

Israel, the Palestinian Factions, and the Cycle of Violence

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Since September 2000, Israel and the Palestinians have been engaged in a deadly conflict, commonly known as the Second Intifada, which has claimed more than 1,000 Israeli and 3,300 Palestinian lives. In previous work (Jaeger and Paserman, 2005, henceforth JP), we showed that the conventional wisdom that the two sides are locked in an endless cycle of violence, where actions by one side are always followed by retaliations from the other, does not appropriately capture the dynamics of the conflict. Rather, Israel responds in a predictable and systematic way to Palestinian violence, while the Palestinians' actions do not seem to be related to past levels of Israeli violence either through revenge, deterrence, or incapacitation. In that analysis, we treated the Palestinians as a unified entity. To better understand the dynamics of the conflict, we may need to consider that the various violent Palestinian factions have different organizational structures and long-term objectives and that Israel may have an incentive to react differentially to violence committed by them.

The three main Palestinian factions involved in violence against Israel are Fatah (and the various groups affiliated with it, particularly the Al-Aqsa Martyr Brigades), Hamas, and the Palestinian Islamic Jihad (PIJ). Fatah was founded by Yasir Arafat in 1959, and since 1969 it has been the controlling group of the Palestinian national movement, first, in the Palestinian Liberation Organization (PLO) and subsequently, after the 1993 Oslo Accords, in the Palestinian National Authority. As the majority party, Fatah has been the primary negotiator with the Israeli

government. It has adopted the two-state approach to resolving the conflict, agreeing in principle to a partition of Palestine between a Jewish and a Palestinian state.

Unlike Fatah, Hamas and PIJ do not entertain the possibility of a two-state solution. Hamas has expressly called for the destruction of Israel and the establishment of an Islamist state in all of Palestine, a goal shared by PIJ. Hamas has stronger support in the Gaza Strip, where it provides some social services for the poor. Until 2005, Hamas had shunned politics at the "national" level, focusing instead on involvement in local councils. In January 2006, Hamas participated in the elections for the Palestinian Legislative Council for the first time and won an absolute majority of seats. PIJ is uninvolved in social or political issues.

Several papers have modeled the strategic interplay between moderate and radical groups in the Palestinian-Israeli conflict or other armed struggles between insurgents and a central government. Andrew Kydd and Barbara F. Walter (2002) argue that extremist violence is not indiscriminate or irrational, but is timed to coincide with major developments in a peace process, with the aim of sabotaging diplomatic efforts. Mia M. Bloom (2004) emphasizes the role of political competition between Palestinian factions, claiming that they use suicide bombings to boost prestige and popularity. Robert A. Pape (2003) and Claude Berrebi and Esteban Klor (2004) argue, instead, that Palestinian groups use violence to extract territorial concessions from Israel. A variety of other studies examine antiterrorism policies and their effectiveness (Walter Enders and Todd Sandler, 1993; Bryan Brophy-Baermann and John A. C. Conybeare, 1994; and Asaf Zussman and Noam Zussman, forthcoming). None, however, address the possibility that Israel's actions may also be strategic and that it may choose to act differently in response to violence by different factions. We empirically explore this possibility and test whether the magnitude and targets of

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Israel's response to Palestinian violence depend on which faction claims responsibility for an attack.

I. Data and Descriptive Statistics

We rely on two data sources on violence in the Second Intifada: the Web site for B'tselem (<http://www.btselem.org>), an Israeli human rights organization, and the database on incidents and casualties prepared by the Institute for Counter Terrorism (ICT) in Herzliya, Israel (<http://www.ict.org.il>).

In the statistics section of its Hebrew Web site, B'tselem records every fatality on both sides of the conflict, excluding suicide bombers. These data are advantageous in their comprehensiveness and the symmetric treatment of fatalities on both sides. More important, the information published by B'tselem is widely thought to be accurate and reliable.

The B'tselem data, however, lack information on the militant group affiliation of the Palestinian fatalities and do not report the Palestinian group that claims responsibility for Israeli fatalities. To overcome these shortcomings, we cross-validated the B'tselem data with data from the ICT, which include the organizational affiliation of the victim for Palestinian combatants and the group claiming responsibility for Israeli fatalities. For the period from the outbreak of the Second Intifada (September 2000) through the end of August 2004, we attempted to match manually every record in the B'tselem data to the corresponding record in the ICT data by using names, dates, and all other available information that could help identify the individual. The match rate was more than 99 percent for Israeli fatalities and roughly 72 percent for Palestinian fatalities. To identify combatants, we used the ICT definition of combatant status and supplemented it with the B'tselem definition for those individuals for whom combatant status was missing in the ICT data.

In Table 1, we present the distribution of Palestinian fatalities by combatant status and organizational affiliation. Roughly 45 percent of all Palestinian fatalities were combatants and 42 percent were noncombatants, with the combatant status of the remainder unknown. We were

TABLE 1—COMBATANT STATUS AND ORGANIZATIONAL AFFILIATION OF PALESTINIAN FATALITIES

Status, faction	Number of fatalities	Share of	
		Total fatalities	Combatant fatalities
Combatants	1,272	0.447	
Fatah	388	0.136	0.305
Hamam	294	0.103	0.231
Islamic Jihad	112	0.039	0.088
Other or unknown	478	0.168	0.376
Noncombatants	1,197	0.420	
Unknown	379	0.133	
Total	2,848		

Source: Authors' tabulations using data from B'Tselem and ICT, from September 29, 2000, to August 31, 2004.

TABLE 2—DISTRIBUTION OF ISRAELI FATALITIES BY PALESTINIAN FACTION CLAIMING RESPONSIBILITY

Faction	Number of fatalities	Share
Fatah	322	0.336
Hamam	402	0.420
Islamic Jihad	130	0.136
Other	25	0.026
Not claimed	78	0.082
Total	957	

Source: See note to Table 1.

able to identify the organizational affiliation of more than 60 percent of combatants. Of these, roughly half belonged to one of the groups affiliated with Fatah, one-third belonged to Hamas, and about one-sixth belonged to PIJ. We present the distribution of Israeli fatalities, by the faction claiming responsibility for the fatal attack, in Table 2. The group claiming the single largest number of Israeli fatalities is Hamas (42 percent), followed by Fatah (34 percent), and PIJ (13 percent).

II. Reaction Functions

To estimate Israel's reaction to Palestinian violence, we employ a simple econometric framework similar to that used in JP. We focus here on the incidence of reaction as a function of the past actions of Israel and the Palestinian factions. As an example, consider the reaction function we estimate for Israel against Fatah:

$$\begin{aligned}
F_t = & \alpha + \beta_1^F I_{(t-1 \text{ to } t-7)}^F + \beta_2^F I_{(t-8 \text{ to } t-14)}^F \\
& + \beta_1^H I_{(t-1 \text{ to } t-7)}^H + \beta_2^H I_{(t-8 \text{ to } t-14)}^H \\
& + \beta_1^{PIJ} I_{(t-1 \text{ to } t-7)}^{PIJ} + \beta_2^{PIJ} I_{(t-8 \text{ to } t-14)}^{PIJ} \\
& + \beta_1^{OTH} I_{(t-1 \text{ to } t-7)}^{OTH} + \beta_2^{OTH} I_{(t-8 \text{ to } t-14)}^{OTH} \\
& + \gamma_1 P_{(t-1 \text{ to } t-7)} + \gamma_2 P_{(t-8 \text{ to } t-14)} \\
& + \mathbf{X}_t \delta + \varepsilon_t
\end{aligned}$$

where F_t is the incidence of fatalities of combatants from Fatah on day t , $I_{(t-1 \text{ to } t-7)}^F$ is the number of days with Israeli fatalities claimed by Fatah in the first seven-day period prior to day t , and $I_{(t-8 \text{ to } t-14)}^F$ is the number of days with Israeli fatalities claimed by Fatah in the second seven-day period prior to day t . The other variables are defined similarly and represent the lagged number of days with Israeli fatalities claimed by Hamas, PIJ, and other combatant groups (e.g. the Popular and Democratic Fronts for the Liberation of Palestine). To control parsimoniously for serial correlation in Israel's actions, we also include variables for the lagged number of days with any Palestinian fatalities, $P_{(t-1 \text{ to } t-7)}$ and $P_{(t-8 \text{ to } t-14)}$. The vector \mathbf{X}_t is a set of day-of-week and period-of-conflict variables, as well as a variable measuring the length of the separation barrier between the West Bank and Israel. We define these variables and explore a variety of functional form issues (to which the results are robust) in JP.

We define Israel's reaction function against the other factions similarly, with only the dependent variable changing, and include regressions for Palestinian fatalities characterized as noncombatants and for whom combatant status is unknown. The regressions are estimated as linear probability models. Because the error terms in the different reaction functions are likely to be correlated, we treat them as a set of seemingly unrelated regressions. The estimated standard errors are also heteroskedasticity consistent.

We present the results of estimating the Israeli reaction functions against the different factions in Table 3. We find that Israel responds differentially to violence committed by the different factions. It reacts in a signifi-

cant and positive way to fatalities claimed by Fatah, but not to those committed by the other factions. Violence by Fatah appears to affect Israel's response to the other groups as well, significantly increasing the incidence of fatalities for nearly all other groups. The incidence of noncombatant fatalities is also positively affected by past Fatah violence, but not by past violence by Hamas and PIJ. The results in the last column, in which we use the incidence of any Palestinian fatality (regardless of faction) as the dependent variable, reinforce our conclusion that Israel reacts primarily to violence by Fatah, but not violence by Hamas. The estimated coefficient for Israel's reaction against PIJ is also large, but not statistically significant.

The row tests show that Israel responds differentially against the different factions when Fatah commits violence, but it appears that Israel's response to Hamas violence is uniform across all factions. In each column, we present χ^2 statistics for the joint statistical significance of all of the faction coefficients, as well as only the "own" coefficients of the faction under examination. If the regressors are orthogonal to the error term, we can interpret these as testing whether Palestinian violence (*in toto* or by the individual factions, respectively) causes an Israeli response. In JP, we explored at length the issue of whether we can attach a causal interpretation to these tests in similar regressions involving the overall level of fatalities on both sides and concluded that there is little reason to believe that a causal interpretation is inappropriate. The tests show that all of the faction coefficients are jointly statistically significant in the reaction function against Fatah, but they are jointly statistically insignificant in the reaction function against Hamas. Put differently, violence against Fatah can be predicted by past levels of Palestinian violence, but violence against Hamas cannot. Only for Fatah do we find a statistically significant relationship between its "own" violence and Israel's response to it. Finally, the test of equality of column coefficients shows that Israel's reaction against Fatah varies depending on which faction was responsible for past Israeli fatalities, while Israel's reaction against Hamas is independent of the faction claiming responsibility for the attacks.

TABLE 3—ISRAELI REACTION FUNCTIONS
(absolute value of heteroskedasticity-consistent z -ratios in brackets, p -values in parentheses)

Number of days with Israeli fatalities claimed by:	Affiliation of Palestinian fatality						Row test	
	Fatah	Hamas	Pal. Islamic Jihad	Other	Noncombatant	Unknown	χ^2 test, all coeffs. equal	All
Fatah								
$t - 1$ to $t - 7$	0.0292 [2.31]	-0.0016 [0.16]	0.0095 [1.30]	0.0309 [2.43]	0.0446 [3.01]	0.0393 [3.48]	40.041 (<0.001)	0.0383 [2.79]
$t - 8$ to $t - 14$	0.0197 [1.55]	0.0224 [2.07]	-0.0199 [3.02]	0.0376 [2.86]	0.0171 [1.09]	0.0073 [0.65]		0.0280 [1.91]
Hamas								
$t - 1$ to $t - 7$	0.0151 [0.77]	-0.0143 [0.90]	0.0075 [0.56]	0.0135 [0.62]	0.0202 [0.82]	-0.0088 [0.50]	12.471 (0.255)	-0.0000 [0.00]
$t - 8$ to $t - 14$	-0.0430 [2.35]	0.0194 [1.03]	0.0050 [0.42]	-0.0155 [0.73]	0.0221 [0.88]	-0.0080 [0.50]		0.0145 [0.60]
Palestinian Islamic Jihad								
$t - 1$ to $t - 7$	-0.0431 [1.78]	-0.0203 [0.94]	0.0244 [1.47]	0.0013 [0.05]	0.0483 [1.42]	0.0619 [2.41]	21.294 (0.019)	0.0430 [1.35]
$t - 8$ to $t - 14$	0.0378 [1.40]	-0.0005 [0.02]	-0.0142 [0.98]	0.0042 [0.15]	0.0506 [1.51]	0.0575 [2.42]		0.0476 [1.52]
Other								
$t - 1$ to $t - 7$	0.0370 [2.18]	0.0192 [1.35]	-0.0174 [1.85]	0.0240 [1.34]	0.0538 [2.53]	0.0449 [3.15]	23.505 (0.009)	0.0357 [1.82]
$t - 8$ to $t - 14$	0.0032 [0.20]	-0.0072 [0.51]	0.0007 [0.08]	0.0100 [0.58]	0.0009 [0.04]	-0.0228 [1.83]		0.0026 [0.12]
Column tests								
χ^2 test, All factions = 0	26.376 (0.001)	8.148 (0.419)	14.015 (0.081)	20.025 (0.010)	31.779 (<0.001)	35.390 (<0.001)		
χ^2 test, Own faction = 0	8.659 (0.013)	1.987 (0.370)	2.935 (0.231)	2.273 (0.321)				
χ^2 test, All factions equal	17.967 (0.006)	5.786 (0.448)	9.757 (0.135)	5.677 (0.460)	2.764 (0.838)	17.132 (0.009)		
"Diagonal" test							8.988 (0.174)	
All "own" coeffs. equal								

Notes: Dependent variables are daily indicators of any fatalities of faction members. Independent variables are number of days with any Israeli deaths claimed by faction in periods $t - 1$ to $t - 7$ and $t - 8$ to $t - 14$. Regressions also include the length of the separation barrier and lagged day-of-week and phase-of-conflict dummy variables. Variance-covariance matrix of estimates is heteroskedasticity-consistent and takes into account correlations in the error terms across equations.

Source: See note to Table 1.

We have estimated similar models examining the reactions of the Palestinian factions to Israeli violence. As for the general results presented in JP, we find little evidence that there is any relationship between Israeli violence and a response by any of the factions. These results are available from the authors by request.

III. Discussion

Why does Israel react differently to the various factions? We conjecture that Israel's incentive to react may differ because of the contrasting long-term objectives of the Palestinian factions, as well as their different organizational structures. The relatively moderate Fatah

has endorsed the two-state approach to solving the conflict and has been the primary negotiator with Israel over that solution. Whether it engages in violence to extract territorial concessions or to boost its prestige and popularity among the Palestinian public, its choices on the timing and magnitude of the attacks are strategic, implying that there is likely to be a scope for deterrent actions by Israel. Israel has the organization and technical means to respond quickly when Fatah claims responsibility for an attack, and it also has an incentive to respond directly and in a timely way, to make obvious that it is willing to use its military strength and to reduce any net benefit of Fatah violence. In addition, the prospect of future negotiations

with Fatah may also dictate the timing of Israel's response. Because bargaining strength on either side is a function of past violence, each side has an incentive to have the "last word" prior to negotiations.

On the other hand, it is less clear what incentives Israel has to react systematically to violence by Hamas and PIJ. These groups are explicitly committed to the destruction of the State of Israel, and are opposed to any negotiated settlement on the basis of territorial concessions. Berrebi and Klor (2004) explicitly assume that the radical groups' behavior is non-strategic and that they always pursue the violent option. If this is so, the timing of Israel's response against Hamas and PIJ would not necessarily be related to previous actions, even though Israel clearly has incentives to try to incapacitate these groups.

The difference in Israel's response may also be due to the different organizational and military structures of the different armed groups. The Al-Aqsa Martyr Brigades (AAMB—the primary armed group affiliated with Fatah) have a fairly decentralized structure. An attack by the AAMB reveals information about the capabilities and (perhaps) the location of a cell. Because of the decentralized command structure of the AAMB, removing a cell may lead to a longer-term reduction in violence. In contrast, Hamas is centrally commanded and well organized. Removing a cell of "foot soldiers" may lead only to the quick replacement of those foot soldiers; Israel has greater incentive to target the leadership of Hamas. An individual attack by Hamas, however, may not reveal any new information about the capabilities or location of that leadership. Because of the large sacrifices it demands of its members, Hamas may also be better able to screen its operatives and ensure loyalty (Eli Berman and David D. Laitin, 2005), thus making it more difficult to infiltrate the group and extract information on the planners of the attack. Therefore, Israel's response against Hamas is less likely to be temporally linked to individual attacks claimed by Hamas and will depend more on intelligence gathering and the opportunity to strike its leaders.

These results make clear that Israel's re-

sponse to Palestinian violence depends on the group that committed that violence, suggesting that Israel's response is in part based on strategic considerations vis-à-vis the Palestinian factions. Understanding this complex relationship between the Palestinian factions and Israel is the focus of our ongoing research.

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