

What should we believe about atheists?

Dominic Johnson*

Politics and International Relations, University of Edinburgh, Scotland, UK

Catherine Caldwell-Harris provides a stimulating review of the psychological correlates of atheism. The broad conclusion is compelling evidence in support of the hypothesis that atheism results from natural variation along a continuum of belief (hypothesis 2 in my target article of this issue). I called this my “null hypothesis” because it just seems the most likely and least complicated or speculative: we observe people who believe in God (for example) and people who do not. We also know that there is variation in the strengths of such beliefs. Therefore, like any other biological trait – whether physiological or psychological – atheism is probably just one end of the spectrum of naturally occurring variation in the propensity for religious belief.

However, significant doubt remains, for several reasons: we do not know much about causality (more experimental work is needed); we have very little data on atheism in non-western and indigenous societies (are western populations representative?); we must not rely too heavily on self-report data (people may declare themselves atheists but nevertheless display supernatural thinking); and there have been almost no studies on the other nine evolutionary hypotheses for atheism (speculative as they are, we have no data to judge them).

This is not to emphasize disagreement. At the end of my target article I said I found the null hypothesis (natural variation) the most compelling, and Caldwell-Harris’s excellent study only reinforces this view. However, in the same spirit of questioning everything that inspired my original article, let me now attack the null hypothesis itself.

1. Correlation and causality: what does a personality profile of atheists tell us?

Caldwell-Harris’s analysis and others like it (e.g. Beit-Hallahmi, 2007) put a heavy emphasis on profiling atheists. They ask, what are the characteristics of certain individuals that seem to predispose them to atheism? We must be cautious about this approach. However large the sample sizes, and however strong the statistical associations, it may not tell us very much at all. This is because there are three explanations for such correlations:

- (1) Personality traits X, Y, Z lead to atheism (the paper’s implicit assumption).
- (2) Personality traits X, Y, Z *result from* atheism.
- (3) Personality traits X, Y, Z *and* atheism result from some third factor.

This is the standard problem with inferring causality from correlations. In the case of atheism, all are perfectly plausible. As an example of possibility 2, since atheists have tended to be in a minority in modern societies (as Caldwell-Harris notes), they may

*Email: dominic.johnson@ed.ac.uk

have been more likely to *develop* a certain personality or disposition in order to justify or defend challenges to their beliefs. As an example of possibility 3, genetic factors underlying the cognitive mechanisms supporting religious beliefs (e.g., agency detection, theory of mind), may also underlie the expression of different personalities. In such cases, individual differences may predict atheism, but they do not explain it.

2. The elephant in the room: the role of environment

Personality factors *cannot* account for atheism by themselves. We can be sure of this because we observe massive variation in the proportion of believers between societies (Miller, Scott, & Okamoto, 2006). Caldwell-Harris rightly points out that this does not deny the utility of searching for individual differences (“even if atheism is predictably tied to social conditions, one still needs to explain individual differences within a given social milieu,” see “Introduction”). However, it *does* mean that, in explaining the incidence of atheism, environment *is* an important overarching predictor variable. In other words, whether atheism is a consequence of personality or not, it is clearly influenced by the society in which one lives. This is important because it points to an alternative hypothesis (my hypothesis 6): atheism is an ecological adaptation.

3. History and future: atheism no more?

One implication of an individual differences explanation of atheism is that levels of belief and atheism vary randomly in a population, and do not invoke differential selection (if they do, then it falls into one of the other hypotheses instead; though see Schloss’s commentary on my target article). In other words, atheism is not a functional, adaptive strategy, but rather an accidental result of natural variation in belief. Although this may have been the case in our evolutionary past and recent history, this may no longer be the case today. There is good evidence suggesting that religious groups are reproducing much faster than atheists (Blume, 2010), and there are models showing that if believers assort with each other then the genes of believers will spread in the population at the expense of the genes of atheists (Rowthorn, 2011). In some regions, this will lead to significant demographic changes in the coming years. Evolution is favoring believers and selecting out atheism. In these societies, atheism is no longer a non-functional individual difference variable – it is a recipe for annihilation.

4. What is atheism good for?

I challenge Caldwell-Harris’s contention that “non-believers have significant cognitive and personality *strengths*” (my emphasis). Her key findings about atheists are that they are “less social, less conformist, and more individualistic.” Although I see the logic that these can be positive attributes for individuals in modern society, I think it is easier to make a case that they are *detrimental* for the individual and for society as a whole. With the rise of globalization, anonymity in large urban societies, and increasing separation from close kin, community and family are fading elements of people’s lives. But since our brain and behavior evolved in small-scale kin groups with repeated interactions and few strangers, religion may be a better way for humans to maximize well-being and tie communities together than atheism. Perhaps it does not matter today, but it may matter in 2050 or 2100, or when we face major natural or man-made disasters.

5. Polyatheism: the many ways not to believe

Just to muddy the waters a bit more, there remains a danger that we are being misled in the characteristics of non-believers by lumping them all into the same category. There are important differences between individuals we might variously call irreligious, new atheists, skeptics, and “positive” versus “negative” atheists (Martin, 2007). Just as polytheistic religions had many gods, human society may be polyatheistic, having many forms of non-belief. Different sorts of non-believers may have different roles, motives, payoffs, different functions in the evolution of religion, and different psychological profiles.

Conclusion and some consensus

Overall, I find considerable optimism in this emerging debate because Caldwell-Harris and I seem to agree that natural variation along a continuum of belief represents the most plausible explanation of atheism. In the spirit of debate I have challenged various aspects of this individual differences explanation of atheism. It has theoretical and empirical challenges to overcome, but so do all hypotheses. I think this is the explanation that Darwin would have favored as well. If he had taken the *Beagle* around the world’s religions and temples instead of its jungles and swamps, he would most likely have been struck by the *variation* in religious beliefs as much as their universals - an extraordinary diversity that includes the potential for atheism.

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Explaining universality and individual differences in terms of “human nature”

Lee A. Kirkpatrick*

Department of Psychology, College of William and Mary, Williamsburg, VA, USA

Recent theoretical developments in cognitive science (CS) and evolutionary psychological (EP) approaches have turned the tables on an age-old question: it now appears that non-belief, rather than religion, may pose the greater mystery. However, attempts to address this question, as reviewed and expanded by Caldwell-

*Email: lakirk@wm.edu