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## Comment James P. Smith

Economics has a well-deserved reputation as an imperialistic discipline. There is little in human behavior that we seem unwilling to place under our

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analytical microscope, using either its theoretical or statistical lens. With relatively few exceptions, the economic microscope has shied away from all things religious. This is unfortunate since religion is clearly one of the most fundamental and influential institutions affecting human behavior, an influence that transcends time and geography. We may see some of its more negative manifestations in today's newspaper headlines with religious wars still raging around the globe. The flip (and now quieter) side of religion in promoting better personal behaviors and interactions between people is often forgotten in the daily headlines but may be just as fundamental and influential.

Angus Deaton is not shy. He takes on religion with ambition and insight, subjecting it to economics straight and pure and no apologies, thank you very much. The World Gallup Poll that he uses is a terrific data source. One could quibble about the lack of depth and scope in the substantive content of the questions, but that would be missing the larger picture. The Gallup World Poll has no match in what it does well, covering 98 percent of the world's population in over 140 countries. Peoples in all regions of the world are represented. While variation in outcomes limited to those living within a particular country are significant, they pale next to the scope of variation observed around the world.

One of the expected, and in this case realized, pleasures in reading a paper by Angus Deaton, especially if you are the discussant, is that you know that the empirical findings will be fully transparent. After reading the chapter, I basically felt that I knew all there was to know about the principal empirical regularities about religion in the Gallup data. And Angus did all the work, which makes it a double pleasure for me. I have no comments, criticisms, or quibbles about the empirical methods that produced these results, having full trust in the master's voice that these are the principal empirical regularities surrounding religion. My main points center instead about how to interpret these findings.

The chapter is substantively written around two issues. The first concerns determinants of religiosity around the world and in particular how the degree of religiosity changes with economic development. The second takes religiosity as given and focuses on the impact of religiosity on a set of health outcomes. I will discuss each in turn.

There are two key empirical relationships about religiosity and a theory to match on which Angus focuses in this chapter. First, religiosity declines with income or level of development, with richer countries being on average less religious than poorer ones. Similarly, within countries poorer individuals—in the United States women, blacks, and the less educated, for example—will be more religious than their better off counterparts. Second, even without any cohort effects, with younger cohorts richer than older ones placing us right back in the poor-rich implications of the theory, religiosity increases with age. This is especially the case at older ages when one gets closer to the end of life on earth and presumably becomes more concerned with the nature and quality of any life that may lie beyond.

The theory represents a simple but powerful use of economics. On the first empirical regularity, the relationship between income levels and religiosity starts with a two-period problem—life on earth, which throughout most of human history and for most people even today is pretty harsh, and life in heaven, which by any standards and at any time is something to look very much forward to. With normal income effects, increases in income or standard of living in the earth life increases the value of earth life compared to the heavenly afterlife, which was pretty ideal to begin with, implying an income elasticity of zero.

Within countries, using very much the same type of reasoning, those with lower wages—women, blacks, and Latinos in the United States, for example—have poor earth lives compared to the quality of their prospective lives in heaven. In the Deaton theory, they will be more religious in their behaviors.

The theory on which Deaton relies is a theory for saints. In many religions, the promise of an eternal life is not just the heavenly version of eternal bliss, but also the hellish variant of eternal damnation. Depending on the type of life that has been led, the expected afterlife may be one of very low utility and not high utility. For those where the relevant odds of a very bad afterlife cannot be dismissed, increases in income would be devoted to reducing the prospects of such an event, which can be done by being a better person or being more religious rather than less.

A more comprehensive version of the theory may be that as economic development takes place, the good become less religious while the bad become more religious. If there are more good than bad, then the net effect is that religiosity will decline with economic development, as the data appear to be telling us. But so will heterogeneity in the extremes of behavior, with fewer saints and devils among us with moral behaviors becoming more commonplace but less extreme at both ends.

I also have some concerns with the use of this theory for within-country analysis, particularly for women. In most societies, women are much more religious than men. An interpretation within this theory is that women have lower wages than men do and therefore are poorer and more religious. But men and women typically live together and have pretty much the same household incomes and standard of living, even if their wages are quite different.

A more likely reason in my view starts with women's role as caretaker of children, largely in charge of the intergeneration transmission of past cultural values. One of the most important values to transmit to children is the religion of one's ancestors, if only to inculcate a set of moral beliefs that will help constrain their behavior. The more children one has the greater the value of this role for women using a simple scale effect argument. If my conjecture is correct, another relevant variable that may capture this is the cohort-specific fertility rate, which could be easily appended to the Gallup

survey. As economic development proceeds, not only do incomes rise, but fertility rates typically fall. Declining fertility over time may even explain the much steeper rise in religiosity with age among women in the cross-section. This would not represent an age effect at all, but rather cohort effects where fertility of younger women is much lower than fertility of older women in the cross-section.

The theory underlying the increase in religiosity with age is even simpler. The closer one gets to the afterlife the more optimal it becomes to invest in behaviors that would improve one's prospects of a good hereafter even if the belief in its very existence is not assigned a probability of one. With any set of probability beliefs, there appears to be little to lose with deathbed conversions.

But hold on there. This is a one-sided model with a very naïve all-knowing God on the other side. In a two-person (or one-person, one God) game with full knowledge, one would like to believe that one's life's work in all things spiritual might be more relevant.

The next part of the chapter switches to the second question—what role does religiosity play in promoting better health? Deaton is justifiably cautious in not claiming causality in this relationship, but equally right in pointing out that establishing the correct associations is a useful beginning in our understanding. There are two complementary steps to the empirical arguments. The first involves a model regressing a set of health outcomes (pain, energy, being satisfied with health, and being disabled) on religiosity while the second regresses a set of behaviors known to improve health (married, having a friend in need, treated with respect, spending time with friends, smoking, and trusting the medical system) on religiosity. While the evidence that many of these outcomes, especially the social capital ones, actually improves health is very much in dispute, there is little left to dispute with smoking.

Table 8C.1 summarizes Deaton's results for the impact of religiosity on health. An up arrow indicates that religiosity increases the outcome listed in the first column while a down arrow means the outcome fell when religiosity increased. A star (\*) symbolizes statistically significant. Separate columns are presented for the impact on male and female health. The final column

**Table 8C.1** Effects of religiosity on health

	Male effect	Female effect	% of countries with wrong sign
Pain	↓*	0	47
Energy	↑*	↑*	28
Satisfied with health	↑*	0	36
Disabled	0	↑*	46

\*Statistically significant.

**Table 8C.2** Effects of religiosity on health behaviors

	Male effect	Female effect	% of countries with wrong sign
Married	↑*	0	3
Friend in need	↑*	↑*	40
Treated with respect	↑*	↑*	23
Time with friends	0	↑*	53
Smoker	↑*	↑*	18
Trust medical system	↑*	↑*	23

\*Statistically significant.

contains a particularly useful and insightful Deaton innovation in the presentation of empirical findings. This column lists the percent of countries in which the sign of the coefficient is “wrong”—that is, religiosity is associated with worse health. Many of these wrong signs in individual countries are not, of course, statistically significant, but I still find this addition to the summary stats very helpful in assessing universality of results.

The results for men support the notion that religion is good for your health. Among men being more religious is associated with pain reduction, increased energy, and being more satisfied with one’s health. There does not appear to be any association with male disability. But before you start running out to church, the results for women do not indicate any effect of religiosity on health at all. Religiosity does increase energy among women but neither pain nor, more importantly, satisfaction with health is affected by religious behavior. Disability actually works in the opposite direction. In my view, there is no evidence of any effects of religiosity on women’s health.

Even the more male positive results have to be given a major caveat. The last column of table 8C.1 demonstrates that in a large fraction of countries estimated effects are in the opposite direction. Since an even larger fraction will not be statistically positive associated with good health, there may be relatively few countries driving the male health-enhancing impact of religion.

Additional pertinent evidence on the nature of these effects of religiosity on health is contained in Deaton’s figures, separating these effects by income level. For all health outcomes except smoking these effects appear to be concentrated exclusively on the low income countries.

The format of table 8C.2 parallels that of table 8C.1 but now the summary pertains to the estimated impacts of religiosity on a set of health behaviors associated with better health. The rightmost column once again lists the percent of countries with the “wrong” sign. These pathway results to health-promoting behaviors from religiosity are actually much more consistent (the fraction of wrong country signs are smaller) and stronger than the health results themselves. Being married makes men more religious (but not

women), and most of the social capital variables are associated with more religiosity for both men and women. One apparent benefit of religiosity is that it discourages smoking, a reliable pathway to better health. Resolving one small technical issue would help in interpreting these results. These are correlated pathway outcomes so it may be that there is only an effect through smoking and these other somewhat weaker outcomes are telling us that they are more or less correlated with smoking.

The strength of these pathway results on health behaviors actually makes you wonder why the health effects of religiosity are not even larger. For example, the pathway effects are just as strong for women as for men, but Deaton finds essentially no health effects of religiosity for women. The question, then, is what about religion promotes better health since it seems far from a universal constant across place or across people? It has the opposite sign in as many as one-third of the countries in the Gallup survey, it affects men but not women, and appears only to be a force within low income households. Like religion itself, it is more than a bit of a mystery. Deepening the mystery only makes me want to learn more about the role and appeal of religion in the world. I can ask for no better guide to my learning than having Angus Deaton probe deeper in the future on this most important of topics.