

Arms and Aggression in the Middle East

OVERT MILITARY INTERVENTIONS, 1948-1991

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The authors' understanding of the relationship between the cold war and enduring rivalry in the Third World has been hampered by a tendency to view international conflicts as relatively isolated phenomena. The authors address this question by analyzing the impact of superpower arms transfers on armed interventions in the Middle East from 1948 to 1991. The evidence suggests that arms transfers from the United States to Israel restrained the level of military aggression in the region, on the part of both Israel and its Arab rivals. Soviet arms transfers, however, had the opposite effect. This latter pattern is attributed more to the Soviet Union's inability to restrain its clients than to its active promotion of regional conflict. The authors' conclusions are based on a Poisson regression analysis of time-series data derived from the Overt Military Interventions database and the arms trade registers compiled by the Stockholm International Peace Research Institute.

The cold war is over. Is greater peace necessarily at hand? The cold war dominated international politics for nearly half a century from shortly after World War II until the end of the 1980s. The two superpowers, the United States and the Soviet Union, each threatened nuclear Armageddon. They also enlisted most other important military powers within competing worldwide coalitions. They provided arms to numerous Third World clients, which helped to sustain enduring regional rivalries. Whether and how much world peace is enhanced by the end of the cold war depends on the manner and extent to which U.S.-Soviet rivalry contributed to international armed conflict during the period of its reign.

The cold war era presents an interesting paradox of frequent local war and de facto global peace. Local warfare was rampant in many corners of the

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globe and frequently involved members of opposing blocs. Literally millions of soldiers died on foreign soil as result of repeated "small" wars. Nevertheless, the cold war period was more peaceful than the half century that preceded it. Warfare did not engulf entire continents as it did leading to World Wars I and II.

The paradox invites competing interpretations of the epoch. The *orthodox* view of the cold war imagines the world divided between two unalterably hostile camps led by the United States and the Soviet Union, each bent on the other's destruction by use of any means available. Orthodoxy generally assumes that all preparations for war on either side, including additions to stocks of arms, necessarily make it more likely that weapons will be used. It tends to blame the United States, the Soviet Union, or both for stirring up most international armed conflict. By implication, greater peace should follow demise of the cold war.¹

The *reformed* perspective, on the other hand, recognizes mixed motives among the superpowers and deliberate limits set to East-West struggle, including by means of global and regional deterrence. The reformed tradition generally commends U.S. and Soviet restraint for helping to preserve the long global peace that followed World War II. It also usually assumes that the superpowers contributed relatively little, on balance, to the incidence of local international armed conflict. In this respect, the reformed perspective provides less reason for optimism about post-cold war international order than does orthodoxy.²

The appropriateness of orthodox versus reformed images of the cold war may be tested empirically. We undertake one such test by examining the effects of superpower arms transfers on international armed conflict. Superpower competition in the Third World was manifest in important ways through their arms-transfer policies. In this article, we explore the impact of superpower arms transfers on military interventions in the Middle East from

1. Sacred texts of cold war orthodoxy, especially among Americans, include official U.S. statements (Kennan's "long telegram," the Truman Doctrine, NSC-68) as well as academic commentaries (e.g., Morgenthau 1951; Kaplan 1962). Interestingly, many "revisionist" historians and other strong critics of U.S. containment policy, including Barnett (1972), Horowitz (1965), Magdoff (1969), and Williams (1959), agree with its defenders that the cold war represents an entirely awful, deadly business. They merely disagree about who is to blame. The ideological extremes of American politics have been united on this point if no other.

2. Walter Lippmann (1947) introduced the reformed view of the cold war. French scholar-journalist Raymond Aron (1966, 536-72) provided a theoretical rationale. Aron argued that the United States and the Soviet Union after World War II behaved as *les grands frères* (the big brothers). They visibly competed with one another, including to the extent of actively supporting rival parties overseas; at the same time, however, they colluded with one another to maintain equilibrium in Europe and to restrict international crises elsewhere to avoid unlimited war. Other theories of international relations subsequently embraced the reformed point of view (e.g., Bull 1977; Waltz 1979).

1948 to 1991, in particular those initiated by Israel, Egypt, and Syria. The Middle East is among several regions of the Third World where the super-powers competed with each other, partly by arming local states engaged in competitive, and often violent, interstate rivalries.

ARMS TRANSFERS, MILITARIZATION, AND REGIONAL CONFLICT

Arms transfers embody both military capability and, to varying degrees, political support, each of which is expected to exert some kind of influence on the propensity of recipients to pursue conflictual foreign policies. Arms transfers, by definition, contribute to the *militarization* of the Third World, especially insofar as they constitute an inflow of weaponry not otherwise available to local armed forces. They may also promote *militarism*, or the tendency of state leaders to seek military solutions to internal and interstate disputes. The availability of arms supplies expands the military options available to leaders by enhancing the authority of the military within the state.³

By contrast, militarization in the Third World might, in fact, lead not to militarism but rather to military restraint by bolstering the state's actual and perceived security environment. Arms imports improve the recipient's position vis-à-vis its rival in the overall military balance and thereby help deter external attack. They may also dampen the recipient's inclination to engage in preemptive conflictual behavior by enhancing the state's own sense of security.

Several analysts have speculated as to the likely consequences of super-power arms transfers for the course of regional rivalries in the Third World. More often than not, academic analyses have concluded that regional conflict is exacerbated by such outside interference (e.g., Ross 1990; Klare 1990; Ayooob 1991, 1994). Official justifications for military aid and military sales, on the other hand, usually include the claim that they contribute to deterrence and thus help to reduce the likelihood of war.

Are there certain conditions under which we might expect restraint versus aggressive behavior on the part of arms importers? The defensive or offensive character of the transferred weaponry is one possible predictor. Not only are defensive weapons of limited utility in launching offensive military action, they are also less threatening. Transfers of defensive weapons are thereby

3. A conceptual discussion of militarization and militarism can be found in Ross (1987). He defined militarization simply as military buildup and identified the following dimensions: military expenditures, armed forces, arms imports, arms production, wars, and military regimes. For a discussion of the cultural dimensions of militarism, see Luckham (1984).

less likely to tempt preemptive military action by the recipient's rival, and probably deter it. Transfers of offensive weaponry, on the other hand, are more likely to be followed by aggressive behavior on the part of both the importer and a rival inclined toward preemption. Still, such distinctions assist us only marginally in predicting aggression or restraint to the extent that modern weapons systems can be used in both offensive and defensive contexts.⁴

We might also expect that the behavioral impact of arms transfers depends on the arms importer's power status vis-à-vis its local rival. A balance-of-power perspective suggests that the potential for local conflict increases when arms transfers upset an existing balance of military capabilities. This, for instance, was the conclusion of two pioneering studies of the international arms trade. The Stockholm International Peace Research Institute (SIPRI; 1971) maintained that "a perceived 'balance' of arms supplies may restrain the outbreak of war," whereas "an influx of arms to one side in the conflict may alter the 'balance' and lead to war" (p. 77). Referring to it as a "surge pattern," Leiss et al. (1970) also noted the destabilizing nature of a regional influx of arms.

ARMS TRANSFERS AND COLD WAR ALIGNMENT

So far we have said little that would distinguish superpower arms transfers from weaponry supplied by any other state or, indeed, from weaponry procured domestically. Yet the political support signaled by weapons suppliers, especially the superpowers, is an essential element of the postwar international arms trade. Superpower arms-supply policies were part of a larger effort to promote patron-client relationships in the Third World, including the Middle East. This political dimension of superpower arms transfers suggests that our task may be more complicated than one of simply assessing the impact of regional militarization.

Bercovitch (1991) has suggested that patron-client relations were encouraged by the post-World War II bipolar international system. They were "adaptive mechanisms" employed by both great powers and small states "to cope with anarchy and avoid chaos and disorder" (p. 16). Although patron-client relationships involve power asymmetries, they are not necessarily hegemonical relationships. In fact, the degree of leverage that clients have

4. For a general discussion of the difficulties associated with assessing the effect of offensive and defensive military technology on interstate aggression, see Levy (1984). Levy is skeptical regarding the utility of such distinctions in theoretical analysis given states' divergent perceptions of the offensive/defensive balance.

over their superpower patrons is a (positive) function of the degree of competition between the superpowers themselves. Bercovitch further argued that, given the extraordinary costs of great-power war in the nuclear age, the superpowers' desire to avoid direct confrontation was coupled with an "overriding interest in damping down conflicts between their clients" (p. 22; see also Golan 1991). However, paradoxically, superpower caution often left client states with considerable room to maneuver regionally, including few restraints on aggressive foreign policies.

Recognizing that arms supplies were a central feature of patron-client relations during the cold war, again we are left with ambiguous expectations regarding their impact on regional security. As a form of political alignment, arms transfers may have been combined with superpower strictures regarding regional aggression. At the same time, the risks of direct confrontation effectively checked each superpower's regional leverage. Strictures or not, the perceived latitude afforded by an arms-supply relationship with a superpower may actually have encouraged foreign-policy adventurism on the part of client states.

The orthodox image of the cold war implies that all superpower transfers necessarily contribute directly to increased international armed conflict within a rivalrous region. Ayooob (1994) is not alone in suggesting that the East-West competition

led to the prevalence of proxy wars in the Third World so that the superpowers could probe the adversary's political will and military reach. . . . In other words, the workings of the post-World War II international system and the global balance of power permitted—indeed, encouraged—conflict in the Third World at the same time [that] violent interstate conflict was ruled out in the core strategic and economic areas. (p. 17)

The reformed image recognizes multiple purposes and effects of superpower arms transfers: the inhibition of recipients and the deterrence of foes, as well as incitement of aggression. According to the reformed view, competitive superpower arms transfers to regional rivals may produce a benign or dampening effect on international armed conflict overall consistent with superpower interest in preserving general peace (Kolodziej 1991). This does not necessarily imply that the superpowers play identical roles within any given region. Soviet transfers may incite some parties and U.S. transfers restrain others, or vice versa, and the net regional effect may still be benign. Most important, however, this image of the cold war suggests that client states are seldom proxies, because

a prevailing local context can take over from a traditional great-power relationship, and enable tails to wag dogs. . . . If the superpowers begin to rely on

client states so as to restore some semblance of international order, to their own advantage one need hardly add, it is then the client states which generally call the shots. (Windsor 1991, 37, 45).

DATA ANALYSIS

The empirical indicators of interest to us are, of course, superpower arms transfers and military aggression. In a statistical analysis guided by similar theoretical questions, Kinsella (1994) used events data (COPDAB and WEIS) to construct annual time series for conflict between Third World rivals. The time series for superpower arms transfers used in that study were derived from SIPRI's arms-transfer database and represent dollar valuations of all weapons transferred by each superpower to its client state(s). Here we employ different indicators of both conflict and arms transfers.

MILITARY INTERVENTIONS

Kinsella (1994) aggregated all events coded as falling into any of several "conflict" categories. Because these categories ranged from verbal hostility to full-scale war, the resulting indicator was more a measure of the general state of relations obtaining between rival Third World states than an indicator of military aggression per se. Indeed, no attempt was made to distinguish initiator from target in that analysis. In our present analysis of overt military interventions, we do preserve such distinctions.

An overt military intervention (OMI) represents combat-ready military operations openly undertaken by a state's regular military forces within a foreign territory. It includes operations by conventional ground combat units, commando and other small unit raids, aerial attacks, ground-based artillery and rocket attacks, and naval bombardment.⁵ The OMI data set (Tillema 1991, forthcoming) identifies 690 confirmed instances of OMI initiated between 1945 and 1991 by all states of the world. Each intervention encompasses all overt military operations conducted within 6 months of one another by one state within one foreign territorial political unit.

Table 1 lists the 38 interventions between Israel, Egypt, and Syria initiated between 1948 and 1991. Each represents an armed attack or a series of closely

5. An intervention begins on the day that a state commences overt military operations within a given foreign territory and ends on the day that operations cease through either withdrawal of forces or subsequent inactivity. As a rule, all related overt military operations conducted within 6 months of one another by one state within one foreign territory are considered to represent one intervention. Excepted are resumption of artillery shelling between Israel and Egypt in July 1967, little more than 1 month after the end of the ground operations associated with the June war. These are coded as separate interventions for reasons of historical clarity.

spaced attacks. The first began in 1948; the last in 1982. Among these are all foreign military operations by key parties associated with the region's several major wars, including the Palestine War of 1948-1949, the Sinai War of 1956, the June War of 1967, and the Yom Kippur War of 1973. Other interventions contributed to potentially important but oft-forgotten international armed conflicts short of major war. We construct a time series consisting of the number of military interventions initiated by a state against its rival(s) in each year from 1948 to 1991. Interventions are tallied separately for Israeli interventions within Egypt and Syria, and Egyptian and Syrian interventions within Israel.

ARMS TRANSFERS

Kinsella's (1994) analysis employed a measure that represents the dollar-value equivalent of arms transferred from the United States to Israel and from the Soviet Union to Egypt and Syria. The limitations of this sort of measure are candidly discussed by Brzoska (1982). Schrodtt (1983a, 1983b) has argued for another relatively parsimonious indicator, namely, the number of arms transfers programs (as opposed to the number of *weapons* transferred, which will be far greater). The number of arms transfers is operationalized as the number of discrete entries in SIPRI's arms trade registers for a particular recipient during a particular year, each of which may record any number of weapons delivered.⁶ Schrodtt (1983b) preferred this indicator over others that presume to measure military effectiveness, partly because

the purpose of all of these studies is to look at political behavior, not to provide a checklist of what to expect when you roll across the border. [The number of transfers] probably comes closest to a purely political measure, measuring as it does the amount of transfer activity, of any of the measures. (p. 6)

Moreover, despite the considerable effort devoted to constructing military effectiveness indexes (e.g., Sherwin and Laurance 1979; Baugh and Squires 1983), the payoff has been rather meager.

We adopt Schrodtt's (1983a, 1983b) approach here. Tallies from SIPRI's (1975) *Arms Trade Registers* and Brzoska and Ohlson's (1987) *Arms Trans-*

6. As Schrodtt (1983b) noted, the main weakness of this indicator is that it could produce spurious results. For example, one country acquiring several different types of weapons systems, but only a few of each, would receive a higher value than another country acquiring a great many systems, but of only a few different types. He pointed out, however, that countries acquiring small numbers of weapons typically "do not use a cafeteria approach of buying a weapon here, a weapon there, but instead make one or two purchases" (p. 6).

TABLE I
Overt Military Interventions in the Middle East

<i>Intervenor</i>	<i>Target</i>	<i>Start</i>	<i>End</i>	<i>Conflict</i>
*Egypt	Israel	15 May 1948	6 January 1949	Palestinian War
*Syria	Israel	15 May 1948	13 April 1949	Palestinian War
*Israel	Egypt	22 May 1948	6 January 1949	Palestinian War
Israel	Syria	25 May 1948	13 April 1949	Palestinian War
Israel	Egypt	30 June 1950	30 June 1950	Rafah Raid
*Syria	Israel	4 April 1951	9 May 1951	Syria-Israel Conflict
*Israel	Syria	5 April 1951	5 May 1951	Syria-Israel Conflict
*Israel	Egypt	29 August 1953	8 March 1957	Gaza Raids
Syria	Israel	15 March 1954	11 December 1955	Kinneret Shelling
Israel	Syria	15 March 1954	15 March 1954	Kinneret Shelling
Egypt	Israel	25 March 1954	25 March 1954	Egyptian Reprisals
Egypt	Israel	21 January 1955	3 April 1955	Egyptian Reprisals
Israel	Syria	22 October 1955	11 December 1955	Kinneret Raids
Egypt	Israel	5 April 1956	6 April 1956	Gaza Shelling
Syria	Israel	9 July 1957	3 December 1958	Border Shelling
Israel	Syria	9 July 1957	3 December 1958	Border Shelling
Syria	Israel	24 January 1960	12 February 1960	Beit Katzir Conflict
Israel	Syria	31 January 1960	12 February 1960	Tawafiq Raid
Syria	Israel	1 February 1962	17 March 1962	Kinneret Shelling
Israel	Syria	16 March 1962	17 March 1962	Kinneret Raids
Syria	Israel	7 June 1963	10 June 1967	Syrian Border Conflict
Israel	Syria	9 June 1963	9 June 1963	El Douga Raid
*Israel	Syria	6 July 1964	10 June 1967	Syrian Border Conflict
*Israel	Egypt	5 June 1967	10 June 1967	Six Day War
*Israel	Egypt	14 July 1967	7 August 1970	Suez Canal Duels
Egypt	Israel	14 July 1967	7 August 1970	Suez Canal Duels
*Israel	Syria	24 February 1969	27 June 1970	Israeli-Syrian Border
*Syria	Israel	8 December 1969	27 June 1970	Israeli-Syrian Border
Egypt	Israel	29 March 1971	29 March 1971	Canal Conflict
Israel	Egypt	18 September 1971	18 September 1971	Canal Conflict
Israel	Syria	1 March 1972	8 January 1973	Israeli-Syrian Border
Syria	Israel	2 March 1972	2 March 1972	Israeli-Syrian Border
Syria	Israel	10 November 1972	8 January 1973	Israeli-Syrian Border
*Egypt	Israel	6 October 1973	18 January 1974	Plan Badr
*Israel	Egypt	6 October 1973	21 February 1974	Yom Kippur War
*Israel	Syria	6 October 1973	6 June 1974	Yom Kippur War
*Syria	Israel	6 October 1973	24 October 1973	Yom Kippur War
Israel	Syria	9 June 1982	9 June 1982	Beirut Offensive

NOTE: An asterisk (*) indicates that the military intervention initially or eventually took the form of conventional ground operations. The list is derived from Tillema's (1991) Overt Military Intervention database.

fers to the Third World 1971-85 are supplemented on the basis of registers appearing in the SIPRI's (1988-93) *World Armaments and Disarmament* yearbooks. Figure 1 shows time series for American and Soviet arms transfers to rival states in the Middle East. For each year, these are the number of arms transfers initiated or ongoing from the previous year.

ESTIMATION

In probing the relationship between superpower arms transfers and aggression between enduring rivals, we confront a basic question of causality. We are interested in the effect of arms transfers on aggression, yet we must take into account the opposite relationship. Regional conflict is what creates the demand for armaments in the first place. If we can safely infer causality on the basis of temporal order, then one option is to use lagged variables as regressors in a statistical analysis. However, rather than lag our independent variables, we create separate tallies for (1) interventions and arms transfers *initiated* in the current year and (2) interventions and arms transfers that are *ongoing* from the previous year. The former serve as our dependent variables; the latter are our independent variables.

We know from King (1989a) that linear regression analyses of international event counts are inefficient, in part because count variables approximate a Poisson distribution.⁷ The application of ordinary least squares (OLS) regression is therefore not entirely appropriate for our purposes. King (1989a, 128-30) proposed instead a Poisson regression model:

$$E(Y_t) \equiv \lambda_t = \exp(x_t\beta). \quad (1)$$

Here Y_t is the number of military interventions occurring within period t . They are the observable events generated by a state's confrontational posture toward its rival(s), a continuous underlying process designated λ_t . Military interventions are expressed as a function of a vector of explanatory variables, x_t , which include ongoing arms transfers and interventions, and a corresponding vector of influence parameters, β . Our empirical domain is state aggression, not conciliation or cooperation, so λ_t is positive and the functional form

7. The limitations are compounded by the typically high degree of measurement error in the events data used in international relations research. In restricting our attention to overt military interventions, our data analysis is less likely to be affected by measurement error caused by censoring. As Schrodtt (1994) observed, "to the extent that some events are more important than others in determining international behavior, censoring is probably inversely proportional to importance: the more important an event, the more likely it will be reported" (p. 41).

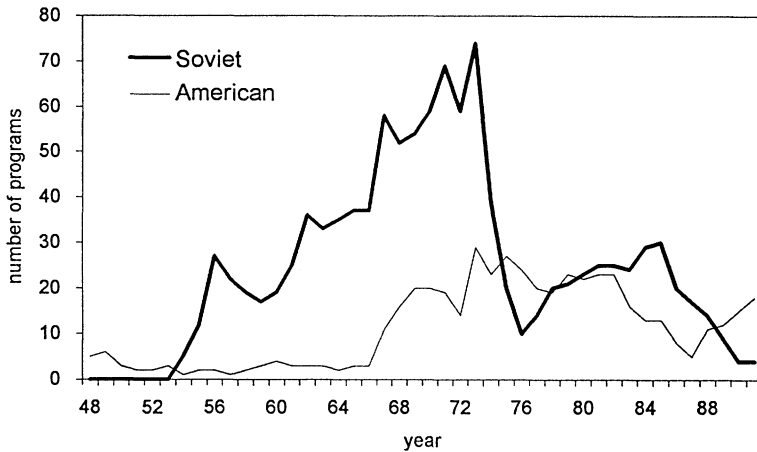


Figure 1: Arms Transfers to the Middle East, 1948-1991

NOTE: Trend lines indicate the number of arms transfer programs initiated or ongoing during each year. Counts are computed from the Stockholm International Peace Research Institute's arms trade registers.

exponential. We are also interested in estimating the reverse relationship. In this case, Y_t designates the number of arms transfer programs, an observed dimension of patron-client relations, λ_t .

The parameters and standard errors are estimated by maximizing the following log-likelihood function:

$$\ln L(\beta|y) = \sum_{t=1}^n [y_t(x_t\beta) - \exp(x_t\beta)]. \quad (2)$$

The ratio of the parameter estimate to its standard error is analogous to the t value used to assess statistical significance in OLS regression.⁸ The analysis covers the time period from 1948 to 1991, so $N = 44$.

8. Estimates of the covariance matrices allow for heteroscedasticity, so the standard errors used to compute t values are "robust" standard errors. Note also that because ours is an analysis of time series, our "sample" is not limited to cases where military interventions were undertaken and so does not suffer from selection bias. See King (1989a, 136-41) for adjustments to the Poisson regression model that allow for truncated-at-zero data distributions.

EMPIRICAL RESULTS

We first examine the relationship between superpower arms transfers and military aggression by enduring rivals at the regional level. These results appear in Table 2. The OMI variables are simply the sum of all overt military interventions undertaken by Israel in Egyptian and Syrian territory and those undertaken by Egypt and Syria in Israeli territory. The arms variables are similarly constructed: the sum of U.S. transfers to Israel and Soviet transfers to Egypt and Syria. Cell entries in each column of the table are parameter estimates from a Poisson regression of the *initiated* variable on the *ongoing* variables plus a constant. The *t* statistic (absolute values) for each estimate appears in parentheses.

The first column in Table 2 suggests that, in the aggregate, ongoing arms transfers to the Middle East had no impact on regional conflict. Superpower arms transfers were driven by the level of conflict in the region (second column), as suggested by the positive and statistically significant regression coefficient on the OMI variable. Also, newly initiated arms transfers were a function of ongoing transfers, which is not surprising if we consider the relative degree of consistency (inertia) in the superpowers' regional arms-supply policies over time.

Despite the regional-level results, it would be premature to conclude that superpower arms transfers had no impact on military aggression in the Middle East. It may be that regional aggregation masks statistically significant relationships at the state level. Table 3 reports the results of an analysis of the disaggregated data. They indicate that superpower transfers to their client states did, in fact, have an impact on military interventions undertaken by those states against their rivals. The effects, however, are not parallel. American arms transfers to Israel showed a tendency to restrain the latter's proclivity to resort to force, as is evident by a negative and statistically significant coefficient on the American arms variable (column 1). Soviet transfers to Egypt and Syria, on the other hand, had the opposite effect. The positive and statistically significant coefficient (column 2) suggests that these recipients of Soviet weaponry became militarily assertive as a consequence. What is more, the impact of superpower arms is the same for both the arms recipient and its rival(s). That is, American transfers not only dampened Israel's tendency to intervene militarily but also had a negative effect on interventions by Israel's Arab rivals (column 2). Soviet transfers enhanced not only the Arab states' propensity to undertake military interventions but also Israel's (column 1).

The last two columns of Table 3 reaffirm the consistency or inertia in superpower arms-supply policy suggested in Table 2. Newly initiated

TABLE 2
Poisson Regression Estimates for
Total Interventions and Superpower Arms Transfers

<i>Regressor</i>	<i>Initiated</i>	
	<i>OMIs</i> ^a	<i>Arms</i>
Ongoing		
Arms	0.002 (0.11)	0.023 (4.54)
OMIs	0.039 (0.23)	0.129 (1.68)
Constant	-0.220 (0.50)	1.525 (8.67)
Log likelihood	-43.50	645.48
<i>N</i>	44	44

NOTE: Each column of parameters is from a Poisson regression of the *initiated* variable on the *ongoing* variables plus a constant. Numbers in parentheses are *t* statistics (absolute values) calculated using heteroskedastic-consistent standard errors.

a. OMI = overt military intervention.

TABLE 3
Poisson Regression Estimates for
Rival Interventions and Superpower Arms Transfers

<i>Regressor</i>	<i>Initiated</i>			
	<i>Israeli OMIs</i> ^a	<i>Arab OMIs</i>	<i>American Arms</i>	<i>Soviet Arms</i>
Ongoing				
American arms	-0.101 (2.29)	-0.129 (3.16)	0.047 (2.38)	-0.008 (0.39)
Soviet arms	0.030 (2.35)	0.050 (3.12)	0.012 (1.54)	0.034 (4.42)
Israeli OMIs	-0.090 (0.26)	0.918 (2.13)	0.101 (0.24)	0.336 (0.86)
Arab OMIs	-0.156 (0.41)	-1.436 (2.46)	0.096 (0.19)	-0.086 (0.21)
Constant	-0.647 (1.62)	-1.088 (2.08)	0.530 (1.82)	1.058 (4.33)
Log likelihood	-32.80	-28.19	58.19	307.81
<i>N</i>	44	44	44	44

NOTE: Each column of parameters is from a Poisson regression of the *initiated* variable on the *ongoing* variables plus a constant. Numbers in parentheses are *t* statistics (absolute values) calculated using heteroskedastic-consistent standard errors.

a. OMI = overt military intervention.

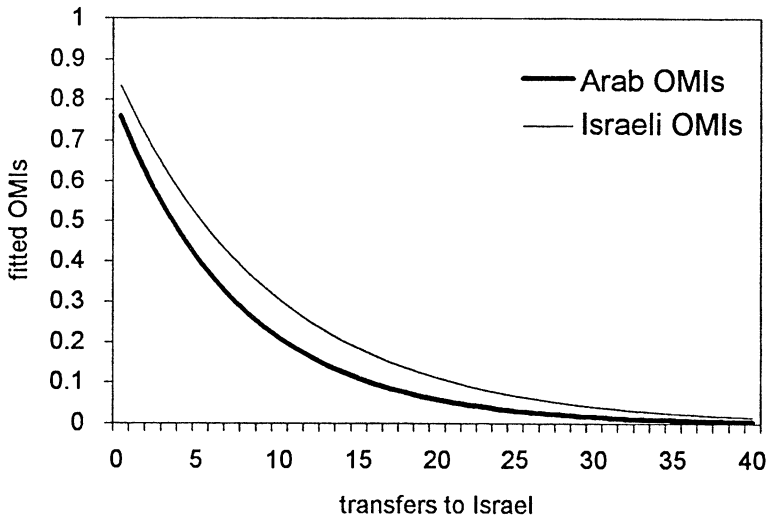
transfers by both the United States (column 3) and the Soviet Union (column 4) were positively related to their own ongoing transfer programs. American transfers, however, may have been driven also by the level of transfer activity by the other superpower (column 3), although the t value here is just shy of the conventional hurdle for statistical significance ($p = .06$). There is no evidence that Soviet transfers were similarly reactive to American transfers (column 4).⁹ Finally, and in partial contrast to the impression given by the results in Table 2, superpower arms transfers were not generally responsive to the number of ongoing military interventions in the region.

Interpreting the parameter estimates in Table 2 is not straightforward because the functional form of equation 1 is nonlinear (for different methods of interpreting nonlinear parameter estimates, see King 1989b, 102-10). The impact of, for example, American transfers on Israeli interventions depends on the values of the other explanatory variables. In a "typical" year, however—one with 0.45 Israeli interventions, the mean for the period—an increase of 20 ongoing American arms transfer programs leads to a decrease of 0.91 Israeli military interventions.¹⁰ The impact of a similar increase in Soviet arms transfers is an increase of 0.27 Israeli interventions. In a typical year of 0.42 Arab military interventions, the impact of 20 additional American arms transfers is a decrease of 1.06 Arab interventions, whereas an additional 20 Soviet transfers leads to an increase of 0.41 interventions.

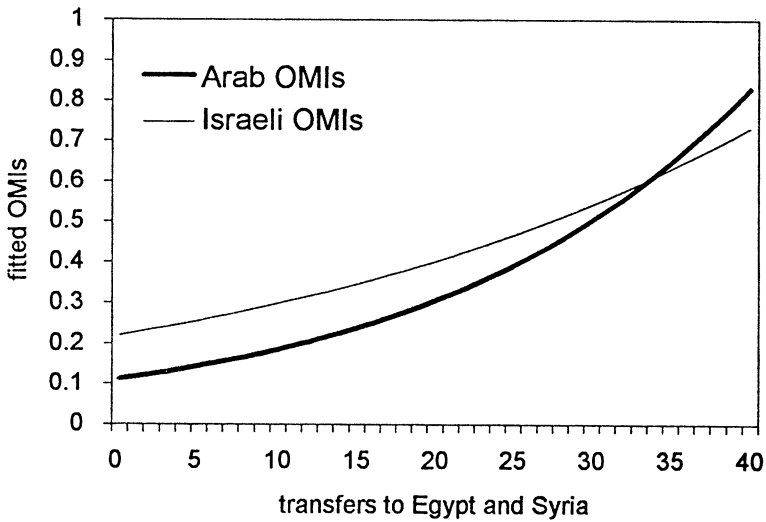
Figure 2 depicts the estimated impact of superpower arms transfers graphically. Fitted values are calculated for equation 1 by holding all other explanatory variables at their period means. Effects (i.e., slopes) vary depending on whether unit changes in transfers are imagined to occur in the context of low or high levels of existing arms transfer activity. In general, however, the curves for American transfers are steeper than those for Soviet transfers, reflecting the magnitude differences in the parameter estimates reported in Table 3. Where the former flatten out, it is in the context of very high levels

9. Kinsella (1994) also reported evidence that the United States was more reactive to Soviet arms supplies than vice versa. These results are contrary to those reported by Mintz (1986a), who found that Soviet (and Warsaw Pact) transfers were more reactive to American (and NATO) transfers. Mintz's results pertain to worldwide arms exports, however, not just exports to the Middle East. In a different study, Mintz (1986b) found evidence of mutual reactivity in arms importation by Israel and its Arab rivals, although here the imports analyzed are those from all sources, not just the superpowers. The tendency of the United States to be more reactive in its foreign policy behavior than the Soviet Union is also apparent in some of the results reported in the reciprocity literature (e.g., Ward and Rajmaira 1992; Goldstein 1991).

10. Because the derivative of λ_i with respect to x_i is $\lambda_i\beta_i$, the computation is $0.45 \times -0.101 \times 20 = -0.91$.



Panel A: American Transfers



Panel B: Soviet Transfers

Figure 2: Estimated Impact of American and Soviet Arms Transfers

NOTE: Figures plot fitted values for $\lambda_i = \exp(x_i\beta)$ against hypothetical values of American arms (panel A) and Soviet arms (panel B) using parameter estimates reported in Table 3 (columns 1 and 2). For each, all other explanatory variables were held constant at their means: Israeli Overt Military Interventions (OMIs) = 0.39, Arab OMIs = 0.32, American Arms = 7.73, Soviet Arms = 18.34.

of existing transfer activity, levels that were not approximated during the period analyzed.¹¹

Because our results suggest that American and Soviet arms transfers to the Middle East worked at cross-purposes during the cold war, it is useful to examine their net impact. Table 4 reports estimated interventions for different combinations of American and Soviet arms-transfer activity. Each entry is the sum of fitted values for Israeli interventions and Arab interventions. Diminishing estimates down the table's main diagonal, which simulates equal infusions of American and Soviet arms, suggest that the negative impact of American transfers more than offset the positive impact of Soviet transfers. In fact, arms infusions were not equal during the period, so it is more appropriate to examine values above the main diagonal.

We conducted one final regression analysis on a subset of the data used to this point. The OMI data set includes 15 instances of intervention involving conventional ground operations between Israel, Egypt, and Syria between 1948 and 1991 (see Table 1). Ground operations seem to represent the crossing of a threshold of sorts—military, political, and/or social-psychological. When launched “out of the blue,” or even when they are escalations from lower levels of military engagement, ground operations are often taken as evidence of the initiator's aggression.

Likewise, the military significance of arms-transfer programs may vary according to the types of weapons supplied. Some kinds of weapons contribute primarily to static defense. Ground-based air defense radar systems and anti-aircraft missiles are examples. Other weapons enhance capabilities to launch offensives within the territories of other states, including attack, bomber, and fighter aircraft; main battle tanks; self-propelled artillery; and armored personnel carriers. Each of these latter types of weaponry contributes to the ability to undertake mobile operations distant from home bases; each aids particularly major ground invasions conducted in the contemporary style with support of combined arms. It is wrong to assume, as Levy (1984) pointed out, that some types of weapons necessarily serve offensive as opposed to defensive purposes. Nevertheless, from a narrowly tactical point of view, transfers of mobile weapons heighten the ability of recipients to take to the offensive against the territories of foreign powers. If arms transfers affect military behavior primarily through the mechanism of enhancing military capabilities, we expect to observe an empirical correlation be-

11. The highest number of ongoing American arms transfer programs was 20, reached during both 1981 and 1982 (period $M = 7.7$, $SD = 6.7$). For Soviet transfers, the highest number of programs underway was 55, in 1971 ($M = 18.3$, $SD = 14.6$).

TABLE 4:
Estimated Interventions for Combinations
of American and Soviet Arms-Transfer Activity

<i>American Arms</i>	<i>Soviet Arms</i>				
	<i>0</i>	<i>10</i>	<i>20</i>	<i>30</i>	<i>40</i>
0	0.79	1.15	1.70	2.55	3.85
10	0.26	0.37	0.55	0.81	1.20
20	0.09	0.12	0.18	0.26	0.38
30	0.03	0.04	0.06	0.09	0.12
40	0.01	0.01	0.02	0.03	0.04

NOTE: Table entries are the sum of fitted values for initiated Israeli Overt Military Interventions (OMIs) and Arab OMIs, using parameter estimates reported in Table 3 (columns 1 and 2). Ongoing Israeli OMIs and Arab OMIs are held constant at their means for the period (0.39 and 0.32, respectively).

tween receipt of offensive weaponry and the initiation of offensive ground interventions.

The regression estimates appearing in Table 5 are derived like those in Table 3, except that here the military intervention variables are constructed from tallies of ground interventions only, whereas the arms transfers variables are constructed from tallies of offensive weapons transfers only.¹² The results suggest that the effect of offensive transfers on the conduct of ground operations does not conform to the more general pattern observed between arms transfers and military intervention. American transfers did not dampen the incidence of military aggression in the Middle East. Nor did Soviet transfers exacerbate it. The most extreme and simplistic view of the impact of superpower-sponsored militarization is therefore not supported by the data: the transfer of offensive weapons did not directly translate into military aggression.

In the last two columns of the table, arms-supply inertia is apparent only in the case of Soviet transfers (column 4). Also in contrast to results reported in Table 3, there is evidence that the United States initiated offensive arms transfer programs in response to ongoing ground operations against its client (column 3). At the same time, Arab aggression prompted the Soviets to scale back on transfers of offensive arms (column 4).¹³ Both superpowers' arms-

12. Conventional ground operations are operationally defined as those involving regular military units of company size or larger that undertake conventional maneuvers, normally to seize, to hold, or to secure territorial objectives. Offensive weapons are defined for present purposes to include (1) attack, bomber, and fighter aircraft; (2) main battle tanks; (3) self-propelled artillery; and (4) armored personnel carriers.

TABLE 5
 Poisson Regression Estimates for Rivals'
 Ground Interventions and Superpower Offensive Arms Transfers

<i>Regressor</i>	<i>Initiated</i>			
	<i>Israeli OMIs^a</i>	<i>Arab OMIs</i>	<i>American Arms</i>	<i>Soviet Arms</i>
Ongoing				
American arms	-0.116 (0.88)	-0.053 (0.30)	0.051 (1.15)	-0.057 (1.11)
Soviet arms	0.002 (0.03)	-0.021 (0.28)	0.019 (0.96)	0.082 (3.78)
Israeli OMIs	-0.353 (0.38)	-0.498 (0.38)	-0.104 (0.30)	-0.446 (1.39)
Arab OMIs	-13.694 (0.14)	-9.138 (3.85)	0.431 (1.63)	-1.069 (2.51)
Constant	-1.286 (2.09)	-1.75 (1.58)	0.118 (0.44)	0.583 (1.81)
Log likelihood	-21.60	-17.10	-33.99	15.43
<i>N</i>	44	44	44	44

NOTE: Each column of parameters is from a Poisson regression of the *initiated* variable on the *ongoing* variables plus a constant. Numbers in parentheses are *t* statistics (absolute values) calculated using heteroskedastic-consistent standard errors.

a. OMI = overt military intervention.

supply policies were therefore more sensitive to ground interventions (at least those undertaken by Egypt and Syria) than to military interventions generally. To the extent that the United States and the Soviet Union sought to manipulate arms transfers as a means to manage local conflict, the impetus appears to have come only after the most flagrant threats to regional (and perhaps global) stability.

DISCUSSION

Our empirical analysis suggests the following. The combined flow of U.S. and Soviet arms to the Middle East had no significant impact on regional conflict

13. Because some military interventions involving ground operations were initiated at lower levels of hostility, the interpretation that we attach to this last set of findings must remain qualified. The independent variable here is ongoing interventions that *initially or eventually* took the form of conventional ground operations. Therefore, the statistical results are consistent with particular cases in which the superpowers stepped up or curtailed the transfer of offensive weapons after the initiation of interventions that would only later escalate to the level of ground operations.

in the aggregate. But when individual state behavior is examined, distinct patterns are apparent. American arms transfers to Israel exercised a restraining influence on both Israel and its Arab rivals, whereas Soviet transfers to Egypt and Syria had the opposite effect. Each superpower's arms transfer activity was closely related to its past transfer activity. The transfer of armaments that we have classified as "offensive" had no independent or unique effect on ground interventions undertaken by either Israel or its Arab rivals. The incidence of ground interventions affected the subsequent transfer of offensive weapons, though, with the United States stepping up such arms supplies in response to Arab operations against Israel and the Soviet Union curtailing them.

These quantitative findings highlight certain dimensions of superpower involvement in the region, dimensions that would not necessarily come to the fore in a strictly qualitative analysis. Our results suggest, for instance, the relative effectiveness of U.S. attempts to encourage Israeli restraint via its arms-transfer policy. In the context of what Israel considered to be Egyptian (and Soviet) cease-fire violations in the aftermath of the war of attrition—namely, the dispatch of SA-3 missiles to the Egyptian interior, along with Soviet crews—the Nixon administration was able to prod the Israelis to return to peace negotiations in January 1971. Promises of military assistance, including previously suspended shipments of F-4 *Phantom* aircraft plus Shrike missiles, contributed significantly to American persuasiveness (Quandt 1977).

The reluctance of the United States to reward military assertiveness did apparently figure into Israel's strategic calculations. After learning of Arab military preparations in October 1973, Golda Meir gave this response to a proposed preemptive strike:

I know all the arguments in favor of a preemptive strike, but I am against it. We don't know now, any of us, what the future will hold, but there is always the possibility that we will need help, and if we strike first, we will get nothing from anyone. (quoted in Reich 1991, 60)

Egypt and Syria did of course attack, and the United States showed little hesitation in mounting a massive resupply effort, which helped Israel reverse losses suffered early in the campaign.

The long process leading to the Camp David Accords and the subsequent peace treaty between Israel and Egypt in 1979 was punctuated by U.S. security guarantees, including a number of arms agreements. American leverage was undoubtedly complicated—but not undermined—by pledges of military equipment (mostly aircraft) to Egypt and Saudi Arabia as well. When Israel agreed to withdraw from Lebanon in 1983, even in the face of Syria's refusal to do so, the Reagan administration not only lifted the ban on the sale of 75 F-16s to Israel but also authorized the sale of additional fighter

aircraft. In short, it appears that "the granting of military assistance, and not the imposition of sanctions, has been more efficacious in securing the desired modifications in Israeli policy" (Reich 1991, 86).

Our findings suggest that a different dynamic was at work in Soviet arms-transfer policies toward Egypt and Syria. Whether Soviet policy could be considered "offensive" as opposed to "defensive" is subject to some debate. Nevertheless, many analysts agree that, during the cold war, the Soviet Union "sought to rally the Arab world into an 'anti-imperialist' front against the west" (Freedman 1991, 143; see also Walt 1987). Because this meshed rather neatly with the confrontational stance taken by Egypt and Syria toward Israel, Soviet arms-transfer policy did not seem a suitable instrument with which to encourage Arab restraint. Nor was restraint always actively sought.

It is probably wrong to interpret our findings as evidence that the Soviets used arms transfers as a means of promoting Arab belligerence. Still, the Soviet Union's willingness to supply weaponry was often interpreted liberally. During the tensions that preceded the June War in 1967, for instance, Nasser asserted that "the Soviet Union stands with us in this battle and will never allow any state to intervene until things go back to what they were before 1956" (quoted in Safran 1969, 269-70). Not only did the Soviets fail to prevent the Israeli preemption, they refused also to resupply Arab armies during the hostilities. On the other hand, when Soviet commitments went beyond materiel, as with the Soviet missile crews that accompanied the dispatch of SA-3 batteries to Egypt in 1969 or the Soviet pilots who flew patrols in the Nile Valley at the same time, it is not altogether unreasonable that Nasser may have perceived meaningful Soviet security guarantees.

Rather than actively encouraging Arab belligerence, the Soviet Union is more accurately seen as unable, sometimes unwilling, to use arms transfers to moderate Egyptian and Syrian behavior. Golan (1991) argued that a big part of the explanation for the Soviet Union's lack of leverage was its vulnerable position in the region. Egypt especially, but to a lesser extent Syria as well, had the option of turning to the other superpower for support should they accept Israel's right to exist. This vulnerability deterred the Soviet Union from pushing its client states too hard toward accommodation. Israel really did not have the option of turning to the Soviet Union for assistance, making it more (but not entirely) susceptible to U.S. pressure.¹⁴

14. We do not want to overemphasize the effectiveness of U.S. arms-transfer policy in altering Israeli behavior, however. Many analysts have, in fact, pointed to Israel's propensity to disregard American wishes despite its dependence on U.S. weaponry (see, e.g., Krause 1991; Nachmias 1988). Although this position too may be overstated, we wish only to emphasize the *relative* effectiveness of U.S. arms-transfers policy as compared to Soviet policy vis-à-vis Egypt and Syria. For an analysis of the conditions under which American attempts to influence recipient behavior have been most successful, see Sislin (1994).

Although the Soviets had been counseling restraint, by the summer of 1973 Sadat was showing strong inclinations to resort to force to recapture territories lost to Israel in 1967. The Soviets did accommodate, and this after Soviet personnel had been expelled from Egypt in July 1972. Egyptian and Syrian air defenses were substantially reinforced with the infusion of large numbers of SA-6 and SA-7 missiles and antiaircraft guns. Offensive capabilities too were enhanced with the dispatch of hundreds of tanks and FROG surface-to-surface missiles. Egyptian and Syrian forces attacked in October.

Ultimately, the Soviet Union lost its Egyptian client, and Syria's stock rose accordingly. Syria was rewarded for its continued confrontational stance, corresponding as it did with the Soviets' desire to limit the gains that the United States might derive in brokering a wider Arab-Israeli peace. Although the Soviets did not fully approve of Syrian adventurism in Lebanon, they did significantly enhance Syrian air defense capabilities with the shipment of advanced SA-5 missile systems (along with Soviet operating personnel) in the aftermath of the military engagement with Israel in 1982. Syria would subsequently become steadfast in its refusal even to consider withdrawing its troops from Lebanon until the Israeli withdrawal was complete. The Soviet Union then kept a rather low profile as Syria became embroiled in a series of military clashes in 1983, first with Israel and then with the United States.

Freedman (1991) suggested that the Soviet Union felt compelled to supply Syria with advanced weapons systems—especially the SA-5s and the SS-21 surface-to-surface missiles, the latter following the September 1983 Syrian-American confrontation—to reassure Assad of Soviet support. The Soviet personnel that accompanied both missile shipments, however, were most likely dispatched because “Moscow was concerned that otherwise Syria would exploit the new weaponry to go to war in pursuit of its Lebanese and Middle Eastern goals” (Freedman 1991, 198). Syria may have been a loose cannon in Soviet eyes, but it was the only cannon the Soviets had.

CONCLUSION

Our quantitative findings parallel those presented by Kinsella (1994). That study employed different measures of both arms transfers and regional conflict and thus reflects favorably on the robustness of the results we report here. They appear not to be an artifact of particular indicators, operational definitions, or data sources. The present analysis, however, sheds some additional light on the relationship between superpower arms transfers and enduring rivalry in the Middle East.

In using the OMI data set, we have focused our attention on military interventions specifically, and not the entire gamut of conflictual interstate behavior. We have also identified the initiator of armed intervention. This level of specificity was aggregated out of the time series in Kinsella's (1994) analysis. In our investigation, we have therefore been able to confirm that American arms transfers had a dampening effect on Israeli *and* Arab military belligerence, whereas Soviet transfers had an exacerbating effect on both. Kinsella's (1994) results, although *consistent* with those we present here, applied only to the general pitch of Arab-Israeli relations.

We have also tried to address another issue in our empirical analysis, at least in part. One of the most difficult questions to answer in this sort of research is whether arms transfers are important because they constitute an enhancement of the recipient's military capability, or because they indicate some level of superpower support for the recipient's regional goals and activities. The dollar value of arms transferred between supplier and recipient is correlated with the military capability embodied in that weaponry, because that measure reflects both the number and sophistication of the weapons shipped. Indeed, Brzoska (1982) has suggested that such a measure is a reasonable indicator of "military use value." It is always difficult to disentangle the military and political dimension of arms transfers, but we suspect that the measure we employ in this study—the number of transfers—is only loosely correlated with transferred military capability. Instead, we suggest, following Schrodtt (1983a, 1983b), that it comes reasonably close to a purely political measure.

We have gone a step further in investigating the link between the transfer of weapons with particular "offensive" mission characteristics and the subsequent initiation of conventional ground operations, that is, those interventions most often associated with military aggression. There is no link. We therefore suspect that a military calculus was not the primary force motivating state behavior in the Middle East. As empirical manifestations of cold war alignments, superpower arms transfers had political content. Their impact was exercised in the context of the patron-client relationships that penetrated the Middle East security complex (see Buzan 1991).

Our results appear to be more nearly consistent with the reformed than the orthodox image of the cold war. Superpower arms transfers to Israel, Egypt, and Syria, taken as a whole, are not consistently related to the initiation of overt military intervention among these parties. This overall result arises, in part, because American and Soviet arms transfers appear to have opposite and compensatory effects on their respective recipients. The net result may be interpreted as benign to the extent that the region suffers no more frequent

international armed conflict than it would otherwise. The possibility remains, of course, that conflicts, although no more frequent, are more intense when they happen and deal more death and destruction as the result of increased armaments obtained from the superpowers.

Some optimism may be warranted regarding the Middle East rivalry specifically. Soviet arms transfers apparently spurred intervention by its clients, even if that ran counter to Soviet intentions. In any event, the Soviet Union has disintegrated and can no longer play the role of Syria's patron. American transfers, which seem to have had a restraining effect on Israeli operations against Egypt and Syria and vice versa, continue. Settlement has already been reached between Israel and Egypt. Partial agreement has followed with the Palestine Liberation Organization as well as agreement in broad principle between Israel and Jordan. It is possible that Syria will follow.

It is less certain that enduring rivalries within other regions conform to exactly the same mold. The reformed perspective suggests that the cold war (and, by implication, superpower arms transfers) generally had no worse than a benign effect on the incidence of international armed conflict. Its end is not necessarily sufficient to resolve other enduring rivalries that may be able to continue under their own steam. There is special reason for concern if American and Soviet roles were reversed within other regions, as well they may have been. Further research is needed regarding the impact of superpower arms transfers on all regional rivalries during the cold war era.

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