

World Population Will Stabilize Because Humans Aren't Cockroaches



By Alex Berezow, PhD — May 20, 2016



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For bizarre reasons that I simply do not understand, world population growth is a hot-button issue. There is a large segment of the public that seems to believe that humans will continue to reproduce until we run out of food and water. Basically, we're just like cockroaches or bacteria. No serious demographer believes that -- as world fertility has been declining for years -- but facts haven't yet extinguished this pernicious myth.

Just two months ago, in response to an [article](#) ^[1] I wrote in 2011 on the myth of overpopulation, I received an e-mail that read: "You are the worst kind of a**hole. You're obviously [sic] a pawn of the powers that be." So, I'm a bad person because I believe humans aren't cockroaches, and I only hold this opinion because I'm being paid off by ... well, somebody.

Internet malcontents aren't the only ones who hold these strange views. The [always enlightened Bill Maher](#) ^[2] told a woman that she is "super-selfish" for having five children.

The exact opposite message, however, was sent by anthropologist Heidi Colleran from the Institute for Advanced Study (Toulouse, France) in a [review article](#) ^[3] published in the *Philosophical Transactions of the Royal Society B*^{*}. Humans appear to be the only organism that actually reproduces less as resources become more available. She writes:

"Over the past 200 years, people from different religious, linguistic, ethnic and

cultural groups, living in economies with different histories and value-systems, are increasingly limiting their families to around two or fewer children."

Demographers do not completely understand why this is the case. On the surface, it is easy to say that, in wealthy societies, the cost of raising children has become so high that people produce fewer of them. But this fails to explain the underlying evolutionary phenomenon, namely, how it is that a society can evolve in such a way that producing fewer children is beneficial. Demographers have developed various models, but none is satisfactory. Thus, it was Dr. Colleran's intent in the review article to explore these models in more detail.

The human behavioral ecology (HBE) model insists that there must be an evolutionary advantage to limiting fertility. Perhaps having fewer, but more educated and more prosperous children, maximizes long-term fitness (i.e., reproductive success). The trouble with this view, however, is that it is paradoxical and lacks supporting evidence. If low fertility is evolutionarily advantageous, eventually, we should expect low-fertility societies to "cash in" on their evolutionary advantage by cranking out more children. But, they don't.

Cultural evolution (CE) models place emphasis on other non-biological factors. For instance, a desire for high social status may make a person less likely to have children. But, in forgoing biological children, if the person achieves a high social status, he or she can still "pass on traits" to the next generation in the form of culture. If other members of society share similar goals, then the outcome will be fewer children.

The author appears to favor the latter model, however she indicates that much remains to be explained. There is no simple formula for fertility. Education, contraception, and desire for social status play interrelated roles, but it is unclear what ultimately drives fertility rates.

Countries like [Japan](#) [4] and [Russia](#) [5], which will lose about 1/3 and 1/5 of their populations in the next 40 to 50 years, respectively, may hope that Dr. Colleran will find an answer sooner rather than later.

*Interesting side note: [Founded in 1665](#) [6], *Philosophical Transactions of the Royal Society* is the world's oldest scientific journal. Isaac Newton was published in it.

Source [3]: Heidi Colleran. "The cultural evolution of fertility decline." *Phil. Trans. R. Soc. B* 2016 371 20150152; DOI: 10.1098/rstb.2015.0152. Published 28-March-2016.

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Links

[1] http://www.realclearscience.com/articles/2011/07/20/the_world_is_not_overpopulated_106247.html

[2] <http://www.mrctv.org/videos/maher-tells-guest-shes-super-selfish-raising-five-children>

[3] <http://rstb.royalsocietypublishing.org/content/371/1692/20150152>

[4] <http://qz.com/162788/japan-is-rapidly-losing-population-and-half-the-world-is-about-to-join-it/>

[5] <http://www.voanews.com/content/demographers-warn-of-looming-population-crisis-for-russia-118382619/170554.html>

[6] <https://arts.st-andrews.ac.uk/philosophicaltransactions/>