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Contemplations on the Economic Approach to Religious Behavior

By JAMES D. MONTGOMERY *

Economic models of religious behavior have generated heated debate. I contend that the deepest problem with the economic approach to religion lies in its treatment of belief formation. In this paper, I review the standard economic treatment of belief formation, argue that existing economic models of religious behavior have not dealt adequately with belief formation, question whether rational models could account for religious beliefs, and outline an alternative behavioral approach.

I. Religious Behavior as Choice Under Uncertainty

I begin the present paper with the presumption that it is both possible and useful to interpret religious behavior as an attempt to maximize expected utility given subjective beliefs.¹ One simple model might specify two actions $\{A_1 = \text{attend church}; A_2 = \text{do not attend church}\}$, two states of nature $\{s_E = \text{God exists}; s_N = \text{God does not exist}\}$, the beliefs $\{p_E, p_N\}$, and the utilities $\{u_{1E}, u_{1N}, u_{2E}, u_{2N}\}$; the analysis would then assume that the actor chooses the action A_i that generates the highest expected utility $\sum_j p_j u_{ij}$. Of course, more realistic models might specify many more actions or states of nature; intertemporal extensions might endogenize beliefs or utilities.

II. Religious Preferences and Religious Beliefs

In popular discussions, the terms “religious preferences” and “religious beliefs” are often

used interchangeably. Interpreting religious behavior as choice under uncertainty, it seems most natural to associate “religious preferences” with the utilities u_{ij} and “religious beliefs” with the probabilities p_j . This distinction between preferences (utilities) and beliefs (probabilities) is important for reasons beyond conceptual clarity. In contemporary economic theory, utilities are generally taken to be “personal” in a way that probabilities are not. Robert J. Aumann (1987 p. 13) ponders why economists have imposed this asymmetry:

Perhaps the most basic reason is that utilities directly express tastes, which are inherently personal. It would be silly to talk about “impersonal tastes,” tastes that are “objective” or “unbiased.” But it is not at all silly to talk about unbiased probability estimates, and even to strive to achieve them. On the contrary, people are often criticized for wishful thinking—for letting their preferences color their judgment. One cannot sensibly ask for expert advice on what one’s tastes should be; but one may well ask for expert advice on probabilities.

Of course, contemporary economic theory admits (even relishes!) the possibility that asymmetric information may lead rational actors to hold divergent beliefs. But models that incorporate asymmetric information are almost always grounded upon the common prior assumption (CPA). That is, all actors are assumed initially to share the same beliefs over states of nature. After receiving signals which convey information about the true state, actors are assumed to update beliefs rationally using Bayes’ rule. In its defense, Aumann (1987 pp. 13–14) argues that:

the CPA expresses the view that probabilities should be based on information; that people with different information legitimately entertain different probabilities, but there is no rational basis for

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¹ For previous research, see Corry Azzi and Ronald G. Ehrenberg (1975), John T. Durkin, Jr. and Andrew M. Greeley (1991), Montgomery (1992), and Laurence R. Iannaccone (1995).

people who have always been fed precisely the same information to do so.

Given their asymmetric treatment of utilities and probabilities, economists can question the rationality of beliefs in a way that they cannot question the rationality of preferences. This has led to some strong (perhaps surprising) results: rational actors can never agree to disagree (Aumann, 1976); common knowledge of actions negates asymmetric information about events (John Geneakoplos, 1992).

III. Religious Capital Models

Following Iannaccone (1990), one might attempt to explain interpersonal and intertemporal variation in religious behavior by applying the "consumption-capital" framework (George J. Stigler and Gary S. Becker, 1977). In this framework, current religious participation increases an individual's stock of "religious capital" and thereby increases the individual's utility from future participation. A variety of predictions follow from the insight that rational foresighted individuals will seek to accumulate and preserve their denomination-specific religious capital. For instance, children will tend to remain within their parents' denomination; children who do switch will choose a new denomination similar to the parents' denomination.

However, while the religious capital framework seems able to explain these and other facets of observed religious behavior, interpretation of religious-capital models remains problematic. Because Iannaccone (1990) implicitly assumes that religious beliefs are fixed, any change in the expected utility associated with an action must be attributed to changes in the utilities—not the probabilities—associated with various states of nature. But it seems plausible that religious participation alters subjective probabilities as well as utilities. Thus, it is unclear whether "religious capital" is a proxy for utilities, probabilities, or both. More concretely, do children tend to remain within their parents' denomination because it offers them a higher level of utility, or because they develop the belief that this denomination is the "true" church?

One might be tempted to minimize my concern about the religious-capital framework, ar-

guing that utilities and probabilities could be treated symmetrically and thus merged into "religious capital" without loss. Why not treat subjective probabilities as stocks which accumulate and depreciate as a function of religious participation, just as the religious-capital framework treats utilities? But as discussed above, contemporary economic theory treats utilities and probabilities asymmetrically. Within the consumption-capital framework, one may assume that utilities are formed through a learning-by-doing process which depends in arbitrary ways upon own past participation; one cannot say that a particular "utility production function" is either rational or irrational. But economists place more structure on belief formation: the beliefs of rational actors are fixed in the absence of new information; signals that convey information must alter beliefs through the application of Bayes' rule. Consequently, religious participation can alter the beliefs of rational actors only if participation reveals new information, and even then it must alter beliefs in particular ways. Clearly, the economic approach does not permit any simple merger of utilities and probabilities into "religious capital."

I hope not to be misunderstood. I am not arguing that the religious-capital framework cannot encompass risk, nor am I arguing that rational (i.e., Bayesian) learning models cannot be grafted onto religious-capital models. Indeed, I think that those who wish to follow the economic approach to religion can and should move in that direction. Nor am I arguing that behavioral (i.e., non-Bayesian) models of belief formation, which might view subjective probabilities as stocks which accumulate and depreciate as a function of religious participation, cannot be grafted onto religious-capital models. Indeed, this is consistent with the alternative theoretical approach that I outline below. I *am* arguing that economists studying religious behavior need to specify more clearly the processes by which both utilities and beliefs are formed.

IV. Challenges to the Economic Approach

Could the economic approach offer a compelling account of religious-belief formation? One might be tempted to reject this possibility

on empirical grounds. How can the enormous diversity of religious belief and action observed in the United States (much less the world) be reconciled with Aumann's (1976) result that rational actors cannot agree to disagree? Or with Geneakoplos's (1992) result that common knowledge about actions negates asymmetric information about events? I contend that the diversity of religious belief poses an important and difficult challenge for economic theorists. Of course, I do not expect economists to concede defeat. Some economists will argue that utilities are much more important than probabilities in determining religious choices. Other economists, conceding that probabilities do matter, will argue that asymmetric information about both "ultimate reality" and the religious choices made by others could sustain divergent religious beliefs.

One might also be tempted to reject the economic approach on epistemological grounds, arguing that it can accommodate risk but not the uncertainty inherent in religious choice. In this view, religion involves not merely the unknown but the *unknowable*; if actors cannot objectively assess probabilities, their expected-utility-maximization problems are not well specified, and the economic approach cannot be used to predict their behavior. Because the economic approach does assume that probabilities are knowable, I think it is fair to challenge economists to identify those signals that convey information about ultimate reality. But as long as followers of the economic approach are willing to defend explicitly this epistemological position (see Durkin and Greeley, 1992), it seems futile to challenge the economic approach on a priori philosophical grounds.

V. An Alternative Approach

Only time will tell whether the economic approach (which maintains that all beliefs are objective, grounded in common priors, and derived rationally through Bayesian updating) can provide a compelling account of religious belief formation. However, given the empirical and epistemological challenges to the economic approach just identified, I personally have little faith in this research program. For

the remainder of this paper, I thus attempt to outline an alternative theoretical approach.

The starting point is an epistemological orientation that I shall label methodological existentialism (ME). In contrast to the economic approach, ME maintains that ultimate reality is unknowable: there are no signals that would allow individuals to derive objective estimates of the probability that God exists (much less what *type* of God exists). An "infinite, chasmal, qualitative abyss" separates man from God (Søren Kierkegaard, 1980 [1849] p. 129). ME further maintains that individuals are compelled to make choices in the face of uncertainty, even though they lack the information needed to form objective beliefs. Man is "condemned to freedom" (Jean-Paul Sartre, 1966 [1943] p. 485). Observing the "leaps of faith" which individuals must inevitably make, social scientists are left with the important task of developing behavioral theories of religious belief formation.

Presumably, numerous behavioral theories of belief formation might be grounded upon ME. However, given that existentialists emphasize the psychological tensions arising from the necessity of choice, the use of cognitive-dissonance theory seems natural. In brief, cognitive dissonance is "a state of tension that occurs whenever an individual simultaneously holds two cognitions (ideas, attitudes, beliefs, opinions) that are psychologically inconsistent" (Elliot Aronson, 1988 p. 116). To reduce this tension, individuals may (subconsciously) alter one (or more) of their conflicting cognitions or add additional cognitions that help reconcile the original cognitions (see Aronson [1988, 1992] for further discussion). For a (too simple) example in a religious context, consider an individual who does not believe in God and yet attends church regularly. The resulting dissonance might be reduced through an increase in the subjective probability that God exists.² In this way, actions directly influence beliefs, even though

² Elaborating my simple example, social psychologists might stress the need for "internal" rather than "external" justification of actions. They might also stress the role of social support in belief formation (see Leon Festinger, 1957; Aronson, 1988).

these actions reveal no new information. Thus, current religious participation leads to an increase in expected utility from future religious participation, but for a different reason than posited by Iannaccone (1990). Indeed, I suspect that the religious-capital model "works" in part because it implicitly formalizes this nonrational process of belief formation.

Note that Aronson's definition of cognitive dissonance blurs a key distinction made by the economic approach: "cognitions" might represent either utilities or probabilities. Indeed, my reading of the dissonance literature suggests that similar psychological processes are driving both the formation of utilities and the formation of beliefs (see Aronson [1988] for references to numerous experiments).³ Because dissonance theory treats utility and probability formation symmetrically, and because the consumption-capital framework has proved useful for specifying utility formation (see Montgomery, 1994), this suggests (perhaps ironically) that some version of the consumption-capital framework may prove useful for specifying *behavioral* models of belief formation. Within this framework, theorists might posit "probability production functions" which could depend in arbitrary ways upon own actions and the actions of others. Of course, theorists using this framework to specify behavioral models might alter (even drop) the maintained assumption that agents are aware of the future consequences of their actions.⁴

³ Some evidence for the symmetric treatment of utilities and beliefs in dissonance theory might be drawn from the manner in which economists have used this theory: George A. Akerlof and William T. Dickens (1982) and Akerlof (1989) consider belief formation; Dickens (1986) and Montgomery (1994) consider utility formation; Matthew Rabin (1994) does not distinguish between belief and utility formation.

⁴ Rejecting Blaise Pascal's (1666 [1670]) claim that "going through the motions" will induce religious belief, Jon Elster (1979) argues that an individual cannot both (1) believe a proposition and (2) recognize that this belief stems from a *decision* to believe. Such concerns suggest that theorists should acknowledge the *subconscious* nature of belief formation.

VI. Conclusion

The present critique has not addressed many aspects of the economic approach often debated by its critics; I have argued merely for the methodological presumption that religious beliefs are formed through nonrational processes. Thus, even if they accept my critique, economists who have no professional interest in religion might continue about their daily business uninterrupted. But if one accepts that individuals form *any* of their beliefs through nonrational processes, this raises the suspicion that nonrational processes might govern the formation of nonreligious as well as religious beliefs (as argued by Akerlof and Dickens [1982] and Akerlof [1989]). Becker (1976) contends that the strength of the economic approach lies in its parsimony. I would concede that a theoretical approach that posits multiple theories of belief formation—one process to explain religious beliefs and another to explain nonreligious beliefs—seems far from parsimonious. But if one accepts that religious beliefs are formed in nonrational ways, two alternatives remain: a nonparsimonious theoretical approach in which some beliefs are formed rationally while others are not and a parsimonious approach in which *all* beliefs are formed through the same nonrational process.

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³ **The Economic Consequences of Cognitive Dissonance**

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