which is adapted to particular kinds of events and automatically suggests explanations for these events"[41]. Religious cognition is understood in terms of a number of domain-specific processing mechanisms - again, Black's belief in Jesus would actually be partially enabled by an a priori cognitive device for the perception of agency underlying said belief and the device(s) can be the sole focus.

Although there is no necessary relationship between CSR and evolutionary psychology, a more powerful CSR is possible through a divorce from Tooby and Cosmides form of evolutionary psychology. The form of CSR that we seek to leave behind is one that treats cognitive architecture amounting to religion as emerging in the way suggested by such evolutionary psychologists. Evolutionary psychologists are clear that they do not take a position of biological reductionism nor an approach that could be understood as a naive nature-versus-nurture dualism. The same would apply for CSR[42]. However, there is a contradiction in evolutionary psychology that emerges in light of the claim that "our modern skulls house a stone age mind"[43]. While evolutionary psychology involves a non-reductionist agenda that pretends to make room for culture in phylogenetic terms, its proponents claim that cognitive architecture is exclusively shaped in the Pleistocene era and that it is passed on almost exclusively through genetics, but this implies something that looks like biological reductionism[44]. It involves a conception of culture that effectively by-passes its immediate

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36 Tooby and Cosmides, "Psychological Foundations", 89.

37 Bering, *God Instinct*.

38 Spelke and Katherine, "Core Knowledge".

39 Barrett, *Why would anyone*.

40 Barrett, "Cognitive Science", 2.

41 Boyer, *Religion Explained*, 17.

42 See Cohen et al., "Common Criticisms".

43 Tooby and Cosmides, "Psychological Foundations"; Cosmides and Tooby, *Evolutionary psychology*.

44 For example, Cosmides and Tooby, "Domain Specificity", 106-108; Tooby and Cosmides, "Psychological Foundations", 82-87.

ontogenetic influences and this is a trend that can be clearly found in CSR. For example, Barrett argues that a super-agent would be retained in memory if it violated a few natural expectations but not too many[45]. A super-agent that can walk through walls but has a natural human-like mind is represented in memory as opposed to an agent that violates many assumptions. The cultural content or meaning of a specific agent is irrelevant because it is the number of violations of natural expectations that matter. This is an example of cognitive constraints that can be understood as emerging from natural selection. A problem is that this view commits researchers to a questionable minimal ontogenetic role of immediate culture on cognition, the downside of this view being that the environment that matters to cognitive architecture is the Pleistocene environment and not the immediate situation, the latter serving only to provide input in actual domains.

In short, we seek to avoid a CSR where (1) culture is given an exclusively phylogenetic explanation, and (2) cognition is conceived as evolutionarily designed domain-specific mechanisms that are locked inside human skulls. Where Reber and we call for an approach that can accommodate immediate realities, CSR runs the risk of committing itself to a paradigm that simply *cannot* accommodate them, as we will more clearly substantiate below.

Gantt et al. have even said that evolutionary psychology ends up expanding its metaphors to a metaphysical level removed from actual evidence[46]. While we avoid speculating about metaphysics, these authors certainly make a good case when arguing that evolutionary psychology perpetuates a particular world view that is not useful for CSR. They show how evolutionary psychologists conceive of reality in a singular sense that reflects a naturalistic paradigm incongruent with human sciences[47]. This paradigm excludes any sort of world view that is non-scientific while it is, in fact, a narrow conception of science shaped in metaphor just like any other view of reality. Gantt et al. show how presuming an a priori phylogenetic role for culture and a locked cognition inside the skulls of humans expresses a paradigm that already shapes what counts as evidence without considering religious experience – and actual cultural experience – as it shows up in life. Consider the specificity of Black's belief: he does not feel the everyday presence of Mohammed but that of Jesus – and probably a Jesus belonging to the specificities of his particular Christian adherence. Even more, and as he says, he only knows Jesus to be in the room. Mohammad, to follow our example, would be seen by him in an entirely different light: for example, as the subject of a belief others have, but not as part of his own immediate and phenomenological reality. Domain specificity does not allow for a discussion of such a distinction, since, according to its premises, Jesus and Mohammed would both be cultural manifestations of a prior universal and phylogenetic mechanism. This means we seek to provide CSR with an approach that expands it in such a way that it can have pragmatic value to religious believers. It not our conviction that CSR *intentionally* bypasses the practically relevant content of religious belief, but it is clear that a metaphorical a priori of what counts as science cuts this practically relevant content off from the possibility of a more pragmatic, and thereby robust, CSR. In what follows, we will seek to propose a paradigm that can address verisimilar realities and then offer a theory of cognition that can expand CSR.

Cultural Psychology: Humans Constitute Experienced Religious Realities

Those inspired by *Cultural Psychology*[48] have made the case that cognition and culture are ontogenetically interdependent[49]. They argue that defining the immediate environment as constitutionally independent of cognition – aside from serving as general actual domain input criteria – reflects a problematic conception

45 Barrett, "Coding and Quantifying".

46 Gantt et al., "Mechanisms or Metaphors"; see also Richardson, *Evolutionary psychology*.

47 See also Slife and Reber, "Implicit Bias".

48 This moniker is a debated one. We are promoting a strong from of cultural psychology that is reflective of *The Oxford Handbook of Culture and Psychology*, edited by Valsiner. This strong form of cultural psychology stands in contrast to reincarnated cross-cultural psychology, as exemplified by Kitayama and Cohen's *Handbook of Cultural Psychology*.

49 E.g., Bruner, *Acts of Meaning*; Ratner, *Cultural Psychology*; Shweder, *Thinking*; for an overview see Valsiner, *Oxford Handbook*.

of the relationship between culture and cognition. Moreover, understanding cognition as culturally constituted enables an understanding of how phenomenologically experienced realities arise. Basically, this approach to culture relies on conceiving it as sociolinguistic practices. One author wrote: "personal life takes shape in cultural terms, or better yet, perhaps, that individuals are necessarily and continually involved in the interpretive apprehension (and transformation) or received symbolic models"[50].

Elsewhere, we have outlined such an approach and articulated how it is necessary for CSR and we will summarize some key points rather than being redundant (we refer readers to these works for more information[51]). Consider social constructionism and discursive psychology. Gergen has already shown the role that language and sociality play in the social construction of cognition[52], also spelling out how what are usually taken to be processing mechanisms pertaining to self-representations are actually a social phenomenon ontogenetically shaped in social experience and language use[53]. In the United Kingdom, discursive psychologists such as Edwards[54] and Potter[55] pursued a similar direction. Edwards carefully and systematically outlined how mechanisms enabling categorization are not really explainable in terms of information processing, by showing how perception and categorization are better conceived as social constructions occurring in interactions with others. In a similar vein, Bruner commented on the cognitive revolution to point out that the idea of processing mechanisms is misguided[56]. Language actually *shapes* the perceptual categories and cognitive performance of humans. There are other substantial bodies of work that carefully document the sociolinguistic constitution of what are normally taken to be cognitive properties that cannot be explored in depth here[57]. Of course the forgoing approaches are diverse with sophisticated and nuanced distinctions. Suffice it to say, however, that there is a large literature demonstrating the viability of an alternative mode of cognition, including alternative textbooks[58].

This work is expanded by others interested in the *embodiment* of sociolinguistic practices in relation to cognition. A central notion is that, when humans engage in sociolinguistic practices, they align themselves with the folk meanings *experienced* in sociolinguistic symbols[59]. Children learn language and to learn a language is to learn the experiential realities that come with it[60]. To learn to be "afraid of the dark" is to learn that "afraid" is experientially part of "the dark". Work with infants and young children has shown how humans are socialized to bodily experience realities in the same way as caregivers, and this work ties such socialization to language and symbolic expression[61]. For example, Oppenheim and colleagues examined dialogic interplay between mothers and their children, showing that this interplay constituted children's ability to regulate their own behaviour and emotions[62]. Once again, this line of work expands social constructionism and discursive psychology insofar as it shows human language to be already aligned with the folk meanings *experienced* in religious symbols.

In relation to McCarthy's character, we could say this is precisely the point colloquially made by Black when he mentions Jesus as someone who he *knows* is in the room – he doesn't merely think so – and as someone with whom he can talk – even though he doesn't hear Jesus' voice out loud. In Black's everyday experience of Jesus, he lives his presence as part of bigger sociolinguistic practices in which, in effect, he's a figure with whom one can talk and share a space that is both spiritual and physical. So it is not as if Black's belief can be understood as a mere consequence of prior cognitive mechanisms; rather, its religious and

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50 Rosaldo, *Toward an Anthropology*, 140.

51 See Cresswell, "Can psychology"; McLean et al., "Psychologists Finding".

52 Gergen, *Realities and Relationships*.

53 Gergen, "Agency", *Social Construction*.

54 Edwards, *Discourse and Cognition*.

55 Potter and Wetherall, *Social Psychology*.

56 Bruner, *Acts of Meaning*.

57 See Wertsch, *Vygotsky*; *Voices*.

58 E.g., Harré, *Cognitive Science*.

59 Baerveldt and Voestermans, "Cultural psychology"; Cresswell, "Being Faithful"; Cresswell and Smith, "Embodying Discourse".

60 Cresswell and Tuecher, "Body and Language".

61 Cole, *Cultural psychology*; Fogel, *Developing Trough*; Rogoff, *Cultural Nature*.

62 Oppenheim, "Emotion Regulation".

experiential specificity is embodied in Black's immediate cultural reality. Black's perception of the presence of Jesus is not composed of contingent environmental facts that are read by domain-specific mechanisms as having a religious nature; *they are religious facts themselves*, and they imply an experiential, embodied "lingerin scent of divinity".

Implications

All of the work we have discussed points to how learning language is to acquire an embodied mode of being that shapes ostensive realities of religious experience. On the subject of CSR, this means that participating in a religious community involves sociolinguistic practices that shape the word as it is phenomenologically experienced with verisimilar reality. These are the realities within which religious participants live and what Reber and we seek to address. The point is that culturally constituted meaning is centrally important and not domain-specific processes. In contrast to the idea of domain-specific processing mechanisms where the authors "do not intend a reading of domain as *content domain,* in the folk sense of domains individuated by the *meaning* of their constituents"[63], folk meaning is central in a culturally oriented view. When we advocate for the inclusion of culture, we mean it in the sense that "personal life takes place in cultural terms". This means to incorporate culture in a deeply pervasive sense where it – as embodied sociolinguistically – and cognition are constitutionally interdependent in ontogenesis.

So we propose that CSR misses religious meaning and experience because it misses the co-constitution of culture and cognition. That is, "[r]eligious meaning and experience … is defined out of bounds due to a focus on how many domain specific processing mechanisms accidently accumulate to produce religious epiphenomena."[64] A focus on domain-specific processing mechanisms bypasses the role of culture in cognition by reducing it to mere input material. An extreme example of this challenge can be seen in authors that purport a worldview that defines immediate religious contingencies as epiphenomenal. For example, Guthrie described religion as a „bi-product of… a perceptional and cognitive strategy"[65]. He meant that the culturally immediate specifics of a religion are not relevant because cognitive mechanisms are of interest. Other authors make similar claims with an emphasis on „[c]ore systems for representing objects, actions, numbers, places, and social partners …"[66]. Boyer regularly refers to "inference systems"[67] to address evolutionarily shaped domain specific processing systems. A similar approach is found in Bering, who wrote that "we are indeed contained entirely within our own skulls" and later that "the human brain, like any physical organ, is a product of evolution, and since natural selection works without recourse to intelligent forethought, this mental apparatus of our evolved to think about God quite without need of the latter's consultation"[68]. Bering was interested in showing how our minds have pre-given knowledge independent of the immediate environment. He draws authors such as Keleman, who argue for a "promiscuous teleology", that is, a concept that pertains to a general propensity to explain the realities as having a purpose[69]. The actual meanings of characteristics of the explanation that is slotted into this promiscuous teleology are considered to be irrelevant. Bering seeks to describe a „universal ontology of cognitive abilities" and expresses a general trend in CSR to promote cognitive architecture formed by domain-specific processing mechanisms[70]. But the notion of actual and proper domains, however, effectively creates this schism, locating it between cognitive faculties and the environment in a way that simply does not fit what cultural psychology has shown about human cognition and experience. This approach bypasses any meaningful role of culture, so the folk meanings that are sociolinguistically constituted are ignored because of the way

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63 Barrett and Kurzban, "Modularity in Cognition", 630, emphasis added.

64 Cresswell, "Can Psychology", 137.

65 Guthrie, "Animal Animism", 39.

66 Spelke and Kinzler, "Core knowledge", 90.

67 Boyer, *Religion Explained*.

68 Bering, *Belief Instinct*, 23, 43.

69 See Kelemen and Rosset, "Human Function".

70 Bering et al., "'Afterlife' Beliefs".

culture and cognition have been separated. In a word, isolating cognition from experienced realities betrays the way human cognition is entwined with a milieu[71]. In a culturally informed approach, on the other hand, a stimulus is constituted by sociolinguistic practices that also constitute experiential reality. When cognition is not treated as principally distinct from the world, stimuli are not distinct from the organism and the meaning of a stimulus is then shaped by the individual as she has participated in life with others.

In order to grasp religious realities like Black's experience of Jesus with verisimilar objectivity, we need an approach to cognition that can handle phenomenologically immediate experience. Rather than inadvertently bypassing folk psychologies as irrelevant to CSR, we propose a science that is more culturally informed, and as we have argued elsewhere, such a cultural approach is precisely what enables us to apprehend the verisimilar realities within which humans live[72]. Such an approach considers sociolinguistic actions and how they play a constitutive role in relation to cognition. For example, Belzin approached a Christian tradition with an attempt to apprehend what it meant by using the language of salvation and sanctification[73]. In order to understand how these lives are experienced in this particular tradition, he addressed such terms by participating directly in them. In so doing, he studied the sociolinguistic constitution of this community's cognition. If we are to follow Belzin, "we must appreciate the ways that such understandings grow, not from an 'inner' essence relatively independent of the social realities, but from experience in a world of meanings, images, and social bonds, in which all persons are inevitably involved"[74]. This allows us to add a few words on McCarthy's Black and pragmatic cultural psychology. Mainly, we can see that whatever the merit of current CSR, it can't help us understand experiences like Black from within his own perspective. But this is what is at stake here: the project of a CSR that can actually conceive the relation between culture and cognition from an immanent, non-dualistic point of view, this is, one that gives culture a constitutive and ontogenetic role. When we mention the need to understand Black's experience *from within*, we mean that it is not an irrelevant input into prior processing mechanisms. But this is what CSR misses if it considers culture a secondary set of contingent inputs that affects a cognitive apparatus dating back to the Pleistocene era: culture's deeply pervasive nature in its ontogenetic relation with cognition, a relation made explicit in Black's case.

Taking Lead from Some Good Ideas: Potential Directions from CSR

As we propose, CSR could also aim to include explanations that can account for the meaning of culturally constituted realities. Some authors in CSR hint at the direction this enterprise would involve:

> Such explanations necessarily entail the position that just as culture does not hover above cognition, so cognition is not somehow insulated from culture. ... The shaping/constraining effects of evolved psychological mechanisms are only *some* of the many factors influencing religious innovation and transmission.[75]

In this way, and "[u]nlike the social lives of non-human primates, human social life is thoroughly cultural... there need not have been anything in the ancestral module that precluded the possibility of culturally enhanced or constructed cues"[76]. As some authors go so far as to write that "human processing is not like a computer"[77], it becomes clear that CSR is not *necessarily* committed to a culturally isolated conception of cognition.

Sperber is one author whose approach could be considered a classic citation in this matter[78]. His goal was to provide an account of culture that was not naïvely reductionist, by suggesting "that psychology is

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71 See Peters, "Evolutionary Psychology"; Tallis, *Aping Mankind*.
72 Cresswell, "Can Religion"; McLean et al., "Psychologists Finding".
73 Belzin, *Cultural Psychology*.
74 Rosaldo, "Toward an Anthropology," 139.
75 Cohen et al., "Common Criticisms", 113-114, emphasis added.
76 Sperber and Hirschfeld, "Cognitive Foundations", 44.
77 Whitehouse, *Modes of Religiousity*, 22.
78 Sperber, *Explaining Culture*.

necessary but not sufficient for characterization and explanation of cultural phenomena"[79]. He thereby makes room for context and culture, for example, with claims such as the idea that "metarepresentations are brain states described in functional terms, and it is the *material interaction between brains, organisms, and environments* that will explain the distribution of a representation"[80]. That being said, although Sperber opened the door to an approach that takes culture seriously, he still relied on domain-specific processing mechanisms that preclude the constitutive role of culture. But again, this cuts CSR off from understanding religious experience. For example, Sperber is clear in seeking to explain cultural macrophenomena as cumulative effects of individual mechanisms and inter-individual mechanisms: "there are only mental representations, which are born, live and die within individual skulls, and public representations, which are plain material phenomena"[81].

Similar potential can be seen in McCauley, who is arguably a central figure in CSR[82]. Like Sperber, McCauley opened the door to a potential approach that includes an ontogenetic role for culture. He did so by beginning his book with the claim that cognition is embedded and embodied[83]. Unlike Sperber, McCauley is more forthright about the interdependence between culture and cognition, stating bluntly that cognitive accomplishments are not confined to what happens in people's heads[84]. He also claims that cognition does not depend on exclusive or genetically determined capacity and thereby opens the door to a contextual approach that includes a meaningful inclusion of culture. In a mode strikingly similar to Sperber, however, McCauley still reverts to the primacy of domain-specific processing systems where operations are mandatory. As his book progresses, he moves further towards the familiar line of domain-specific processing mechanisms shaped in evolution. He eventually asserts cognition does not depend on anything culturally distinctive and cautions that it is possible to overplay how much something is culturally embedded[85]. In sum, the same primacy of self-contained processing present in Sperber is echoed in McCauley, which could potentially lead to the kind of bypass of experience that we seek to include.

Overall, we do not think that researchers in CSR commit naïvely to a perspective of cognition independent from culture. Afore mentioned quotations and examples like Sperber and McCauley hint at a potentially richer CSR that can address religious experience. We seek to explain how it is possible to have a paradigm about cognition that does not throw out the ontogenetic role of culture. An issue to deal with, however, is the role of evolutionary psychology, because domain-specific processing mechanisms are supposedly rooted in our evolutionary history, meaning that the cognitive and biological mechanisms that would explain Black's experience of divinity go back to these times, with the fact that his experience includes talking and standing in the presence of Jesus – a very specific religious figure - being secondary, a mere cultural input on top of a much older evolutionary hardware. In any case, by presenting a paradigm of cognition that both sidesteps the need for domain-specific processing and offers an alternative view of the evolution of human cognition, we will propose an approach to cognition that can account for the realities that people experience and so bring us into the realities of religious practitioners.

A Middle Way: Enactivism

Promising research is that of embodied cognition because it is a unique approach to conceiving cognition[86]. Where the paradigm generally presented by CSR rests upon the presumption that cognition pertains to happenings rooted in an individual brain, embodied cognition treats it as belonging to the whole sensory-

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79 Ibid., 60.

80 Ibid., 26, emphasis added.

81 Ibid., 81.

82 See McCauley, *Why Religion*.

83 Ibid., 17.

84 E.g., ibid., 18.

85 Ibid., 37.

86 See Karasavvidis, "Distributed Cognition"; Noë, *Out of Our Heads*; Robbins and Aydede, "Situated Cognition"; Shapiro, *Embodied Cognition*.

motor activity of the body embedded in in its milieu. That is, cognition extends beyond the brain into the whole embedded body "such as the sensory organs, the musculoskeletal system, and relevant parts of the peripheral nervous system"[87]. As such, as opposed to merely computational mechanics, on this view cognition involves contextually-bound embodied experiences[88]. One paradigm of embodied cognition is *enactivism*, as promoted by Thompson[89]. His work constitutes a good source to turn to because it addresses phenomenologically experienced realities in direct relationship to cognitive science[90].

Enactivism and Cultural Psychology

A crucial feature of enactivism is that it treats cognition as embodied. To understand how cognition is fundamentally engaged in the world outside of itself, enactivism considers cognitive systems as dynamic systems that achieve sensory-motor organization in attuning themselves interdependently with the surrounding milieu. Rather than bypassing religious experience as a feature of the domain-specific mechanisms anchored in the brain that receive stimuli and respond on the basis of such processing, cognition can be seen as emergent in circular causality of continuous sensory-motor interactions involving the brain, body, and milieu[91]. What looks like processing on one paradigm could be reinterpreted as a dynamic system coupled to a milieu. At the neurological level, for instance,

> ... individual neurons do not detect objectively defined features. Rather, assemblies of neurons make sense of stimulation by constructing meaning, and this meaning arises as a function of how the brains endogenous and nonlinear activity compensates for sensory perturbations.[92]

As an example, consider the idea of how children supposedly represent the contents of others' minds. Some proponents of CSR draw upon the idea that we understand others' minds by forming a theory about what is present within them[93]. An enactive approach, in contrast, promotes an increasingly attuned organism aligning with other organisms in the give-and-take of life. The sympathetic nervous system may be escalated in an organism like a caregiver, and so what this arousal amounts to depends on the context. For example, it could be a feeling of indignation if there is a sociolinguistic practice that gives shape to a sympathetic nervous system arousal in a milieu where such a feeling is normatively justified. A child's own sympathetic nervous system may mirror that of the caregiver such that there is attuned arousal[94]. Learning, then, is to ontogenetically couple this sensory-motor attunement with symbols and other peoples' higher order cognition of indignation with others. Learning what looks like a representation of others' mental states is actually falling into synchronicity with the realities and the caregiver who is also part of such realities[95]. This example illustrates how researchers in CSR can rethink mechanisms through enactivists theories.[96]

Enactivists reconceptualise the role of the surrounding milieu. Thompson pointed out that human cognition as such should not be separated from the environment in terms of stimuli and domain-specific processing mechanisms because it is always coupled with something beyond itself. It is for this reason that he wrote that "'Inner' and 'outer' are not pre-existing separate spheres, but mutually specifying domains

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87 Robbins and Aydede, "Situated Cognition", 4; Varela et al., *Embodied Mind*.

88 Noë, *Out of Our Heads*.

89 Thompson, *Mind in Life*. See also Maturana, "Biology of Language"; Maturana and Varela, *Tree of Knowledge*; Varela et al., *Embodied Mind*.

90 Thompson, *Mind in Life*; Varela et al., *Embodied Mind*.

91 Thompson, *Mind in Life*, 11.

92 Ibid., 530.

93 E.g., Barrett, *Born Believers*; Kelemen and Rosset, "Human Function".

94 See Greenspan and Shanker, *First Idea*.

95 McLean et al., "Psychologists Finding".

96 For readers interested in a more systematic discussion about Theory of Mind and other mechanisms commonly discussed in CSR, we refer them to McLean at al. where such topics are covered in much more detail.

enacted or brought forth by the structural coupling of the system and its environment"[97]. Much like the cultural approach that we set out above, stimuli would not be considered triggering conditions because, with the dismantling of the dualism between "inner" and "outer", there is a blurring of the boundary between world and cognition. For humans, experience goes beyond affect insofar as it entails value and meaning: instead of treating it as an *environment* with stimuli, it is treated as *communally constituted realities*. Realities present themselves to us in ways that compel us because they are integral to us. Rather than claiming that people have representational content *about* a supernatural being, in human's *manifest experience* they engage a supernatural being that is already part of reality. It is in this way that a CSR informed by enactivism would orient itself to the embodied experience of Black and consider how his knowledge of Jesus is entwined with his embodied activity, making it feel like it is part of his manifest experience, like Jesus is in the room with him.

This phenomenologically oriented view highlights how reality, insofar as we can possibly experience it (i.e. in the full embodied sense), is bound to sociolinguistic participation in life with others. Participation in a community enables people to be tacitly tutored in a reality that those in a community take for granted[98]. Consider again the approach to what looks like representing others' minds. An enactive paradigm of cognition involves the attunement to jointly-constituted realities. This achievement includes cultivating synchronicity with other people's sensory-motor and other kinds of dynamics, as they are coupled to immediate life. Religious indignation, for example, involves a situation where it is appropriate as constituted by a community's sociolinguistic practices. Through a history of engagement with many others, there are normative dispositions as to what situations are appropriate for indignation. A situation is one requiring indignation and people do not arbitrarily impose it on neutral reality. As such "(1) perception consists in perceptually guided action and (2) cognitive structures emerge from recurrent sensorimotor patterns that enable actions to be perceptually guided"[99]. The religious reality, insofar as Black can possibly experience it, is constituted by such dynamic mutuality, as his cognition is shaped in its coupling with others via sociolinguistic practices. We turn to include the folk psychologies in which he is a participant when grasping his religious experience and enactivism enables a theory of cognition that allows for this turn.

Such claims fit with the perspective of cultural psychology set out above. What enactivism adds is a deeper view that explicitly integrates biology and a theory of cognition that opens CSR up to new directions[100]. Language is coupled to the sensory-motor engagement with life, making language deeply embodied. There is never a natural reality over which experience is laid because it is already experienced as laden with sociolinguistically constituted value and meaning. Simply put, enactivism further shows how Black's cognitive experience of Jesus can also be understood as experientially bound to realities constituted by sociolinguistic practices in which he is an embodied participant. This view opens up an approach to the realities within which people, included religious practitioners, live[101].

Enactivism and Evolution

Ontogeny, on this view, is about self-organizing in attunement with others[102]. The central idea is that a child who organizes her sensory-motor and sociolinguistic activity in harmony with others is organizing herself. As a child moves through different situations with others, a dynamic reorganization occurs. Different constellations of milieus require reorganizing one's psychology in different ways, so that self-organization would include enacting appropriate feelings and expressing appropriate rationality. Phenomenologically, what this means is to organize oneself to experience the appropriate realities at an appropriate context. As children grow, they become better at organizing their emotions and thoughts and so become better able to

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97 Thompson, *Mind in Life*, 26.
98 See also Tallis, *Aping Mankind*.
99 Thompson, *Mind in Life*, 173; Maturana, "Biology of Language".
100 See Baerveldt and Verheggen, *Enactivism*.
101 See Cresswell, "Can Religion".
102 Thompson, *Mind in Life*; Varela et al., *Embodied Mind*.

participate in the dynamic rhythm of life. Development is marked by success defined in terms of acting and perceiving in a manner that is close enough to others. The kinds of behaviour a child enacts are increasingly sensible and appropriate because she is organizing herself in concert with life and enacts it along with others: she enacts realities as others do. A child reaches cognitive maturity when she successfully gets along in sociolinguistic practices: we could call this the ontogenetic development of a functional cognitive system[103]. From this perspective, and in relation to the rest of McCarthy's play, Black would have gone through a similar enculturative experience, learning to experience reality in a way that is sensible and appropriate to other religious believers. As we can infer, he becomes a functional cognitive system by participating in the same religious reality and thinking in generically similar ways.

This approach to cognition provides an alternative account of human evolution that starts by rethinking the notion of adaptation[104]. Where adaptation is traditionally taken to be a capacity that offers an advantage to an organism in passing on its genes, enactivism treats adaptation as an attunement of a human to the culturally constituted realities in which she participates with others. An enactive view of adaptation is one that starts from the observation that humans are fundamentally interdependent with others and phenomenologically immediate realities. The consequences are that

> heredity depends not on ‚transmission' of genetic information for phenotypic design, but on the reconstruction of patterns in ontogeny, a process that involves many other developmental resources besides genes. Second, the innate/acquired distinction is not applicable to developmental processes. Finally, natural selection is not an external force, but the differential propagation of developmental systems[105].

As realities change with different communities, so would Black, because his adapting amounts to a self-organization in relation to realities lived by others. In fact, we see this later in the play as he struggles to engage White, the atheist professor. This attunement and self-organization can happen over long chronological time as well, which stands in direct contrast to the idea that there is a single human organism faced with adaptive problems conceived from the standpoint of its individual survival. Hence, it better fits the ways in which humans are irreducibly entwined with others. It makes room for how humans are ontogenetically entwined with each other and for how the socio-linguistic constitutions of religious realities are experienced with phenomenological immediacy[106].

Such a radical change in the notion of adaptation begs the issue of the role that survival pressures play. That is, it calls for an account of changes that occur in a population and addressing it requires a discussion of how enactivists approach the notion of reproduction. Self-organization is involved in reproduction in that, according the enactivism, "… reproduction consists in one unity organizing another unity of the same class, that is, having the same organization"[107]. The dynamic system in a human is reproduced in the sense that another human organizes herself in the same way. As a caregiver starts at a rustle in some shrubs along a pathway, a child is tacitly socialized into such behaviour and experience of the realities. In this example, the dynamic organization that produces what looks like a hyperactive agency-detection device is reproduced in another human as the latter actually self-organizes in attunement with others. Attunement among conspecifics happens in synchrony and the long term outcome is chronological attunement. Such a process gives rise to the enactment of historically linked psychologies. In our example, this would mean that Black's surety – his embodied perception of actual divinity and its parallel discursive conviction – expresses not his *individual* experience but his belonging to the historically linked psychologies of the sociolinguistic communities he has been part of. Black's religious belief – one that includes the everyday presence of a divine being – is not based on a set of cognitive inferences drawn from the input of an outer environment, but on a lived reality that is itself communally constituted.

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103 Thompson, *Mind in Life*, 99.
104 Maturana, "Biology of Language".
105 Thompson, *Mind in Life*, 202, see also 184.
106 See Buller, *Adapting Minds*.
107 Thompson, *Mind in Life*, 167.

In this context, enactivists describe evolution in terms of a natural drift[108]. Change emerges in the internal dynamics of an organism that is interdependently connected with its realities of experience, so gradual coordinated change in self-organization leads to a gradual change in a population[109]. After all, "[i]n any historical lineage generated by reproduction, there will be both conservation of, and variation in, the structural characteristics of the unities from one generation to another"[110]. Instead of genetic traits being selected for by environmental contingencies, enactivists point out how organisms that compose a population are able to self-organize and adjust to their realities. This notion of cognition integrates basic selective pressures such as food scarcity with more complicated sociolinguistic phenomena. For humans, ideological misalignment with others can be just as deadly as starvation and enactivism recognizes this important fact.

Although change can occur in relation among organisms and their environment as the latter changes in tandem with the former, there is also stability over time. Stability is described in terms of *robustness* and *flexibility*, where the first notion means

> the capacity not to change when conditions change, a capacity for self-maintenance, self-adjustment, and self-organiza-tion in the face of change. *Flexibility* is the capacity to change in relation to changing conditions, to accommodate change. Robust and flexible developmental processes, because they allow for phenotypic variations to arise in development that are not lethal to the organism, enhance the capacity of organisms for evolutionarily change[111].

Robust systems are established over time and these are dynamic systems that remain functional as an environment changes. Robust systems don't change when the environment changes because the system is able to reorganize itself to accommodate the milieu. In this way, Black's belief amounts to a robust system that leads to dynamic stabilization insofar as his historically rooted belief remains constant even in the face of White's atheist challenge. A trajectory of change is thereby emergent in the interwoven quality of multiple organisms and their environment, but change can be slow on the account that self-organization can be robust. The advantage of this approach is that it effectively brings the ontogenetic efficacy of culture together and the importance of experience with phylogenetic evolution.

Implications

An important feature of CSR is its commitment to finding universal features of cognition that undergird religious phenomena[112]. We are seeking to get away from this search for universals manifesting as an attempts to specify universal cognitive architecture in terms of identifying supposed domain-specific processing mechanisms. Because it is possible to approach CSR in a way that sidesteps the realities within which believers actually live, it can also sidestep religious phenomena as it is practically experienced. By expanding upon work already addressed by authors such as Reber[113], Sperber[114] and McCauley[115], work that makes room for an ontogenetic role of culture and the realities of community-shaped experience, we have attempted to delineate an approach that allows CSR to develop a more robust field of work. The foregoing has attempted to clear a path for a turn to cultural psychology that addresses experienced realities as irreducibly real, but also for a paradigm of cognition that can include a different view of evolution while also approaching the way cognition is constituted by culture through sociolinguistic practices. From this perspective, we can now understand both Black's embodied and lived experience of divinity as well

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108 Ibid., 97.
109 Proulx, "Enactivist Theory".
110 Thompson, *Mind in Life*, 169.
111 Ibid., 195.
112 For example, Barrett, "Cognitive Science"; Boyer, *Religion Explained*; Cohen et al., "Common Criticisms"; McCauley and Lawson, *Bringing Ritual*.
113 Reber, "Secular Psychology".
114 Sperber, *Explaining Culture*.
115 McCauley, *Why Religion*.

as the fact that the specific folk meaning of divinity he takes part of revolves around a specific figure, Jesus. From a domain-specific-driven CSR, in contrast, a religious experience like Black's is considered to be a consequence of prior phylogenetic mechanisms with no constitutive influence on the ontogenetic development and functioning of the mechanisms themselves. But we have seen how that image of the relation between cognition and culture is simply insufficient if we want to understand from a cognitive point of view how everyday religious practitioners – like Black - live their lives. We can now understand that Black is not misinterpreting outer data with a religious interpretation. There is no outer data that is misinterpreted in cultural terms – with White then being correct to reject that interpretation from an atheistic view. In Black's case, rather, enactivism sheds light on a lived reality in which the everyday presence of divinity is a fact of sociolinguistic communal activity.

The issue that the discussion in this section has sought to address is what we do with evolution and the implicit issue is the search for cognitive universals. First, it is important to be clear how evolutionary psychology and domain-specific processing misses the interdependence of culture and religious cognition. In the words of Thompson:

> Genocentrism and computationalism... [b]oth perpetuate the dualisms of hardware versus software, matter versus information, body versus mind, and both mechanize the role that particular subsystems play in what are fundamentally dynamic phenomena of the whole organism embedded in its environment. ... A better metaphor for development than 'following coded instructions' is 'laying down a path walking.' This metaphor implies that there is not separation between plan and executed action[116].

Any approach to finding such universals requires that this interdependence be acknowledged. Authors such as Peters have pointed out that the notion of genetically determined processing mechanisms is problematic because it contradicts clear evidence to the contrary[117]. He points out that the removal of the ontogenetic view of culture simple misses neurological evidence[118]. Other authors such as Buller have pointed out more generally that ontogenesis is crucially important in terms of understanding cognition[119]. An enactive account offers a view of cognition that makes room for the ontogenetic role of culture. It takes us out of the realm of treating humans as individuals by recognizing our fiercely interdependent quality. It does so, however, without having to dismiss universals. Thompson is clear that self-organization can lead to historically linked psychologies and so writes about some organization configurations as robust. Religious experiences have had consistent patterns over time and CSR has picked up on such consistencies. For example, Barrett have pointed out that religious ideas are generally and optimally counter-intuitive insofar as they tend not to be extremely foreign to everyday experience while also not being completely mundane[120]. These authors explain such consistencies on the basis of universal innate domain-specific processing mechanisms. An enactive account would drop the necessity of domain-specificity programmed during the Pleistocene era and look towards the kind of sociolinguistic features of current and past life to see what makes such psychologies more robust. Whenever humans are in a new environment, they tend to self-organize in a way that maintains such patterns across history.

In terms of a cognitive theory, Thagard[121] outlines criteria for evaluating the efficacy of an approach to cognition. One criterion is what he calls "representational power" and it refers to the degree to which a given approach bypasses important functions or information that minds process. It is clear by now that CSR stands to gain representational power if it takes an ontogenetic role of culture seriously through an appropriation of enactivism. When we consider what matters to Black's religious experience, a theory that can account for its particular content has an advantage, since folk psychologies are central for understanding religious experience and enactivist includes a theory of cognition that can enfold them. Moreover, Thagard

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116 Thompson, *Mind in Life*, 174-180.

117 Peters, "Evolutionary Psychology".

118 See also Richardson, *Evolutionary Psychology*.

119 Buller, *Adapting Minds*.

120 Barrett, "Coding and Quantifying".

121 Thagard, *Mind*; for an elaborate and systematic discussion of this paragraph see McLean et al., "Psychologists Finding".

mentions another criterion: "computational power". This entails how well an approach deals with high-level thinking and activities like problems solving (planning, decision making, explaining) and learning. An approach to cognition should account for how Black learns insofar as he dynamically adapts to life and recapitulates historically linked psychologies. Computational power can be seriously enhanced if CSR includes the constitutive role of culture, because enactivism offers insight into how that which looks like self-contained cognitive devices are actually predicated upon a richer and wider culturally constituted approach to religion. As we understand it from the point of view of enactivism, the fact that Black's everyday experience of religion can successfully sustain a critical argument with someone as different as White – an atheistic university professor – should bring the point home that an enactivist approach to Black does involve better computational power. In a word, the fact that Black experiences the presence of Jesus in his phenomenologically immediate reality but can also rationally explain said experience in sociolinguistic sparring with a character like White shows that, in effect, he is exercising high-level cognitive and practical activities. Unlike a domain-specific CSR focused on the Pleistocene era, enactivism, as we have insisted, does allow us to understand this. Lastly, "practical applicability" is another criterion for evaluating approaches to cognition identified by Thagard. It addresses how well an approach to cognition can be used to improve the life of people. The whole thrust of the foregoing was to turn to the verisimilar religious realities that people like Black experience with phenomenological immediacy. This approach is intended to be more practically applicable in to enable CSR to better engage people other than CSR researchers. Reframing how CSR approaches cognition and evolution can enhance practical applicability while also providing a theory of cognition that adds representational and computational power. As we have said elsewhere:

> It is possible to capitalize on these opportunities in CSR if researchers re-tool how they approach their work by transitioning to more powerful underlying theory that resonates with pragmatic cultural psychology. Specifically, by reformulating research in ways that is not reliant on self-contained processing modules.[122]

Conclusions and Future Directions

The purpose of this paper was to harness important recent work in a direction that can expand CSR into new realms that account for the way humans shape the realities they experience. We summarized CSR to illuminate the ways in which it draws upon evolutionary psychology. The problem with an uncritical acceptance of evolutionary psychology is that it only includes culture as a phylogenetic feature of the environment that is part of natural selection. It bypasses religious phenomena by simply defining it as theoretically irrelevant. We attempted to substantiate how the ontogenetic role of culture is bypassed and that rectifying this bypass is necessary to expand CSR in a direction that can adequately account for religious phenomena. Our proposal rests upon a strong form of cultural psychology that highlights how culture and cognition are irreducibly interdependent by way of sociolinguistic practices. As a way to establish a more robust CSR, we proposed an enactive approach. By providing an alternative paradigm of cognition that accounts for phylogenetic and a meaningfully ontogenetic role of culture, we hope to offer new directions in CSR that can enable researchers to work within the realities of their religious participants and still have a theory of cognition.

The issue that remains is what to do in CSR. We are seeking to push the field in a direction that makes a meaningful shift in its theory and that can, in turn, broaden its own boundaries. This means that future work should expand on generative themes already found in Sperber[123] and McCauley[124]. Following some authors in areas very close to enactivism[125], previous research could be reinterpreted. For example, the above discussion addressed the notion of representing others' minds in CSR[126] and then addressed an alternative

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122 McLean et al., "Psychologists Finding", 10.
123 Sperber, *Explaining Culture*.
124 McCauley, *Why Religion*.
125 E.g., Noë, *Out of Our Heads*; Shapiro, *Embodied Cognition*.
126 E.g., Barrett, *Born Believers*; Kelemen and Rosset, "Human Function".

interpretation of that research. Thus, it would be possible to reinterpret the CSR data and design new studies from an enactive approach. This work would entail integrating previous and future experimental findings with the socio-linguistic narratives that shape realities experienced with phenomenological immediacy. In this way, a non-reductive CSR would appear as possible as it is necessary.

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