Faith-Based Organizations

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Abstract

Faith-based organizations—religious, political and intellectual—are groups in which beliefs are sustained via interaction with like-minded people. We develop a model of faith-based organizations which introduces social transmission of beliefs to a standard club goods framework. In our model, faith-based organizations are susceptible to free-riders who acquire beliefs from other members of the group without themselves investing in those beliefs. To induce investment in beliefs and screen out nonbelievers, faith-based organizations demand costly sacrifices. This helps to overcome other collective action problems, supporting public good provision and political opposition. The model’s predictions are consistent with the proliferation of Islamic organizations in Egypt since the 1970s.

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1 Introduction

Faith-based organizations are groups which sustain certain belief systems by facilitating social interactions among like-minded people. The beliefs they support are not purely instrumental, nor are they subject to immediate empirical verification. Instead, these are beliefs that agents are motivated to accept or reject, more or less on faith. Religious beliefs are an obvious example, but so are political convictions and many other forms of belief such as those concerning human nature, distributive justice and the future of the capitalist mode of production. Political groups, community organizations and intellectual societies emerge not only to exchange information, but also to share beliefs. These faith-based organizations support belief systems that may whither without reinforcement by shared professions of faith. This paper will focus on religious organizations, but the reader may keep in mind that the basic theoretical framework we develop can be extended to other forms of faith-based organizations.

Following the seminal work of Iannaccone (1992), religious organizations are modeled as clubs that produce religious goods from the inputs of members (see also Berman 2000). Seemingly bizarre religious restrictions have a purpose in this setting. By imposing restrictions on members’ outside activity, religious organizations induce agents to substitute resources toward group activity and screen out uncommitted types. This mitigates the free-rider problem in the joint production of religious club goods. One remaining gap in the literature is the absence of a framework for analyzing belief formation and maintenance in religious groups.

In this paper, we introduce social transmission of beliefs to the existing club goods framework. Religious belief can be acquired by contact with believers and undermined by contact with nonbelievers. Viewing religious beliefs as transmitted among peers through social interaction has implications for the structure of religious organizations that have not been explored in either the economics of religion or cultural transmission literatures (see for example Bisin &
Verdier 2000, 2001). The social transmission of beliefs generates a new free-rider problem. Religious organizations are susceptible to free-riders who acquire religious beliefs from other members of the group without themselves investing in religious beliefs. To induce investment in religious beliefs and screen out nonbelievers, religious authorities demand costly sacrifices. In doing so, they are able to overcome collective action problems of other kinds, such as public good provision and political opposition. Adding religious competition to the club goods framework (something not done in prior work), we show how the entry of new and more extreme religious organizations can be induced by (1) an increase in the demand for religious beliefs and (2) the moderation of established religious organizations. The analysis is conducted in Section 2.

In Section 3, we apply the theory to a case study of the Islamic revival in Egypt. This revival occurred amidst rising relative deprivation and state attempts to regulate established religious organizations in the latter half of the twentieth century. We suggest that religious beliefs compensate for relative deprivation and state regulation moderates established religion. Our model predicts that in response new and more extreme religious groups will enter the market and engage in more intensive public good provision and political opposition. These predictions are broadly consistent with the Egyptian experience.

2 The Model

Let us begin by studying interactions between one religious organization and a continuum of individual agents $I$ with unit mass. The set of agents is endowed with Lebesgue (uniform) measure $\mu$. At times, we shall refer to the religious organization as ‘the group’. Competition among different religious organizations is analyzed in Section 2.3.

The timing of the game is as follows:

Date 0. The religious organization announces its strictness $s$, which is the minimum level
of participation required of group members. Once announced, the organization remains committed to $s$.

*Date 1.* Each agent $i$ chooses whether to become a member of the group ($m_i = 1$) or not ($m_i = 0$). Denote the set of group members by $M$ and the set of non-group members by $N$.

*Date 2.* Each agent chooses a level of participation $x_i \in [0, 1]$ at cost $x_i^2$. Group members are required to choose at least the minimum level of participation specified by the organization, so that if $m_i = 1$, then $x_i \geq s$. Participation can convert an individual into a ‘carrier’ of religious beliefs. In particular, we assume that individual $i$ becomes a carrier of religious beliefs with probability $x_i$.

*Date 3.* For each individual $i \in I$, the following process of social transmission determines her final beliefs: If agent $i$ is a religious group member, she is randomly matched with one other member of the group, say $j$. If $j$ is a carrier of religious beliefs, $i$ ends the period as a believer. Otherwise, she ends up being a nonbeliever. If agent $i$ is not a religious group member, the process is the same except that she is randomly matched with one other nonmember.

### 2.1 Equilibrium Religious Membership and Participation

We shall now specify individual payoffs. Beliefs in this model are a form of consumption; individuals deliberately (but not necessarily consciously) cultivate certain kinds of beliefs. In particular, we assume that individual $i$ receives a payoff of $\lambda_i$ if she ends the period with religious beliefs, and zero otherwise. To get explicit solutions, we assume that $\lambda$ is uniformly distributed on $[0, \bar{\lambda}]$, where $0 < \bar{\lambda} \leq 1$. We refer to $\bar{\lambda}$ as the *demand for religious belief*.

Agent $i$’s expected payoff when choosing religious activity $x_i$ is then:

$$ p_i \lambda_i - x_i^2. $$

(1)

where $p_i = P_i(\bar{m}, \bar{x})$ is agent $i$’s probability of ending up with religious beliefs, given the
profiles of membership $\vec{m}$ and religious participation $\vec{x}$.

Agent’s membership and participation choices can be characterized as follows:

**Proposition 1** Suppose that the religious organization chooses strictness $s$. There exists a unique Nash equilibrium of the ensuing subgame. In this equilibrium:

(i) If $s = 0$, then $x_i = 0$ for all agents and $\mu(M) = 0$.

(ii) If $0 < s < \overline{x}$, then $x_i = s$ for all group members $i \in M$ and zero for nonmembers. In addition, $\mu(M) > 0$.

(iii) If $s \geq \overline{x}$, $x_i = 0$ for all agents and $\mu(M) = 0$.

**Proof.** (i) If an agent does not join the group, then she is matched with another nonmember at random and acquires her beliefs. Thus, the probability of agent $i \in N$ ending up with religious beliefs is:

$$p_i = \int_{j \in N \setminus i} \frac{x(j)}{\mu(N)} d\mu. \quad (2)$$

Notice that $p_i$ is independent of $x_i$. Therefore, $i$’s expected payoff in (1) is strictly decreasing in $x_i$. This implies that $x_i = 0$ for all $i \in N$. Hence, $p_i = 0$ for each nonmember $i$. Substituting $p_i = x_i = 0$ into (1) yields a payoff of zero from being a nonmember.

When $s = 0$, the same logic implies that $p_i = x_i = 0$ for all $i \in M$ so that the payoff from joining the group is zero. Therefore, $\mu(M) = \mu(\emptyset) = 0$.

(ii)-(iii) When $s > 0$, all agents who join the group are required to choose $x_i > 0$. To complete the proof then, we need to show that the set of agents who join the group has positive measure if and only if $0 < s < \overline{x}$. 
We have established that all nonmembers receive a payoff of zero.

Members are required to choose \( x_i \geq s \). Because each agent \( i \)'s payoff is strictly decreasing in \( x_i \), no agent will choose \( x_i > s \). Thus, the probability of agent \( i \in M \) ending up with religious beliefs is:

\[
p_i = \int_{j \in M \setminus i} \frac{s}{\mu(M)} d\mu = s.
\]  

(3)

Substituting (3) into (1), we get the payoff from being a group member:

\[
s\lambda_i - s^2.
\]  

(4)

Agent \( i \) then joins the group if (4) is greater than zero. By inspection and rearrangement, this occurs if and only if \( 0 < s < \lambda_i \). Therefore, \( M = \{i: 0 < s < \lambda_i\} \).

Recall that \( \overline{\lambda} \equiv \max_{i \in I} \lambda_i \). Hence \( \mu(M) > 0 \) if and only if \( 0 < s < \overline{\lambda} \). \( \square \)

In this setting, there is a severe free-rider problem in belief formation. Proposition 1(i) states that without religious organizations that impose a minimum level of participation on group members, no agent would choose a positive level of participation. The reasoning is that religious participation \( x_i \) can convert agent \( i \) into a carrier of religious beliefs and thereby increase the likelihood of other group members ending the period with religious beliefs. However, it does not affect \( i \)'s own likelihood of ending up with religious beliefs. That is a product of social transmission and depends on the proportion of other agents in the group who are carriers of religious beliefs. According to part (ii) of the proposition, a religious organization can alleviate this free-rider problem and attract members by imposing a minimum standard of participation on group members \( s > 0 \). This ensures that group members are likely to interact with other carriers of religious beliefs. Therefore, religious belief is a club good in our
model and religious organizations are critical to religious participation. If the organization is too strict \((s \geq \lambda)\), however, agents find it prohibitively costly to join the group and instead remain unaffiliated with zero religious participation.

### 2.2 Equilibrium Strictness

While individuals engage in religious participation to cultivate religious beliefs (via membership in a religious group), we assume that religious organizations also care about the more tangible products of religious participation, such as the provision of social services and political opposition. In particular, we assume that the religious organization’s objective is to maximize:

\[
\int_{i \in M} x(i)^\alpha d\mu, \tag{5}
\]

where \(\alpha > 0\) is a measure of the degree to which the organization cares about the intensity of religious participation relative to the number of people who join the group. Implicit in this objective function is a tradeoff: by choosing high strictness \(s^*\) the organization attracts fewer members, but induces a high level of participation by these members. When \(\alpha\) is high, the organization tends to prefer such a small group with high participation to a large group with low participation.

We can now state the following proposition:

**Proposition 2** There exists a unique subgame perfect equilibrium of the game. In this equilibrium, the religious organization sets strictness:

\[
s^* = \frac{\alpha}{1 + \alpha \lambda}
\]

and each agent \(i \in I\) joins the group if and only if \(\lambda_i > s^*\).
Proof. We solve for the subgame perfect equilibrium via backward induction. By Proposition 1, if the religious organization chooses strictness \( s = 0 \) or \( s \geq \lambda \), then \( x_i = 0 \) for all \( i \in I \). In this case, the religious organization’s payoff in (5) is zero, a minimum of the function. Hence, the religious authority will never choose such an \( s \).

As such, consider strictness \( s \in (0, \lambda) \). In this case, \( M = \{i : \lambda_i > s\} \) by Proposition 1. The measure of this set is:

\[
1 - \mu([0, s]) = 1 - \frac{1}{\lambda} s.
\]

We have also established that every group member chooses participation level \( s \). Therefore, the organization’s payoff from strictness \( s \) is:

\[
\int_{i \in M} x(i)^\alpha d\mu = \int_{i \in M} s^\alpha d\mu = (1 - \frac{1}{\lambda} s)s^\alpha. \tag{6}
\]

The first-order condition is:

\[
\alpha(1 - \frac{1}{\lambda} s)s^{\alpha-1} - \frac{1}{\lambda} s^\alpha = 0 \tag{7}
\]

or:

\[
\alpha(1 - \frac{1}{\lambda} s) = \frac{1}{\lambda} s. \tag{8}
\]

Solving for \( s \) yields the result:

\[
s^* = \frac{\alpha}{1 + \alpha \lambda}. \tag{9}
\]

It is straightforward to verify that the second-order condition for a maximum is satisfied at \( s^* \). \( \square \)
Therefore, equilibrium strictness is increasing in the demand for religious beliefs $\lambda$ and the religious organization’s preference for intensive participation $\alpha$.

We can now state an important interpretation of the model. Suppose that religious participation involves forms of collective action, such as public good provision and political opposition. There are well known free-rider problems associated with these activities. It is also fairly well established that religious groups are unusually effective providers of public goods and mobilizers of political opposition (e.g. Gruber & Hungerman 2007, Berman & Laitin 2008, Chen 2010). We provide one possible explanation for this. Individual agents in our model have no direct interest in collective action.\footnote{One reason why this would occur in our model is because individual agents are non-atomic—individually, they make no difference, but bear the full cost of contributing.} They are willing to participate in collective action only because it qualifies them for religious group membership, which in turn helps to cultivate religious beliefs by facilitating interactions with like-minded people. Hence religious groups can overcome free-rider problems in public good provision and political opposition by providing access to a technology for acquiring religious beliefs.

### 2.3 Religious Competition

Let us now introduce competition. Suppose that after the incumbent organization (henceforth group 1) has committed itself to strictness $s_1$, an entrant (group 2) announces its level of strictness $s_2$. Individuals choose to remain unaffiliated ($m_i = 0$), join group 1 ($m_i = 1$) or join group 2 ($m_i = 2$). Denote the set of unaffiliated members by $N$, the set of group 1 members by $M_1$ and the set of group 2 members by $M_2$. Social transmission occurs within groups as before.

The incumbent maximizes the following payoff:

$$\int_{i \in M_1} x(i)^\alpha \, d\mu.$$  \hspace{1cm} (10)
The entrant organization has different preferences to the incumbent. We assume that it maximizes:

$$\int_{i \in M_2} x(i)^\beta d\mu,$$

where $\beta > \alpha$, so that the entrant cares more about intensive participation than the incumbent. We can characterize the following result:

**Proposition 3** For $\alpha$ sufficiently low, there exists a unique subgame perfect equilibrium of the game. In this equilibrium, the religious organizations choose strictness:

$$s_1^* = \frac{\alpha}{1 + \alpha} \bar{\lambda} \quad \text{and} \quad s_2^* = \frac{\beta}{(1 + \beta)(1 + \alpha)} \bar{\lambda} > s_1^*$$

respectively, and individuals’ membership choices are as follows:

$$m_i^* = \begin{cases} 
0 & \text{if } \lambda_i \leq s_1^*, \\
1 & \text{if } s_1^* < \lambda_i < s_1^* + s_2^*, \\
2 & \text{if } \lambda_i \geq s_1^* + s_2^*, 
\end{cases}$$

for all $i \in I$.

**Proof.** To be inserted.

According to Proposition 3, the incumbent’s choice of strictness is the same as in the case without competition. As with the incumbent organization, the entrant’s strictness is strictly increasing in the demand for religious belief $\bar{\lambda}$ and its own preference for intensive participation $\beta$. In contrast, however, the entrant’s choice of strictness is strictly decreasing in the incumbent’s preference for intensive participation $\alpha$. Consider a decrease in $\alpha$, that is shift in the preference of the incumbent toward a larger group with less intensive participation (a feature of state religions). The optimal response of the entrant is not clear, a priori. It may want to decrease strictness to capture some of the incumbent’s higher $\lambda$ members. This turns out not to be the case, however. Instead, the entrant increases its level of strictness,
because it can elicit higher levels of participation while losing fewer of its lower $\lambda$ members. In this way, the moderation of the religious establishment results in religious polarization in our model.

Notice also that though an increase in the demand for religious belief $\bar{\lambda}$ induces both groups to raise strictness, the strictness of the entrant organization increases relative to that of the incumbent. Hence Proposition 3 predicts that smaller sects with intensive participation are more sensitive to changes in the demand for religious beliefs.

Let us now turn our attention to the determinants of average religious participation when there is religious competition. Average religious participation is defined as:

$$\int_{i \in N} x(i) \, d\mu.$$ \hspace{1cm} (12)

**Proposition 4** Average religious participation in society is higher under religious competition. In addition, average religious participation in society is:

(i) strictly increasing in the demand for religious belief $\bar{\lambda}$,

(ii) strictly increasing in organizational preferences for intensive participation $\alpha$ and $\beta$.

*Proof.* By Proposition 3, all agents for which $\lambda_i > s_i^*$ join a religious group, as in the case without competition (see Proposition 2). However, now some of those agents join the stricter group 2 which requires a higher level of participation. Therefore, average participation increases.

To establish parts (i)-(ii), rewrite average participation in (12) as:
\[
\mu\left([s^*_1, s^*_1 + s^*_2]\right)s^*_1 + \mu\left([s^*_1 + s^*_2, \lambda]\right)s^*_2 = \frac{1}{\lambda}s^*_1 s^*_2 + \left[1 - \frac{1}{\lambda}(s^*_1 + s^*_2)\right]s^*_2
\]
\[
= (1 - \frac{s^*_2}{\lambda})s^*_2
\]
\[
= \frac{\beta(1 + \alpha(1 + \beta))}{((1 + \beta)(1 + \alpha))^2}L
\]

Partially differentiating (13) with respect to \(\alpha\) and \(\beta\) yields the result. \(\square\)

The key point here is that average religious participation is increasing in the preference of religious organizations for smaller groups with more intensive participation. In an influential paper, Iannaccone (1994) argued that strict religious organizations prosper by limiting free-rider problems in club good provision. Rather than turning to strictness here (an endogenous variable in our model), we show how the deep parameters \(\alpha\) and \(\beta\) affect religious participation in equilibrium. We can restate Iannaccone’s proposition as follows: an increase in the disposition of religious organizations toward smaller, stricter groups increases average religious participation in society. According to Proposition 4(ii), Iannaccone’s conclusion holds (in this modified form), even when agents can switch between groups and remain unaffiliated. Thus, we bring together the literature on religious club goods (e.g. Iannaccone 1992, Berman 2000) and religious competition (???McBride 2008, ?) in a single theoretical framework, something that has not been done before.

3 Application: The Islamic Revival in Egypt

In January 2012, Egypt’s revolution led to parliamentary elections that revealed the scale of support for Islamic political parties—the Muslim Brotherhood Freedom and Justice Party and the Salafist Al-Nour party attracted 47% and 28% of the vote, respectively. Their electoral success was the culmination of a wide-reaching Islamic movement beginning in the 1970s that reversed previous trends toward secularization. According to Hourani (2005), by
the 1930s, Islam had become merely an inherited culture rather than a source of practical guidance for a large part of the educated elite. They were living largely outside the bounds of the *sharia*; prayers and fasting were less frequently observed, and the consumption of alcohol was rising (Hourani 2005, p. 345-6). The subsequent reversal of fortunes for Islamic organizations in Egypt—in particular the entry of new and more extreme religious groups that provided public goods and engaged in political opposition—is known as the ‘Islamic revival’.\(^2\)

We shall focus on two conditions prevailing in the lead up to Egypt’s Islamic revival. Firstly, the turn away from traditional Islamic values and practices by the middle and upper classes in the first half of the twentieth century presaged decades of state attempts to subjugate the religious establishment and repress religious organizations. Table 1 contains a selective list of relevant events since 1920. The governments of Gamal Abdel Nasser (1956-1970) and Anwar Sadat (1970-1981) co-opted the religious establishment, in particular the Al-Azhar scholars and clergymen,\(^3\) removing Al-Azhar’s authority over family law, appointing its Grand Sheikh and adding secular subjects to its curricula. Al-Azhar was used as an organ of the state to legitimize policies that would otherwise be opposed on religious grounds (see Kepel 1985, Hopwood 1991, Barraclough 1998, Moustafa 2001). The religious establishment moderated its stance toward religious obligations, practices such as female circumcision and peace with Israel. Our model suggests that such a moderation may produce endogenous religious polarization as smaller sects respond by increasing their strictness. In Egypt, this prediction is broadly consistent with the subsequent growth of strict religious groups such as the Muslim Brotherhood, who engaged intensively in public goods provision and political opposition, as well as more extreme militant groups such as Al-Gama’a al-Islamiyya, Islamic Jihad and Takfir wal-Hijra.


\(^3\)Al-Azhar university is the premier institution of Sunni Islamic higher learning.
Table 1: Religiopolitical Developments in Egypt: 1920-present

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1923</td>
<td>Voluntary deveiling movement led by Huda Shaarawi in Cairo</td>
</tr>
<tr>
<td>1924</td>
<td>Free secular education introduced for women</td>
</tr>
<tr>
<td>1928</td>
<td>Muslim Brotherhood founded by Hassan al-Banna; calls for Islamic state and <em>sharia</em></td>
</tr>
<tr>
<td>1937</td>
<td>Al-Azhar’s <em>fatwa</em> committee declares that veiling is not a religious obligation</td>
</tr>
<tr>
<td>1943-50</td>
<td>Muslim Brotherhood establishes branches in Jordan, Syria, Sudan and elsewhere</td>
</tr>
<tr>
<td>1950</td>
<td>Sayyid Qutb returns from the United States scandalized, joins Muslim Brotherhood</td>
</tr>
<tr>
<td>1953</td>
<td><em>Waqfs</em> (Islamic trusts) nationalized</td>
</tr>
<tr>
<td>1954</td>
<td>Muslim Brotherhood officially dissolved and members prosecuted</td>
</tr>
<tr>
<td>1956</td>
<td>Al-Azhar loses authority over family law which is incorporated into civil code</td>
</tr>
<tr>
<td>1955</td>
<td><em>Sharia</em> courts abolished</td>
</tr>
<tr>
<td>1961</td>
<td>Nasser gains authority to appoint Grand Sheikh of Al-Azhar University</td>
</tr>
<tr>
<td>1961</td>
<td>Secular subjects and women’s faculty introduced to Al-Azhar</td>
</tr>
<tr>
<td>1967</td>
<td>Arab defeat in Six-Day War</td>
</tr>
<tr>
<td>1973</td>
<td>Sadat initiates ‘holy war’ against Israel</td>
</tr>
<tr>
<td>1975-79</td>
<td>Islamist student organizations flourish and gain control of student unions</td>
</tr>
<tr>
<td>1980</td>
<td>Constitutional amendment recognizing Islam as state religion, <em>sharia</em> primary source of legislation</td>
</tr>
<tr>
<td>1981</td>
<td>Sadat assassinated by religious extremists</td>
</tr>
<tr>
<td>1985</td>
<td>People’s assembly votes to gradually amend existing laws to conform to the <em>sharia</em></td>
</tr>
<tr>
<td>2005</td>
<td>Muslim Brotherhood wins 20% of parliamentary seats, despite electoral irregularities</td>
</tr>
<tr>
<td>2011</td>
<td>Revolution and fall of Mubarak</td>
</tr>
<tr>
<td>2012</td>
<td>Parliamentary elections: Muslim Brotherhood Freedom and Justice Party wins 47% of vote, Salafist Al-Nour Party wins 28% of vote.</td>
</tr>
</tbody>
</table>

Secondly, deteriorating economic conditions compounded the polarizing effect of state regulation of the religious establishment. The Islamic revival occurred amidst economic stagnation and rising inequality. Binzel (2011) provides empirical evidence of a sharp decline in social mobility in Egypt in the 1970s-80s. In addition, the liberalization of the economy under Sadat is supposed to have heightened inequality. El Guindi (1981) claims that “[a] new form of inequality has emerged—wealth for the entrepreneur, unemployment for the college educated” [p. 481].\(^4\) Several authors including Ayubi (1991), Amin (1995) and Wickham (2002) have suggested that this created feelings of relative deprivation, especially among educated youth, which fueled Egypt’s Islamic revival. Carvalho (2009) develops a formal

\(^4\) Wickham (2002, p. 52-3) estimates that entry-level positions for graduates in foreign firms and joint ventures paid around twelve times more than those in local government administration. By 1987, the salaries of government employees had fallen to 55 percent of their level in 1973, forcing employees to take second and even third jobs (Wickham 2002, p. 47).
model of religious participation driven by relative deprivation. This paper adds to existing theories of relative deprivation by studying the crucial role of religious organizations in the process of belief formation, public good provision and political opposition. We suggest that religious beliefs compensate for inequality and unfulfilled aspirations, so that rising relative deprivation leads to greater demand for religious beliefs. Our model predicts that religious groups will respond by increasing strictness, and engaging more intensively in public good provision and political opposition. The model also predicts that this change should be most pronounced among sects with more intensive participation. These predictions are broadly consistent with the Egyptian experience since the 1970s.

References


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