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Martyrdom Contracts

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This article emphasizes the similarities between such diverse instances of public-spirited suicide as the Islamic martyrs of yesterday and today, the anarchists, the Japanese kamikaze of World War II, the Tamil Tigers of Sri Lanka, and the Christian martyrs under the Roman Empire. It tries to accommodate this disparate evidence within a single two-period, expected utility model of a martyrdom contract, to which volunteers sign up in the expectation of probabilistic earthly rewards. Contract enforcement is ensured by a sufficiently strong stigma, or social sanction, placed on renegades. The main implication for counterterrorism policy is that the sanction should be softened, so as to turn prospective martyrs into apostates.

Keywords: martyrdom; suicide terrorism; expected utility; incentive contracts

The waves of Palestinian suicide bombers and Al-Qaeda suicide terrorists in recent years have exercised the minds of Western observers and scholars in an effort to understand the motives of such people and the logic of their acts—an effort motivated by the search for effective policy responses or preemptive action. In an important recent study, Pape (2005) convincingly argues the political rationality of the terrorist groups that recruit and direct suicide attackers but leaves out the question of the attackers' motives, conceding that they may be driven by suicidal psychologies or religious indoctrination as many current academic and journalistic accounts would have it. This article attempts to make a further step in the same direction by suggesting a rational foundation to individual suicidal behavior for a collective cause. This is no obvious conceptual task. What seems to put off any attempt at explanations of such behavior based on the standard rational choice approach is the apparent fact of the virtual *certainty* of death when the action is taken. However enormous the subjectively perceived benefits from joining a suicide group may be, if the probability of survival is exactly zero, the expected present value of membership falls to zero, and the conventional expected utility calculus breaks down. History is strewn with military, political, or religious actions that involved a very

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high risk of death, but high probability is qualitatively different from probability one—or so it seems, and hence the search for novel approaches.

The suggestions put forward to overcome this apparent disability of expected utility theory fall into three broad categories. One approach starts from the observation that all societies have their share of madmen (Laqueur 2001): psychotic people who are willing to die a glamorous death to acquire notoriety and/or avenge perceived wrongs or injustices. In normal times, such aspirations remain inhibited, and those people die a solitary death or engage in some other kind of headline-capturing acts. But when with war or civil conflict an occasion arises, these exhibitionists are likely to rush to volunteer for the cause at hand: the fighting provides a focus and an outlet for the realization of their hidden aspirations to notoriety through voluntary death. Put another way, fanatics are among us all the time; only some of the time, however, do they find an excuse to come under the limelight. Hence the policy advice is clear: remove the excuse, find a settlement to the conflict, and they will lapse into obscurity again. At least in the Palestinian case, however, the sheer number of volunteers queuing up for action casts doubts on the madmen theory. But more to the point, extensive interviews with a large sample of these volunteers or their relatives show them to be entirely normal, nonpsychotic people, though (until 2000) deeply religious and strongly nationalistic in their outlook; furthermore, here as elsewhere, recruiting organizations systematically screen out such psychotic subjects as unreliable (Hassan 2001; see also Margalit 2003). Moreover, in the Middle East at least, participation in terrorism and political violence is apparently unrelated, or even weakly positively related, to individuals' income and education levels (Krueger and Maleckova 2003). Also, here as in all cases in which a selection or self-selection of candidates is possible, suicide terrorists tend to be young. These findings are in sharp contrast with the predictions and findings of the economics of suicide literature (Hamermesh and Soss 1974), in which people who commit suicide are typically older and poorer than the general population.

A second approach (Iannaccone 2003; Berman and Laitin 2005) centers on the religious motive and considers that the Muslim assurance of a heavenly reward for the martyr takes the place of ordinary incentives in this life. In addition, the high social prestige and generous financial assistance bestowed on the martyr's surviving family members are usually factored in as an extra incentive.¹ This interpretation accepts the self-conscious motives stated by volunteers at face value and can also accommodate the precedent of the Iranian *pasdaran* youth who voluntarily blew up on the minefields to clear the ground for the advance of the regular Iranian army during the Iran-Iraq war in the 1980s. One problem with this view is that the Muslim martyr's hereafter is apparently tailored for men, with seventy-two virgins awaiting the blessed in heaven, which makes it awkward to accommodate the few young women who must be counted among the Palestinian martyrs. Another problem is the

1. A sophisticated variant on this altruistic motive is offered by Azam (2005), who models suicide terrorism as an extreme form of intergenerational saving and investment designed to increase the probability of the benefit of some public good accruing to the next generation, as in a dynastic family model. This approach, however, can hardly account for the prevalence of unmarried youths in most historical instances of organized martyrdom, which forces one to fall back on straight "warm glow" giving to the general (future) society. The latter looks tautological.

birth of the Al-Aqsa Martyrs Brigade, the suicidal arm of Fatah, a secular, nationalist organization that in 2001 began successfully to contest the Islamists' monopoly of suicide missions in Palestine. But, more generally, public-spirited suicide has historically not been the exclusive preserve of religious fundamentalists. "Secular martyrs" include the anarchists at the turn of the twentieth century; then, toward the end of World War II, the Japanese kamikaze and the elite units of the German SS asked to undertake suicidal missions to slow down the onslaught of the Soviet army; and today, the Tamil Tigers of Sri Lanka, in fact the world's leader in suicide terrorism (Pape 2005; Laqueur 2001). If the hereafter theory is accepted for Muslims and Christians (and perhaps the Jewish Maccabees and Zealots), then we need a completely different theory for these secular characters.

A third approach, pioneered by Wintrobe (2006, forthcoming), tries to overcome the disabilities of the other approaches by grounding the analysis in a rational trade-off between autonomy and solidarity within a group. His paramount concern is to explain the "attraction of the corner" (i.e., the probability-one death). His explanation is that the more a person gives away autonomy in exchange for group solidarity, the closer he comes to identifying his utility with that of the group leader, until a point is reached where he is prepared to "replace" his own utility with that of the leader, as it were. Since by assumption the leader has an unlimited demand for suicide volunteers, the person then willingly obeys and goes off to die. Although Wintrobe's emphasis and main concern is with religious, specifically Islamic suicide bombers, his theory only requires the individual's demand for solidarity to be sufficiently strong, so in principle nothing prevents the theory from being applied to "secular" suicides such as those mentioned above. Whatever the chosen application, however, the centerpiece of this theory seems to be the corner solution, that is, the certainty of death, at which the volunteers are invariably sent forth by the leader and willingly comply. But there is at least one great historical precedent that has apparently been overlooked so far: the Christian martyrs under the Roman Empire, who not only were never "sent forth" by church leaders but were often actively discouraged from offering themselves up to the authorities, in an effort to protect the very survival of the organization. Nevertheless, the *possibility* of martyrdom (i.e., of dying as a witness to the faith) was part and parcel of the bundle of commitments and obligations that a person knowingly took upon himself or herself when joining the Christian community. Also, the anarchists followed much the same pattern. Wintrobe's theory hardly seems equipped to deal with these important cases of undirected martyrdom.

This article introduces two novelties, one of factual coverage and one of method. Empirically, it tries to take into account the evidence from a variety of historical instances that, although a world apart from each other, all share the feature of voluntary suicide for the provision of a public good, be it the witnessing of the faith, the victory of one's side in a struggle, or the slaughter of the infidel enemy.² A casual,

2. It is hardly necessary to emphasize that there is a huge moral difference if the "good" thus produced is testifying one's religious belief, without harming others, or if it is killing as many innocent civilians as possible. Nevertheless, the logic of individual choice is the same in both cases, even though this implies no equation of value judgments.

nonexhaustive survey of notorious historical examples reveals a bewildering variety of cases: the early Jewish and Christian martyrs were religious but voluntary (i.e., not directed); the anarchists of the nineteenth to twentieth centuries were also voluntary but secular; the Japanese kamikaze and the German SS units were secular but state directed; the Iranian pasdaran were religious and state directed; the Assassins of medieval Islam were religious and group directed; the Palestinian and Al-Qaeda suicide terrorists are often, but not necessarily, religious and group directed; and Sri Lanka's Tamil Tigers are secular and group directed.

All the people just listed are here called "martyrs" in the sense explained above. So the central question of this article is, Can martyrdom in general be explained as rational choice? We have seen above that none of the existing theories seems to be able to account for the whole range of suicide terrorism,³ let alone the whole range of martyrdom. It may be that an ad hoc combination of these theories could be contrived to cover the full range of interest. This article takes a more parsimonious route and offers a single model that, it is hoped, accounts for the full range of martyrdom cases. The key to breaking out of the apparent deadlock of the rational choice approach to the problem is the observation that it is almost never true that the situation calls for the individual's instant *and* certain death. In all the cases surveyed above, death is certain, but there is a prior period of membership that may provide sufficient earthly incentives to join the group; there is no prior period, but the ex-ante probability of death is in fact lower than one; or, very often, there are both a prior period and a probabilistic expectation of death.

To sharpen our focus and free the analysis from the specifics of each case, the model presented below assigns a value of zero to altruism toward relatives or fellow nationals, to within-group solidarity as such, and to heavenly rewards. It assumes that people have normal, selfish preferences: they are all interested only in their own consumption on earth and may differ only in their levels of reservation utility and degrees of risk aversion. Thus, the madmen theory, the hereafter theory, and the solidarity theory are all superseded, though not necessarily proven wrong. A group offers people a two-period incentive contract, called a "martyrdom contract," that (a) provides members with certain benefits in the first period and probabilistic benefits in the second period, (b) includes a probability of death in the second period, and (c) provides for a sanction or stigma to apply to renegades. Individuals accept the contract if it yields a level of expected utility that is no lower than their reservation utility. Members comply and undergo martyrdom, if and when requested to, if the sanction on renegeing is sufficiently strong. Thus, the stigma is the device that ensures contract enforcement in the model. However, the stigma may be strong enough to make some individuals comply, but it may be not so strong for others who then accept the lot of being branded as renegades or apostates—a problem that vexed

3. In an alternative approach, Harrison (2004) offers an ingenious model that explains all types of suicide terrorism, religious as well as secular, as the outcome of a voluntary agreement between a terrorist group and a young person to trade life for identity, so that suicide becomes the outcome of an individual rational choice. The institution of the "living martyr" makes the contract privately enforceable. However, the model applies only when death is certain *and* the "living martyr" device functions, which is not always the case.

the early Christian church for centuries. The important policy suggestion derived from the model is that suicide terrorism can be countered by offsetting the stigma and thereby easing defection.

The next section sets out the model of an individual martyrdom contract and points out conditions on parameter values that are required for it to work. The third section briefly reviews the evidence on the Christian church under the Roman persecutions, the anarchists, the Tamil Tigers, the Japanese kamikaze, and the Islamic martyrs of yesterday and today, in each case trying to test the predictions drawn from the model. Then, policy suggestions are developed from the model and the case studies. The last section concludes the article.

THE MODEL

Consider a two-period world in which a representative individual is contemplating the option of joining a group. If he does not join, he earns a reservation utility of $U_1^0 > 0$ in period 1 and $U_2^0 > 0$ in period 2. If he does join, in period 1, he receives benefits from membership B_1 (net of any fixed entry cost if this exists). In period 2, he may be asked to suffer martyrdom for the cause with probability P , in which case, if he complies, his benefits are equal to zero. Note that this is a worst-case assumption for the model: there are no perceived benefits from one's heavenly rewards or from one's relatives' or comrades' earthly rewards. If the occasion of martyrdom does not occur, with probability $1 - P$, he receives benefits B_2 . Finally, if his martyrdom is called for but he reneges, he survives to enjoy benefits B_2 but incurs a social sanction S . Furthermore, without loss of generality, we assume that no dropping out is allowed at the beginning of period 2; that is, anyone who leaves the group when the time of trial comes is branded as if he had reneged on his contract and incurs the sanction.

There is full information: the probability P that actual martyrdom is required is observed by all parties. This assumption seems adequate to describe the informational environment of most instances of martyrdom that come to mind, including those reviewed in the next section. As a starting point, we assume that all benefits and sanctions (B_1 , B_2 , and S) are fully controlled by the organization; this assumption will be relaxed later. The individual is endowed with Von Neumann–Morgenstern preferences, a rate of time discount of r , and a degree of (constant relative) risk aversion of $1 - a$, with $a \leq 1$.

The prospective member can choose one of two strategies, compliance or martyrdom (M) and reneging (R), by comparing benefits and opportunity costs, appropriately discounted. At the moment of joining the group, at the beginning of period 1, the expected present value of his net utility from the martyrdom strategy is

$$\begin{aligned}
 NEU^M &= B_1^a + \frac{1}{1+r} [(1-P)B_2^a + P(0)] - U_1^0 - \frac{1}{1+r} U_2^0 \\
 &= B_1^a - U_1^0 + \frac{1}{1+r} [(1-P)B_2^a - U_2^0],
 \end{aligned}
 \tag{1}$$

whereas the expected present value of his net utility from renegeing is

$$\begin{aligned}
 NEU^R &= B_1^a + \frac{1}{1+r} [(1-P)B_2^a + P(B_2^a - S)] - U_1^0 - \frac{1}{1+r} U_2^0 \\
 &= B_1^a - U_1^0 + \frac{1}{1+r} [B_2^a - PS - U_2^0].
 \end{aligned}
 \tag{2}$$

It is immediately obvious that a martyrdom contract cannot be self-enforcing if *both* there is no first period ($B_1 = 0$) *and* martyrdom is certain to occur ($P = 1$). In such a case, $NEU^M < 0$, and if

$$NEU^R \geq 0, \tag{3}$$

anyone who joins in will be a renegade.

If, however, either $B_1 > 0$ or $P < 1$, or both, then the participation constraint (PC) is satisfied if

$$NEU^M \geq 0. \tag{4}$$

For the contract to work, it must further satisfy the incentive-compatibility (IC) constraint that $NEU^M \geq NEU^R$, which from (1) and (2) yields

$$B_2^a - S \leq 0. \tag{5}$$

Starting from (1) and (2), it is straightforward to work out the special cases at the ends of the range of possible contracts: at one end, the case in which there is no first period ($B_1 = 0$); at the opposite end, the case in which death is certain ($P = 1$). In each case, the participation constraints (3) and (4) are modified, but the incentive-compatibility constraint (5) is not.

It is worth noting that while first-period utility, time discount rate, and probability of martyrdom all affect the participation constraints (3) and (4) via (1) and (2), they are irrelevant to the incentive constraint (5): all that matters here is that the social sanction be no less than the utility from second-period benefits if alive. This is because if and when the call for martyrdom occurs, the past is past, and hence first-period net benefits and time preference are now irrelevant; what would have happened if the call had not occurred does not matter anymore, and hence its probability is now irrelevant too. This probability can then well be one. All that counts is that net benefits for a proven renegade be nonpositive (i.e., no greater than net benefits for a dead person, which have been set to zero). Note further that IC can be satisfied whatever the individual's risk attitudes: the degree of risk aversion ($1 - a$) affects only the magnitude of the ratio B_2/S required for (5) to hold.

The key to the model is the sanction S . As the necessity for a given member to sacrifice his life at a given moment is public information, there is no moral hazard in the model, and the martyrdom contract characterized by equations (4) and (5) is first-best. The contract is viable if the sanction on renegeing is unbounded and the organization has full control over it. An efficient sanction that satisfies (5) implies a very demanding requirement: life as a renegade must be made so unbearable as to

be no better than death itself. Clearly, this is conceivable only under very special circumstances: a closed, “no-escape” society, where the organization’s reach is ubiquitous and its ties with the social environment are so tight and exclusive as to make renegade life a nightmare.⁴ In reality, however, feasible penalties for noncompliance are often bounded, or—which amounts to the same thing—they partly depend on outside factors beyond the organization’s control. In such cases, the sanction may not be adequate for some individual members, and the contract may fail. This gives an important clue for “antimartyrdom” policies: opening up the society and offering renegades an opportunity to escape or soften the social sanction, as we discuss in a later section.

If all individuals are equal in preferences and reservation utilities and the organization fully controls benefits and sanction, then if (4) and (5) hold, all members will behave as martyrs. On the other hand, if (3) holds but (5) fails, all members will renege. If, however, benefits and/or sanctions depend also on environmental factors outside the organization’s control or risk preferences ($1 - a$) differ across individuals, and if furthermore both (3) and (4) hold at least for some people, then the sanction S may be high enough for (5) to hold for some members but not for others, and the organization will feature a mixed membership of martyrs and renegades. When feasible, a possible strategy for the organization is then to discriminate the sanctions according to members’ observable characteristics, such as position in the organizational hierarchy, thereby increasing fulfillment of the IC condition (5). The examples reviewed in the next section illustrate these different possibilities.

Since an organization can in general include both martyrs and renegades, it is interesting to ask what factors favor participation of each type of agents. Partial differentiation of equations (1) and (2) provides indications about the effect of changes in parameters on net expected utilities and hence on participation by the two types of prospective agents, martyrs (M) and renegades (R). First, changes in first-period benefits (B_1) or first-period reservation utility (U_1^0) affect expected utilities of both types in the same measure, as there is no difference in the first part of equations (1) and (2). Second, a higher rate of time discount (r) discourages participation of each type if the opportunity cost of second-period membership (U_2^0) is lower than its expected benefit for that type—that is, if second-period net expected utility (NEU) is positive—and vice versa. Obviously, in the special case of certain death ($P = 1$), only those M s who discount the future heavily will join, while renegades (who will not die) may exhibit any pattern of time preference. Aside from this special case, since any sign of second-period NEU is compatible with any sign of overall NEU (equations (1) and (2)), which also includes first-period net utility, the relationship between time preference and participation by each type of agent cannot be signed a

4. Even in such environments, not everyone would sign up for a martyrdom contract. Specifying likely candidate types would require a model with heterogeneous individuals and self-selection into membership. In the present model, individuals differ only in their reservation utilities and risk attitudes, and all that is required is that there exist some individuals who accept the contract and comply with it. Also, the model does not address the “cult” aspect, whereby people who get in are not the same as those who get out because of progressive identification with the leader or the group. This would bring us back to the Wintrobe (2006, forthcoming) model.

priori.⁵ Third, a higher probability to be called on to die (*P*) discourages participation of both martyrs (because they are more likely actually to die) and renegades (because they are more likely to incur the sanction on renegeing).⁶

Last, an increase in second-period benefits (*B*₂) naturally increases participation of both types; interestingly, it increases *R*'s participation more than *M*'s participation because the *R*s enjoy the benefits with certainty (and incur the sanction).⁷ On the other hand, an increase in *B*₂ makes incentive compatibility (5) harder to satisfy, requiring a corresponding increase in the sanction *S* to maintain incentives. Thus, if neither benefits nor sanctions are discriminated across individuals, an increase in second-period benefits from membership (perhaps due to a decline in outside options) has the contrasting effects of enhancing participation but at the same time making defection more likely.

The net effect of a change in second-period benefits will thus come to critically depend on the nature of the sanction, which must be evaluated on a case-by-case basis. If the solidarity of the group (à la Wintrobe) or the person's identity (à la Harrison) are what the benefits of group membership essentially amount to, then being branded as renegade involves the complete loss of such solidarity or identity, and IC is fulfilled by definition at any level of benefits. However, if the benefits consist of high social status and the corresponding sanction is being stigmatized by the general society, then its effectiveness depends on the group's reach and its control of public opinion and social relations. This general social component seems significant in most real-life instances of martyrdom contracts, as the historical evidence to follow will show. Here is where a policy of encouraging apostasy, as discussed in a later section, can work.

SOME EVIDENCE

THE CHRISTIAN MARTYRS UNDER THE ROMAN EMPIRE

The commitment to witness the faith and, if necessary, undergo death "for the Name" was from the beginning an essential item of the membership package in the

5. For *Ms*, $\frac{\partial NEU^M}{\partial r} = -\frac{1}{(1+r)^2}[(1-P)B_2^a - U_2^0] \geq 0$ according to whether $[\bullet] \leq 0$. For *Rs*,

$\frac{\partial NEU^R}{\partial r} = -\frac{1}{(1+r)^2}[B_2^a - PS - U_2^0] \geq 0$ according to whether $[\bullet] \leq 0$. In each expression, $[\bullet]$ is

net expected utility of the second period. Since for *Rs*, (5) fails, $B_2^a - S > 0$; hence, $B_2^a - PS \gg 0$, and $[\bullet]$ can have any sign. The extreme case $P = 1$ implies $\partial NEU^M/\partial r > 0$, whereas it is consistent with any sign for $\partial NEU^R/\partial r$.

6. $\partial NEU^M/\partial P = -B_2^a/(1+r) < 0$ and $\partial NEU^R/\partial P = -S/(1+r) < 0$. It is easy to check that when (5) holds, $\partial NEU^M/\partial P > \partial NEU^R/\partial P$, or $|\partial NEU^M/\partial P| < |\partial NEU^R/\partial P|$.

7. $\frac{\partial NEU^M}{\partial B_2} = (1-P)\frac{a}{1+r}B_2^{a-1} \geq 0$ (according to whether $P \leq 1$). $\frac{\partial NEU^R}{\partial B_2} = \frac{a}{1+r}B_2^{a-1} > 0$.

Clearly, for $P > 0$, $\frac{\partial NEU^M}{\partial B_2} < \frac{\partial NEU^R}{\partial B_2}$.

Christian community, which perceived itself as permanently at war with a hostile, heathen world. In this the early Christians were direct heir to late Judaism, which had been developing a doctrine and a practice of voluntary martyrdom for the Law first at the time of the Maccabean revolt against the Seleucid kingdom in the second century B.C. and then again in the revolts against the Roman overlords of Judea in the first and second centuries A.D.

The first point worth emphasizing is that although there is evidence of cases of pathological mentalities among the recorded martyrs (de Ste Croix 1963, 23-4), the vast majority of these were drawn from the ordinary members of the church, including a score of prominent clergy. This ordinary membership in turn was made up of urban, middle-class, law-abiding men and women, so there is no support whatsoever for a "madmen theory." Second, what numbers we have speak for a very tiny probability of actual sacrifice of life. Until the middle of the third century, persecutions were exclusively a local affair, usually initiated by a hostile populace who dragged an often reluctant imperial officialdom into judicial action. No figures are available for this period, but the evidence suggests that although the death toll may occasionally have been heavy in particular localities, such as Lyons in 177 A.D. (Frend 1965, chap. 1), the local churches learned to live with these endemic, periodic outbreaks and managed to survive and grow. The pervasive, if sporadic, nature of these threats was, however, a constant reminder that being a Christian was not to be taken lightly—much like membership in a revolutionary organization.

Then came the three centrally mandated, empirewide persecutions. The last and most infamous of these, the so-called Great Persecution directed by emperor Diocletian and his associates, lasted from 303 to 305 A.D. in the West and, intermittently, from 303 to 311 in the East. A mid-range estimate of the number of victims yields 2,500 to 3,000 people in the East and some 500 in the West, adding up to a grand total of 3,000 to 3,500 for the whole empire (Frend 1965, 536-7). On the eve of this persecution, the total number of Christians in the empire may have been some 5 million, mainly concentrated in the more populated and more Christianized Eastern provinces, where they may have reached a share of 10 percent of the total population (MacMullen 1984). Christian membership had been growing rapidly in the forty years of religious toleration preceding the Great Persecution, so it must have been considerably smaller at the time of the persecutions initiated by the emperor Valerian in 257 to 259 A.D. and by the emperor Decius in 250 A.D. On the former, no figures are available. On the latter, deaths over the whole empire "may probably be numbered in hundreds rather than thousands" (Frend 1965, 413).

The fact that both absolute numbers and percentages of martyrs were tiny does not mean that they were "planned casualties" in the church's struggle against the state. In a very large number of cases, they were "voluntary martyrdoms," with people

going far beyond what their churches officially required of them, often indeed offering themselves up to the authorities of their own accord, and occasionally acting in a provocative manner, smashing images and so forth. . . . The heads of the churches, sensibly enough, forbade voluntary martyrdom again and again, and were inclined to refuse to these zealots the very name of martyr. . . . Nevertheless, we do hear of an

astonishingly large number of volunteers, most of whom, whatever the bishops might say, were given full honour as martyrs, the general body of the faithful apparently regarding them with great respect. (de Ste Croix 1963, 21-2)

Thus, as the rabbis after the fall of Jerusalem in 70 A.D. set to work to define the situations in which death for the Law was a necessity, so Tertullian and a whole sequel of Christian theologians and leaders borrowed from and elaborated on them in an attempt to restrain zealots and enforce limits and conditions on voluntary martyrdom (Frend 1965, 56-7).

The church's aversion to excessive zeal in facing persecution and execution was not simply due to an understandable effort to maintain a viable organization and prevent unnecessary loss of life. The passage quoted above highlights the crucial importance of the praise given to the fallen and therefore, implicitly, of the stigma placed on renegades and the role played by the rank and file in enforcing both, "whatever the bishops might say." To understand this, one must appreciate that the Roman authorities never repressed the practice of the Christian cult *per se*: all they wanted of Christians, as of any subject of the empire, was at least a token recognition of the Roman state's tutelary gods as a symbol of political loyalty. Since the time of the emperor Trajan, this was typically enforced through the sacrifice test: if a Christian consented to sacrifice at a Roman deity's temple and/or in honor of the incumbent emperor's genius, he could go free and continue in his chosen cult unmolested. Of course, Christian tenets forbade just doing this. But the test's "essential aim was to make apostates, not martyrs" (de Ste Croix 1963, 20). Until the mid-third century, however, when "persecution from below" prevailed and there was never a general seeking out of Christians, such a sacrifice test struck only locally and occasionally, so that the church's structure as a whole was never challenged. Defections did occur but could be managed case by case with targeted doses of penance for readmission.

Emperor Decius changed this and caught the church unprepared to the challenge (Frend 1984, 318-28). In 250 A.D., he decreed that every subject of the empire should sacrifice to the Roman gods and be released a certificate proving it. Under this unprecedented blow, the church nearly collapsed. Defection occurred on a mass scale throughout the empire, whole churches led by their clergy apostatized, and in the best cases, many prominent bishops went into hiding. On the other hand, groups of brave men and women held on and sternly confessed their faith. While many of these were done to death, many others survived, either because they were sentenced to lesser penalties or because the persecution was terminated before they could be executed. As a result, in many places, the surviving "confessors" came back as the vanguard of the church, disavowing church hierarchy and claiming exclusive right to decide on church policy concerning readmission of the lapsed—a right earned on the battlefield, so to speak. This controversy rent the church apart and gave rise to the Novatianist schism. The same story repeated itself sixty years later in the aftermath of the Great Persecution, yielding the Meletian schism in Egypt and the Donatist schism in North Africa. But in the intervening period, the church had adjusted and refined its sanction policy, so as to better withstand the next onslaught.

The situation is nicely illustrated by the case of Cyprian, an eminent theologian and bishop of Carthage (Frend 1965, chap. 13). When the Decian edict struck, he went into hiding and came back at the end of the year when the edict's enforcement was halted. Then he found his church in the hands of the militant confessors and had to engage in a long struggle to reassert his episcopal authority and enforce a readmission policy with graded sanctions (discriminating *S* in our model): everybody would eventually be taken back upon repentance and penance, but the apostate clergy would never again get their office back. So the confessors lost out and hierarchy was upheld, but by so doing, Cyprian had locked himself into a dead end: a man of his standing who had put all his eggs in his bishopric's basket could never go back to penitent lay status. The stigma he had enforced as church discipline was soon to backfire against himself. Eight years later, when Valerian's persecution struck, Cyprian was arrested and given time and opportunity to recant, but he refused and died a martyr's death.

The upshot of this brief survey is clear. Too lenient a sanction against renegeing makes the martyrdom contract not incentive compatible and threatens church collapse through mass defection. On the other hand, too stiff a sanction turns the church into a "church of the martyrs," a thin, stern body led by militant confessors, and overturns hierarchy and privileges of the leadership. Discriminating sanctions between laity and clergy helped to control, if not solve, the dilemma. The early Christian church had to walk on a knife edge between these two dangers, and only its eventual takeover of the Roman Empire terminated the problem—and created a new one in its stead: how to replace the old-fashioned martyrdom contract with a substitute device to screen applicants and maintain a dedicated membership. This new problem, however, lies beyond the scope of this article.

SECULAR MARTYRS

The Anarchists

Between the last two decades of the nineteenth century and the first decade of the twentieth century, the anarchists managed to stage a sequence of political assassinations and targeted terrorist attacks that shook the world from Russia to southwestern Europe to the United States.⁸ They interest us here because their acts ranged from high-risk operations to no-escape missions to (in Russia) suicide bombings—the first such acts ever.

The anarchists who engaged in these practices—to be distinguished from the arm-chair thinkers and from those who engaged in industrial action or syndicalism—subscribed to the theory of "propaganda by deed." This theory held that capitalist society is hopelessly corrupt and exploitative and that the working class is brainwashed and intimidated into subjection to the ruling class by the joint action of the priest and the police. Social revolution is the only way out, but it cannot be accomplished through disciplined, long-term struggle by a working-class political party as the socialists

8. This section is based on the material in Joll (1979), Woodcock (1975), and Geifman (1993). See also the discussion in Kalyvas and Sanchez-Cuenca (2005) and Gambetta (2005).

would have it—this would be for the people a mere change of masters since authority of man over man, whatever its form, is inherently unjust. Propaganda by speech, on the other hand, is fine but not nearly sufficient. The only strategy that is consistent with anti-authoritarian principles is to work through exemplary deeds that serve the twin purposes of proving that the seemingly all-powerful state is in fact vulnerable and showing the working class that individual will can break the chains of subjection and achieve freedom, until the people will rise spontaneously in one great surge—the millennium. Therefore, the targets of terrorist attacks were chosen to be either heads of state and government or selected institutions of “bourgeois” society—police headquarters, upper-class cafés, religious processions, parliaments, and the stock exchange.

Even in the majority of cases that were not suicide bombings, given the available technology and the choice of targets that required close contact with the victims, many perpetrators were killed or arrested on the spot. Others did not really try to run away or were soon caught and bravely faced trial and execution. Still others committed suicide rather than surrendering. Clearly, like the Assassins discussed below, for those who set out to act, the likelihood of dying was very high (except if failure entailed only a prison sentence), and it was often not only anticipated but invited. Of course, the anarchist enterprise proved a colossal failure—the working class never rose to the call, revealing a preference for prudent leadership and piecemeal improvements. But the catalogue of strikes that were successfully carried out, not to mention those failed or foiled, was impressive enough to strike fear and invite large-scale repression across society.

The anarchists dedicated to propaganda by deed were never more than extremely tiny minorities in any country. How did they manage to mount and sustain such a long-lasting challenge to Western society? The key to an answer is twofold: the complete lack of organization and direction and the cult of martyrs. The anarchists’ uncompromising rejection of authority carried over to their own organization, which was completely decentralized to local groups of just a few members with very loose contacts with fellow groups. Not only were individuals not “sent forth” by the group, but the decision to start out on a mission, the choice of target, timing, and technique—everything was decided either by a solitary terrorist or at most by a small group of comrades. Likewise, membership in a local group was open to anybody who was willing to take part in regular propaganda by speech, writing, or deed, basically without any screening—which was the reason why they were often infiltrated by ordinary criminals or by police agents. Members could and did freely walk out, and even if such defection was denounced by comrades, it basically carried no stigma because the movement was so small that there was plenty of room for the defector to blend back in the general society.

On the other hand, even though they were militant atheists fighting for social justice, the anarchists had a lively cult of martyrs, among whom the perpetrators of terrorist acts, whether alive or dead, enjoyed pride of place. Their names and deeds were circulated in the anarchist press and literature, and their actions became a source of inspiration and spread by imitation. Cherishing and celebrating the memories of the fallen heroes seems to have been quite effective in prompting someone else to action. A famous Russian American leader, Emma Goldman, wrote, “It is

among the Anarchists that we must look for the modern martyrs who pay for their faith with their blood, and who welcome death with a smile, because they believe, as truly as Christ did, that their martyrdom will redeem humanity" (quoted in Kalyvas and Sanchez-Cuenca 2005, 227). Geifman (1993, 12) suggests that in Russia, the women's remarkable readiness to sacrifice their lives for their beliefs "was a projection of the Russian Orthodox concept of the woman-martyr into the entirely secular realm of radical politics." The same selflessness was, however, common among Jewish women too.

Thus, the anarchist case can be seen to be a limit case of a martyrdom contract. There clearly was a first period of membership in the movement, and in the second period, the probability of death was very high, although on average somewhat lower than one, for those who chose to act. But since there was no direction, and since, unlike with the early Christians, the martyrdom was freely self-inflicted rather than passively suffered, the martyrs were all genuine volunteers, which implies that there was no sanction against defection—indeed, there was no defection to speak of, as no one was ever personally called up to sacrifice his or her life.⁹

This completely unorganized, voluntaristic, and individualistic structure of the anarchist operation was of course the recipe for its ultimate failure, but, counterintuitively, it also explains its endurance through time and its singular resilience to police repression. The second-period "benefits" for a volunteer terrorist were an active contribution to the cult of previous martyrs; the exalted atmosphere of the preparation for action inside a small paranoid, conspiratorial group; and the prospect, in case one survived to face trial, of speaking prophetic words of defiance and rebellion from the bench of a court of justice, words that would make headlines in the press. As long as people could be found who valued these benefits highly enough to give up their lives for it, the chain of actions could continue, even if involving vanishingly small numbers of participants. On the other hand, police repression could not be very effective as there was no real organization to strike down, and it would restoke the fire by adding to the roll call of martyrs fallen for the cause. The anarchist example suggests that a terrorist operation run exclusively by volunteers and tuned down to minimal intensity can be very difficult to root out.

The Japanese Kamikaze

Some 4,000 young Japanese pilots in all died as kamikaze in the last ten months of World War II.¹⁰ A few thousand on the waiting list survived through no fault of their own because Japan surrendered, and they were sent home to their families. It

9. The self-selection at work in anarchist recruitment is especially clear in Russia (Geifman 1993, 123-4, 131-3). Here the anarchists did not arise spontaneously but as a result of defections from other revolutionary organizations. A handful of defectors formed a small cell, which then formed loose federations and plunged into action. Since existing socialist parties, in contrast to those of Western Europe, were sufficiently militant to accommodate all but the most idealistic and/or restless types, the defectors to anarchism were sure to be extreme enough. Also, social origins suggest a repressed urge for action: as in the other Russian revolutionary groups, Jews and women were disproportionately represented.

10. This section is based on Pinguet (1993, chap. 12) and Hill (2005).

was formally a voluntary contract in that the pilots were asked to join the “special units,” not drafted—at least not until the very last, frenzied months of war.¹¹ Apparently, nearly all accepted the offer. Indeed, some of them “had a strong urge to decline but realized that this was impossible; to do so would be considered unbefitting a naval pilot” (Hill 2005, 21). Was it a martyrdom contract in our sense?

To answer this question, we must make an effort to place ourselves in a unique situation. This differed from the early church’s in two ways: once the contract was undersigned, the probability of death was exactly one (until the war ended), and among volunteer signatories, the rate of defection was virtually zero, although this changed with the last groups of drafted kamikaze (Hill 2005, 27-8). Yet their surviving diaries and letters reveal normal young men who enjoyed life, were gripped by a sense of duty to their country, but were skeptical or even bitterly critical of the military oligarchy and the nationalist politicians who had brought their country to the brink of disaster. Blind fanaticism was definitely not the prevailing attitude.

Why, then, accept the contract and comply with it? On one hand, they were very likely to die in action in any case before the war’s end, so their reservation utility was very low. On the other, in the closed atmosphere of an embattled military caste, the stigma placed on defection must have been enormous, instilling a sense of guilt that would have made return to base, and then home as a “lapsed,” unbearable. But what were the benefits to set against the certain death? Even if it is hard to fully grasp now, the few weeks that were usually spent in training and moral preparation before the fatal last flight were typically lived through with an intensity and a sensitivity to the most trifling details of ordinary things that is without comparison and was worth a whole life. These boys’ last thoughts, committed to writing, were grateful for and appeased by the minute joys of camaraderie and the true reckoning with one’s soul that such a compressed last stage of life had forced on them, or rather allowed to them (Pinguet 1993). Furthermore, in the last days before their mission, the pilots were often allowed to freely indulge in earthly pleasures of heavy drinking and sex (Hill 2005, 29-30), something not easily available otherwise to young men in a puritanical, deferential society such as Japan’s. So it was that under tragic circumstances, normal, nice, rational young men willingly and knowingly signed up for an extreme form of martyrdom contract that left no escape.

Sri Lanka’s Black Tigers

The Liberation Tigers of Tamil Eelam (LTTE) have been fighting a war for the national liberation of Tamils living in the north and east of Sri Lanka from the early 1970s to the current ceasefire.¹² Born as an insurgent group, the LTTE soon turned

11. This final period apparently featured a degree of coercion and foot-dragging. For one eyewitness report, see Onishi (2006). Similarly, some unknown degree of deception and/or coercion into “suicide” may have affected some of the people involved in some of the cases discussed below, such as the *pasdaran* and the Assassins. However, no one has ever seriously suggested that this could account for the whole story.

12. This section relies on Hopgood (2005). See also Bloom (2005, chap. 3) for a broader picture of the conflict and Reuter (2004, chap. 10) for a concise discussion.

into a regular army and began to fight not only guerrilla operations but also conventional warfare against a Sri Lankan army that far outnumbered them and possessed a superior command of heavy weaponry. To compensate for these disabilities, the LTTE set up an elite unit called the Black Tigers, which devoted itself to high-risk or no-return missions and engaged in three types of operations: targeted assassinations, guerrilla attacks, and conventional land and sea combat. The chances of survival in a mission depend crucially on the type of operation and the target. Assassinations through suicide bombings are obviously fatal, while land combat in support of regular troops and especially guerrilla attacks may be very risky but not necessarily deadly for the operative. In fact, some Black Tigers (BTs) are known to have returned alive and to have been used again in subsequent missions. In any case, the organization's emphasis is not on suicide but on securing the target, and survival is encouraged conditional on the latter. This is what one would expect from an organization that views these elite soldiers as a scarce, valuable military resource and uses them as a weapon to win the war, not to spread terror. Although there have been many civilian casualties, they should be regarded as "collateral damage" to assassinations in public places, while there is no evidence of deliberate targeting of non-combatants. And the Black Tigers have been used sparingly: the LTTE claims 241 BT deaths in the whole period of their activity, 1987 to 2002, to be contrasted with a total of 18,000 combat deaths since 1982.

Black Tigers are drawn from the regular ranks of the LTTE. Candidates write applications addressed to the top leader, Vellupillai Pirabakaran, upon which they seem to be placed on a waiting list. Once selected, recruits undergo intense training and are finally assigned to a regular LTTE unit, where they serve by concealing their membership in the BTs all the while and taking routine leave when called up for a mission; if they survive, they return to regular service again. Membership is only revealed if and when they are killed in combat. Although we have no figures for candidate rejections, training failures, and, even less, defections, it seems clear that the BTs are an exclusive, selective unit whose membership confers high status. One should also note that the LTTE itself is not an open-access organization but an exclusive one, whose membership is selectively awarded to applicants. This rationing of admissions first to the LTTE and then to the BT unit is made possible by the fact that the risk gap between civilian and army life was substantially narrowed by the indiscriminate aerial bombing carried out by the Sri Lankan military, and that once in the LTTE, dangers were such that the LTTE-BT gap was also narrower than one might imagine—though real enough. As an implication, the prevalence of the excess demand for admissions, together with the fact that both organizations aim at a professional, trained, and motivated force, makes recurring allegations of forced conscription into the LTTE, and even more into the BT, implausible.¹³

13. Berman and Laitin (2005), following Bloom (2005), offer a different reconstruction of the Black Tigers (BT) case, one centered on threats to the general population, forced recruitment, and use of untrained child soldiers for suicide missions. The evidence supporting this view is, however, scanty and controversial (see Hopgood 2005).

The fact that the selection of BTs is apparently made by recruiters among a plentiful supply of candidates makes it possible to enforce desired characteristics in the membership: for example, suicidal types are screened out as unreliable, and women have dramatically gained prominence over time, here as well as in all sections and ranks of the LTTE. Moreover, once one is a BT, one's assignment to different types of operations is decided by recruiters, presumably on the basis of aptitude and skill; as we have seen, such assignments carry different probabilities of survival. So there is a real sense in which one is called up for martyrdom with a definite probability.

As in all elite soldier corps, camaraderie and mutual solidarity are very important in the collective life of BTs awaiting missions. The organization emphasizes rules of personal discipline and propriety, including restrictions on sex, smoking, and drinking, which fosters the image of dedicated fighters of whom not only the LTTE but all the Tamil people can be proud. Furthermore, the rewards to membership are enhanced by two cult-like features: a personality cult and a cult of martyrs. The first centers on the figure of Pirabakaran, who is the unquestioned leader with complete control over the LTTE. Individual BTs swear an oath of personal allegiance to him and are famously known to have a last meal and photograph with him before their last mission—although this can hardly apply to those BTs who are deployed in regular land combat on short notice. As Hopgood (2005, 65) notes, "In no other case where suicide missions are used is there a leader who is both as revered *and* as much a part of the day-to-day struggle." This is an asset the anarchists could not avail themselves of and was apparently unimportant in the Japanese case.

There are no religious connotations to the Sri Lankan conflict, and the LTTE overwhelmingly relies on a nationalist ideology—claims that it is Marxist-Leninist are based on flimsy evidence. Despite this secular character, the BTs feed on a lively cult of martyrs—like the anarchists, with the important difference that here it is shared and supported by the population at large instead of being a ritual of scattered, self-segregated minorities. Martyrs, or fallen heroes, include other fighters, but the BTs are prominent in the roll call. Names and deeds are publicized and honored in the Tamil press. Particular districts construct memorials to BTs who came from their area. Pictures of martyrs are prominently displayed across the land and are printed in booklets. In addition to the Heroes' Day for the movement as a whole, the BTs are the only LTTE unit to have their own day—Black Tigers' Day.

Thus, the BTs neatly fit our contract model. Hopgood (2005, 76) seems to miss the point when he sums up his insightful analysis with the following comment: "The 'rewards' that Black Tigers receive appear to have little or nothing to do with their decision and are entirely posthumous," and he concludes with the suggestion that BT behavior approximates war heroism in general as an instance of altruism and self-sacrifice. Indeed so, elite commando units are clearly in a close continuum with the BTs. But the *anticipation* of such rewards, feeding on the ongoing cult that links martyrs through time and experienced as a highly regarded position in the prior period, is neither posthumous nor necessarily other-regarding and may well be an adequate incentive for some people to sign up and keep the contract.

ISLAMIC MARTYRS¹⁴**The Assassins**

The sect of the Ismailis-Nizari, popularly known in the West as the Assassins, was a splinter group from within the Shi'a Muslims who were able to establish and retain for about two centuries (1090-1275) two independent states, one in Persia and another in Syria.¹⁵ They devoted themselves to the missionary preaching of their radical version of Islam and supported their mission by the systematic resort to the selective assassination of princes and high-placed officials and religious dignitaries of the dominant Sunni establishment. They concern us here because the Assassin technique of murder seems designed to make it virtually certain that the assailant was caught and executed in the aftermath. For one thing, the killing, as a political act, had to be executed in public places and in broad daylight to attract as much notoriety as possible. For another, his weapon was invariably a dagger, which implies face-to-face contact with the victim and seems designed to make capture certain. Then he "usually makes no attempt to escape; there is even a suggestion that to survive a mission was shameful" (Lewis 1967, 127). Clearly, the sect prepared its men to seek martyrdom, which guaranteed entry into paradise. And clearly too, the probability for the chosen men to die was very close to one. Reneging was so heavily stigmatized as to be virtually nonexistent.

Despite the bad name that stuck, the Assassins were not a criminal gang but a missionary order wedded to a millenarian, messianic reading of Islam. To the extent that their members were self-selected, their choice was based on doctrinal issues and perhaps on social conditions, certainly not on a predisposition to suicide, even though (as with the early Christians) the cult of martyrdom was part and parcel of the Shi'a ideological lot. The sect was organized as an effective secret society, based on graded initiations, so that information about their proceedings is scant and comes mainly from hostile Sunni chroniclers and occasional European travelers of the time. However, the total number of murders ever attempted or carried out by the Assassins amounted to between one and two hundred; on the other hand, while no figures are available, the total population of the Assassins' two states—actually, leagues of scattered mountain fortresses or city-states—must have been several orders of magnitude greater than that number. So, even taking into account that often several men

14. Dale (1988) provides an illuminating analysis of the traditions of suicide terrorism in the anti-colonial struggles of three Asian Muslim communities, which he sees as a direct antecedent to the Middle Eastern terrorism of today. Those suicidal jihads could endure for decades (in Atjeh and the Philippines) or even centuries (in Malabar) because they drew on entirely voluntary, self-selected, psychologically normal recruits. The volunteers were strongly encouraged and supported by the local community led by the local *ulama*, prepared for action through an elaborate ritual, and inspired by a widely circulated heroic literature that glorified martyrdom and cultivated the memories of the fallen. Once action was undertaken, death was virtually certain and fully expected, but the stigma against reneging was crushing; in Malabar at least, defectors were derided by friends and family as "half-martyrs," which often provoked them to undertake another attack (Dale 1988, 52). Thus, in terms of our model, these early Muslim examples seem located halfway between the anarchist case and the Palestinian case reviewed below.

15. The material for this section is taken from Lewis (1967) and from Rapoport's (1984) insightful comparative analysis.

were needed for one mission, on a broad interpretation, the ratio of martyrs to sect members must have been very tiny.

Narrowing the focus onto the subset of men who were trained and prepared for the killing missions and were indeed almost certain to meet death, as described above, we lack hard evidence on their motives and incentives, but two pieces of information suggest that earthly incentives were substantial. One is the Assassins' own tales about the victim-murderer relationship. Typically, a young member was placed in the service of a high official and remained there for years, gaining his master's trust as a loyal servant with the attendant privileges, until the time came to raise the dagger (Rapoport 1984; Lewis 1967, chap. 5). Another is the account left by a most remarkable witness, the Italian traveler Marco Polo, who visited the Alamut castle in Persia, the headquarters of the sect, in 1273 (full translation in Lewis 1967, 6-8). According to Marco Polo, the Old Man of the Mountain (as the supreme leader came to be called in folk lore) kept at his court youths between twelve and twenty years of age and periodically introduced groups of them, while asleep, into an enclosed garden where they would enjoy all the pleasures of the flesh. The garden was patterned exactly after Muhammad's description of paradise, which they truly believed the garden to be. He left them there until he needed one for a killing mission; the chosen boy, again while asleep, was then brought before the Old Man and asked to undertake the mission, and he would willingly do whatever his lord wanted just to be allowed to "return" to paradise!

Although Marco Polo's story features an element of dupery and should certainly not be taken as hard evidence, its message is the same as that conveyed by the master-servant story reported above. By tying a young man to a captive relationship with his would-be victim or with his lord, his reservation utility is lowered; at the same time, the material benefits provided to the martyr before immolation seem, given his condition, fully adequate for him to voluntarily accept the deal.

The Iranian Pasdaran

Created at the beginning of the Islamic revolution in Iran in 1979, the Corps of the Guards of the Islamic Revolution (pasdaran) was a politicized, volunteer armed force that in time became professional and developed its own army, navy, air, and intelligence forces as a duplicate of the regular armed forces.¹⁶ As the darling of the ruling clerical class, throughout the 1980s, they kept climbing the ladder of prestige and material privilege. But especially at the beginning of their career, they paid dearly to earn themselves these rewards: when the Iraqi army struck and invaded Iran at the start of the Iran-Iraq war (1980-1988), the guards supplied the "human waves" that swept across the minefields and blew up to clear the ground for the regular army's counterattack. Joining the Revolutionary Guard Corps was always a voluntary choice, though encouraged and propagandized by the government, and it seems clear that scores of poor, uneducated youths saw it as a route to upward mobility and offered

16. Information for this section was found in Arjomand (1988, chap. 8) and Omid (1994, chap. 6).

volunteer service as an entry fee. But even in the initial period, when the entry fee was particularly heavy, the probability of martyrdom was fairly moderate: “by 1981, of an estimated 150,000 guards, 11,000 had ‘achieved’ martyrdom” (Omid 1994, 111), or 7.3 percent. So even though the Guards, as the Assassins before, once again drew on the deep-seated Shi’a tradition of, and cult for, martyrdom, the heavenly rewards promised to the martyrs need not have been their guiding motive.

In subsequent years, as the Guards became a professional organization and continued to contribute to the war effort as a structured army, another volunteer militia, the *basij*, was called on to keep the dwindling supply of martyrs flowing. As the *pas-daran* in their early stage, this too was an egalitarian, nonprofessional, nonhierarchical organization, and therefore it could offer broad opportunities for signal service and glory to a range of people whose reservation utility must have been very low. One participant explained, “As *basij* forces we are led by a twelve-year-old boy whose small heart is more eloquent and more powerful than a thousand words. Unhampered by classical specialization, with a bomb tied to his belt he braves the enemy, runs under the tanks killing the foe and draining the cup of martyrdom himself” (quoted in Omid 1994, 116). We are not told whether this particular boy survived. If he did, he would certainly be rewarded with prestige and promotion. If he did not, he would be publicly and spectacularly mourned in his hometown, and his parents would reap the privileges and social esteem that accrued to the martyrs’ families. But even aside from that, he would have lived a unique day of unlimited power and fulfillment that, to a small boy, sadly, may well have been worth a whole life.

The Palestinian Suicide Bombers

The Palestinian case is by far the most extensively analyzed, so our discussion can be fairly short.¹⁷ The key to interpreting Palestinian suicide bombers as parties to a rational martyrdom contract is that, especially starting with the second Intifada, there has been a large excess supply of volunteers, only a few of whom are picked for suicide missions. Hence, even if when one is picked, death is virtually certain (except in case of a technical failure); at the moment of signing up, the probability of dying is much less than one, while one and one’s family enjoy the great social prestige and esteem that candidacy for martyrdom confers. So the benefits while alive are largely determined by peer groups and the surrounding social environment, not by the sponsoring organization. Furthermore, once selected, one goes through a long training and preparation period, even though this period seems to have been significantly shortened during the last Intifada, when the supply of candidates increased. Finally, as is well known, the public cult of martyrs is hugely developed and fosters commitment and enthusiasm by linking martyrs through time. “Reneging” sometimes occurs but in the disguised form of being turned down by the leaders as not enough steadfast and reliable, in which case there is apparently no stigma. Otherwise, the social sanction on renegades in such a closed environment would presumably be unbearable. On the

17. This section relies on Hassan (2001), Margalit (2003), Reuter (2004, chap. 5), and especially Ricolfi’s (2005) thorough study.

other hand, in the Gaza strip and the West Bank, prospects are nowadays so bleak for middle-class youths, even more than for working-class youths, that their reservation utility must be very low indeed. This accords well with the prevalence of relatively educated, employed, nonpoor, young males among suicide bombers, in an environment where opportunities for normal careers are minimal.

POLICY IMPLICATIONS

The model of this article may provide guidance to governments, foreign-aid agencies, or international organizations that set themselves the aim of counteracting the current waves of suicide terrorism. As many observers have pointed out, satisfying the grievances that breed violent conflict in the first place—for example, finding an acceptable settlement for the Palestinian question or for Chechnya's or Sri Lanka's ethnic conflict—would undercut the terrorists' appeal. But this is for the long term, and meanwhile, continuation of atrocities is likely to harden parties still further and make negotiated settlement ever more difficult. Clearly, too, the more diffuse the target, the less effective a bombing or assassination mission, and hence the less incentive there is for a fighting group to resort to it. Thus, for example, the Assassins sent their killers against officials and rulers of autocratic, centralized Muslim monarchies, where personalities were essential, but not against the Christian crusading orders in Palestine, knowing that the order's principal would quickly be replaced with no lasting effect (Lewis 1967, chap. 6). Similarly, the Japanese kamikaze struck warships, not American land forces spread out over a territory. But the degree of concentration of the target does not easily lend itself to purposeful policy manipulation.

More within reach seem to be policies that work on our model's parameters: reservation utility, within-group benefits, and sanction against renegeing. The first and the second affect the participation constraint (4): any policy that raises the utility of alternative opportunities will, other things equal, decrease the attractiveness of any benefits that group membership may confer and hence undercut the people's willingness to join the group that offers the martyrdom contract. Thus, as has been suggested (e.g., by Berman 2003), policies that promote economic growth and create more and better-paid jobs for Chechens, Palestinians, and Tamils, as well as policies that make social services broadly available on a nondiscriminatory basis, can certainly undermine the appeal of the social protection provided within the organization. This helps toward convincing the youth that there is something better to do than heeding the terrorists' call. But again, such a constructive policy, as an alternative to downright repression, is for the long run and likely to be expensive for the sponsoring parties. Furthermore, our model points to a potentially serious problem with this line of argument. A fall in second-period benefits from membership, B_2 , relative to outside opportunities, U_2^0 , does reduce participation but makes contract enforcement easier for those who remain because the required sanction S is lessened (to the extent that S is not identical with the loss of such benefits). Thus, this policy may end up fostering smaller organizations, beset by recruitment difficulties, but less vulnerable to defection and therefore more effective and deadly.

The novel suggestion that comes out of our model centers on a different instrument: the level of the sanction S , which critically affects compliance with the terms of the contract via the incentive-compatibility constraint (5). As we have seen, the sanction basically boils down to making life impossible for a renegade, so much so that accepting death can be no worse. Now as the case of the early Christians makes clear, this social sanction may only partly be under the organization's control: often it heavily depends on the surrounding environment. If policies are designed to offset or at least soften the sanction, by providing renegades with opportunities to escape from the organization's grip and go back to normal life, defection will be encouraged and the terrorist organizations' effectiveness undermined.¹⁸ As we have seen, this was exactly the policy implemented by the Roman empire for centuries: subject the Christians to the sacrifice test as a test of loyalty to the empire, and then let them blend back into the general population—and go back to the church if the latter would take them back—with no further harassment or public stigma attached. The policy was so successful as to threaten the church with mass apostasy at critical junctures.

Therefore, the best policy advice that this article has to offer goes no further than following the Roman emperors' wisdom: rather than trying to deter or deflect people from joining the terrorist organizations in the first place, try to make apostates instead of martyrs, so more members will refuse to obey when their sacrifice is requested. However, if such a policy should become established practice, it might create a new and difficult problem. If renegeing is rewarded by lessening the social sanction and welcoming renegades, and if this is repeated over time so that rational agents come to anticipate its future occurrence, the policy may generate a perverse incentive: why not play terrorism a bit once in a while and then come back untainted?

This is exactly like the tax amnesty problem. The government has an interest in recovering some of the uncollected tax revenues and offers settlement on easy terms to tax evaders who choose to report themselves. But if taxpayers have reason to expect that sooner or later, yet another opportunity for lenient settlement will be forthcoming, fresh evasion may actually be encouraged. The difference between tax evasion and terrorism is that the former is usually an individual decision, whereas the latter is collectively organized. Therefore, if the terrorist organization is adamant that in no case will a defector be forgiven and taken back, then the "renegade game" described above cannot be played, and the perverse incentive to participation is stifled. But the example of the early Christian church should warn us that an organization struck by mass apostasy will inevitably find ways to grant apostates readmission on some conditions or else risk its own extinction. Furthermore, the problem is compounded by competition: if there exist competing terrorist organizations in a given area, such as Palestine, a defector from one group could try and ask for admission to another group. If so, then the problem that renegeing may become strategic is real enough to warrant further consideration.

18. This approach is specific to suicide terrorism but is broadly in agreement with one of the antiterrorist policies advocated by Frey (2004, chap. 6), which amounts to breaking up the isolation of extremist groups involved in, or supportive of, terrorism by offering them social integration and welcoming defectors back to normal life. Frey also appropriately mentions the possibility of perverse incentives that is discussed later in the text.

CONCLUSIONS

This article has argued that suicide for the sake of a public good, whether political, military, or religious, can be explained without reference to psychotic predispositions, other-worldly rewards, or blind devotion to a leader. Martyrdom and suicide terrorism are seen here as just extreme cases of high-risk contracts that include, with varying probability, the request of sacrifice of life on given conditions. These contracts may be voluntarily entered into by rational individuals provided that either there are benefits to be gained with certainty in a period prior to martyrdom or the probability of martyrdom itself is less than one (or both). Then compliance with the contract is ensured if a sufficiently strong stigma is placed on renegeing and surviving when death was called for. On paper, such a contract is always feasible and incentive compatible if the organization has full control over the benefits of membership and the stigma on renegades. Compliance problems may, however, arise when, as was the case with the early Christian church, these parameters partly depend on environmental factors that lie outside the organization's reach.

This approach makes it possible to place martyrs on a continuum of risky contracts that may easily encompass other, more familiar forms of revolutionary, terrorist, or military action. We have applied the model to a range of historical cases that include state-sponsored suicide (the Japanese kamikaze, the Assassins, and the Iranian pasdaran), group-sponsored suicide (the Palestinian suicide bombers, the Black Tigers), and individually chosen, "volunteer" martyrdom (the early Christians, the anarchists). Some cases feature a first period of membership followed by certain death (the kamikaze, the Assassins on a narrow interpretation), others a single period with probabilistic death (the Palestinians, the pasdaran), and still others both a first period and a probabilistic death in the second period (the Christian church, the Assassins on a broader interpretation, the Tamils, the anarchists). Reneging was virtually nonexistent in several cases (the kamikaze, the Assassins), impossible to gauge but presumably minimal in other cases (the Tamils, the pasdaran, the Palestinians), while it was a widespread and excruciating problem in the Christian church. In the limit case of the anarchists, defection was not an issue as the choice of martyrdom was completely voluntary and self-inflicted, which explains anarchism's remarkable longevity.

The main policy advice suggested by the model and the case studies is a concerted effort to encourage defection by softening or offsetting the social sanction on renegades. However, the possibility that such a premium placed on renegeing be strategically anticipated may perversely stimulate participation in terrorist activity—a possibility that deserves further study.

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