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The God issue: We are all born believers

19 March 2012 by [Justin L. Barrett](#)

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Our minds solve fundamental problems in a way that leaves a god-shaped space just waiting to be filled by religion

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BY THE time he was 5 years old, Wolfgang Amadeus Mozart could play the clavier and had begun to compose his own music. Mozart was a "born musician"; he had strong natural talents and required only minimal exposure to music to become fluent.

Few of us are quite so lucky. Music usually has to be drummed into us by teaching, repetition and practice. And yet in other domains, such as language or walking, virtually everyone is a natural; we are all "born speakers" and "born walkers".

So what about religion? Is it more like music or language?

Drawing upon research in developmental psychology, cognitive anthropology and particularly the cognitive science of religion, I argue that religion comes nearly as naturally to us as language. The vast majority of humans are "born believers", naturally inclined to find religious claims and explanations attractive and easily acquired, and to attain fluency in using them. This attraction to religion is an evolutionary by-product of our ordinary cognitive equipment, and while it tells us nothing about the truth or otherwise of religious claims it does help us see religion in an interesting new light.

As soon as they are born, babies start to try to make sense of the world around them. As they do so, their minds show regular tendencies. From birth children show certain predilections in what they pay attention to and what they are inclined to think.

One of the most important of these is to recognise the difference between ordinary physical objects and "agents" - things that can act upon their surroundings. Babies know that balls and books must be contacted in order to move, but agents such as people and animals can move by themselves.

Because of our highly social nature we pay special attention to agents. We are strongly attracted



Out of the minds of babes and infants comes the idea of god (Image: Antonino Bartuccio/4Corners Images)

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to explanations of events in terms of agent action - particularly events that are not readily explained in terms of ordinary causation.

For instance, Philippe Rochat and colleagues at Emory University in Atlanta, Georgia, conducted a series of experiments showing that in the first year of life children distinguish between the movement of ordinary objects and the movement of agents, even if the objects and agents in question are only computer-animated coloured discs. By 9 months old, babies showed that they were not just sensitive to the causal relationship between two discs that appeared to chase one another, they could also tell who was chasing whom (so to speak). The babies first watched either a red disc chasing a blue one or vice versa until they got habituated - good and bored, in other words. Then the experimenter reversed the chase. The babies noticed the difference and started watching again (*Perception*, vol 33, p 355).

Many of these experiments used animated discs that did not remotely resemble a human or animal. Babies do not need a person, or even an animal, present to get their agency reasoning up and running - an important point if they are going to apply their reasoning about agents to invisible gods.

See graphic: "[Who believes what](#)"

Babies also seem sensitive to two other important features of agents that allow them to understand the world but also make them receptive to gods. First, agents act to attain goals. And second, they need not be visible. In order to function in social groups, avoid predators and capture prey, we must be able to think about agents we cannot see.

The ease with which humans employ agent-based reasoning does not end with childhood. In an experiment I did with Amanda Johnson of Calvin College in Grand Rapids, Michigan, we asked college students to narrate their actions while placing ball bearings over holes on a board. Periodically an electromagnet sent the ball bearings racing around in violation of intuitive physical expectations. Almost two-thirds of the students spontaneously referred to the ball bearings as if they were agents, making comments such as, "That one did not want to stay", "Oh, look. Those two kissed", and "They are not cooperating" (*Journal of Cognition and Culture*, vol 3, p 208).

This hair-trigger agent reasoning and a natural propensity to look for agents in the world around us are part of the building blocks for belief in gods. Once coupled with some other cognitive tendencies, such as the search for purpose, they make children highly receptive to religion.

What's a tiger for?

Deborah Kelemen of Boston University has shown that from childhood we are very attracted to purpose-based explanations of natural objects - from monkeys and people to trees and icebergs. Four and 5-year-olds thought it more sensible that a tiger was "made for eating and walking and being seen at the zoo" than that "though it can eat and walk and be seen at the zoo, that's not what it's made for" (*Journal of Cognition and Development*, vol 6, p 3).

Similarly, when it comes to speculation about the origins of natural things, children are very receptive to explanations that invoke design or purpose. It seems more sensible to them that animals and plants were brought about for a reason than they arose for no reason. Margaret Evans of the University of Michigan in Ann Arbor has found that children under 10 tend to embrace creationist explanations of living things over evolutionary ones - even children whose parents and teachers endorse evolution (*Cognitive Psychology*, vol 42, p 217). Kelemen has also done experiments with adults that suggest we do not simply outgrow this attraction but that it must be forcibly tamped down through formal education (*Cognition*, vol 111, p 138).

It appears that we all share an intuition that apparent order and design such as we see in the world around us requires an agent to bring it about. A recent experiment by George Newman of Yale University supports this view. Twelve to 13-month-old babies viewed two animations: a ball knocking over a stack of blocks (obscured by a barrier during the actual striking), and vice versa

with the blocks starting in a disordered heap and finishing in a neat stack. Adults would immediately see something unexpected in the second scenario: balls cannot stack blocks. Babies were also surprised, in that they looked longer at the second animation. This suggests that babies find a ball creating order more surprising than a ball creating disorder.

More interesting still was a second experiment. In this, a ball-shaped object with a face moved purposefully behind the barrier and either apparently ordered or disordered the blocks. In this case, the babies found neither display more surprising (*Proceedings of the National Academy of Sciences*, vol 107, p 17140).

The most straightforward explanation is that babies have the same intuitions as adults: people, animals, gods, or other agents can create order or disorder, but non-agents, such as storms or rolling balls, only create disorder.

Of course gods do not just create or order the natural world, they typically possess superpowers: superknowledge, superperception and immortality. Surely these properties of gods - because they differ from and exceed the abilities of people - are difficult for children to adopt?

If anything the opposite appears to be the case. In a series of studies with other researchers, children appear to presume that all agents have superknowledge, superperception and immortality until they learn otherwise.

For example, in a study in Mexico led by Nicola Knight of the University of Oxford, Maya children aged 4 to 7 were shown a gourd that usually holds tortillas. With the opening covered, the experimenter asked children what was inside. After answering "tortillas", they were shown - much to their surprise - that it actually contained boxer shorts. The experimenter then covered the opening again and asked whether various agents would know what was inside. The agents included the Catholic god, known as Diyoos, the Maya sun god, the forest spirits, a bogeyman-like being called Chiichi' and a human. In Mayan culture, Diyoos is all seeing and all knowing, the sun god knows everything that happens under the sun, the forest spirits' knowledge is limited to the forest and Chiichi' is just a nuisance.

The youngest children answered that all the agents would know what was in the gourd. By age 7, the majority thought that Diyoos would know that the gourd contained shorts but the human would think it contained tortillas. They were also sensitive to the shades of difference in the other supernatural agents' level of knowledge (*Journal of Cognition and Culture*, vol 8, p 235). Similar things have been found with Albanian, Israeli, British and American children.

I may be wrong, but my interpretation of these findings is that young children find it easier to assume that others know, sense and remember everything than to figure out precisely who knows, senses and remembers what. Their default position is to assume superpowers until teaching or experience tells them otherwise.

This assumption is related to the development of a faculty called "theory of mind", which concerns our understanding of others' thoughts, perception, wants and feelings. Theory of mind is important to social functioning but it takes time to develop. Some 3-year-olds and many 4-year-olds simply assume that others have complete, accurate knowledge of the world.

A similar pattern is seen with children's understanding of the inevitability of death. Studies by my collaborator Emily Burdett at the University of Oxford suggest that the default assumption is that others are immortal.

The finding that the younger Maya children thought all the gods would know what was in the gourd is important for another reason: simple indoctrination cannot account for it. Whatever some people say, children do not need to be indoctrinated to believe in god. They naturally gravitate towards the idea.

My contention is that these various features of developing minds - an attraction to agent-based explanations, a tendency to explain the natural world in terms of design and purpose, an assumption that others have superpowers - makes children naturally receptive to the idea that there may be one or more god which helps account for the world around them.

It is important to note that this concept of religion deviates from theological beliefs. Children are born believers not of Christianity, Islam or any other theology but of what I call "natural religion". They have strong natural tendencies toward religion, but these tendencies do not inevitably propel them towards any one religious belief.

Instead, the way our minds solve problems generates a god-shaped conceptual space waiting to be filled by the details of the culture into which they are born.

The Santa delusion

IF RELIGION comes naturally to children, doesn't that put God on the same footing as Santa Claus or the Tooth Fairy - a being that children should outgrow? And does it not also mean that belief in God is childish?

Let's examine these claims. The analogy begins to weaken when we recognise that many adults come to believe in God having rejected the idea as children, or after rethinking their childhood beliefs and embracing them as adults. That is, they sometimes reason their way to religious beliefs. People do not begin or resume believing in Father Christmas in adulthood.

Santa and the Tooth Fairy also fail to fully fit the conceptual space that children (and adults) have because of their natural cognition. They do not readily account for perceived order and purpose in the natural world, for great fortune and misfortune, for matters concerning morality, life, death and the afterlife and they have little relevance in day-to-day matters outside their very limited ranges of concern - that is, Christmas presents and compensation for lost teeth. Their superknowledge and superperception is circumscribed in curious ways. Santa knows if you've been bad or good but does he know *all* that you do? The Tooth Fairy knows when you have lost a tooth but not where you have put your car keys.

Note, too, that adults do not typically eat sacrifices placed out for gods and pretend that the gods ate them the way they eat Santa's cookies. If indoctrination and theatrical acts of deception were the bulk of what gods had going for them conceptually, adults would outgrow them too.

It is easy to be sympathetic to the idea that we should abandon "childish" thinking in adulthood. But why does labelling an idea childish automatically make it bad, dangerous or wrong? It is true that children know less than adults and make more mistakes in reasoning, so their judgements are not as trustworthy. But what follows from this is only that we should more carefully scrutinise the beliefs of children than those of adults, particularly if they deviate from what adults believe.

But adults generally do believe in gods. That such belief begins in childhood and typically endures into adulthood places it in the same class as believing in the permanence of solid objects, the continuity of time, the predictability of natural laws, the fact that causes precede effects, that people have minds, that their mothers love them and numerous others. If believing in gods is being childish in the same respect as holding these sorts of beliefs, then belief in gods is in good company.

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