

Palestinian Suicide Bombers: A Statistical Analysis

by Sean Yom and Basel Saleh

[Back to Previous Page](#)

After the dust had settled from the attacks of September 11, world attention turned to the Israeli-Palestinian conflict for answers. Palestinians were using various suicidal-attack tactics for seven years before 9/11. These suicide attacks didn't better the lives of Palestinians one iota. Yet they continue. Researchers began a campaign of analysis to investigate the powerful motives that feed and nurture suicide attackers. Political scientists, anthropologists, and economists deployed the tools of their respective disciplines to analyze how an individual metamorphoses from a college student, to a living shaheed, and ultimately to a shaheed. Can this choice be rational or can it be rationalized?

Political scientists study suicide bombing as a strategy deployed by armed groups, and anthropologists examine the collective factors that create a "culture of martyrdom" which condones the behavior of suicide attackers. The economists' take on the subject has been to extend the approach used in studying criminal and outlawed activities, as developed by Gary Becker, to studying suicide attacks. The levels of education and income were the primary explanatory variables as predicted by the theory of the economics of crime.

A New Approach

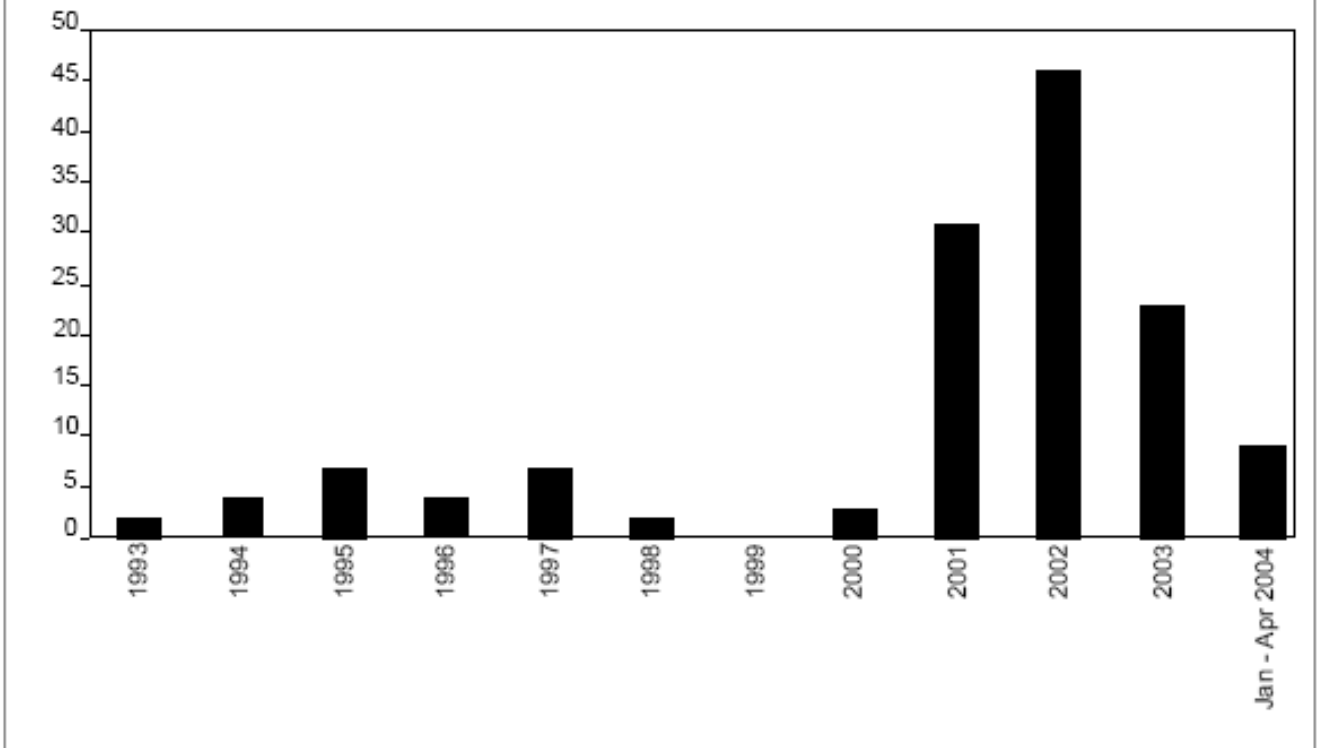
In our study we consider suicide attacks as a social and political phenomenon, one dependent on both organizational and individual-level explanatory dynamics. We offer qualitative and quantitative analysis to explain why Palestinian armed groups have stepped up their suicidal operations. Although we recognize the importance organizations play in suicide attacks, we believe that focusing on these organizations alone is problematic. First, it cultivates highly axiomatic arguments about suicide attacks, which are seen as a functionalist outcome of religious extremism, an inevitable outgrowth of terrorist resources, or as the prevailing currency in the marketplace of militancy. Second, they negate the essence of individual agency. Suicide bombers are not simply "the instruments of terrorist leaders" (Ehud Sprinzak, 2000), and neither are they innocent victims of brainwashing; they are, to borrow from Stanley Hoffman, "disturbingly normal" (1998). If suicide terrorism "can be sustained over time only when there already exists a high degree of commitment among the potential pool of recruits," (Robert Pape, 2003) then investigating what cultivates such devotion is critical. Impeding suicide attacks requires not only confronting the organizational demand for them, but also investigating the individual-level incentive to volunteer on the supply-side.

History of Suicidal Attacks

Historically, various Palestinian groups have sent fighters on one-way missions involving extraordinary risk. For instance, in May 1990, the Abu al-Abbas organization dispatched 17 heavily armed Palestinians to an attack on Tel Aviv's Nizanim beach, where eventually four were killed and the rest captured. Moreover, during the First Intifada, Israel experienced a spate of stabbing attacks, or what was then labeled as a "war of knives;" in one such incident, three Palestinians boarded a Tel Aviv bus in December 1990 and stabbed numerous passengers before being all killed or arrested.¹ However, the emergence of suicidal operations disturbed observers far more due to their devastating effectiveness and the readiness of the attacker to face eminent death. Suicide attacks combine elements of both material and psychological warfare. The bomber creates devastation and the message conveys desperation.

The first suicide attack ascribed to the Palestinian cause occurred on 16 April 1993, when a car bomb exploded near Mechola in the Jordan Valley. Between then and March 2004, 139 suicidal-attack incidents attributed to Palestinian operators transpired against Israeli targets (Figure 1). Between 1993 and September 2000, 27 suicide missions claimed 120 of the 290 Israeli deaths attributed to Palestinian attacks; since then, 112 suicide bombings have accounted for 474 of 918 Israeli Second Intifada fatalities while wounding more than 3,000, despite composing less than 1 percent of all violent incidents.² These tallies do not include failed suicide operations (i.e. attacks intercepted by security forces or crippled by device failure); the number of attempted attacks is thus

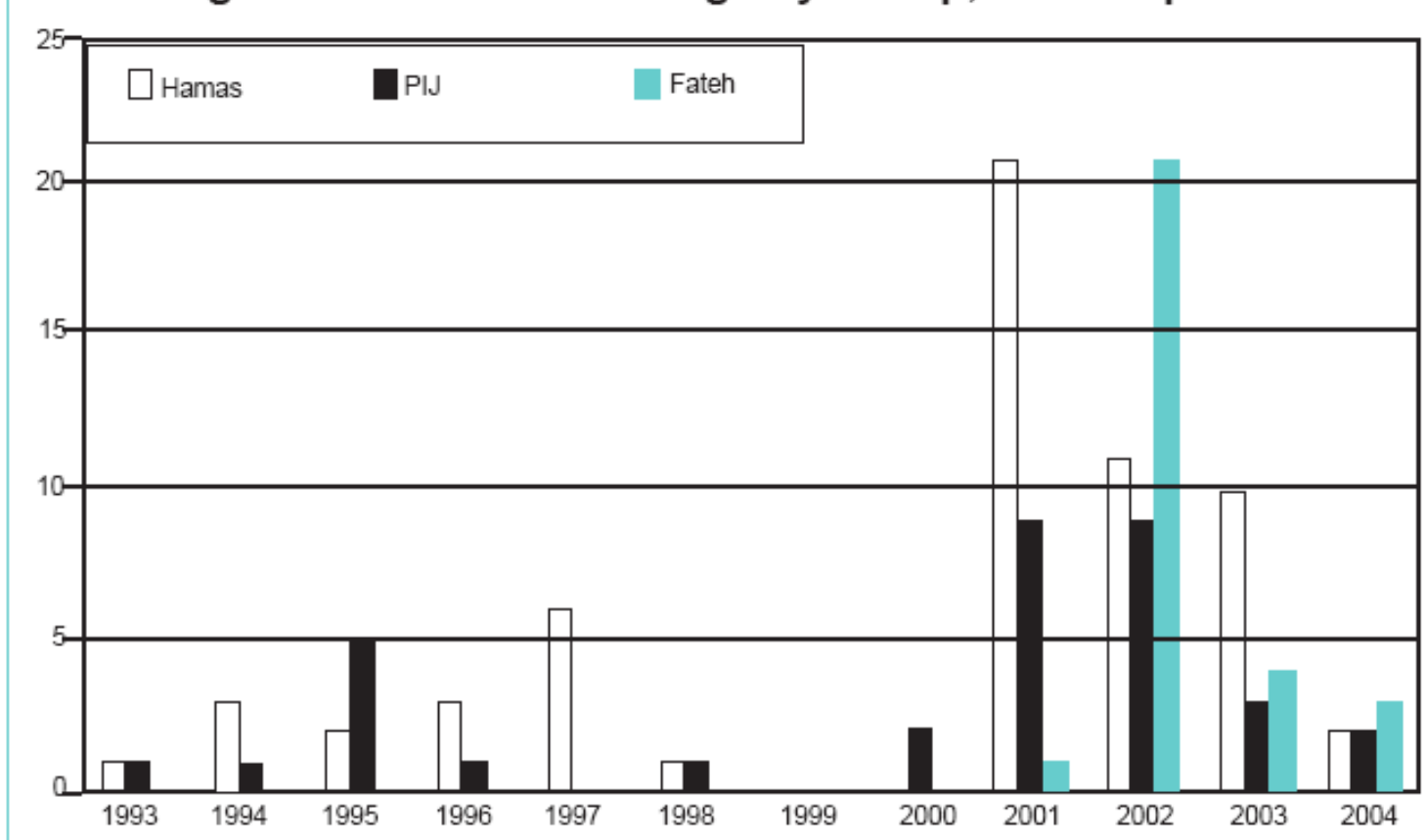
Figure 1: Palestinian Suicide Bombings, 1993 - April 2004



higher.

Suicide attacks are usually carried out by militant organizations acting independently of each other. But recently an increasing number of these attacks have been claimed by the collaborative efforts of two or more Palestinian militant groups. From 1993 through April 2004, 46 percent of all suicide bombings were carried out by Hamas, 29 percent by PIJ (Palestine Islamic Jihad), and 22 percent by Fatah (Figure 2); the remainder were by the Popular Front for the Liberation of Palestine (PFLP) or were claimed by two or more groups.

Figure 2: Suicide Bombings by Group, 1993 - April 2004



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Findings from a New Database

Having constructed a database of 87 suicide attackers from the Second Intifada, we discovered recurrent social and demographic patterns.³ First, Palestinian suicide bombers are between the ages of 17-53, with mean and median falling at 22 years. Second, 38 percent had completed more than 12 years of education, having been university students or graduates at the time of the attack; only 28 percent failed to finish high school. Third, the majority had many siblings; 81 percent came from households with at least eight members, with fully six or more brothers and sisters. Fourth, almost all suicide bombers are unmarried and male, though the number of female bombers is rising. Suicide bombers are better educated than average - in the Palestinian distribution of educational achievement they are clustered on the right-hand tail. In addition, two new facts have recently surfaced. We suggest that two factors, economic deprivation and human cost, generate increased incentives to participate in militant activities, and we provide quantitative evidence in the support of this argument.

Revenge and Unemployment

As Table 1 shows, there is evidence that many suicide attackers included a large number of Palestinians who had a prior history violent encounters with the Israel Defense Forces (IDF) that resulted in an immediate family member being killed or in some cases the attacker him/herself was injured or arrested (due to space limitations only a sample of this data is included in this table). Revenge may be a significant factor in motivating Palestinians youth to volunteer; in our preliminary search we found 44 (and counting)

attacks where the operators had been exposed in the past to IDF force. 11 of the 44 suicide attackers with grievances had a relative killed by the IDF; almost all were previously arrested or had had a family member arrested or injured. Combined with deteriorating economic prospects, such personal injuries may seed volunteerism among youths, making them relatively easy targets for organizational recruiters. From October 2000 through March 2004, over 2,800 Palestinian fatalities and 25,600 non-lethal injuries were attributed to the IDF. By the end of 2002, some 1,600 homes were destroyed, 14,000 damaged, and \$650 million of damage done towards public infrastructure. Unsurprisingly, suicide bombers often experience personal trauma related to the Israeli force prior to their volunteering, such as the death or injury of a family member.

Table 1: Partial List of Suicide Attackers with Prior History of Injury or Arrest SSA=Suicide Shooting Attacks. SBA=Suicide Bombing Attacks. FI=First Intifada.	
Date of attack	Grievance noted in bios posted on official websites of Hamas, PIJ, and al-Aqsa Brigades.
11/7/2002 (SSA)	Cousin killed in gunfight with IDF.
10/10/2002 (SBA)	Arrested in FI.
5/13/2002 (SSA)	Arrested in 1995, held for one year.
4/23/2002 (SSA)	Left note to family informing of intention to carry out attack in revenge for actions of IDF in Jenin Camp during incursion.
3/31/2002 (SBA)	(i) Cousin assassinated, car bomb by Israeli Mossad. (ii) Older brother arrested by IDF. (iii) Arrested in 1997 by IDF.
7/9/2001 (SBA)	(i) Injured in the eye by IDF during FI. (ii) IDF killed one brothers in 1987. (iii) IDF shot and fully paralyzed other brothers.
5/25/2001 (SBA)	IDF killed older brother in FI.
5/24/2001 (SBA)	IDF killed older brother in FI.
5/24/2001 (SBA)	Older brother beaten to death by IDF during FI.
1/1/2001 (SBA)	Arrested twice before.
11/7/2000 (SBA) with a boat	(i) Arrested once before. (ii) Lost three fingers in FI after the IDF shot him in the hand. (iii) IDF shot and injured three brothers, had two arrested.
10/19/1994 (SBA)	(i) IDF killed brother in 1988. (ii) Arrested by IDF.
12/13/1993 (First Suicide Bomber)	(i) Arrested twice and spent 2 ½ years in Israeli jail. (ii) Orphaned at age 10.

Economically, more than three years of Intifada have thrust bleak economic, social, and health conditions onto the territories. Because of the closure policy enforced by Israel on the Palestinian Territories since 1993, fluctuations in the unemployment rate are a result of direct political policy of Israel rather than business conditions. This affects employment in two ways. First, because the Palestinian economy has long depended on Israel for absorbing from a third to a half of its labor force, such policies leave unemployed thousands of workers (Joshua Angrist, 1996). Second, closures disturb gainful employment within the territories. Consequently, Palestinian unemployment statistics are fixed in a unique pattern: the rate varies considerably within a given year due to closures, not as a result of cyclical or seasonal fluctuations in business conditions (Table 2).

Table 2: High-Low Unemployment Rate during Selected Years				
	1995	1996	2000	2001
Lowest	11% WB 17% GS	20%	9%	26.9%

Highest	30% WB 33% GS	50%	28%	35.5%
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As collective strategies of repression, these closures deepen the stress borne by Palestinians and increase participation in violent resistance. Prior research posits correlative links between economic damage and violent outcomes in conflict scenarios (Manoucher Parvin, 1973), a finding confirmed in more recent studies that find a significant relationship between the two during the First Intifada (Marwan Khawaja, 1995). Suicide bombers are particularly vulnerable to the severe economic conditions in the Palestinian Territories. Closure dampens earning potential while discouraging entry into the labor market. Overeducated against the mean, suicide attackers face high losses relative to their educational investment; since many come from larger families and face crushing obstacles in labor market entry, the lack of feasible economic alternatives produces higher probability of violent militancy.

Quantitative Evidence

Do these human and economic damages determine or predict the level of suicide attacks? To review these propositions, we construct a Poisson model to estimate the correlation between political violence and three variables: income, unemployment, and conflict intensity. Conflict intensity is the number of Palestinian fatalities resulting from the IDF force in a given year. No prior work on Palestinian violence has taken into account such "human" variables, despite the commonsensical notion that Palestinian fatalities may reflect some substantive measure of human suffering. The dependent variable is measured in three ways: suicide bombing attacks, shooting attacks, and total number of attacks.

The preliminary results cast doubt on prior hypotheses that failed to take into account the human cost of the Intifada (see Krueger and Maleckova, 2002; Berrebi, 2003). According to the results of the estimated models, the number of Palestinians killed is an important determinant for militant violence, and economic factors become highly significant predictors for violence after accounting for conflict intensity. Shooting attacks appear to be more responsive to conflict intensity than suicide attacks (although suicide attacks are also significantly related to economic factors). This actually confirms existing patterns in violence; as the organizational-strategic theorists would suggest, the time, resources, and involvement spent in preparing a martyrdom operation highly varies according to the group-level dynamics and tactical requirements of the militant leadership; such lag time may skew the observed pace of suicidal bombings from the expected value, since a volunteer who may have just lost a brother or friend may not perform a mission until the group decides to do so. Shooting attacks, on the other hand, take little time to prepare and are launched spontaneously in response to ongoing Israeli incursions. This confirms our prior concession that organizations do matter in the spread of suicidal terror; but this also suggests that so, too, do individual-level factors in predicting overall levels of violence, when accounting for both suicide and shooting attacks.

With regard to the economic determinants of attacks we find that an increase in the Palestinian income per capita will reduce Palestinian attacks against Israelis; likewise, a reduction in the unemployment rate reduces the incentive for young Palestinians to participate in political violence. While these statistical estimations are still a work in progress, the early iterations show startlingly opposite findings to the widely disseminated research of mainstream economists over the last year.

Conclusion

Suicidal bombings are the product of both organizational strategy and individual-level incentives, and neither level of analysis is sufficient in explaining its rise during the Second Intifada. On the one hand, pursuing militant entities that deploy suicidal terror is a necessary component of an effective counterterrorist response. However, if individual-level economic and social factors also generate increased incentives for individual Palestinians to participate in these activities, stunting organizational growth alone will not end attacks against Israeli targets. The micro-macro linkages highlighted in this study underscore the relationship between individual loss, on the one hand, and increased probability of participating or supporting violence on the other. Suicidal attacks are broadly correlated with certain conditions - economic deprivation and human loss - along with policy outcomes (closures and other structurally

damaging policies); eroding the individual motives to support and participate in violence would necessarily include improving the structural health of Palestinian society. Though this would involve political compromises that both the Palestinian and Israeli government will loathe, the alternative is accepting the mounting cost of terrorism, and the counterproductive war against it.

NOTES

1. During 1990-1991, for instance, 34 stabbing attacks occurred against Israelis; this figure was collected from Al-Ahram (Arabic-language daily).
2. This and preceding data collated from ICT reports, Human Rights Watch, and the authors' own research in Ha'aretz and Jerusalem Post archives.
3. We culled data from English and Arabic-language information sources, including newspapers, media reports, and militant groups' websites.

[Back to top](#)

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