



Religion and Popular Support for Suicide Attacks

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Running Head: RELIGION AND SUICIDE ATTACKS

Religion and Support for Suicide Attacks

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11 **ABSTRACT** - In four studies carried out across different cultural, religious and political
12 contexts, we investigated the association between religion and popular support for suicide
13 attacks. In two surveys of Palestinians and one cognitive priming experiment with Israeli settlers
14 prayer to God, an index of religious devotion, was unrelated to support for suicide attacks.
15 Instead, attendance at religious services, thought to enhance coalitional commitment, positively
16 predicted support for suicide attacks. In a survey of six religions in six nations, regular
17 attendance at religious services positively predicted a combination of willing martyrdom and out-
18 group hostility, while regular prayer did not. Implications for understanding the role of religion
19 in suicide attacks are discussed.
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6 The suicide attack can be thought of as belonging to an extreme subset of *parochial*
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8 *altruism* (Choi & Bowles, 2007) as it combines a parochial act (the attacker killing out-group
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10 members) with the ultimate act of sacrifice for the in-group (the attacker killing him or herself).
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12 In the last decade there has been an exponential increase in the frequency of suicide attacks. To
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14 illustrate, while 142 suicide attacks were carried out worldwide between 1983 and 2000 (Pape,
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16 2005), 312 suicide attacks were carried out between 2000 and 2003 (Atran, 2003). Since the U.S.
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18 invasion of Iraq, the number of suicide attacks being carried out has increased further, with over
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20 500 carried out in 2006.
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25 Between 2000 and 2003, the period marking the upsurge in the use of suicide attacks,
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27 organizations motivated by some fusion of religious and political goals (hereafter “religious
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29 groups”) carried out over 70% of suicide attacks (Atran, 2003). There has been widespread
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31 popular and scientific debate regarding the relationship between inter-group violence, suicide
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33 attacks and religion, with particular attention paid to Islam (Dawkins, 2003; Harris, 2005). What
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35 has been sorely lacking in this debate is empirical investigation into the relationship between
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37 religion and suicide attacks. This paper aims to bridge this gap with an investigation into the
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39 relationship between religion and popular endorsement of violent parochial altruism in general,
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41 and for suicide attacks in particular.
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46 A possible explanation for why most groups using suicide attacks are religious may be
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48 that religious groups find it easier to mobilize popular support from “constituent” communities
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50 for the use of suicide attacks. Violent insurgent organizations typically require a threshold of
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52 passive and active popular support to survive (Merari, 1993). Moreover, most insurgent
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54 organizations that use suicide attacks do so with the intention of inspiring *greater* levels of
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3 popular support (Bloom, 2005). It has been widely speculated that devotion to religious belief
4 might facilitate support for suicide attacks (Harris, 2005) because certain religious beliefs
5 denigrate those of other faiths (Dawkins, 2003), may promise martyrs the reward of an afterlife
6 (Hoffman, 1998), or may contain narrative traditions that glorify acts of combative martyrdom
7 (Gambetta, 2005; Rappoport, 1990) such as suicide attacks. We call this general class of
8 explanation *the religious belief hypothesis*. Proponents of the religious belief hypothesis tend to
9 rely on selected violent content of religious texts and traditions rather than on an empirical
10 investigation of the relationship between religious belief and suicide attacks. Such an approach
11 has been criticized for overlooking the complex way people interpret and contest the use of their
12 religious texts to justify violence (Esposito, 2002).
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27 Alternatively, religion's relationship to suicide attacks may be independent from belief
28 per se, but derive from religion's ability to enhance commitment to coalitional identities (Atran,
29 2003; Irons, 2001) and within-group cooperation or parochial altruism (Sosis & Ruffle, 2003).
30 We term this the *coalitional commitment hypothesis*. Participation in group activities is a good
31 index of strong group identity (Deaux, 1996), but there is evidence that participating in
32 collective religious ritual has a particularly powerful positive effect on within-group
33 cooperation. For example, in a study of Israeli Kibbutzim, frequency of attendance at synagogue
34 but not frequency of communal meals, positively predicted within-group altruism (Sosis &
35 Ruffle, 2003). Because suicide attacks are an extreme form of within-group cooperation
36 (involving the sacrifice of the attackers' life to his or her collective), the positive effect of
37 collective religious ritual on within-group cooperation in general may hold for support of suicide
38 attacks in particular.
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Collective religious rituals may enhance coalitional commitment and create a sense of “fictive kinship” within congregations (Irons, 2001) via two possible mechanisms. First, mimicry has been shown to increase cooperative behavior (van Baaren, Holland, Kawakami & van Knippenberg, 2004) and collective religious rituals common to mosque, synagogue, temple or church typically involve ritualized coordinated movements (Atran & Norenzayan, 2004) that might be thought of as large scale mimicking behavior. Second, these rituals typically also include costly commitment to shared counterintuitive beliefs that signal in-group commitment (Atran & Norenzayan, 2004; Irons, 2001). Greater in-group commitment in turn may be associated with greater intergroup conflict. In one cross-cultural study, costly behaviors that mark in-group identity (e.g., ritual genital mutilation, body piercings) was shown to predict the existence of external wars (Sosis, Kress & Boster, 2007).

To summarize, the *religious belief hypothesis* holds that measures of devotion to specific religious beliefs would positively predict support for suicide missions. Our *coalitional commitment hypothesis* holds instead that any relationship between religion and support for suicide missions is a byproduct of the positive effect of collective religious ritual on coalitional commitment and, thus, that attendance in collective religious activities would positively predict support for suicide missions.

We tested these alternative hypotheses in four studies. In studies 1 and 2, we investigated whether support for suicide attacks was predicted by prayer frequency (an index of devotion to religious belief¹) and frequency of mosque attendance (an index of coalitional commitment) respectively in two surveys of Palestinian Muslims living in the West Bank and Gaza; in Study 3, we used a cognitive priming experiment to test whether reminders of praying to God or

¹ Because prayer is an inward communication with a divine power (James, 1961/1902), religious devotion can be inferred from prayer frequency. In Studies 1 and 4 we empirically validate prayer’s importance as an index of religious devotion.

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3 reminders of synagogue attendance increased the likelihood that Jewish Israelis would support an
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5 Israeli suicide attack against Palestinians; and in Study 4, we carried out a broader cross-cultural
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7 investigation of the relationship between prayer, attendance and parochial altruism among
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9 Indonesian Muslims, Mexican Catholics, British Protestants, Russian Orthodox, Jewish Israelis,
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11 and Indian Hindus.
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14 15 16 **Study 1: Palestinian survey 1999**

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18 We began by analyzing data from a nationally representative survey of 1151 Palestinian
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20 Muslim adults (579 women, mean age \approx 34) who participated in individual face-to-face home
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22 interviews carried out in 1999.² This study had two purposes. First, we tested our assumption that
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24 prayer and attendance at collective religious services (*attendance*) constitute overlapping but
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26 distinct aspects of religious experience where prayer, compared to attendance, would more
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28 strongly predict devotion to religious beliefs or deities (*religious devotion*). The second and
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30 primary goal was then to test our hypothesis that attendance, compared to prayer, would more
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32 strongly predict support for suicide attacks.
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36 37 **Method**

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39 We regressed religious devotion and support for suicide attacks respectively on frequency
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41 of prayer and frequency of mosque attendance in the first step, adding additional control
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43 variables in the second step. This strategy allowed us to examine the unique relationship between
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45 our primary predictor variables and our dependent variables.
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49 *Predictor variables.* Participants were asked, “How often do you pray?” (never, 9.1%;
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51 very little, 7.1%; on Fridays and religious holidays, 6.2%; more than once a week, 8.4%; or five
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53 times a day, 69.3%) and “How often do you go to mosque?” (on religious holidays only, 24.1%;
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58 ² For additional details on methods for all studies see online supplementary materials.
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3 on Fridays and religious holidays, 35.6%; at least once a week, 22%; or “once a day, 18.3%.
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5 Prayer frequency and Mosque attendance were correlated ($r_{\text{spearman}} = .28, p < .01$).
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8 *Dependent variables.* Participants were asked “Do you support martyrdom attacks?”
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10 (23% supported, 77% opposed); and “how important is religion in your life?” (75% reported
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12 “very important”, 20% “somewhat important”, 4% “not very important”, 1% “unimportant”).
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15 *Control variables.* We controlled for: gender, age, education level, refugee status,
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17 perceived standard of living, support for the rule of Palestine by Sharia (this is the stance of
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19 Hamas and Palestinian Islamic Jihad, groups responsible for most Palestinian suicide attacks),
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21 and support for the Oslo peace process. Our sample was representative of the population in terms
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23 of gender, education level and refugee status.
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27 **Results and Discussion**

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29 Because our dependent and predictor variables were strongly skewed, we carried out
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31 logistic regressions, which make no assumptions regarding the normality of the distribution of
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33 dependent or independent variables, using reverse Helmert contrasts where each category of the
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35 predictor variables except the first (reference) category was compared to the average effect of
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37 previous categories. The reference category for prayer was “never pray” and the reference
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39 category for attendance was “on religious holidays only”.
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43 *Religious devotion.* The dependent variable was recoded “1” (religion is very important
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45 in my life) and “0” (somewhat important or less). When we regressed religious devotion on
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47 attendance and prayer, we found that compared to those who prayed less frequently, praying five
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49 times a day increased the predicted odds of a respondent saying that religion is “very important
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51 to my life” by a factor of 6.6 (Wald = 70.07, 95% CI for OR = 3.30-8.85, $p < .001$) while
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53 attendance was unrelated to religious devotion once prayer was accounted for (all Walds < 1.30,
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$p > .1$). The effect of prayer was reliable when including control variables in the second step (see Table 1). Thus, frequency of prayer was found to be a good measure of religious devotion.

Support for suicide attacks. Compared to those who attended less frequently, attending a mosque once a day increased the predicted odds of a respondent supporting suicide attacks by a factor of 2.11 (Wald = 12.11, 95% CI for OR = 1.38-2.20, $p < .01$) while prayer was unrelated to support for suicide attacks (all Walds < 2.30 , $p > .1$). The effect of attendance was reliable when control variables were included in the second step (see Table 1). In this study, and in all other studies reported in this paper, there was no main effect for gender, nor did gender interact significantly with any of our predictor variables. We found the same results using alternate contrast methods, and prayer frequency did not moderate the effect of attendance frequency.

In summary, study 1 found: (a) that when we regressed religious devotion on prayer frequency and frequency of mosque attendance, prayer frequency was a significant predictor but mosque attendance was not; but (b) that when we regressed support for suicide attacks on both variables, mosque attendance was a significant predictor but prayer was not. These results provided initial evidence for the *coalitional commitment hypothesis* and against the *religious belief hypothesis*.

Study 2: Palestinian survey, 2006

We replicated findings of study 1 in a survey, carried out in 2006, of 719 Palestinian Muslim university students (359 women, mean age ≈ 21) who participated in individual face-to-face interviews across 14 university campuses in the West Bank and Gaza. In this study we were able to control for two additional variables that could predict support for suicide attacks: 1) support for Hamas or Palestinian Islamic Jihad (PIJ) (most Palestinian suicide attackers have been student members of these groups); and 2) dehumanization of Israelis. In addition, a

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3 different wording was used to measure support for suicide attacks in an attempt to assess the
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5 robustness of the findings.
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8 **Method**

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10 *Predictor variables.* Participants were asked “How often do you pray to Allah?” (never,
11 3%; very little, 5%; on Fridays only, 2%; once a day, 4%; or five times a day, 85%) and “How
12 often do you go to mosque?” (never, 30%; rarely, 22%; Fridays only, 12%; daily, 5%; or more
13 than once a day, 32%).
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19 *Dependent variables.* Participants were asked “In your opinion, what is the position of
20 Islam regarding the bomber who kills himself with the aim of killing his enemies as some
21 Palestinians do? Do you believe that Islam (forbids, 4.2%; allows, 59%; encourages, 23.8%;
22 requires, 13%) such acts in defense of Islam and of the Palestinian people?” Our analyses
23 focused on the last response category since pools of potential recruits for suicide attacks would
24 be most likely to come from those who believed such acts were required. However, the results
25 were unchanged if we pooled “encourages” and “requires” responses.
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37 *Control variables.* Our sample was representative of the population in terms of gender and
38 refugee status. We controlled for age, gender, whether participants identified with Hamas or PIJ,
39 location (west Bank or Gaza), income, and dehumanization of Israelis. We measured
40 dehumanization by asking how typical of Israelis were two “uniquely human” emotions: “care
41 and compassion for the family” (very typical, 41%; somewhat typical, 32%; somewhat atypical,
42 10%; very atypical; 16%); and “pain at the death of a loved one” (very typical, 54%; somewhat
43 typical, 28%; somewhat atypical, 8%; very atypical, 11%). These two items formed an
44 adequately reliable scale (Cronbach’s Alpha = .68).
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Results and Discussion

We used logistic regression employing reverse Helmert contrasts to test hypotheses because of the non-normal distribution of variables. First we regressed the belief that Islam requires suicide attacks on prayer frequency and frequency of mosque attendance. As in Study 1, frequency of mosque attendance (Wald = 14.45, 95% CI for OR = 1.89-6.80, $p < .001$), but not frequency of prayer (all Walds < 2.00 , $p > .1$), positively predicted the likelihood that participants would claim that Islam requires suicide attacks. Those attending the mosque more than once a day were more likely, compared to those attending less often, to believe that Islam requires suicide attacks by a factor of 3.58. This relationship was still reliable when including control variables in a second step (see Table 1).

Again devotion to Islam, measured by prayer frequency, was unrelated to Palestinian support for suicide attacks. In contrast, frequency of mosque attendance strongly predicted support for suicide attacks. The effect of mosque attendance cannot be attributed solely to propaganda by religious clerics or recruitment efforts at mosques, as it held even when controlling for identification with organizations carrying out suicide attacks, and when controlling for dehumanization beliefs.

Study 3: Israeli settler experiment

We further investigated the relationship between religion and suicide attacks in a cognitive priming experiment carried out with a representative sample of Jewish Israelis living in the West Bank and Gaza (hereafter “settlers”). The purpose of this study was twofold. First, we investigated whether the association between participation in collective religious services and support for suicide attacks generalizes to a different religious group experiencing intergroup conflict. Second, controlled experiments are necessary to provide greater confidence in the

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3 hypothesized relationship between any two variables. Social cognition research consistently
4 demonstrates that “priming” cognitive constructs can temporarily increase their influence on
5 subsequent evaluative and behavioral tasks (Schwarz & Sudman, 1996). By manipulating the
6 order of questions in this survey we were able to test whether activating cognitions related to
7 “praying to God” or “attending synagogue” had different effects on the evaluations of a suicide
8 attack by a Jewish Israeli against Palestinians.
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17 **Method**

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20 *Prime manipulation.* We randomly selected 198 respondents (100 women, median age =
21 34) in a telephone survey to participate in this experiment and then randomly assigned them to
22 one of three experimental conditions. Some were randomly assigned to the synagogue prime
23 condition and were asked questions (like those used in Study 1) regarding their frequency of
24 attendance at synagogue; others were assigned to the prayer prime condition and were asked
25 about frequency of praying to God (as in Study 1). Then both groups were asked about their
26 support for the suicide attack against Palestinians. A third group was not primed; they were
27 simply asked about their support for the suicide attack.
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39 *Dependent variable.* Because suicide attacks by Jewish Israelis are uncommon, we
40 measured support for a single act carried out by a settler, Baruch Goldstein. On February 25
41 1994, Goldstein died while killing 29 Muslims at prayer and injuring 60 others, in the “Cave of
42 the Patriarchs”, a site holy to both Muslims and Jews located in Hebron, the West Bank.
43 Goldstein’s act was widely condemned by Israelis, but his supporters refer to him as a martyr
44 (Sprinzak, 2000). To measure support, participants were asked whether they believed that
45 Goldstein’s act was “extremely heroic” or not.
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Results and Discussion

Study 3 replicated the first two studies in a different religious group, demonstrating the effect of attendance on support for suicide attacks with an experimental design. In the synagogue prime condition, 23% reported believing that Goldstein's act was extremely heroic, compared to 15% in the no prime condition and only 6% in the prayer prime condition ($\chi^2 = 7.81, p = .02$). We examined these effects further with a logistic regression, entering as predictor variables the conditions prayer prime (versus other conditions) and synagogue prime (versus other conditions) so that the reference condition for both variables was the no prime condition. Compared to the no prime condition, those primed with attending synagogue were more likely (Wald = 4.01, 95% CI for OR = 1.01-3.55, $p < 0.05$), while those primed with prayer were marginally less likely (Wald = 2.83, 95% CI = 0.14-1.16, $p = .09$) to regard Goldstein's act as extremely heroic.

Study 4: Survey of six religious majorities in six nations

In Study 4 we analyzed data from representative surveys of Indonesian Muslims, Mexican Catholics, British Protestants, Russian Orthodox, Jewish Israelis, and Indian Hindus ($N = 4704$) to further investigate whether the relationship between attending collective religious services and a propensity for parochial altruism holds across a wider variety of political and cultural contexts. We also re-tested our assumption that prayer frequency, compared to attendance frequency, would be more strongly associated with levels of religious devotion.

Method

The survey was conducted in 2003-2004 on behalf of the British Broadcasting Corporation by ICM research associates. We sampled six religions in countries where they formed a nation's majority faith, allowing us to examine our hypotheses in sub-samples that were comparable, large in number, and nationally-religiously coherent.

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Predictor variables. To measure prayer frequency, participants were asked whether they prayed regularly (58.6%) or less than regularly (41.4%). To measure religious attendance, participants were asked whether they agreed (42%) or disagreed (58%) with the statement: “I regularly attend an organized religious service”.

Dependent variables. We constructed a cross cultural measure of parochial altruism relevant in contexts devoid of suicide attacks. We scored people as positive for parochial altruism if they simultaneously endorsed two items: “I would be willing to die “for my God” (a measure of altruism towards in-group) and “I blame people of other religions for much of the trouble in this world” (a measure of hostility to out-groups). Nine percent of the entire sample endorsed both items simultaneously.

Religious belief and devotion was measured by agreement or disagreement with the following statements: “I have always believed in God”, “God judges my actions and the way I live my life”, “God created the universe”, “God could prevent suffering if He wanted to”, “I don’t believe death is the end”, “I find it hard to believe in God when there is so much [suffering]” (reverse scored), “The world would be a more peaceful place if people didn’t believe in God” (reverse scored), and “Religion is a cloak for politics” (reverse scored). These items formed an adequate index (Cronbach’s alpha = .67).

Control variables. Our sample was representative of each nation’s population in terms of gender and age. Other control variables included work type (arranged from highest to lowest SES), a measure of belief in superiority of in-group beliefs (“agree” [vs “disagree” and “don’t know”] with “My God/Beliefs is the only true God/Beliefs”, and a measure of national human development (UNHDP, 2004).

Results and Discussion

Religious devotion. Prayer was again a stronger predictor of the religious devotion index: $\beta = .39$, $S_{\beta} = .02$, $t(4704) = 25.94$, than was attendance at collective religious services, $\beta = .14$, $S_{\beta} = .02$, $t(4704) = 9.18$, both $p_s < .001$. This remained true when other variables were controlled (see Table 1).

Parochial altruism. Because our dependent variable was strongly skewed we used logistic regression using a similar strategy to Studies 1 and 2. For the whole sample, the predicted odds of simultaneously declaring a willingness to die for one's God (or beliefs) and that people of other religions were to blame for much of the trouble in the world was not uniquely predicted by prayer frequency while controlling for frequency of attendance (Wald = 2.19, $p > .1$). However endorsement of parochial altruism was higher, by a factor of 2.54, for regular (compared to irregular) attendees at the mosque, church, synagogue or temple (Wald = 55.15, 95% CI for OR = 1.99-3.26, $p < .001$), while controlling for prayer frequency. The effect of attendance remained when we included our control variables in the regression, OR = 2.20, $p < .001$ (see Table 1). The strength of the attendance variable differed somewhat across samples (see Fig. 1). We tested whether the effects of prayer and attendance on endorsement of parochial altruism interacted with membership in different sub-samples, finding that the positive effect of attendance on endorsement of parochial altruism was reliably stronger for the Russian Orthodox compared to other sub-samples (Wald = 7.31, 95% CI for Odds Ratio = 1.33–5.91, $p < .01$) and that the negative effect of prayer on endorsement of parochial altruism was reliably stronger for the Indonesian Muslims compared to other sub-samples (Wald = 5.97, 95% CI for Odds Ratio = 0.43–0.86, $p < .05$). We would caution against over interpretations of these differences as our samples differed along multiple dimensions.

General Discussion

In Studies 1 and 2, the frequency with which Palestinian Muslims attended the mosque, but not their frequency of prayer, positively predicted support for a specific and extreme example of parochial altruism: suicide attacks. In Study 3, priming synagogue attendance (but not prayer to God) increased the likelihood of Jewish Israeli settlers believing that a single suicide attack carried out against Palestinians was “extremely heroic”. Study 4 demonstrated in a multinational and multireligious sample that parochial altruism was positively predicted by the frequency of attendance in organized religious services, but not by their frequency of prayer.

Other behaviors such as direct propaganda and recruitment in places of collective worship may also increase support for suicide attacks. However, these are not counter-explanations for our results. In Study 1, more frequent mosque attendance predicted strong support for suicide attacks even while statistically controlling for support for political Islam. In Study 2, frequency of mosque attendance predicted strong support for suicide attacks even while controlling both for identification with religious Palestinian groups that carry out such attacks and for dehumanization of Israelis. Thus at both high and low levels of such identification and dehumanization respectively, more frequent attendees (compared to less frequent) demonstrated greater support for suicide attacks.

We should note that building coalitional commitment may have many positive and benign consequences, leading to strong communal institutions (Putnam, 2000). It is only in particular geopolitical contexts where the parochial altruism associated with such commitments is translated into something like suicide attacks. It is also evident that social mechanisms that facilitate parochial altruism (e.g., youth groups, military parades, sports events) are available to

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3 non-religious groups. For example, the non-religious Tamil Tigers of Sri Lanka use such
4 mechanisms to recruit support for inter-group violence and, indeed, suicide attacks (Gambetta,
5 2005). Clarifying the links between such secular activities and parochial altruism, including
6 those that take violent form, is an important goal for future research.
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13 Taken together, these four studies represent strong support for the *coalitional*
14 *commitment hypothesis* and disconfirmation of the *religious belief hypothesis*¹. Our findings
15 suggest that the relationship between religion and support for suicide attacks is real, but is
16 orthogonal to devotion to particular religious belief or indeed religious belief in general. Of
17 course, economic and political conditions may strongly contribute to support for suicide attacks.
18 Our paper deals only with the relationship between religion and support for suicide attacks. The
19 proposal that there is some relationship between religious devotion and inter-group violence did
20 not receive empirical support. It appears that the association between religion and suicide
21 attacks is a function of collective religious activities that facilitate popular support for suicide
22 attacks and parochial altruism more generally.
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Table 1

Summary of regression analyses predicting religious devotion and support for suicide attacks from prayer and attendance frequency in Studies 1, 2 and 4

	Prayer to God	Attendance at collective religious services
Study 1: Palestinian survey 1999		
Religious devotion	Wald = 47.19, Odds Ratio = 3.3 – 8.55	Wald = 0.45, Odds Ratio = 0.58 – 1.97
Support for suicide attacks	Wald = 0.71, Odds Ratio = 0.71 – 2.3	Wald = 6.42, Odds Ratio = 1.15-3.02
Study 2: Palestinian survey 2006		
Support for suicide attacks	Wald = 0.95, Odds Ratio = 0.57 – 5.22	Wald = 4.23 (1.03 - 3.84)
Study 4: Six nation survey		
Religious devotion	B = .25, SE = .02	B = .08, SE = .02
“Parochial altruism”	Wald = 2.17, Odds Ratio = 0.93 – 1.64	Wald = 38.4, Odds Ratio – 1.71 – 2.82

Note. Significant results at $p < .05$ are in bold. Data for Odds Ratios show the 95% confidence intervals. Full tables including results for control variables may be found in supporting materials online.

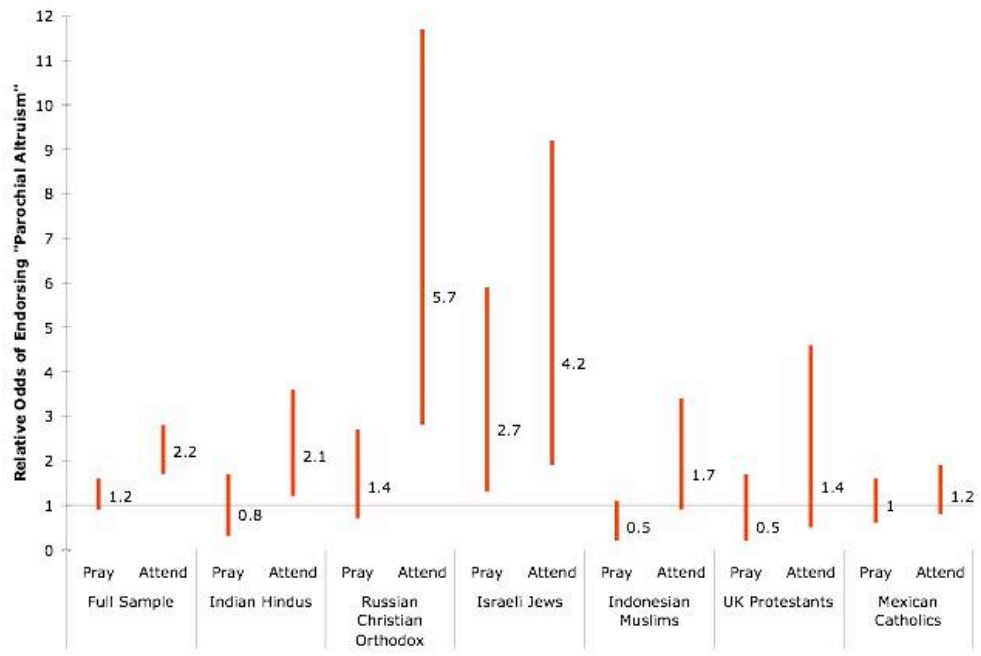
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6 **Fig. 1** Relative odds of endorsing parochial altruism as a function of prayer and attendance
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8 frequency for six faith groups and the full sample. Error bars indicate 95% confidence intervals.
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