

Hell, Religion, and Cultural Change

by

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This paper's key conclusion is that church doctrine about the afterlife is a function of factors predictable with economic theory. Religion, like government, family, and community can enforce property rights and encourage socially valuable behavior. Religious doctrines about hell as punishment for breaking rules that arguably benefit society will occur in religions in cultures where the church is relatively more influential than the family, community, and government. Statistical material from the Human Relations Area Files tends to support the model's implications as does informal analysis of New England colonial Puritan doctrine about hell. (JEL: L 39, L 31)

1. Introduction

A common feature of religions is that they provide information about the afterlife. Such information is of obvious interest. The potential value of a blissful eternal life, for one, is substantial indeed. But many religions promote doctrines about the afterlife that are literally the antithesis of bliss. Hell's objective, in any of its various incarnations, is to *minimize* consumer utility. Why would a church hold as part of its doctrine the possibility that some or all of its members are condemned to an exceedingly unpleasant eternal future?

This paper's objective is to explore church behavior using economic methodology. Of particular interest is church doctrine regarding the afterlife. Our key conclusion is that church doctrine about the afterlife is an endogenous variable in cultures and is a function of factors predictable with economic theory.

Religion is an enormously complicated human activity. This paper is in no way a comprehensive treatment of the subject. Rather, this paper intends only to give insight into certain facets of religion by applying the methodology of

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economics. The economics of religion is an important emerging area of study, but is as yet immature and will only supplement, never replace, research in other fields. Readers should treat this paper as an illustration of the potential for applying economic theory to religion and as an invitation to explore the subject further.

A useful first step in modelling church behavior is to treat churches as firms producing a mix of valuable products. A number of authors explicitly model churches as firms. EKELUND, HEBERT and TOLLISON [1989] and THORNTON [1992] look at the firm-like rent-seeking activities of the Roman Catholic Church. IANNACCONE [1991] models church membership across countries by treating churches as firms in a religious market. Churches can be treated as firms even when a formal church structure is absent – when a church is organized by an informal association of individuals. IANNACCONE [1992], for example, uses this approach to address the issue of unusual behavior required of religious sect members.

These papers study churches as firms in the religion industry, approaching the subject from a number of directions. Critical to explaining the behavior of firms in any industry, however, is understanding the industry's products. Firms in an industry sell a particular product or set of products because doing so reduces information costs to consumers and captures gains from producer specialization and economies of scope. As we show in earlier work, religions produce a unique set of products. Religions offer fellowship, provide various forms of entertainment, enforce appropriate social behavior, predict or influence the future, and provide information about the afterlife (HULL and BOLD [1989]). The third and last of these products are interrelated since, as is explained later, church doctrine about the afterlife can encourage appropriate social behavior. Note that the question of whether to adopt the standard assumption of the theory of the firm that churches maximize profit is not particularly important but is considered briefly later in the paper.

2. *Why Hell?*

The church products named above are valuable to consumers and fit our expectation that firms produce utility-increasing goods. Hell does not fit this expectation. Why might churches have doctrines about hell? Three reasons suggest themselves.

First, the church may simply be providing valuable (albeit unpleasant) information in the same way medical doctors provide information to patients about unpleasant or even terminal diseases. Churches surely take this view. Information about the afterlife may well satisfy an important human psychological need to understand the infinite and deal with death.

If churches provide afterlife information, two implications follow. The first is that all religions will have roughly the same doctrines about heaven and hell,

just as the bulk of medical doctors diagnose a given set of symptoms in a similar fashion. This implication follows if accurate information about the afterlife is obtainable before death. If accurate information about the afterlife is unobtainable, church afterlife doctrine will have no pattern across cultures, its characteristics will be distributed randomly. Importantly, for both of these implications, doctrines about heaven and hell will not be influenced by the structure of the religion industry or other cultural characteristics. That is, for example, a monopoly religion's doctrine about heaven and hell should be similar to (or not systematically different from) that in a society with multiple competing sects and religions.

A second possible hypothesis about church afterlife doctrine is that heaven and hell are nearly ideal tools to expropriate rents. Church officials can promise heaven to those who transfer wealth to church officials and threaten hell to those who do not. In principle, enforcement is perfect, although the church must incur costs to convince people of the doctrine's validity.

This extortion hypothesis seems more plausible in situations where the church's organizational structure includes a subgroup that can gain at the expense of the bulk of members. EKELUND, HEBERT and TOLLISON [1989] adopt this assumption in analyzing the Medieval Christian church's attitude toward usury, arguing that church officials in Rome gained wealth and power by opportunistically enforcing and interpreting church usury doctrine. The periodic revelations about exploitive behavior of some itinerant and broadcast media evangelists in the United States are also consistent here.

A third reason church doctrine might include hell is that heaven and hell are effective methods of encouraging members to engage in valuable social behavior. Heaven rewards desirable behavior and hell increases the expected cost of misbehavior, causing an increase in enforcement effectiveness.

This view is very much in the spirit of SKOG and STUART's [1982] model of a social contract. Individuals can benefit collectively and agree *ex ante* to a system of property rights enforcement that will result in some of the individuals being punished and so worse off *ex post*. In the same vein, note that sports leagues hire referees. Similarly, GAUTHIER [1986] shows how morality constrains individual behavior in a way that is socially beneficial. FRANK [1988, 250] explicitly mentions the potential importance of heaven and hell in preventing undesirable opportunistic behavior. Note that this view of the purpose of religion needs not compete with the model of the church as a rent seeker. A successful rent-seeking church must produce valuable products, just as a profit-maximizing firm produces valuable products.

Churches often clearly encourage a number of activities which are valuable socially. An important example is church enforcement of individual behavior through rules like the Ten Commandments. When members of a society agree on uniform standards of behavior, transaction costs and the costs of enforcing property rights fall. Such behavior standards are extraordinarily useful to a society, a notion recognized by researchers like CHEUNG [1972] and POSNER

[1980]. Other examples of church-provided social goods include preservation of knowledge, some kinds of scientific research, education (MARTY [1970, 76]), income redistribution, and rules of cleanliness, medical treatment, food preparation, and sanitation.

Although we see here that the church afterlife doctrine helps encourage production of valuable social goods, we have yet to explain why the church would employ hell. In principle, the church can make any claim about the amount of utility after death. Why wouldn't the church simply increase without limit the rewards in heaven rather than also increasing the cost of misbehavior by threatening punishment in hell?

A formal mathematical argument is unnecessary. We need only adopt the plausible assumptions that individuals have a diminishing anticipated marginal utility from the different possible afterlives. Assume individual utility is in part a function of claims made by the church about the potential afterlives. The church determines or reveals characteristics of the afterlife and individuals evaluate these claims in terms of utility. A simple implication of the model is that even intensely faithful individuals who are certain of the existence of an afterlife might knowingly commit mortal sins. Given discounting, the present cost of an infinity in hell is finite. Sufficient temporal reward justifies mortal sin.

Alternatively, the utility function can be interpreted as a measure of the plausibility of church claims about the afterlife. At some point "unrealistic" claims about the afterlife tend to reduce its perceived utility. MCDANNELL and LANG [1988, 13] show, for example, how Jewish and Christian versions of heaven in the early Christian era were similar to one another and promised relatively modest improvements in wealth after death. Individuals in the first century would surely have rejected Jewish and Christian doctrine if heaven had been described as the standard of living currently enjoyed in industrial countries.

Why invent hell? Because increases in claimed rewards in heaven have diminishing marginal effect on individual utility and subsequent sacred behavior. At some point, the introduction of even a modestly unpleasant hell is more effective at altering individual behavior than is an increase in the claimed wealth in heaven.

To maximize the appropriate sum of sacred activities, the church equates the marginal effectiveness of claims about heaven and hell. So long as claims about hell are even somewhat plausible, the church always reaches a point where claims about heaven are less effective at the margin than claims about hell.

Although it is not necessary to do so, a more realistic and more complicated model would impose education costs on the church for the afterlife claims it makes. The church would now equate the marginal effectiveness of both heaven and hell claims to the marginal education cost. The model's implications are not affected, however.

An implication of the above is that religions which successfully encourage significant behavior alteration will feature both heaven and hell. This paper

asserts that these cases will occur in cultures where churches are important enforcers of appropriate social behavior. By extension, in cultures where the church is not an important enforcer of social behavior, church doctrine will emphasize neither heaven nor hell. Certainly mainstream Christian and Jewish doctrine in the United States gives little attention to heaven and hell. Interestingly and consistent with the model, Catholic and many Protestant denominations formerly had strong heaven and hell doctrines.

3. Production of Valuable Social Goods

The incentive of a firm like the church to provide social goods is not as obvious as in the production of ordinary products. In the ordinary case, firms choose products that are valuable to consumers and that can be sold at a profit. Social goods are not the sort of product that a consumer simply buys. In addition to being collective, social goods are not readily definable as products, nor do churches ordinarily market social goods explicitly.

However, a plausible argument can be made that churches will provide social goods even without a conscious decision to do so. The argument is straightforward. In situations where it has a comparative advantage in encouraging production of social goods, a church which does so will prosper and survive. This will occur in part because such a church helps its host society prosper and survive and in part because such a church attracts members.

Anthropologists and sociologists certainly accept the proposition that religious institutions can have unintended consequences beneficial to society:

“The hypothesis, therefore, is that in what we regard as false religions, though the performance of religious rites does not actually produce the effects that are expected or hoped for by those who perform or take part in them, they have other effects, some at least of which may be socially valuable.” (RADCLIFFE-BROWN [1959, 154])

HARRIS [1966] makes a similar argument in outlining unintended benefits of the Hindu religion's treatment of sacred cows. MOORE [1957] shows how divination practices by Arctic hunters increase the long-run probability of a successful hunt and reduce the social cost of a failed hunt. DURKHEIM [1915, 80] explains how useless religious doctrines tend to disappear: “But an error and especially a system of errors which leads to, and can lead to nothing but mistaken and useless practices, has no chance of living.” In Harris's words: “No purely religious urge can run counter to economics and ecology for a long time” (HARRIS [1977, 137]).

The preceding argument is functionalistic. It makes the social Darwinist assertion that societies with efficient institutions will dominate other societies over time. The functionalist view has been disputed since it does not make clear how individuals facing greater gains from opportunistic behavior will engage in

collectively beneficial behavior. The prisoner's dilemma is the classic presentation of this critique.

In response, we first should not underestimate the ability of individuals to recognize the ultimate gain from supporting institutions that are collectively beneficial. In principle, churches can adopt any number of doctrines about appropriate member behavior or, for that matter, make no demands at all. However, some doctrines will be more attractive to potential members, and churches with attractive doctrines will prosper. An "attractive" doctrine can well be one that people consciously or unconsciously perceive as useful to the community, not merely one that is easy – SKOG and STUART's [1982] model is again applicable. Employing a similar approach, IANACCONE [1992] shows how religious sects can make all members better off by requiring that each engage in unusual or unpleasant behavior. Eighteenth century philosopher Bernard MANDEVILLE recognizes this phenomenon as well:

"Another Proof, that Men generally are persuaded of the Truth of the Gospel, is, that the Duties and Severities of the Christian Religion seem so reasonable to them, that they would abominate any one who would preach up loose Morals;..." (MANDEVILLE [1720, 18–19], as quoted in LEVY [1992, 5]).

Importantly, recent research is also showing that appropriate social behavior can directly benefit individuals and has survival value. We therefore need not rely completely on a functionalistic argument at the societal level to assure that churches will provide social goods. VANBERG and CONGLETON [1992], for example, show that in repeated prisoner's dilemma games with an exit option (reasonable in a market setting), moral individuals dominate a market – morality being defined as never defecting, but exiting if the opponent does. BERGSTROM and STARK [1993] use a somewhat different game-theoretic model to arrive at the same conclusion. SAMUELSON [1993] points out the role of inclusive fitness in assuring the survival of altruistic genes. ELLICKSON [1991, 167–183] shows how individuals who interact on multiple dimensions and have several simple rules of morality will arrive at optimal market solutions to common property problems.

The foregoing shows that appropriate moral behavior benefits individuals and societies. Further, churches can gain by producing or encouraging the production of valuable social goods like appropriate moral behavior even without having made a conscious decision to do so. Obviously, however, churches are not the only producers of social goods. Especially in modern industrial states, governments produce any number of the social goods discussed earlier in the paper. In addition, social goods often are provided within families. Also, a community may feature a social structure or mutually enforced rules that assure provision of social goods. Smaller ethnic groups often encourage appropriate member behavior (HOLLANDER [1990, 1166]; CARR and LANDA [1983]).

Some social goods can be produced by private firms. However, an important part of the definition of the term is that social goods have public goods characteristics. Private markets find production of public goods difficult due to the free rider problem and the difficulty in making consumers reveal their preferences.

A key question, then, is to what extent economic theory explains the relative importance in societies of the various non-private ways to provide social goods. The total output of social goods in an economy is a function of the outputs of the various producers. Unlike products in ordinary markets, the market output is probably not the simple sum of the outputs of individual producers. Government and church standards might complement one another or contradict one another, for example.

All societies employ methods to enforce property rights, although the total amount and mix of suppliers differ. Let the overall output of one or more social goods be a function of inputs of religious doctrine, government, and the family or community:

$$\text{Social Goods} = S (\text{religion, government, community}).$$

Institutions like the church tend to prosper to the extent that they are lower cost producers and to the extent that the demand for social goods remains strong. If the relative cost of religious inputs to production of social goods is low, religion will become relatively more important than government, the family, and the community in encouraging appropriate behavior. If the demand for social goods increases, all of the producers will increase their output and the relative mix of religious and other producers will change depending on the nature of the cost functions.

The preceding suggests that certain characteristics of church doctrine are predictable. Practically by definition, religion is the institution that provides non-temporal enforcement. Thus, religious enforcement will be more important in situations where temporal enforcement is relatively inefficient. By extension, when cultures rely on a religion's non-temporal enforcement of appropriate social behavior, the religion will have doctrines that emphasize spiritual enforcement of that behavior. In particular, these cultures will have doctrines about the afterlife that include something like hell as punishment for misbehavior, and misbehavior will be defined as breaking rules that arguably benefit society. Hell is not otherwise valuable and other cultures' religions will not feature hell. MARTY [1985], for example, uses this argument in analyzing the decline of hell doctrines in the U.S. in the last century. Hell as an enforcer of appropriate social behavior was widely recognized by Christian theologians until relatively recently. Interestingly, in the 1600s when the Christian doctrine of hell was first seriously questioned, many theologians who disbelieved in hell *continued to advocate the doctrine in public* and urged others to do so, citing its importance in preventing anarchy (WALKER [1964, 4, 6]).

Note that religion provides valuable products other than social goods and may be pervasive in cultures for other reasons, but these religions do not primarily assure appropriate behavior and will tend not to have doctrines that feature hell (contemporary U.S. religions are probably an example). In addition, although they can and do use temporal sanctions and rewards, including formal and informal punishment, religions by definition specialize in spiritual matters. Note finally that religions cannot enforce appropriate behavior simply by increasing the reward for heaven without increasing the cost of hell, as shown earlier.

The remainder of this paper presents two case studies. The first analyzes the situation where the importance of non-temporal enforcement changes as the overall demand for enforcement increases. Church hell doctrine is shown to be more important in cultures of intermediate complexity. Data across cultures from the Human Relations Area Files confirm the model. The same data tend to weaken alternative views of the purpose of hell doctrines. The second case examines changes in hell doctrine in Colonial New England, a situation where the overall demand for social goods remained substantially the same but where the relative effectiveness of other producers of social goods changed significantly. Not surprisingly, Puritan hell doctrine became more severe in times when the family, community, and government were relatively weak.

4. Case Study: The Human Relations Area Files

Surely the key factor affecting the demand for social goods is the culture's technological complexity, meaning the complexity of property rights, production, trade relations, and social interaction. As technological complexity increases, spillover effects become more important and the possibilities for opportunistic behavior increase.

Simple cultures only require simple behavior enforcement. POSNER [1980, 10–19] explains how individuals in small communities in technologically simple cultures easily recognize the social costs of disease and poverty and so are likely to act to reduce them (to the extent they are aware of methods to do so). Property rights and contracts are relatively easy to define and enforce. The same applies when a culture is organized around extended families which share wealth and enforce appropriate family member behavior. In these cultures, religion and government are relatively unimportant providers of social goods. In Robert NELSON's words, "At the local level, there is less need for the unifying influence of a shared faith, ..." (NELSON [1991, 283]).

We do not imply that what are termed here as technologically simple cultures are primitive or simple in other respects. Indeed, these cultures often have complex religions and rich institutions. The implication of the theory is not that religion is unimportant in these cultures, but that religion (and government) are relatively less important as producers of social goods.

By contrast, people in larger and technologically more complex communities are less able to recognize the social cost of individual misbehavior and are less likely to behave properly since any one person's gain from proper behavior is so much smaller than the potential social gain. These communities are large enough that interaction takes place outside family groups but interaction is not extensive enough to include personal contact with all community members. Nelson continues, "... as soon as the community expands beyond modest size, the number of contracts (some formal but many informal) becomes hopelessly large" (NELSON [1991, 283]). Here religions are relatively more important.

HOMANS [1960, 378–384] explains how the Medieval Catholic church provided important social goods in communities like those outlined here. In previous work, HULL [1989] reviews changes in Medieval Catholic Church doctrine about the afterlife consistent with the model. Ecclesiastical courts emerged and reached their height of importance in the Medieval period as well (LEMIEUX [1934, 21]). DAVIES [1986] provides a similar illustration for communities of Mormons. HARRIS [1977, 144] asserts that Buddhism, Islam, and Christianity emerged and flourished because they were ideally suited for more complex and populous cultures.

By contrast, religions again become relatively less effective in very large and technologically complex communities, in large part because property rights issues become too complex. Here the ability of government to enforce property rights, transfer income, and assure other proper behavior is relatively more effective than that of the church (BERGER [1967, 133, 136–138]).

Other factors also affect the relative productivity of religions. As temporal wealth increases, temporal punishment by the government becomes more effective. The government's ability to tax and transfer income also improves relative to the church as individual wealth increases. Improvements in technology likely also favor government production of social goods. Further, as life expectancy increases, temporal punishment represents an increasing relative cost to individuals compared to punishment or reward in the afterlife. Religion thus has a comparative advantage in producing social goods in cultures of intermediate complexity, where the central government is too weak and where communities are too large to be effective.

The Human Relations Area Files (HRAF) is a compilation of textual information written by anthropologists about more than three hundred of the world's existing and past cultures. The unique characteristic of the HRAF is its indexing system. The textual material is indexed by seven hundred subject categories.

Some of this textual material has been coded by anthropologists and sociologists, the first example being the *Ethnographic Atlas* (MURDOCK [1967]). Subsequent researchers have coded material for a subset of cultures labelled the Standard Cross-Cultural Sample (SCCS). SCCS cultures are chosen so that most cultural types are represented and that relatively comprehensive information is available for each culture (MURDOCK and WHITE [1969], LAGACE [1979]).

While impressive, data coded from the Standard Cross-Cultural Sample are not without problems. The first is that the original data were collected over a number of years by hundreds of anthropologists whose orientations changed over time and who were viewing cultures from a perspective different than that of economists. The process of assigning computer codes to the anthropologists' text is another source of inaccuracy. For a variable, coding involves interpreting text written about each culture and assigning each culture to one of several ranked categories.

Perhaps most important for our purposes however, is the fact that modern industrial cultures are not represented in the sample. Anthropologists, most often from developed countries, have tended not to study their own cultures. For this reason, implications of the theory must be adjusted to consider only cultures with less developed economies and governments. The extent to which any conclusions apply to modern industrial states, therefore, can only be inferred.

The first insight from the coded HRAF data is that belief in the afterlife is pervasive in cultures. Religions in ninety-eight percent of SCCS cultures for which data are available feature an afterlife. Although pervasive, the nature of the afterlife varies considerably between cultures. The following two variables illustrate this cultural variation.

Variable AFTERLIFE: Complexity of the afterlife.

percent of cultures in category	category description
2%	No afterlife.
18%	Afterlife is simple (i.e. sleep or join spirits) and is the same for everyone.
30%	Afterlife comes in one distinctly pleasant or unpleasant form and is the same for everyone.
29%	Afterlife has two alternatives (like heaven and hell) and perhaps one extra stage (i.e. purgatory).
21%	Afterlife is complex, including more than two alternatives and perhaps several stages. May include multiple souls or destinations.

Variable ACHIEVE: Actions to achieve a pleasant afterlife.

percent of cultures in category	category description
17%	There is no afterlife or it is uniformly neutral or unpleasant.
20%	Pleasant afterlife requires no action or belief.

7%	Pleasant afterlife requires simple actions, prayers, or intercession.
21%	Pleasant afterlife requires significant alteration of behavior before death or actions by others after death but the required behavior does not benefit society (i.e. significant sacrifices, prayer).
35%	Pleasant afterlife requires significant alteration of behavior before death or actions by others after death and the required behavior benefits society (i.e. live a good life, donate to the poor).

As with all HRAF coding, assigning codes to categories involves judgement on the part of coders. However, it is clear that attitudes about the afterlife differ significantly across cultures. Note especially how the ACHIEVE variable indicates that achieving heaven in roughly half of cultures requires individuals to alter their behavior significantly.

As suggested earlier, religions might include doctrines about hell to provide information, to expropriate rents, or to enforce appropriate social behavior. The variation between cultures in doctrines about the afterlife tends to weaken the first hypothesis. In addition, the variables AFTERLIFE and ACHIEVE are significantly positively correlated (rank correlation coefficient = 0.500, $p = 0.082$). That is, religions that feature complex afterlives that include hell also tend to require appropriate social behavior to get to heaven. This is consistent with the third hypothesis, that religion in general and hell in particular assures appropriate social behavior.

What is the role of market structure on doctrines about the afterlife? If religions mainly expropriate rents, afterlife doctrines will change in a way to imply less complexity (no hell and so a lower cost for misbehavior) as the number of competing religions increases. The HRAF variable NUMBER measures the number of religions and sects in a culture. The variable takes a value of one for cultures with no formal religion and ranges up to a value of six for cultures with more than two distinct religions and additional cults. About twenty percent of cultures have one distinct religion and no additional cults. The variable NUMBER has a low, marginally significant, and *positive* correlation with AFTERLIFE (correlation coefficient = 0.136, $p = 0.099$), and has a low, marginally significant, and *positive* correlation with ACHIEVE (rank correlation coefficient = 0.110, $p = 0.100$). These results weaken the rent expropriation hypothesis.

If religious doctrine about the afterlife is used to enforce appropriate behavior, doctrine will change as cultural characteristics change and the demand for appropriate behavior changes. The above implies a reduced form regression equation of the following form:

$$\text{Complexity} = \beta_1 + \beta_2 \text{Religion} + \beta_3 \text{Government} + \beta_4 \text{Community}.$$

The theory suggests that the function will not in general be linear, since the church, for example, is relatively unimportant in both the most simple cultures and in the most complex cultures. However, because HRAF variable categories are so simple, a non-linear relationship likely would not appear. In addition, modern industrial states are not represented in the SCCS, so the downward curved portion (right tail) of the function would not be present even if the coding was more explicit. No coded HRAF variables directly measure the technical complexity of cultures. However, one coded HRAF variable measures the extent of a culture's written language. Because writing tends to evolve with a culture, a writing variable is an excellent proxy measure of a culture's complexity. The variable WRITING takes a value of one if the culture has no writing and ranges up to a value of four if a culture has a fully-developed indigenous written language (MURDOCK and PROVOST [1973]).

No direct or proxy measure of community is available in the HRAF coded data. Three proxies for religion are used. AFTERLIFE and ACHIEVE are described earlier. The variable PERVADE measures on a scale of one through four the degree to which high spiritual beings who created reality are active and supportive of human morality in the culture (MURDOCK [1967]). The variable POLICE is used to proxy for government enforcement of appropriate behavior. POLICE takes a value of one if the culture has no police force and ranges up to a value of five for a culture with a significant independent police force (TUDEN and MARSHALL [1972]).

If churches produce property rights enforcement, the coefficient β_2 will be positive. Simple intuition suggests the coefficient β_3 will be positive. The fact that the religion and government variables will increase as technical complexity increases implies a potential problem of multicollinearity. No obvious solution to this problem presents itself. Ordered multinomial logit results are summarized in Table 1. Ordered multinomial logit is the alternative to multiple regression analysis when the dependent variable is not continuous but has ranked categories. Interpretation of the coefficients is awkward, but only the signs and significances are necessary to test the model (SMITH [1981], MCCULLAGH [1980]).

Our intuition about the relationship between government and technical complexity is confirmed. The coefficients on the POLICE variable are positive and significant in every equation. The relationship between technical complexity and the various measures of religious enforcement is also positive, although not as consistently significant. The statistical results support the theory that churches in part encourage appropriate social behavior.

5. Case Study: Colonial New England Puritans

The treatment of hell by key Puritan clergy in Colonial New England provides strong anecdotal support for the idea that the afterlife encourages appropriate

Table 1
 Ordered Multinomial Logit Analysis
 Dependent variable is *WRITING*

	POLICE	AFTERLIFE	ACHIEVE	PERVADE	Pseudo R ²
(1)	0.667 (5.27)***	0.363 (1.96)**			0.297
(2)		0.449 (2.52)**			0.253
(3)	0.605 (4.87)***		0.211 (1.64)*		0.280
(4)			0.300 (2.39)**		0.243
(5)	0.616 (3.78)***			0.497 (3.78)***	0.294
(6)				0.655 (5.14)***	0.257

Each figure in parentheses is the ratio of the coefficient and its asymptotic standard deviation. This ratio is asymptotically normally distributed. N = 93.

social behavior. Of particular interest is the fact that Puritan clergy promoted hell with greater intensity during periods when government, community, and the family were under stress.

Summarizing the more than one hundred years of Colonial history in a few lines is obviously a dangerous exercise. However, we wish only to highlight a small number of relevant issues and to hint at one explanation for changes in New England church doctrine. A comprehensive analysis is far beyond the scope of this treatment. However, the New England Colonial case is useful because most cultural factors remained constant during the period, allowing us to focus on changes in the effectiveness of religion, government, family, and community where the overall demand for social goods was relatively constant.

For our purpose, the Colonial period can be divided into four periods: from the founding of the Plymouth settlement in 1620 to 1660, from 1660 to 1700, from 1700 to 1740, and from 1740 to the Declaration of Independence in 1776. Each period corresponds roughly to a generation in Colonial history. Each generation, in turn, had a key minister, a theologian who guided or exemplified the beliefs of the Puritan community. In the second and fourth generations, Puritan clergy more actively promoted hell.

Three background notes are in order. First, Puritan theology throughout the Colonial period recognized the existence of hell. However, although formal doctrine about hell did not change, emphasis by clergy of particular elements of the doctrine did change. Second, the dominant Puritan theology in the Colonial period asserted that a person's fate at death was preordained. Predes-

tion would seem to render ineffective the threat of hell for misbehavior. Puritan theologians explicitly recognized this potential problem and adapted their view of predestination accordingly (WRIGHT [1955, 130–131]). Puritan doctrine asserted that those predestined to heaven could be recognized by their exemplary behavior and that those who clearly sinned were as clearly predestined to hell. In addition, Arminianism, a branch of Puritanism which believed that freely chosen actions could influence a person's fate at death, became gradually more important in the Colonial period. As an aside consistent with the theory, Arminianism was much stronger in Boston, New England's major city, and as the theory implies, religion is most important in more complex settings but those missing a strong central government.

The third note is that the importance of hell in Christian theology was declining overall in the colonies and in Europe from the mid 1600s (and continued to the present) (CAMPORISI [1990, 101–104], MARTY [1985]). The two Colonial periods when hell was promoted represent reversals in a general trend.

The first generation of Puritan clergy did not promote the doctrine of hell. The first colonists left England with shared values and a collective vision. They lived in small, closely knit, independent communities. The early communities were comfortable materially. A strongly-asserted hell doctrine was unnecessary in this environment.

Thomas Hooker was the first generation's leading theologian. Interestingly, his most important work is only barely theological. *A Survey of the Summe of Church-Discipline* promotes reason, law, and responsible citizenship (HOOKER [1648]). Hooker also helped write the Fundamental Orders of Connecticut under which the colony was governed. Hell is not mentioned in the Fundamental Orders.

The second generation of Puritans encountered a much less friendly environment. The New England colonies suffered a sustained economic depression from the 1650s to the mid 1670s in part because the English Civil War disrupted immigration and so blocked the influx of capital and labor to the colonies. King Philip's and King William's war seriously affected New England communities. Some towns were abandoned due to attacks and the threat of attack from Native Americans. Colonial governance was disrupted by James II's unpopular appointment of Edmund Andros as governor of a new "Dominion of New England" and by Andros's subsequent ejection and arrest by the colonists.

Puritan ministers responded to the relative weakness of communities and the government. One of the most popular books in American history as measured by the proportion of the population who purchased it was Michael Wigglesworth's *The Day of Doom, or a Poetical Description of the Great and Last Judgement* (WIGGLESWORTH [1701/1966]). Its first edition in 1662 was purchased by roughly one person in twenty in New England. Seven more editions were printed by 1701. The book was popular especially as a reader for children.

The Day of Doom uses about fifty-six of its sixty or so pages to describe hell and the kinds of sinners who will fill it. Wigglesworth promises hell for any sort

of misbehavior, from murder and adultery to drunkenness. A special place in hell is reserved for vile children.

The colonies' third generation began at the turn of the eighteenth century. The new century also marked a turn in the fortunes of the New England colonies. The New England economy began a thirty-year period of growth (MAIN [1985, 754–763]). Queen Anne's War (The War of Spanish Succession) did not affect the area.

Cotton MATHER [1702/1977] was a key minister and theologian of the third colonial generation. Mather, also a scientist and a scholar, wrote more than 450 books. His most important was an ecclesiastical history of New England, *Magnalia Christi Americana*, written in 1702 (MATHER [1702/1977]). Subsequent work even included a description of plant hybridization, hardly in the category of fire and brimstone.

The fourth colonial generation again faced economic, social, and political turmoil. The colonial economy weakened beginning in the mid 1730s and entered a period of recession in the mid 1750s (MAIN [1985, 115]). Family life faced serious disruptions. The premarital pregnancy rate rose through the 1770s to a level only equalled in the present day (SMITH and HINDUS [1975]). Adults complained about the degenerate and "lewd" practices of the growing teenage population (EDWARDS [1737/1975, 321]). The political life of New England was disrupted first by the French and Indian War and then by the American Revolution.

As before, Puritan clergy promoted hell. Two more editions of Wigglesworth's *Day of Doom* were published in the period. Jonathan EDWARDS [1741/1987, 341–352] in 1741 preached and published what is surely the most reprinted sermon in American history, "Sinners in the Hands of an Angry God." The sermon was one of many sermons, letters, and books that Edwards used to counter the tendency in the previous generation to liberalize Puritan theology. Edwards sought successfully to make his parishioners feel the consequence of sin and to participate at the deepest emotional level in the process of conversion (MILLER [1959]). "Sinners" is a classic and unequalled description of the consequence of sin. God holds sinners "over the pit of hell, much as one holds a spider, or some loathsome insect, over the fire..." (EDWARDS [1741/1987, 347]). Sinners "hang by a slender thread, with the flames of divine wrath flashing about it and ready every moment to singe it and burn it asunder..." (EDWARDS [1741/1987, 347]). Edwards and others in the last colonial generation effectively responded to the relative weakness of other social institutions.

6. Conclusion

Economists are only beginning their study of religion and the church. Most of those who are researching religion, however, continue the tradition in economics of taking a society's underlying institutions as given. This paper attempts to

expand the literature on the economics of religion by exploring religion's role as a social institution. Religion, like government, family, and community can enforce property rights, reduce transaction costs, and encourage socially valuable behavior.

This paper asserts that societies that prosper over time tend to possess social institutions that minimize the cost of enforcing desirable individual behavior. The relative importance of the church, government, family, and community in a society depend on their relative costs and on the nature of the production function of and the demand for appropriate social behavior. Religion has a comparative advantage in encouraging appropriate social behavior in more complex cultures without powerful central governments. Religions in these cultures promote doctrines rewarding particular member behavior with an appealing afterlife and punishing misbehavior with an unpleasant afterlife.

Statistical material from the Human Relations Area Files tends to support the model's implications about heaven and hell and provides some encouragement for other of the model's implications. This paper's preliminary analysis obviously is incomplete, however. HRAF data require additional analysis. The possible problem of simultaneous determination of demand for and supply of social goods has not been addressed.

New England colonial Puritan doctrine about hell also supports the theory. In periods when the social, family, and political life in New England were disrupted, Puritan clergy responded by increasing the degree of social enforcement provided by the church in the form of increased attention to hell as the consequence of misbehavior.

Zusammenfassung

Die zentrale Schlußfolgerung dieses Beitrages ist, daß sich die Determinanten von Kirchendoktrinen über das Leben nach dem Tod mittels ökonomischer Argumente erklären lassen. Ebenso wie der Staat, die Familie und andere Gemeinschaften kann eine Religion dazu dienen, Eigentumsrechte durchzusetzen und zu sozial wertvollem Handeln zu ermuntern. Insbesondere, wenn die Kirche im Vergleich zur staatl. Gewalt, Familien und anderen Gemeinschaften relativ einflußreich ist, ist die Hölle als Strafe für die Mißachtung gesellschaftlich nützlicher Regeln eine Komponente der religiösen Doktrin. Das statistische Material von den *Human Relations Area Files* stützt im großen und ganzen die hier präsentierten Modellimplikationen. Gleiches gilt für die Fallstudie über die kolonial-puritanische Doktrin zur Hölle in Neuengland.

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