



## The Zeus Problem: Why Representational Content Biases Cannot Explain Faith in Gods

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### Abstract

In a recent article, Barrett (2008) argued that a collection of five representational content features can explain both why people believe in God and why people do not believe in Santa Claus or Mickey Mouse. In this model – and within the cognitive science of religion as a whole – it is argued that representational content biases are central to belief. In the present paper, we challenge the notion that representational content biases can explain the epidemiology of belief. Instead, we propose that representational content biases might explain why some concepts become widespread, but that context biases in cultural transmission are necessary to explain why people come to believe in some counterintuitive agents rather than others. Many supernatural agents, including those worshipped by other cultural groups, meet Barrett's criteria. Nevertheless, people do not come to believe in the gods of their neighbors. This raises a new challenge for the cognitive science of religion: the Zeus Problem. Zeus contains all of the features of successful gods, and was once a target for widespread belief, worship, and commitment. But Zeus is no longer a target for widespread belief and commitment, despite having the requisite content to fulfill Barrett's criteria. We analyze Santa Claus, God, and Zeus with both content and context biases, finding that context – not content – explains belief. We argue that a successful cognitive science of religious belief needs to move beyond simplistic notions of cultural evolution that only include representational content biases.

### Keywords

Religious beliefs, cultural transmission, cognitive science of religion, god concepts

The canonical approach to the cognitive science of religion has illuminated many of the features that make religious concepts prevalent across cultures (Boyer, 2001; Atran and Norenzayan, 2004; Barrett, 2004). In particular, researchers have focused on supernatural concepts that systematically violate ontological intuitions. These minimally counterintuitive concepts enjoy enhanced memorability – a bias that could have important effects when applied over successive generations (Barrett and Nyhof, 2001; Boyer and

Ramble, 2001; Norenzayan et al., 2006). The Mickey Mouse problem (we have not cited anyone for this handy label because when we systematically pursued its origins, we found contradictory perspectives from trusted sources) challenges the relative importance of minimal counterintuitiveness to the explanation of religion because there may be many minimally counterintuitive concepts in our cultural worlds, such as Mickey Mouse and Santa Claus, that do not inspire the faith and deep commitments associated with religious representations.

Addressing this challenge, Barrett (2008) outlines five features that – he argues – combine to produce ideal representations for achieving godly status. First, successful god candidates attract attention because they violate a few routine ontological assumptions. That is, they are minimally counterintuitive. Second, they represent intentional agents. Minimally counterintuitive agents (such as talking potatoes) may be more inferentially potent than are similar non-agent concepts (such as invisible potatoes). Third, these agents possess strategic information (Boyer, 2001) that makes them relevant to peoples' lives. Fourth, successful god representations are described as having detectable interactions with our world. Finally, successful god candidates have representational content that motivates ritual practice that bolsters belief (Henrich, 2009). Barrett analyzed Santa Claus according to this representational content bias framework and argued that although Santa is a more suitable candidate for belief than many other counterintuitive agents, Santa ultimately fails because he lacks some of the content crucial to recruit the belief and commitment that is accorded to gods.

Two of Barrett's criteria that purportedly produce belief apparently presuppose some degree of belief before they could operate on the epidemiology of representations. To our knowledge, there is no evidence that people who do not believe an agent actually exists increase their degree of belief when they learn that the agent is portrayed as holding strategic information, or as detectably interacting with the world. Even children show a sophisticated understanding of the reality-fiction distinction (Morison and Gardener, 1978) and can reason about the properties, thoughts, and abilities of fictional agents (e.g., Taylor, 1999; Skolnick and Bloom, 2006), without coming to believe in their actual existence. Believers might get even more interested in their favored counterintuitive agents when they learn that these agents hold strategic information and impact the world, but if Christians learn that Zeus knows about upcoming storms (strategic information), or throws lightning bolts (detectable action), will their Zeus belief increase? This claim awaits support. We also note that many religions possess distant high gods that do not interact in the world (Swanson, 1960), so “detectable interactions” fail to describe some gods that actually recruit belief.

We present a new challenge to this framework, the Zeus Problem, and propose that the cognitive science of religion needs to take seriously an existing framework that looks more broadly at the cognitive and evolutionary foundations of culture, and integrate beyond explanations based purely on representational content. The Zeus Problem implies that explanations invoking only representational content cannot explain why people place faith in some god concepts but not others, such as the gods of neighboring or intermixed cultures. In closing, we apply our framework to patterns of belief in three supernatural agents: Santa Claus, God and Zeus.

Barrett (2008) meets the challenge of Santa and Mickey by arguing that a cognitive “sweet spot” exists for candidate god concepts that lies at the intersection of counterintuition, agency, strategic information, verifiable activity, and action motivation. This confluence of representational content features may partially explain what sets culturally successful gods apart from Mickey Mouse and Santa Claus, but we wonder how Barrett could explain why people do not believe in other peoples’ gods? Depending on your background, these “other gods” might include Zeus, Yahweh, Baal, Thor, Ganesha, Papa Gede, or ancestor spirits. These counterintuitive agents must hit Barrett’s sweet spot, because they all held thousands of adherents for centuries and were gloried in rituals and art. Many of them still do. If they miss the sweet spot, Barrett has a bigger problem because then his explanation would be confined to a particular subset of the deities that actually inspire belief. Our question is: Why doesn’t the representational content of these gods instill faith in those who hold the representational content, outside of their respective eras and cultural milieus?

Barrett’s “Cognitive science of religion” fails to recognize that there is more to cultural evolution than merely representational content. In contrast, evolutionary approaches to cognition and culture have long emphasized both content-based learning and context-based learning (Boyd and Richerson, 1985; Henrich and McElreath, 2003). Content-based mechanisms or biases arise from the interaction of mental representations with our cognitive machinery. Such interactions may affect a representation’s memorability, transmissibility, believability, or intra-psychic transformations (Henrich, forthcoming). Counterintuitiveness is an example of a content-based memory bias (Atran and Norenzayan, 2004).

In contrast, context biases deal with the sources of mental representations and their integration. Evolutionary approaches suggest that learners should attend to cues of prestige, success, skill, age, sex, ethnic membership, health, and self-similarity in figuring out whom to learn from, or how to weight cultural information from diverse sources (Henrich and Gil-White, 2001). Learners should also weight the frequency of different beliefs or behaviors using

conformist transmission (Boyd and Richerson, 1985; Henrich and Boyd, 1998). Learners should be especially sensitive to actions diagnostic of a model's degree of commitment to expressed beliefs, termed credibility enhancing displays. Rituals, for example, may have culturally evolved, in part, to exploit our evolved context biases for cultural learning to more effectively display commitment (Henrich, forthcoming).

Content biases may explain why both religious beliefs and folk tales involve similar content, but context biases may be required to determine why people believe the former rather than the latter, or to determine which candidate god concepts are believed to exist in a given cultural context. Context biases might explain why a child raised in a Catholic village probably believes in the Trinity, but not in the Trident of Poseidon. We think context-based cultural learning better explains why people (from some societies) are more likely to have faith in God than in Zeus or Santa.

This illuminates an issue that the “Cognitive science of religion” has not paid sufficient attention to: the difference between memory and recall on the one hand and belief, faith, or commitment on the other hand. The experiments so often pointed to as evidence for the importance of counterintuitiveness only reveal memory and recall effects (e.g., Barrett and Nyhof, 2001; Norenzayan et al., 2006), which tell us nothing about belief. You can recall something without believing in it or placing deep faith in it. So, do the content-based mechanisms of the cognitive science of religion tell us anything about the origin of faith?

Our evolutionary approach suggests that humans ought to have psychological mechanisms that (1) make counterintuitive representations more memorable (i.e., take note of unusual stuff) and (2) create some immunity (skepticism) against believing such representations without input from other cultural learning mechanism (Henrich, forthcoming). That is, concepts that systematically deviate from intuitive expectations may actually be less believable than are more intuitive concepts. In one experiment (Harris et al., 2006), children were asked whether a variety of different entities exist. The children reported that a variety of empirically non-verifiable scientific entities such as germs exist, and asserted the existence of endorsed beings like Santa Claus. Although this appears to indicate that the children came to believe in counterintuitive agents like Santa Claus, children were more confident that scientific entities exist than that endorsed beings exist. These authors argue that children might in part be more skeptical of the endorsed beings simply because these beings violate intuitive expectations, leading the children to “conclude that the existence of special beings such as God or Santa Claus is more dubious than that of scientific entities” (p. 92). Bloom and Weisberg (2007) further

argue that skepticism of concepts that violate intuitive assumptions has profound effects for our understanding of the world as adults; science education in part is successful if it helps people override some of their intuitions. It is unclear how similar processes would produce both (1) belief in religious agents that violate intuitions, and (2) resistance to scientific concepts that violate intuitions. We think a more likely explanation is that people adhere to those non-intuitive beliefs expressed and demonstrated by members of their cultural milieu, and express skepticism in non-intuitive beliefs that stand in opposition to those they have adopted via context-based cultural learning.

### **Santa, God and Zeus: A Preliminary Examination of Context Biases**

A cognitive and evolutionary approach to religious belief needs to explain why so many adults believe in God (today), but so few believe in Zeus and Santa Claus. Barrett (2008) argues that content biases adequately explain disbelief in Santa Claus. It is puzzling, however, that belief in Santa Claus wanes during late childhood even though Santa's described content does not change. Perhaps context biases can resolve this dilemma. During early childhood, conformist biases may reinforce belief in Santa Claus, as a child will find that his or her peers report similar experiences with Santa Claus. Prestigious individuals in the child's environment also evince belief in Santa Claus. Mom and dad leave out cookies and milk as a credibility enhancing display of their own Santa belief. At school, children are bombarded with testimonials about Santa.

As children age, their peers and parents likely cease their credibility enhancing displays. They might tell a child outright that Santa Claus is a fabrication. A change in content does not precipitate skepticism regarding Santa Claus; instead, belief in Santa Claus declines in concert with the decline of contextual cues that others believe in Santa Claus. Bolstered by the appropriate context biases, Santa Claus is a successful god among children, but a popular folktale for the rest of us. Furthermore, we do not think that Santa is much different along Barrett's five dimensions than many a demi- or ancestor god in small-scale societies.

What, then, of God and Zeus? Both are successful god candidates in Barrett's (2008) content bias framework. Both even inspired widespread belief and commitment in their own eras. Why is belief in God a powerful force in the world today, and discussion of Zeus is relegated to mythology classes? In ancient Greece, conformist biases, prestige biases and credibility enhancing displays supported belief in Zeus, which was both widespread and popular

among the elites. Ritual practices (such as animal sacrifice) and monumental architecture (such as the Temple of Zeus at Olympia) would have served as credibility enhancing displays of cultural models' genuine commitment to and belief in Zeus, further bolstering belief among cultural learners. These factors do not persist today for Zeus, although they do for God.

Supernatural concepts with the right representational content become culturally widespread and persistent because they recruit attention and are memorable, but a core assumption of the canonical version of the cognitive science of religion is that these concepts, or at least some subset of them, have content that recruits belief and commitment. We know of no support for this claim. Representational content biases may describe why some concepts become widespread, but do not adequately explain commitment.

## Conclusion

We propose that any model of religious belief needs to solve both the Mickey Mouse problem (why are some counterintuitive concepts believed in?) and the Zeus Problem (why do people not believe in other peoples' gods?). Representational content biases are potentially powerful forces in cultural transmission, and may explain why some concepts become widespread and culturally recurrent. However, it is far from clear how any combination of such content-based mechanisms can explain the epidemiology of commitment. It is our hope that cognitive science of religion will begin to draw more broadly on the available theoretical tools of integrative evolutionary approaches to culture.

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