Mentalizing Mistakes:

Distinguishing Mentalizing Ability from Bias in God Beliefs

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Abstract

The claim that religions are by-products of evolutionary adaptations has been at the center of the cognitive science of religion since its inception nearly three decades ago. It has been argued that religious beliefs are manifestations of evolved hyperactive agent detection and other mentalizing biases, whose development required pan-human mentalizing abilities. Much of the current research on the cognitive underpinnings of religiosity seems to rest on the assumption that not only mentalizing biases but also mentalizing abilities give rise to god beliefs in the minds of contemporary individuals. However, this presupposes that the higher capacity an individual has for mentalizing the more likely he or she is to make mentalizing mistakes. We illustrate the conceptual confusion that results from this way of framing the discussion and point to empirical evidence that challenges this notion.

Key words: mentalizing; bias; god beliefs; cognitive science of religion

Distinguishing Mentalizing Ability from Bias in God Beliefs

One of the main arguments in the cognitive science of religion (CSR) is that naturally evolved abilities to attribute mental states to others and the related mentalizing biases, such as the tendency to detect agents even when there are none, help to explain why religious ideas have been universally appealing and widespread throughout history. However, there has been little discussion on the separate roles of mentalizing abilities and mentalizing biases in religious beliefs. The failure to clearly differentiate between abilities and biases can easily lead readers of the CSR literature to imagine that mentalizing abilities and mentalizing biases are on a sort of continuum, which would imply that the higher an individual's ability to mentalize the more likely it is that he or she will make mentalizing mistakes. But this would be analogous to arguing that the better a person is at arithmetic the more likely he or she is to make mathematical mistakes. In this article, we identify and discuss this conceptual distinction, which we believe has not been adequately recognized and articulated in the field. Highlighting and clarifying the difference between the role of mentalizing abilities and the role of mentalizing biases in the emergence of religious beliefs can help us not only to clear up a conceptual confusion that has surreptitiously blocked theoretical progress in CSR but also to make better sense of the diverse empirical findings among researchers studying the relation between mentalization and religiosity.

By mentalizing we mean those cognitive processes by which humans make inferences about the mental states of others, especially about their beliefs, emotions, desires, and intentions (Frith & Frith, 2003). We are working with a common definition of cognitive bias as judgmental or perceptual errors; that is, "cases in which human cognition reliably produces representation that are systematically distorted compared to some aspect of objective reality" (Haselton, Nettle, & Murray, 2016, 968; see also Kahneman & Tversky, 1996). Finally, we realize

that the highly contested term “religiosity” can be used to refer to a wide range of phenomena and that social context is important for explaining the occurrence of specific forms of religious commitments across cultures (White, Baimel & Norenzayan, 2021). For the purposes of this article, however, we are interested in religious belief understood as explicit assertions or implicit assumptions about the existence of gods.

Mentalizing abilities and religiosity

It is widely accepted among CSR scholars that capacities related to the quick detection of other human agents and to the relatively automatic theorizing about their beliefs, emotions and intentions were naturally selected because of their survival value in early ancestral environments. It is also assumed that religious ideas can be understood in light of these abilities, without assuming a unique domain for religion in human brains. As Boyer (2003, 119), one of the significant pioneers of CSR, puts it, “religious thoughts are not a dramatic departure from, but a predictable by-product of, ordinary cognitive function”. Similarly, Pyysiäinen and Hauser (2010, 105) argue that “...religious beliefs are a by-product of evolved cognitive mechanisms. These cognitive mechanisms enable us to reason about the intentional states of others ... and also supernatural agents”.

Arguments about the potential relationship between mentalizing abilities and religious beliefs have stimulated considerable empirical research. Scholars have used a variety of terms to refer to these abilities, such as the ability to perceive agency and intentionality, the ability to attribute mind and mental states to another being, the ability to understand other human minds, and the ability to imagine the internal states of others. These abilities have most often been operationalized with empathy questionnaires, but authentic affective empathic responses, skills to infer others’ emotions and intentions, and emotional intelligence have also

been assessed (Abeyta & Routledge, 2018; Jack, Friedman, Boyatzis, & Taylor, 2016; Lindeman, Svedholm-Häkkinen, & Lipsanen, 2015; Łowicki & Zajenkowski, 2017; Maij et al., 2017; Norenzayan, Gervais, & Trzesniewski, 2012; Willard & Norenzayan, 2013; Willard & Norenzayan, 2017; Vonk & Pitzen, 2017). However, the correlations between mentalizing abilities and religiosity in these studies have typically been below .20 and beta weights have hovered around .15, which indicates that the relationship is weak or nonexistent.

These results are not surprising. First, expecting that mentalizing abilities could predict religiosity is based on a confusion. Many cognitive scientists of religion have characterized god belief as mistaken (Guthrie, 1993), a bias (Gervais, 2013), and an illusion (Bering, 2006). Boyer and Bergstrom (2008) equate the mental representation of gods to mental representations of ghosts, and according to Sperber and Hirschfeld (2004), religious supernatural beings are impossible. Abilities cannot be responsible for biases or illusions because an ability is a skill, denoting the capacity to do something well.

Second, the original CSR arguments about mentalizing abilities refer to population-level adaptations and by-products during human evolutionary history, not to the differences between god beliefs among individuals living in contemporary societies. Consider the analogy between the evolution of religion and the evolution of human immune system. The immune system has evolved to combat the effect of infecting metazoan parasites and provide immunity against infections, but this system can also become hypersensitive to harmless antigens from the external environment, such as nuts (Tyagi et al., 2015). The hypothesis that modern people with high mentalizing abilities will have more illusory beliefs makes as little sense as the hypothesis that people who have a healthy, tolerant immune system will have more allergies than other people.

Why, then, has the notion that religious beliefs could be explained by high mentalizing abilities remained unchallenged and even unnoticed in the current discussion of religious beliefs? This conceptual confusion may have stayed under the radar for two reasons. First, scholars have rarely made it clear whether they consider god beliefs, the variable to be explained, as a bias or not. If yes, then hypothesizing that mentalizing abilities can predict god beliefs is not rational: The hypothesis rests on the implicit presumption that the higher capacity an individual has for mentalizing the more likely he or she is to make mentalizing mistakes. Consequently, because empathy questionnaires and other similar methods are designed to assess accurate and appropriate mentalizing, their use in research is justified only if god beliefs are seen to be in accord with reality. Accurate mentalizing cannot predict beliefs that are considered a bias because biases are not extensions of abilities; abilities do not develop gradually and then at some point suddenly cross a threshold and become biases.

The second reason concerns the potential predictors of religiosity. We are not dealing with one but two different evolutionarily emergent properties which may explain and predict religiosity: the capacity to mentalize and the tendency to make errors when mentalizing. One of the existential conditions for religious beliefs, of course, is the capacity to detect agents and mentally represent their intentions but this does not imply this capacity predicts religiosity. Mentalizing abilities are necessary conditions for belief in intentional supernatural agents, but they are clearly not sufficient conditions because most humans, including atheists and religiously ignorant individuals, have these abilities. As Greenway (2016, 102) puts it, “mentalizing ability is necessary for belief in God or gods, but does not help explain much of the variability of belief in God or gods because nearly everyone has adequate mentalizing ability for such belief”. If religious beliefs are understood to be based on mentalizing biases, a claim whose

empirical support is discussed in the next section, we can make better sense of the of the factors that influence religiosity.

Mentalizing biases and religiosity

Many if not most CSR scholars acknowledge that beliefs in gods are to some extent a result of mentalizing biases, such as the tendency to err on the side of committing more false positives than false negatives when detecting human-like agency in the environment. To use Guthrie's (1993) famous example, it is better for a hiker to mistake a boulder for a bear than to mistake a bear for a boulder. Incorrectly interpreting a boulder as a bear as one rounds a mountain trail is not inherently dangerous, but incorrectly thinking that a bear is a boulder can lead to injury or death.

Besides anthropomorphizing, i.e., wrongly attributing agency to inanimate objects (Epley, Waytz, & Cacioppo, 2007; Guthrie, 2016), several other biases are assumed to result from the evolved abilities to mentalize, for example from the tendency to reason in intentional terms, to detect human agents and represent others and the self as mental agents, and to differentiate between unobservable minds and observable and material objects (e.g., bodies). Examples of such biases include promiscuous teleology, understood as the tendency to wrongly detect purposiveness where there is none (Kelemen, 1999b), intuitive dualism, understood as the incorrect inference that souls exist apart from bodies (Bloom, 2007; Forstmann, Burgmer, & Mussweiler, 2012), and core ontological confusions, expressing mix-ups between the most fundamental attributes of mental and physical, animate and inanimate, or living and lifeless things (Banerjee & Bloom, 2014; Järnefelt, Canfield, & Kelemen, 2015; Lindeman et al., 2015; Maij et al., 2017; Willard & Norenzayan, 2013). General phrases such as overactive theory of mind (Bering, 2013), hyperactive agency detection (Barrett, 2000), and hypertrophy of social

intelligence (Boyer, 2003) have also been used to characterize the essence of the biases. The main argument in these writings is that these biases are natural and early-developing and help to explain why people find the culturally transmitted religious ideas so compelling (Bloom, 2007; Forstmann et al., 2012; Gervais, 2013; Kelemen, 1999a; Willard & Norenzayan, 2013).

Empirical research that has focused on the relation between mentalizing biases and religious belief has consistently found stronger connections than those studying mentalizing abilities. The associations discovered in this literature have consistently been robust, with correlations and beta weights between the biases and religiosity ranging typically between .30 and .40. For example, several studies have shown that, compared with their non-religious peers, religious individuals are more likely to be influenced by an intuitive dualism bias (Demertzi et al., 2009; Gray, Knickman, & Wegner, 2011; Willard & Norenzayan, 2013). Religious believers make more errors when making inferences about intentionality and purposiveness in relation to natural events and even to randomly generated movements of geometrical figures (Banerjee & Bloom, 2014; Järnefelt et al., 2015; Lindeman et al., 2015; Maij et al., 2017; Willard & Norenzayan, 2013). Religious people are also more likely to attribute mental phenomena to non-mental phenomena, by ascribing desires to flowers for example (Lindeman et al., 2015; Lindeman et al., 2019; Pennycook, Cheyne, Barr, Koehler, & Fugelsang, 2015). In sum, while there is little evidence that mentalizing abilities are correlated with religiosity, there is stronger empirical warrant for the hypothesis that supernatural belief is linked to mentalizing mistakes.

Conclusion

In this article, we have advocated a higher level of theoretical, conceptual, and methodological precision when explaining and investigating religious beliefs. While most scholars consider god beliefs as the result of mentalizing biases, they have rarely clarified the relationship between

mentalizing abilities and mentalizing mistakes and rarely made it clear whether or not they consider god beliefs to be justified. We urge researchers to be more explicit about these issues.

We realize that there can be psychological, political and even philosophical obstacles to accepting the link between religion and mentalizing mistakes (Shults, 2018). Our goal in this context is not the promotion of atheism, although we see no good reason for cognitive scientists of religion to avoid straightforwardly rejecting the existence of gods just as they reject the existence of other entities that have no empirical warrant (e.g., astrological forces). In any case, the empirical findings and theoretical arguments described briefly above imply that scholars interested in the causes of religious belief would benefit from focusing more explicitly on mentalizing biases rather than only on mentalizing abilities.

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