What causes the rain? How the world is misleading

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Should we account for belief in supernatural agents in terms of benefits it might provide to the human believers? Or is it just a by-product of the human cognitive architecture? Perhaps neither. A different perspective, no longer human-centric, shines through in an observation like "admittedly, the Argument from Design must have been quite convincing before Darwin". We can go farther in this direction.

Three and a half years ago Ryan McKay and Daniel Dennett published an academic article named *The evolution of misbelief*. As the article's abstract explains, their quarry was a contentious subclass of human misbeliefs, namely "misbeliefs best conceived as design features [of the belief formation system]. Such misbeliefs [...] would have been systematically adaptive in the evolutionary past." This post looks at one particular candidate: the belief in supernatural agents such as, say, rain gods. Clearly, by the criteria of the sciences, belief in a rain god is mistaken. So why was it so common throughout human history? Should it be understood as a design feature, somehow capable of conferring a systematic evolutionary fitness advantage?

The academic journal, *Behavioral and Brain Sciences*, employs a format known as "Open Peer Commentary", through which McKay's and Dennett's article was commented on by a variety of other scholars. One of them was David Dunning. From his contribution: "Focusing on the individual's internal cognitive architecture, McKay & Dennett (M&D) provide an incomplete analysis [though he also calls it thoughtful and stimulating] because they neglect *the crucial role played by the external environment in producing misbeliefs* [emphasis mine] and determining whether those misbeliefs are adaptive." And: "Even a perfectly rational human organism could come to hold the types of misbeliefs that M&D discuss, because the environment much more frequently provides people with incomplete or misleading data than M&D anticipate."

The aim of this post is to account for belief in rain gods and similar deities by arguing along this line, blaming a misleading environment. Before we come to that, the next six paragraphs follow a thread of increasingly supportive views through the literature. But first of all, let's quickly consider: what would follow from achievement of the aim? The answer is that we could dispense with the design-feature interpretation. And while it might still be of interest exactly to know how the cognitive architecture produces the beliefs in question, it would not be as interesting as before: after all, what's so remarkable is that the beliefs, unlike one would

normally expect, are *wrong* — and the root cause for that we would then assume to be not some quirk of human nature but the *external* world. The latter could mislead, in Dunning's words just quoted, "even a perfectly rational human organism".

Dunning's commentary, while providing a couple of other examples, does not say anything specific about the case of supernatural agency. But section 11 of the original article by McKay & Dennett has it as its topic. They conclude "the currently dominant evolutionary perspective on religion remains a by-product perspective [...] On this view, supernatural (mis)beliefs are side-effects of a suite of cognitive mechanisms adapted for other purposes." They then indicate three manifestations of such mechanisms, having already near the beginning of the section introduced the first of them, agency overdetection as treated by Stewart Guthrie in his 1993 book *Faces in the Clouds: A new theory of religion*. I will briefly present my reading of this book in the next paragraph while not pursuing other mechanisms here — but in any case, the key philosophical difference would always be the same: should the misbelief be blamed on the internal cognitive architecture or on a misleading external world? We are dealing with by-product theories now, rather than design-feature theories, but this difference remains.

Guthrie proposes that belief in supernatural agents arises from a mostly unconscious bias in human perception. How does he argue for the bias? Not missing agency that is really there can be of overriding importance. For example, from p. 6 in his book, "it is better for a hiker to mistake a boulder for a bear than to mistake a bear for a boulder". A related argument, sometimes intertwined with the first but claiming its own place next to it especially on pp. 101–103, states that the perceptual process prefers to bet on agency because this generates more information to work with. Both arguments apply with particular force to perceptual bets on *human* agency. Thus, they aim to explain anthropomorphism, the overattribution of human characteristics to things or phenomena. Especially for the religious sort of it, he adds a third argument, which I will introduce further below.

His theory of religion, Guthrie says on p. 37, "is indebted most to Horton and intellectualism". In our context, the latter term denotes a particular approach to the topic. Imagine a rain god, worshipped by people in a certain culture; then an intellectualist analysis will proceed on the assumption that the god concept reflects a pursuit to explain features of the observed world. Now, this does not mean that intellectualists would expect to hear a scientific mission statement from the people concerned. Still, in Guthrie's words (p. 21), "most such theorists regard religion as having much in common with science and deny that it is peculiarly emotional, irrational, or otherwise aberrant as a form of thought and action". Intellectualism was cast aside by the ethnological mainstream of the past century, but Robin Horton has, again in Guthrie's words (p. 26), "taken a major, if insufficiently recognized, step to restore it".

This post is meant to fit in with the restoration. In fact, the misleading-environment concept seems particularly compatible with Horton when, on p. 13 in his 1993 book *Patterns of thought in Africa and the West*, a selection of some of his major essays over his years in Nigeria, the latter characterises his own approach as contextualist as much as intellectualist. How, then, does Horton account for belief in supernatural agents such as rain gods? In most societies down through the course of history, he says, the human scene was the perceived locus of order, regularity and predictability, and therefore likely to provide the founding analogies for theoretical schemes; it is a feature of the modern West, one due to accelerated social change coupled with increased technological development and environmental control, that this locus has shifted to the realm

of non-living phenomena, both artificial and natural. The perspective, taken from pp. 327–328 and 375–376 of the book (see also 12, 214–215), shows an overall symmetry: order, regularity and predictability happen to wane in the human realm just as they wax in the inanimate, with both realms otherwise on a par, it seems, as candidate sources of analogies. Cf. his "policy of even-handedness" (p. 14) regarding contextual explanations of thought products that modern Westerners consider invalid vis-à-vis contextual explanations of thought products they consider valid.

By contrast, Guthrie's theory is avowedly asymmetrical. His point is precisely that the two realms are not on a par. Humans, as he accordingly notes on p. 89 in his book, "generate a uniquely wide range of phenomena". This contributes to the importance, to human interests, of detecting other humans. It also contributes to the high amount of information generated by perceptual bets on human agency. And now to his third argument: it also facilitates such bets in the first place. "Much is explicable by appeal to humans or something modeled on them" (p. 36). "Hypothesizing a humanlike being at work behind appearances accounts for effects of unparalleled diversity. This principle, that efficiency in explanations is the ratio of effects predicted to hypotheses made, underlies Occam's razor: do not multiply hypotheses unnecessarily." The latter passage, from p. 189, could account for rain gods and the like as "frugal" theoretical entities.

Yet the crux of the matter, I think, may be even simpler. Guthrie's book contains an overview of intellectualist theorists, starting with a paragraph (p. 21) on the early-Enlightenment writer Bernard Fontenelle. In his essay on the origin of myths, Fontenelle writes of a "principle so natural that even today our philosophy has none other; that is to say, that we explain unknown natural things by those which we have before our eyes, and that we carry over to natural science those things furnished us by experience" (English translation, quoted by Guthrie). This is remarkably similar to Horton's framework, hinted at above. But Fontenelle goes on to note that we get nature to act only "par des leviers, des poids et des ressorts" (by means of levers, weights and springs). And the first people, he says, either didn't know these things or didn't pay them any attention. So interpreting something like rain as nature at work can be simply out of the question! An insight that again introduces asymmetry: it becomes clear that conditions in only one of Horton's two realms, the inanimate one, make all the difference.

Fontenelle includes concrete illustrations of how gods thus came to be introduced, but let us stay on the abstract side and now try to account for such agents ourselves by using Dunning's line as promised above. Dunning calls the environment out on the "incomplete or misleading data" it provides. I would put it in our case as follows. The agentive interpretation, attributing desires and other mental states, is clearly apt for a lot of events, namely those caused by humans and animals; and one might not even entertain the thought that the environment would mix in other events, such as rain and wind, where this interpretation just can't work well any more — however hard one may try to get the mental states right. No desires at all are involved in the weather's actions, but this is far less clear than that desires *are* involved when humans and animals act, at least for someone without a specific education or cultural context.

For an analogy, let's replace the ability to cause events with something else typical of humans and animals: the tendency to leave footprints. Imagine a world where sometimes, without any agent involvement, shapes appear in the soil that look like footprints (although perhaps much

bigger). People inhabiting such a world could surely be forgiven for mistakenly assuming these lookalikes to *be* footprints, left by agents not unlike themselves or animals.

They might see through the hoax if given a chance to directly observe a track of footprint-lookalikes coming into existence without anyone in sight. Or they might then instead perceive an invisible agent walking there. But notice that, in our original case in our own world, supposed agents causing weather events need not be invisible outright. A rain god could be merely hidden from view, or too far away to see. Horton, on p. 284, even has to make sense of an instance where rain itself is invested with mentality, and does so by comparing this to what has been called "theoretical identity" in philosophy of science (one of many intriguing similarities he finds between African traditional thought and Western science — however, he also emphasises and explains the differences).

One might criticise the footprints analogy for relying on one specific sort of shape, out of many possible, when the case at hand involves all sorts of events rather than just a specific sort. Again, then, let's replace the ability to cause events with something else typical of humans and (less so this time) animals: the ability to create design. All sorts of design, so the criticism doesn't apply here. Imagine a world where sometimes, without any agent involvement, appears what looks like design . . . but this is now reminiscent of our own world! Think of eyes, or birds' wings. The world exhibits apparent design not created by humans or animals; and unsurprisingly, beliefs in "intelligent design", in some form or other, have been widespread at all times.

I should note that Guthrie, on pp. 186–187, invokes his account of anthropomorphism to help explain the human feeling of a designer behind the works of nature, citing David Hume on the need for such help. But otherwise it would not have occurred to me that an intellectualist approach might be insufficient to account for the beliefs. Provided, of course, that Darwin's notion of design by natural selection is not available as a viable alternative to design by agent. Likewise, in our original case the argument depends on there not being any notion of natural event-causation (as might be evoked by a contraption using Fontenelle's levers, weights and springs). That is, on Friedrich Nietzsche being correct when stating

> Now man believed originally that wherever he saw something happen, a will had to be at work in the background as a cause, and a personal, willing being. Any notion of mechanics was far from his mind.

I read this, originally from *The Gay Science*, when it appeared last year as the first part of a larger quotation in a post by Cris Campbell on Nietzsche and theory of mind. We should be alert for counterexamples, though. Have certain happenings always been seen as unconnected to agency? That would present a challenge to our parsimonious approach. It would show that people had the option, after all, to cut agency out of the picture, as in today's mechanistic view of geological or weather events; and yet they didn't exercise it as often as they "should" have done. Why not? At this point, to answer that, it may make more sense to invoke, as Guthrie does, a human cognitive bias or feature.

But do we have to answer it? Does such a counterexample exist? I conclude the post with two caveats regarding what would qualify. First, while in both my posts (the other is here) I have singled out desires among mental states (cf. Dennett's concept of intentional stance, singling out beliefs and desires), it is not enough for an event to be not thought of as desired by an agent to happen. Agents may cause events not only on purpose, but also out of carelessness. And as side

effects. When there is a new footprint, it is clear that its creation must have been a small event when it happened. But everyone knows, presumably, that most likely this event wasn't *desired* by the agent who caused it.

Secondly, of course all people have concepts of physics. For example, everyone knows gravity. However, even if the downward trajectory of an object is seen as unfolding by the necessity of physics, the perceived cause of the event could still be a (supposed) agent who dropped or hurled the object in the first place. What if it was pushed off a cliff by the impact of another object? That would be physics as well. Yet who set the other object in motion, then? Only examples qualify that lack *any* perceived contribution from agents with desires and other mental states.