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International negotiations are at the core of the resolution of disputes among states. While virtually everyone agrees that conflict resolution through nonviolent negotiations is preferable to settlements imposed by force, we possess scant general knowledge about the principles governing such negotiations. To be sure, there is a large literature that describes the procedures and contents of specific negotiations, but that literature has not provided many insights that can be readily applied beyond the cases investigated. Still, enough is known that some generalizations can be proposed and investigated. The purpose of this study is to evaluate possible applications of certain insights from social choice theory to problems in multilateral negotiations and to illustrate those applications with an assessment of the prospects for a Middle East peace conference.

An important starting point for the investigation is the recognition that multilateral disputes are fundamentally different from bilateral conflicts. Even young children are familiar with a simple procedure for resolving bilateral controversies, at least when the dispute is over something tangible: allow one interested party to divide the tangible good and allow the other to choose his or her portion. However, with three or more competing parties, there is not a simple rule that ensures fairness or predictability. This is the essential problem of multilateral negotiations and, I believe, a major source of conflict, whether among children or among nations. Nevertheless, the knowledge base developed by students of social choice is sufficiently helpful to the study of multilateral negotiations that we should not despair. For some

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categories of negotiation, helpful techniques exist for pointing the way toward prediction and explanation.

Multilateral negotiations are particularly complex if issues are multidimensional and there is no Condorcet winner[1] or if an enforceable structure does not significantly constrain choices. In these cases, any outcome can arise.

Multidimensional issues create opportunities for trades and countertrades among the participants. Unstable coalitions with shifting memberships have incentives first to advance one alternative and then another as members are picked off and shifted from side to side. Efforts to develop general explanations and predictions regarding the outcome of bargaining in such situations are likely to fail because with enough time and information every feasible trade can be defeated by another feasible trade.[2] Furthermore, in n-dimensional majority rule systems, if preference sets are convex[3] over the set of alternative outcomes and if there is no Condorcet winner, then the social preference is completely cyclical over the set of alternative outcomes.[4] In other words, where a majority of influence—whether it be votes, economic clout, or guns—is necessary to ensure a given outcome and there is not a Condorcet winner, then there exists a strategy such that any alternative open to consideration can be selected as the collective decision of the interested parties. Thus, each actor has a strategy that can produce a path of compromises and concessions leading to the actor's preferred outcome. This observation, based on chaos theorems,[5] is profoundly important for students of multilateral negotiations. It reveals that from any starting point we can arrive at any concluding point, opening the door to chaos.

We might conclude from the chaos theorems that we live in a turbulent

1. A Condorcet winner is an alternative which in a complete set of pairwise comparisons defeats each other alternative and is never itself defeated. For an elaboration of the difficulties inherent in multilateral negotiations, see I. William Zartman, "Many Are Called but Few Choose: Managing Complexity in Multilateral Negotiations," working paper series WP-14, Johns Hopkins University School of Advanced International Studies, Baltimore, Md., 1988.

2. See Thomas Schwartz, "No Minimally Reasonable Collective-Choice Process Can Be Strategy-Proof," *Mathematical Social Sciences* 3 (January 1982), pp. 57–72. If time and information are scarce and if preferences are not cyclic, then trades may be effective. In such cases, we may profit from an examination of the manipulation of information through the bargaining or signalling process. See Jeffrey Banks and Joel Sobel, "Equilibrium Selection in Signalling Games," *Econometrica* 55 (July 1982), pp. 647–61.

3. Convexity merely requires that if any point (or possible outcome of a negotiation) α is included in the set of feasible outcomes and if any other point (or possible outcome) β is also in the feasible set, then all points on the straight line that connects α to β are also within the feasible set of outcomes.

4. See Richard McKelvey, "Intransitivities in Multidimensional Voting Models and Some Implications for Agenda Control," *Journal of Economic Theory* 12 (June 1976), pp. 472–82; Richard McKelvey, "General Conditions for Global Intransitivities in Formal Voting Models," *Econometrica* 47 (September 1979), pp. 1085–112; Norman Schofield, "Instability of Simple Dynamic Games," *Review of Economic Studies* 45 (October 1976), pp. 575–94; and Peter Ordeshook, *Game Theory and Political Theory* (New York: Cambridge University Press, 1986).

5. See McKelvey, "General Conditions for Global Intransitivities in Formal Voting Models"; and Schofield, "Instability of Simple Dynamic Games."

world. Yet most of the time this seems not to be so. More often than not, nations appear to abide by precepts of international law and custom and are expected to honor the agreements they make. Indeed, reactions such as shock are far more commonly associated with breaches of international accords than they are with the honoring of such arrangements. In the absence of a fundamental confidence in the orderliness of international relations, trade and investment would surely cease, military alliances would disappear or be inconsequential, and travel and communication across borders would be a most risky business.

Several constraining factors help produce order out of chaos. Kenneth Shepsle and Barry Weingast, for example, show that the imposition of institutional arrangements or rules can induce equilibria where chaos might otherwise reign.[6] Their formal proof is an extension of well-known laws such as Duverger's law, which demonstrates the conditions under which multilateral disputes are likely to reduce to bilateral confrontations. However, many argue that international relations are distinguished by the absence of structure and binding rules. In those contexts in which international relations are anarchic,[7] lacking the very structural arrangements that help ensure stable policy outcomes, factors other than structure must prevail if order is to emerge from potential chaos. To the extent that multilateral negotiations are constrained by enforceable, prearranged rules, even multidimensional issues may have predictable outcomes. But if prearranged rules cannot be enforced because, for instance, one or more parties can simply refuse to continue to participate or because anarchy, rather than order, prevails, then other constraints must exist if we are to derive reliable, robust generalizations.

Two commonly assumed constraints that permit prediction and explanation in the context of multilateral negotiations are that issues are unidimensional and that an actor's utility for potential outcomes diminishes steadily the farther in Euclidean distance a possible outcome is from that actor's ideal point. Unidimensionality is a substantial restriction on the domain within which generalizations about multilateral negotiations will be applicable. Still, it is not an heroic assumption, nor is it a factor remote from the consideration of national negotiators. During the Kissinger years, for instance, a widely debated question was whether U.S.–Soviet negotiations

6. See the following articles by Kenneth Shepsle and Barry Weingast: "Structure-Induced Equilibrium and Legislative Choice," *Public Choice*, vol. 37, no. 3, 1981, pp. 503–19; and "The Institutional Foundations of Committee Power," *American Political Science Review* 81 (March 1987), pp. 85–104.

7. For a discussion of anarchy in the international system, see Kenneth Waltz, "The Origins of War in Neorealist Theory," in Robert Rotberg and Theodore Rabb, eds., *The Origin and Prevention of Major Wars* (Cambridge: Cambridge University Press, 1988), pp. 39–52. For further discussion of the applicability of the social choice literature to international relations, see James D. Morrow, "Social Choice and System Structure in World Politics," *World Politics* 41 (October 1988), pp. 75–97.

should proceed on the basis of the linkage of issues. Whether, for instance, U.S. exports of wheat to the Soviet Union should depend on Soviet human rights policy and, in particular, on the openness of the Soviet Union to Jewish emigration was widely discussed. Linkage of issues was an attempt to add multidimensionality to questions that had previously been treated as unidimensional and separable. In this article, I focus only on multilateral negotiations from the perspective of unidimensional, separable issues.

The utility, or value, that each actor attaches to alternative outcomes is, of course, critical to any theory that hopes to explain why one policy is chosen over another. Knowledge of the order in which alternatives are preferred is essential, but knowing the origin of those preferences is not. Whatever process leads to given preferences, we can be confident that decision makers will act in what they *believe* is their best interest, given the preferences that they hold. Of course, as these beliefs change, their actions may change. This, however, does not necessarily imply a shift in preferences or objectives so much as an alteration of circumstances (or beliefs about circumstances) surrounding the alternative choices they face.

In the analysis presented here, I assume that alternatives can be arrayed on a line or continuum. I also assume that each actor has a most preferred alternative and that options closer on the line to that alternative are valued more highly than alternatives that are farther away. In other words, I assume that preferences are single-peaked. If this assumption is relaxed, then any outcome is possible in a negotiation simply through the manipulation of the agenda that determines the order in which options are considered. When preferences are *not* single-peaked, we currently can only account for the results of multilateral negotiations by focusing attention on such considerations as the relative skill of the participants in controlling the agenda or in establishing the procedures for evaluating and assessing the pulls and tugs of the competing parties. It is in this sense, incidentally, that we can understand both the protracted discussion over the shape of the negotiating table during the Paris peace talks that ended the Vietnam War and the current debate over whether a Middle East peace is best achieved by sets of bilateral negotiations between Israel and its foes or by a multilateral peace conference in which some or all interested parties are represented.

The two constraints imposed on my investigation—single-peakedness and unidimensionality—should not be viewed as so severe or so simplifying as to render subsequent analysis trivial or suspect. There is an extensive empirical foundation that suggests that these assumptions do not violate reality very severely. In fact, the procedure for making predictions (outlined here and explained in greater depth elsewhere[8]) has been applied to a broad array of political, social, military, and economic issues involving more than sixty countries. It has been successfully applied to internal policy decisions in

8. Bruce Bueno de Mesquita, Alvin Rabushka, and David Newman, *Forecasting Political Events: The Future of Hong Kong* (New Haven, Conn.: Yale University Press, 1985).

nations as diverse as Canada, India, Iran, Italy, Mexico, the Philippines, Saudi Arabia, the Soviet Union, and the United States, and it has also been applied to multilateral international negotiations in such settings as the Organization of Petroleum Exporting Countries (OPEC), the North Atlantic Treaty Organization (NATO), the Association of South East Asian Nations (ASEAN), and the Asian Development Bank (ADB).

An approach that helps predict the most likely outcome in a multilateral negotiation is surely of significant value, but it is inadequate for understanding the political dynamics that produce a settlement and thereby reduce the risks of conflict escalation. I will be concerned, therefore, with specifying a model of perceptions that helps us comprehend the environment within which bargaining takes place and which influences the dangers of escalation. I will also suggest something about how the essentially static model proposed here can be used in a manner that allows us to describe the process by which negotiations unfold, moving from one set of circumstances and outcomes to another and yet another. Finally, I will apply the model to the prospects for a Middle East peace conference.

Predicting the outcome of multilateral negotiations

When issues are unidimensional and preferences are single-peaked, there is always a Condorcet winner, an alternative that cannot be beaten by any other alternative. Multilateral negotiations, however, are not elections in which each voter casts a single vote. Nevertheless, Duncan Black's median voter theorem and Anthony Downs' spatial theory of voting provide a theoretical foundation from which we can gain assistance in predicting the resolution of multilateral disputes.[9] To do so requires a few simple assumptions.

Let $N = \{1, 2, 3, \ldots, n\}$ be the set of actors trying to influence a multilateral negotiation. Let $M = \{1, 2, 3, \ldots, m\}$ be the set of all issues discussed in a multilateral negotiation, and let R_m be the real number line segment, bounded for convenience between 0 and 1, that describes the policy continuum for some issue m selected from among the larger set of issues M. Let each actor i, $i \in N$, have its own *most preferred* resolution of issue m, $X_i^*(m)$, such that on R_m, $0 \leq X_i^*(m) \leq 1$. For any proposal $X(m) \in R_m$, i's utility for

9. See Duncan Black, *Theory of Committees and Elections* (Cambridge: Cambridge University Press, 1958); and Anthony Downs, *An Economic Theory of Democracy* (New York: Harper & Row, 1957). See also Bruce Bueno de Mesquita, "Forecasting Policy Decisions: An Expected Utility Approach to Post-Khomeini Iran," *PS* 17 (Spring 1984), pp. 226–36; James Morrow, "A Spatial Model of International Conflict," *American Political Science Review* 80 (December 1986), pp. 1131–50; T. Clifton Morgan, "A Spatial Model of Crisis Bargaining," *International Studies Quarterly* 28 (December 1984), pp. 407–26; T. Clifton Morgan, "Power, Resolve and Bargaining in International Crises: A Spatial Theory," *International Interactions*, vol. 15, nos. 3 and 4, 1989, pp. 289–312; and T. Clifton Morgan, "Issue Linkages in International Crisis Bargaining," *American Journal of Political Science* 34 (May 1990).

$X(m)$ is a monotonically decreasing function of the distance between $X(m)$ and $X_i^*(m)$, so that $U^iX(m) = f^-|X(m) - X_i^*(m)|$.

Each actor i is assumed to be an expected utility maximizer, by which I mean that i calculates the expected value of alternative strategies and pursues the one that he or she *believes* is in his or her best interest. Of course, that belief may be incorrect.[10]

Of the infinitely many possible proposals, $X(m)$, to resolve issue m, how are we to predict which will be chosen? To answer this question, let us first learn a little more about each actor i. In this analysis, each actor is endowed with three characteristics. Each actor attaches some utility to each possible outcome $X(m)$ on issue m, as already noted. Each participant in the negotiations is also endowed with the power or clout to influence decisions. Let C^i be the clout of actor i, such that the sum of the clout of the participants in a multilateral dispute is 1, so that C^i is actor i's share of the total influence in the negotiations. Each participant has its own agenda of priorities or salience that it attaches to the issues that must be confronted. Thus, i may attach considerable importance to issue R_1 and considerably less importance to issue R_2. The salience of issue m for actor i can be denoted as $S^i(m)$. From the above discussion, then, we see that each actor can be described by a vector of values $[U^iX(m), C^i, S^i(m)]$ for each issue.

Multilateral negotiations in international settings rarely, if ever, involve formal voting. Nevertheless, the exercise of power may be understood as a form of voting. When alternative courses of action are pitted against each other, the array of forces on either side often determines victory. Of course, this array depends on more than the relative power of the competing interests. It depends also on the willingness to spend influence on the issue in question $[S^i(m)]$—a budget constraint—and on the intensity with which each actor prefers one proposed settlement, such as $U^iX_j(m)$ (j's proposal) to another, such as $U^iX_k(m)$ (k's proposal). Thus, each group has a total number of potential "votes" equal to its capabilities, but it discounts those "votes" by its salience for the issue and by how much it prefers the particular options

10. Such an actor neither needs complete information nor needs to examine all alternatives. See John Harsanyi, *Rational Behavior and Bargaining Equilibrium in Games and Social Situations* (Cambridge: Cambridge University Press, 1977); Reinhart Selten, "Reexamination of the Perfectness Concept for Equilibrium Points in Extensive Games," *International Journal of Game Theory*, vol. 4, no. 1, 1975, pp. 25–55; David Kreps and Robert Wilson, "Sequential Equilibria," *Econometrica* 50 (July 1982), pp. 863–94; and In-koo Cho and David Kreps, "Signaling Games and Stable Equilibria," *Quarterly Journal of Economics* 102 (May 1978), pp. 179–222. For examples in international relations, see James Alt, Randall Calvert, and Brian D. Humes, "Reputation and Hegemonic Stability," *American Political Science Review* 82 (June 1988), pp. 445–66; Robert Powell, "Crisis Bargaining, Escalation, and MAD," *American Political Science Review* 81 (September 1987), pp. 717–35; James D. Morrow, "Capabilities, Uncertainty and Resolve," *American Journal of Political Science* 33 (November 1989), pp. 941–72; and Bruce Bueno de Mesquita and David Lalman, "Domestic Opposition and Foreign War," *American Political Science Review* 84 (September 1990).

under consideration. The "votes" cast by actor i in a comparison of alternatives $X_j(m)$ and $X_k(m)$ are said to equal V_i where:

$$V_i \text{ given } [X_j(m),X_k(m)] = C^i \times S^i(m) \times \{U^i[X_j(m)] - U^i[X_k(m)]\} \quad (1)$$

The sum of "votes" across all actors in a comparison between $X_j(m)$ and $X_k(m)$ equals V_{jk} where:

$$V_{jk} = \sum_{i=1}^{n} V_i \text{ given } [X_j(m),X_k(m)] \quad (2)$$

If V_{jk} is greater than 0, then $X_j(m)$ defeats $X_k(m)$, indicating that the tacit coalition in favor of j's proposal is more motivated and powerful than the coalition supporting k's proposal. If V_{jk} is less than 0, $X_j(m)$ is defeated by $X_k(m)$. And if V_{jk} equals 0, the competing interests are collectively indifferent toward the two alternatives.

In any negotiation, there are likely to be many more than two proposed settlements. By pitting all alternatives against one another two at a time, the Condorcet winner is found and is the predicted outcome.[11] In practice, of course, it is impractical to compare an infinite number of alternatives. But we can set a sufficiently fine gradient on R_m to ensure with a high probability that we can arrive at a prediction that is sufficiently close to the precise contents of a settlement as to be acceptably accurate. Such a procedure will be followed here by first finding the winning position among those outcomes explicitly endorsed by at least one actor—that is, the winner among the set of $X_i(m) \in R_m$ for all $i \in N$. Then, at equal intervals, 100 hypothetical positions between the preliminary winner and the next position to the right and to the left of that position will be searched, repeating the calculations of V_i and V_{jk}, for the $[X_j(m),X_k(m)] \in R_m$, thereby locating the compromise or settlement hypothesized to be likely to dominate the multilateral discussions.

Altering the expected outcome: manipulating perceptions

The forecasting element of the model reveals what decision makers should expect *if* all of them act sincerely in accordance with their underlying preferences. What, however, can a decision maker do if the predicted outcome is not to his or her liking? Is there anything that can be done to improve the expected outcome?

It is possible for actors to cooperate in private, sophisticated deals to rearrange outcomes. The perceptual component of the model guides the analyst's inquiries so as to facilitate an understanding of which "deals" are

11. Black, *The Theory of Committees and Elections*.

feasible and which are not.[12] If an interest group is dissatisfied with the *expected* outcome, there are essentially four courses of action, discussed in order of increasing difficulty to implement, by which this group (the focal group) might improve its prospects. First, the group leadership can alter its own level of effort—that is, it can change $S^i(m)$. Second, it can shift its revealed position, selecting $X_i(m)$ such that $U^iX_i^*(m) \neq U^iX_i(m)$. Third, it can influence groups that are willing to make concessions and persuade these groups to alter their level of effort—that is, it can change $S_k(m)$. Or, fourth, it can influence groups that are willing to make concessions and persuade these groups to alter their revealed position, selecting $X_k(m)$ such that $U^kX_k^*(m) \neq U^kX_k(m)$.

Decision makers interested in ascertaining what leverage they can exert could benefit from estimating the beliefs held by each other actor. To do so requires a focus on the three characteristics—$U^iX(m)$, $S^i(m)$, and C^i—used both to estimate each actor's expected utility from challenging or not challenging the policy outcome of each potential rival and to approximate the expected utility each actor i believes its rival expects to derive from challenging or not challenging the policy goals of i. In the model envisioned here, decision makers are assumed to calculate the expected consequences of challenging and of not challenging alternative proposals. The expected utility for i from not challenging rival j's position [$E^iU^iX_j(m)$ given $\sim c$] is estimated by projecting what the relevant decision maker believes is likely to happen in the absence of the exertion of pressure on a rival to persuade the opponent to alter its behavior. One of three contingencies may arise. First, i may anticipate that with some probability (Q^i) rival j will not alter its current policies over the time period of concern to i, and so i will derive whatever utility it receives from the preservation of the status quo between itself and j [$U^iSQ_j(m)$]. Alternatively, i may anticipate that j's position on the issues will change, in which case there is some chance (T^i) that, from i's perspective, the policies of j are anticipated to get better (with $U^iB_j(m)$ being the associated utility) or to get worse [$U^iW_j(m)$], so that $U^iB_j(m) >$

12. The model here is not game theoretic. It does, however, contain a rational expectations component that looks at anticipated courses of action in the event that a group does not challenge a policy proposal. Decision theoretic models with such components tend to converge on game theoretic equilibria. See the following working papers of Albert Marcet and Thomas Sargent: "The Fate of Systems with 'Adaptive Expectations' " and "Convergence of Least Squares Learning in Environments with Hidden State Variables and Private Information," mimeographs, Hoover Institution, November and December 1987. For a game theoretic treatment of problems related to those investigated here, see the following works of Bruce Bueno de Mesquita and David Lalman: "Domestic Opposition and Foreign War"; "The Road to War Is Strewn with Peaceful Intentions," in Peter Ordeshook, ed., *Models of Strategic Choice in Politics* (Ann Arbor: University of Michigan Press, 1989), pp. 253–66; and *War and Reason* (New Haven, Conn.: Yale University Press, forthcoming).

$U^iSQ_j(m) > U^iW_j(m)$. Then i's expected utility if it leaves j's proposal unchallenged is:

$$E^iU^iX_j(m) \text{ given } \sim c = Q^i[U^iSQ_j(m)] + (1 - Q^i)[T^iU^iB_j(m) + (1 - T^i)U^iW_j(m)] \quad (3)$$

When i contemplates challenging j, i must take into account the probability that j does not care enough about issue m to challenge any proposed settlement, including i's policy preference $[(1 - S^j)(m)]$, or that j will resist i's proposal, in which case there is some likelihood that i will succeed in its efforts to enforce its wishes on $j(P^i)$ and some likelihood that it will fail. If i succeeds, then i will derive the utility associated with convincing j to switch from its current policy stance to that supported by i. This is denoted by $U^iS(m)$, with $U^iS(m) = U^i[X_i(m) - X_j(m)]$. If i fails, then it confronts the prospect of having to abandon its objectives in favor of those pursued by j, denoted by $U^iF(m) = U^i[X_j(m) - X_i(m)]$. Then i's expected utility for challenging j's proposed resolution of the multilateral dispute is:

$$E^iU^iX_j(m) \text{ given } c = S^j(m)\{P^i[U^iS(m)] + (1 - P^i)[U^iF(m)]\} + [1 - S^j(m)][U^iS(m)] \quad (4)$$

so that the overall expected utility of i is:

$$E^iU^iX_j(m) = [E^iU^iX_j(m) \text{ given } c] - [E^iU^iX_j(m) \text{ given } \sim c] \quad (5)$$

If equation (5) is greater than 0, then i believes that challenging j's position is superior to not challenging it. If (5) is less than 0, then not challenging is preferred and i is said to be deterred. If (5) equals 0, then i is indifferent about challenging or not challenging j's proposed settlement. Since each actor evaluates equation (5) vis-à-vis each other actor and since the estimates of P^i include calculations of how all other parties will respond to a confrontation between a given pair i and j (placing each other actor in i's coalition, j's coalition, or in a neutral position), the estimation of a complete matrix of expected utilities should fully capture *all* possible confrontations, negotiations, and capitulations among *all* the participants in the relevant political arena.

The terms in equation (5), with the exception of utility terms, are measured in accordance with detailed procedures that David Lalman and I described in an earlier publication.[13] Utilities for specific proposals, such as

13. Bruce Bueno de Mesquita and David Lalman, "Reason and War," *The American Political Science Review* 80 (December 1986), pp. 1113–31. The measurement of the probability of success for i's preferred outcome in a competition with j's preferred outcome is accomplished using the following specification:

$$P^i[X_i(m) \text{ given } X_j(m)] = \frac{\sum_{k \ni ipj}^{n} V_k \text{ given } [X_i(m), X_j(m)]}{\sum_{k=1} |V_k \text{ given } [X_i(m), X_j(m)]|}$$

with p denoting preference and with utilities (U terms) and saliences (S terms) in V_k defined as described below.

$X_j(m) \in R_m$, based on spatial data depicting the location on R_m of each actor's most preferred outcome $[X_i^*(m)]$, are evaluated so that:

$$U^iX_j(m) = 1 - |[X_i^*(m) - X_j(m)]|^{ri} \quad (6)$$

with risk (ri) estimated as described earlier.[14] Utilities for the marginal gains [$U^iS(m)$ and $U^iB_j(m)$] or losses [$U^iF(m)$ and $U^iW_j(m)$] from shifts to alternative proposals are evaluated, using the basic building block just described, in the manner also delineated earlier.[15]

Equation (5) is estimated from four perspectives, with relevant superscripts on equation (5) indicating from whose perspective the calculation is being viewed: first, i's expected utility vis-à-vis each rival j's proposal; second, i's perception of each j's expected utility vis-à-vis i's proposal; third, j's expected utility vis-à-vis each i's proposal; and, fourth, j's perception of each i's expected utility vis-à-vis j's proposal.

These four perspectives thus describe each actor's perception of its relationship vis-à-vis each other actor. Although these relationships can be described in continuous form,[16] for the purposes of this article I summarize the relationships according to six distinct circumstances:

Fight: An actor (for example, actor i) is likely to anticipate a destablizing confrontation with a given rival (rival j) if i's expected utility for challenging the rival's proposal is greater than its expected value for not challenging [$E^iU^iX_j(m) > 0$] and if i believes the same is true for its rival's expectations [$E^iU^jX_i(m) > 0$].

Actor j compromises: If actor i expects to realize a net gain from challenging opponent j and if i believes that the opponent is prepared to lose [$E^iU^iX_j(m) > 0$ and $E^iU^jX_i(m) < 0$] but is not prepared to lose as much as is being demanded [$E^iU^iX_j(m) > |E^iU^jX_i(m)|$], then i is likely to anticipate a compromise in which the negotiated settlement favors its objectives.

Actor i compromises: If actor i believes the tables are turned [$E^iU^jX_i(m) > 0$ and $E^iU^iX_j(m) < 0$ and $E^iU^jX_i(m) > |E^iU^iX_j(m)|$], then i is expected to compromise and accept a negotiated settlement favoring the objectives of its rival.

Actor j capitulates: If actor i's evaluation of equation (5) is positive but is smaller in absolute value than its negative estimate of opponent j's expected utility [$E^iU^iX_j(m) > 0$ and $E^iU^jX_i(m) < 0$ and $E^iU^iX_j(m) < |E^iU^jX_i(m)|$], then i is likely to anticipate a capitulation by rival j.

Actor i capitulates: If the tables are turned [$E^iU^jX_i(m) > 0$ and $E^iU^iX_j(m) < 0$ and $E^iU^jX_i(m) < |E^iU^iX_j(m)|$], then i is expected to capitulate to the policy proposal of rival j.

14. See Bruce Bueno de Mesquita, "The War Trap Revisited," *American Political Science Review* 79 (March 1985), pp. 157–76. For further discussion of the measurement of risk, see James D. Morrow, "On the Theoretical Basis of a Measure of National Risk Attitudes," *International Studies Quarterly* 31 (December 1987), pp. 423–38.

15. See Bueno de Mesquita and Lalman, "Reason and War."

16. Ibid.

Actor *j*'s perspective

Actor *i*'s perspective	*Fight*	*Actor j compromises*	*Actor i compromises*	*Actor j capitulates*	*Actor i capitulates*	*Mutual deterrence*
Fight	clash	negotiate	clash	*i* defeats *j*	clash	*i* bullies *j*
Actor j compromises	clash	negotiate	clash	*i* defeats *j*	clash	*i* bullies *j*
Actor i compromises	negotiate	status quo	negotiate	status quo	negotiate or *j* defeats *i*	status quo
Actor j capitulates	clash	negotiate or *i* defeats *j*	clash	*i* defeats *j*	clash	*i* bullies or defeats *j*
Actor i capitulates	*j* defeats *i*	status quo	*j* defeats *i*	status quo	*j* defeats *i*	status quo
Mutual deterrence	*j* bullies *i*	status quo	*j* bullies *i*	status quo	*j* bullies or defeats *i*	status quo

FIGURE 1. *Mapping of perspectives and corresponding outcomes*

Mutual deterrence: If actor *i* believes that it and its foe both expect to lose more than they expect to gain from a confrontation [$E^iU^jX_i(m) < 0$ and $E^iU^iX_j(m) < 0$], then *i* is likely to anticipate a standoff in which each actor is deterred from challenging the other.

Figure 1 summarizes the thirty-six circumstances that follow for each dyad from all the possible combinations of perceptions. By identifying the circumstance in which each pair falls in a multilateral setting, we are able to evaluate all of the interactions that can arise and are thereby able to assess the likely conditions under which an issue might be settled. It is important to recall, in this regard, that each pairwise relationship has already taken into account all third-party interactions through the calculation of the appropriately discounted effort of each third party for each member of the pair under review.

The process of negotiations: modeling comparative statics

In applying the model just described, it often is of interest to ascertain how strategic interactions can shift expected outcomes toward or away from particular results. This is the essential process of negotiation. To the extent that decision makers behave *as if* they make the calculations described above, the model proposed here can be a useful tool, but first it must be sensitized to the strategic efforts to manipulate outcomes that are at the heart of negotiations. It is to such strategic behavior that I now turn my attention.

The easiest strategic modification for an interested party, as noted in the previous section, is to alter its level of effort. Sometimes, by spending more resources and carrying a bigger stick, a group is able to offset its political opposition. By doing so, the group enhances its relative "votes," shifting the expected outcome in the direction it desires. Depending on the particular structure of interests and influence, it is also possible for increased effort to facilitate the formation of a countercoalition, thereby diminishing the prospects of moving the political settlement in the desired direction. The model presented here allows us to *simulate* the effects of shifts in the level of effort so as to identify the optimal resource expenditure. Furthermore, the model reveals cases in which no change in the level of effort by the interested group will appreciably affect the predicted outcome. In such cases, other strategies, alone or in combination with this one, may be necessary.

Shifts in policy stance are commonplace during negotiations. Indeed, in some sense this is the essence of bargaining; it is similar to what Robert Keohane means by cooperation.[17] As interested parties move to more moderate or more extreme positions, they alter the level of support or opposition to their position as they signal others about their flexibility on the issue being negotiated. Sometimes, by moderating a position, a group is able to attract support from significant actors who previously had been in the opposition. It appears, for instance, that Cardinal Sin's decision to distance the Catholic church from Ferdinand Marcos, moving the church more toward the "center," played a central role in attracting moderate elements in the Philippine business community away from the Marcos coalition of cronies and toward a new, centrist group of concerned business executives and military leaders. Thus, by compromising on his public stance toward Marcos, the Cardinal may have changed the *expected* outcome, moving it closer to his true, underlying preference than otherwise would have been the case. And, in the process, he may have facilitated the relatively peaceful fall of the Marcos government and ascent of President Aquino.

Other times, however, moderation fosters outcomes supported by extremists. This can be accomplished by breaking away marginal elements from

17. Robert Keohane, *After Hegemony* (Princeton, N.J.: Princeton University Press, 1984).

an opposed coalition, pivoting just enough power in a polarized situation to force a sharp swing toward the opposite extreme. Duarte's land reform program in El Salvador in the early 1980s appears to have had this effect. Rather than strengthening the center (one of Duarte's central goals), the land reform program seems to have unintentionally driven moderate business executives into the hands of the extreme right out of fear that their private firms would be nationalized. This, in turn, may have been a key factor in encouraging moderate leftists in El Salvador to shift farther to the left as a reaction to increased fears of the now-strengthened hard right. As with Cardinal Sin's shifting public stance, beliefs about the expected consequences may have led decision makers in El Salvador to alter their public position, thereby leading to a rearrangement of coalitional support. In Duarte's case, the effort at a sophisticated strategy to strengthen the center and stabilize the government failed, since his apparent *ex ante* beliefs about the consequences of his sophisticated strategy turned out to be incorrect.

It is also true that moves away from moderation and toward more extreme positions can shift outcomes toward the center or away from the center, depending on the particular structure of interests in the multilateral negotiation setting. Since that settting is defined by the structure of preferences, capabilities, and saliences within the model proposed here, the precise effects of a shift in position can be ascertained through simulation, by moving group positions on the issue continuum utilized by the model and then solving the model under these altered assumptions. Perhaps such simulations of alternative scenarios can even help forestall the implementation of some sophisticated strategies that backfire in actual practice.

If a particular group is unable through its own actions to alter appreciably the expected outcome of a negotiation in the direction it desires, it may consider the possibility of coordinating with other groups. Obviously, this is more difficult and hence more costly than moves that can be implemented unilaterally. When coalition building is dictated, the model can be especially helpful in providing useful guidance. The perceptual analysis, for instance, reveals which groups *believe* that they should compromise or grant concessions to which particular other groups. Thus, using the perceptual analysis, any interested group (or an interested analyst) can identify the candidates for strategic encounters. A group leader should, for instance, be most inclined to pressure those who believe they must capitulate to the group's demands. Second most attractive would be those who believe that they will need to offer concessions to the group in question. By focusing efforts on groups holding such beliefs, the interested party can most efficiently organize a coalition—with altered levels of effort, shifts in revealed policy preferences, or both—and thereby shift the outcome to be most in line with the organizing group's true preferences. Again, simulation facilitates evaluating the impact of alternative coalitions so that the one actually constructed yields the best possible outcome at the lowest political cost.

The techniques just described allow the analyst to use comparative statics to evaluate the impact of alternative strategies. This can be done from the perspective of any interest group or of *all* groups. What is more, the process can proceed in stages, first identifying the best strategic reaction to the initial (base-case) circumstance, next analyzing strategic responses to the initial strategy to alter the base case, and so forth. In this way, a "movie" of the unfolding process of negotiations can be constructed.[18]

The prospects for negotiations in the Middle East

If ever the world has known a conflict in which the participants seem to have an infinite time horizon and infinite patience for avoiding cooperation, it is the conflict between the Israelis and the Arabs. The first recorded war included the biblical Abraham, founder of the Jewish faith, as a combatant against ancient kings of the fertile crescent. Today, several millennia later, war in the now not-so-fertile crescent remains perhaps the greatest threat to world peace. The rival states have waged conventional war, cold war, terrorist war, high-technology war, and holy war against one another for so long that many despair of the possibility of ever achieving peace in the Middle East. Yet efforts to find a settlement of the issues that divide Arabs from Israelis persist and occasionally bear fruit.

The Camp David Accords inspired many in the United States, Egypt, and Israel to believe that bilateral negotiations could pave the way for a series of dyadic settlements of disputes in the Middle East. And indeed it must be noted that Israel and Egypt have sustained generally businesslike—and sometimes friendly—relations since Anwar Sadat's courageous trip to Jerusalem. But "peace fever" has not spread among Israel's other adversaries, nor even among the Arab states themselves. The disappointment of the decade of the 1980s in the Middle East has been that the journey toward peace which began in the previous decade seems not to have progressed toward its goal. Efforts at a string of bilateral settlements seem to have failed. For more than a decade, the Soviet Union has promoted the idea of a multilateral conference on the Palestinian question, the seemingly central issue dividing Israel and the Arab states since the 1967 war. The United States has gradually come to support calls for a broad-based multilateral conference, and even important political factions within Israel have accepted the notion of such an approach to resolving outstanding issues.

In this context, to illustrate the use of the model described above, I focus on two issues or questions of central importance to the prospects for a Middle

18. For a detailed example (drawn from Italian politics) of such an application of the model, see Douglas Beck and Bruce Bueno de Mesquita, "Forecasting Policy Decisions: An Expected Utility Approach," in S. Andriole, ed., *Corporate Crisis Management* (Princeton, N.J.: Petrocelli Books, 1985), pp. 103–22.

East peace: What sort of negotiation setting is likely to be used to attempt to resolve the Arab–Israeli conflict? What are the likely terms of settlement between the Palestinians and the Israelis in the event they negotiate with one another? To respond to each of these questions, I apply the model outlined above to data on the preferences, capabilities, and saliences of the set of actors likely to try to influence any decisions in a multilateral Middle East peace conference.

The data

Data on the proposed resolution of the setting within which Middle East negotiations can take place, including who would try to influence a decision, what the relative power or clout of each actor is, and estimates of how important this issue is to the players, were obtained from Shmuel N. Eisenstadt of the Hebrew University of Jerusalem during the summer of 1987.[19] Data on the likely terms of a Palestinian–Israeli settlement were obtained from Harold Saunders of the Brookings Institute during the winter of 1989.[20]

The issue continuum for the first issue ranges from strictly bilateral negotiations at one extreme to a conference with full participation, including the Palestine Liberation Organization (PLO), at the other extreme. Table 1 lists the data on capabilities and salience for the issue, while Figure 2 displays the issue continuum regarding the setting of negotiations.

The forecast, grounded in the solution to equation (2) for the base-case data, is for a conference setting that includes some Palestinian representation but not necessarily official participation by the PLO. Neither the full participation by the PLO, which has been supported in the past by the Soviets and the PLO, nor the somewhat less inclusive conference, which has been endorsed by some of the Arab states, would happen within the political context as it existed in the summer of 1987, when data were assembled for this investigation. However, several factors suggest that the initial political context will change.

19. Professor Eisenstadt, who has been very helpful in the development of this analysis, is not responsible for the conclusions and inferences drawn from the model. The principal purpose in applying these data is to illustrate how the techniques outlined here can be used and not to undertake an in-depth assessment of the prospects for peace in the Middle East. However, it should be evident that such a detailed assessment could be accomplished if this model were combined with the subtle understanding only possessed by an area expert.

20. Those not familiar with the model being utilized here may well wonder about the reliability of any process that relies on so small a sample of sources of critical information. However, it must be borne in mind that the method applied here is mathematical, not statistical, and the information required of the experts is basic and fundamental. In controlled experiments, it has been found that the correlation in model results across different expert sources of information is well over .90. That is, different experts may disagree about expected outcomes on issues and they may organize information differently so that inputs appear to be different, but their inputs to the model almost always yield the same output predictions from the model. This is because knowing who the players are on an issue, what their preferred outcome is, what their relative influence is, and how important the issue is to them is fundamental to being an expert on the sorts of issues examined using this methodology.

TABLE 1. *The negotiating setting: capabilities and salience of the prospective participants*

Interested parties	*Capabilities*		*Salience*
	Raw	*Percentage*	
Soviet Union (USR)	100.0	17.5	55
United States (USA)	100.0	17.5	55
Israel/Peres (PER)	55.0	9.6	90
Syria (SYR)	55.0	9.6	75
Jordan/Hussein (HUS)	50.0	8.7	90
Israel/Shamir (SHA)	47.5	8.3	90
Egypt (EGY)	40.0	7.0	40
Iraq (IRQ)	40.0	7.0	40
Saudi Arabia (SAU)	40.0	7.0	40
Palestine/Palestine Liberation Organization (PLO)	25.0	4.4	100
France (FRN)	10.0	1.7	15
United Kingdom (UK)	10.0	1.7	15

A comparative statics analysis indicates that even if the Soviets dropped their insistence on PLO participation and moderated their stand toward Israel, taking a position halfway between the original, conciliatory stance of Jordan's King Hussein and that of Egypt, this would not alter the emergent structure of a multilateral Middle East peace conference. Soviet concessions toward Israel on this question are unlikely to be meaningful, since there are indications that if a conference were to occur, the PLO would be excluded from official participation in any event. In that sense, the Israelis should be particularly wary of Soviet concessions because they may not have any real impact on process or substance.

Is the hypothesized moderation of the Soviet position likely? Based on the data available here and the indications of the comparative statics analysis, the answer is yes. The Soviets anticipate a rocky road in moving toward a multilateral peace conference whether they maintain their sincere position or moderate it to gain concessions from the Israelis. In fact, according to this analysis, the Soviets face somewhat stiffer opposition from Yitzhak Shamir if they offer concessions, but they do not perceive this difficulty. Rather, the Soviet leadership, according to the analysis, anticipates that Shamir will be substantially more cooperative if the Soviets moderate their stand. Their behavior has been consistent with this conclusion, and as anticipated by the expected utility results, Soviet moderation has not paid off thus far in terms of reaching agreement on a Middle East peace conference.

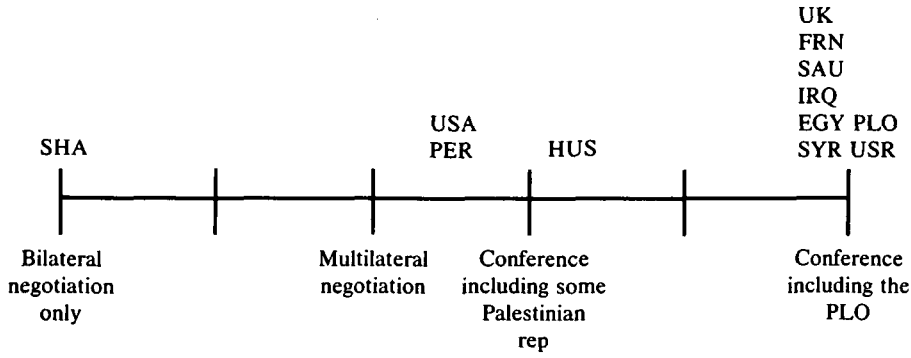

FIGURE 2. *Preferred structure of the negotiating setting*

Several factors indicate that the Soviets have attempted to moderate their policy toward Israel. They have permitted Jewish emigration from the Soviet Union to increase rapidly, and the emigration rate is still rising. In June 1988, for instance, *The New York Times* reported that there were signs of shifts in the Soviet Union's Middle East policy. Eduard Shevardnadze had already met with Shimon Peres and was scheduled to hold his first meeting with Prime Minister Shamir in New York: "The Soviet overture to Mr. Shamir, who has shown no flexibility on the issue of convening an international conference on the Middle East, indicates Moscow's increased willingness to press the issue with all parties in Israel's political spectrum."[21]

The comparative statics evaluation of Soviet interests, in which the Soviet leaders are hypothesized to moderate their policy stance, also indicates that in this period of thaw with the United States, the Middle East remains a significant source of conflict between the two superpowers. However, it is a conflict that can readily be averted. Efforts by then Secretary of State George Shultz to promote a multilateral conference would not, according to the expected utility assessments, lead to a significantly different structure for a multilateral meeting whether the Soviets elected to play a major role or not. Indeed, if the Soviets completely withdrew from the process, Shamir would continue to face virulent threats from the PLO, Peres would face a standoff with the PLO, and the United States would find itself embroiled in a direct confrontation with Israel's current prime minister. All of this would occur while the forecast outcome shifted only a negligible and inconsequential amount. And, as the solution to equation (5) from the Soviet perspective reveals, the Soviet Union would avoid all of the risks associated with trying to broker a conference that is, in any event, unlikely to occur as long as Shamir remains in office.

Since collection of the data, the Soviets did take a decided back seat to the United States in trying to promote a peace conference, although more

21. *The New York Times*, 7 June 1988, p. 1.

recently (in February 1989) their level of effort has risen again. The Soviet Union does appear to have softened its approach toward Israel in the hope of promoting concessions from Shamir. Thus far, its policy has failed. Recognition of the inability of the Soviets to alter the prospects for a Middle East peace conference form the core for inquiring whether other central actors can be successful where the Soviets have failed. One critical player appears to be King Hussein of Jordan. Thus, I turn attention now to a comparative statics assessment of Hussein's prospects of brokering a peace conference.

Hussein has, during the past year, placed himself in a most precarious position within the Middle East. He has attempted to establish himself as a principal spokesman for the Palestinians living on the West Bank of the Jordan River. For some time, he endorsed peace talks in which the PLO would play only a minimal role. Could such a position be sustained in light of the political risks associated with it? To address this question, I utilized the expected utility model to examine the risks to Hussein and the implications of those risks for his policy. To do this, I modified the base-case data in Table 1 and Figure 2 by excluding the Soviet Union, the United States, Peres, Shamir, France, and the United Kingdom, leaving only the six Arab interests represented in the data. The solution of the model in this context facilitates the investigation of Hussein's standing within the Arab community.

The analysis reveals that Hussein's original posture is quite risky for him in the Arab community. Indeed, in terms of the model's risk assessments, Hussein's position is the most dangerous. In the absence of significant progress toward a peace conference—progress that has not emerged—Hussein, according to the expected utility estimates, must compromise with the Iraqis, the Saudis, and the Egyptians while facing a standoff with the PLO. To secure his position, Hussein, according to the analysis, is forced to shift his position to one that is more supportive of the role of the PLO in any eventual negotiations, giving the PLO leadership all but exclusive rights to represent the interests of the Palestinians. As anticipated by the expected utility analysis, but much to the surprise of many Middle East watchers, Hussein shifted his stance in August 1988, declaring that the PLO alone speaks for the West Bank Palestinians. He has backed up this statement by withdrawing Jordanian financial support to the area, indicating that he intends to demonstrate how essential he is to the prospects for a multilateral peace conference. Will this bargaining move pay off?

Hussein's move away from compromise with the Israelis leads to a situation of stagnation and preservation of the status quo ante between Israel and the Arab states. The move therefore precludes the emergence of a peace conference at least for the time being. Both Shamir and Peres face a situation of mutual deterrence with Hussein and with the other Arab interests, neither side believing that the other can impose its will and neither side convinced

that it must make any concessions. The one sanguine feature of Hussein's harder-line position is that it enhances the bargaining leverage of the United States with the Arab states and the PLO while it leaves U.S. relations with Shamir somewhat stormy.[22] Thus, it appears that Hussein will succeed in persuading the Israelis, the Soviets, and the Americans that a peace conference is all but impossible to pull off without his assistance. And in the absence of a key role by Hussein, the PLO will demonstrate its own inability to bring a peace settlement within view.

In the highly volatile Middle Eastern political atmosphere, what prospects does the United States have for exerting a leadership role in the peace process? Can the United States, like the Soviet Union, afford to become somewhat withdrawn or complacent? The expected utility picture for the Americans reveals that they cannot equally afford the luxury of a unilateral withdrawal from the peace process. To do so would shift the equilibrium strongly in favor of the hard-line Arab states, yielding a conference in which the PLO would play a major role. This, of course, remains flatly unacceptable both to Shamir and to Peres and so would result in a complete breakdown in efforts to promote a peace conference. The only salutary effect of such a unilateral move by the Untied States would be to create an atmosphere more conducive to negotiation, rather than confrontation, between Peres and Shamir.

The evidence indicates that the Soviet Union can afford a unilateral withdrawal from the Middle East peace process, but the United States cannot. Yet if the Soviets and Americans were to agree to avoid potential clashes by jointly removing themselves from the process of trying to promote a peace conference, there would be no appreciable effect on the outcome. The United States is *not* essential for peace in the Middle East. This suggests a difficult position for the United States and an interesting source of leverage for the Soviet Union.

The impact on the structure and procedures of a multilateral Middle East peace conference would be the same if the Soviets removed themselves from discussions or if the Americans and Soviets jointly removed themselves, but it would be entirely different if the Soviets participated and the Americans did not. Consequently, the Soviets have greater freedom of action than do the Americans. This probably explains the more visible, active role of the United States in trying to promote multilateral discussions. Progress toward peace could move with equal rapidity—or slowness—if the superpowers withdraw from the process altogether or if both try or just the United States tries to play a diplomatic role.

What does all of this suggest about the likely timing of a peace conference? According to the estimates of expected utilities performed here, Shamir

22. This sentence was written in the summer of 1988. Since that time, the United States has successfully pressured Arafat to recognize Israel's right to exist, a recognition which the PLO previously refused.

perceives his situation as untenable *if* he agrees to a conference and engages in discussions over the structure of such a meeting. His position leaves him isolated and ripe for defeat, since he faces the likelihood of major political clashes with all of the Arab states except Jordan and the likelihood of outright capitulation to Hussein's position. From a detached, "objective" perspective, the analysis suggests that Shamir's position is stronger than he believes. He and Hussein and he and the hard-line Arab states are largely at a standoff in which the status quo prevails. The only direct confrontation that Shamir is likely to experience regarding the setting of peace talks is with the United States. Internally, it is an issue that Shamir will want to avoid, since the expected utility assessments indicate that he will have to offer concessions to Peres, his political rival. Given Shamir's apparent perception of the situation, we must conclude that as long as he is Prime Minister of Israel, there is no reason to expect significant progress toward the establishment of a multilateral negotiation procedure to resolve the Palestinian question. Nor should we anticipate a rapid turnaround in Hussein's position until Israel has a new, more sympathetic government. Hussein is correct in believing that he is critical to the successful negotiation of a multilateral peace conference. He is the local actor capable of brokering a compromise among the many players in this negotiation game.

The contents of a settlement

Although I will not dwell at length on the contents of a settlement in the context of a multilateral peace conference—a context that seems unlikely in the near future—I will summarize briefly some evidence from the expected utility model. Then I will turn my attention to the prospects for a settlement through direct or indirect negotiations between the Israelis and Palestinians.

If there were a multilateral peace conference, then the forecast resulting from the model is for a compromise settlement that includes Jordanian territorial concessions and a public role for Jordan in the administration of a new Palestinian territory. With only small variations, this forecast essentially holds whether the Soviets take a hard-line or moderate stand. The forecast is also robust against the exclusion of the PLO from the conference. That is, Soviet concessions on PLO participation have only a small impact on the contents of an agreement. The PLO is too weak and politically isolated to become a factor in a conference in any event. Neither the PLO nor Shamir appears to be a central figure in forging a settlement. Peres emerges as a considerably more critical figure, able to work compromises with Shamir on the one hand and with the Arabs, Soviets, and Americans on the other hand. The PLO emerges as particularly impotent. The Arab states are likely to embroil each other in a politically divisive conflict while making concessions to the Israelis and while trying to be responsive to the wishes of the PLO. The weakness that the PLO and Shamir would have in a multilateral ne-

gotiation provides a strong basis for believing that such a context will not arise in the near future. Both the PLO and Shamir would be better off in one-on-one negotiations, although the venue might well need to be private and secret.

For Israel, and especially for Peres, a key difference in a multilateral conference arises in response to moderation by the Soviet Union. As I have already noted, the substance of an agreement is little affected by the presence or absence of the PLO or by a hard-line or moderate stand of the Soviet Union. But the political context of the settlement is significantly influenced by the Soviet approach. If the Soviets take an extremist position, this works to Israel's advantage. Under those conditions, the Egyptians and, to a lesser extent, Hussein, rather than Peres and his followers, bear the heaviest burden in coping with Arab opposition to a settlement that could be livable for the Israelis. If, however, the Soviets moderate their position significantly, they will help pull Arab hard-liners and more moderate Arabs together, creating a somewhat strengthened coalition opposing Israeli objectives. Thus, this preliminary analysis of the contents of a settlement suggests that the Israelis must be cautious of a moderated Soviet approach in setting up a multilateral conference because the consequences of the Soviet approach might be similar to those of the Trojan horse.

An alternative to a multilateral conference of the sort envisioned by the Soviets is for Israeli and Palestinian representatives to negotiate directly or through a catalytic third party. The second issue posed earlier is investigated now in this context. The data and outcome preferences provided by Saunders are summarized in Table 2 and Figure 3.

The continuum of possible outcomes ranges from the establishment of a fully independent, secular Palestinian state at one extreme (scaled to equal 0) to the annexation by Israel of the West Bank and Gaza at the other extreme (scaled to equal 100). On a scale from 0 to 100, 30 represents territorial compromises to the Palestinians without establishing an autonomous state. At position 30 on the continuum, we envision a Palestinian political entity federated with Jordan. The current status quo is located at 85.

As a validity check on the model and the data assumptions, it is interesting to see where the forecast policy outcome on this issue is within the Israeli context. To determine this forecast, I solved the model excluding the Palestinian actors identified in Table 2. The forecast outcome within the Israeli political setting is exactly the point identified by Saunders as the current status quo. This provides confidence in the data assumptions.

The forecast outcome in the event of a Palestinian–Israeli negotiation is for the Palestinians to receive rather small concessions from the Israeli government. On the scale of 0 to 100, the predicted outcome is 60, suggesting some localization of control in the hands of the Palestinians but certainly nothing approaching even a semiautonomous state. Indeed, it is interesting and surprising to note that the forecast outcome from direct or indirect

TABLE 2. *Prospects for peace in negotiations: talks between the Israelis and the Palestinians*

Interested parties	*Capabilities*		*Salience*
	Raw	*Percentage*	
Israeli representatives			
Israeli defense (DEF)	100	12.7	80
Israeli settlers (SET)	100	12.7	100
Shamir (SHA)	85	10.8	85
Hard-line Likhud (HLIK)	85	10.8	90
Peace camp (PEA)	70	8.9	85
Labor (LAB)	60	7.6	75
Liberal Likhud (LLIK)	60	7.6	50
Palestinian representatives			
PLO executive committee (PLO)	100	12.7	95
Palestinians in occupied territories (OCC)	100	12.7	95
Popular Front for the Liberation of Palestine (PFLP)	20	2.5	95
Muslim fundamentalists (FND)	10	1.3	80

negotiations just between Palestinians and Israelis is the same as the forecast outcome from a Middle East peace conference. The venue seems not to be particularly consequential in terms of the contents of prospective settlements.

The outcome of Palestinian–Israeli negotiations looks more like a bargain between Labor (at 30) and Shamir (at 85, the current Israeli status quo) than a bargain between Palestinians and Israelis. From the PLO perspective, the analysis indicates that Arafat anticipates a standoff with Shamir and a substantial political struggle with the Palestinians living under Israeli occupation, the Popular Front for the Liberation of Palestine (PFLP), and the fundamentalist Muslim elements in the Palestinian movement in the event of negotiations. If Arafat attempts to construct an agenda for negotiations, he will, of course, have to contend with internal differences among Palestinian interests. The assessment of that internal agenda-making process suggests that Arafat will moderate his own stance somewhat, adopting the slightly more conciliatory stance of the Palestinian settlers. They, rather than the PFLP or the fundamentalist Muslim interests, represent the real threat to Arafat, according to the analysis conducted here. The perception of Arafat (and that of his Palestinian rivals as well) is that the settlers are the group that must be dealt with. In this sense, the Intifadeh has had a profound effect on the focus of Palestinian politics.

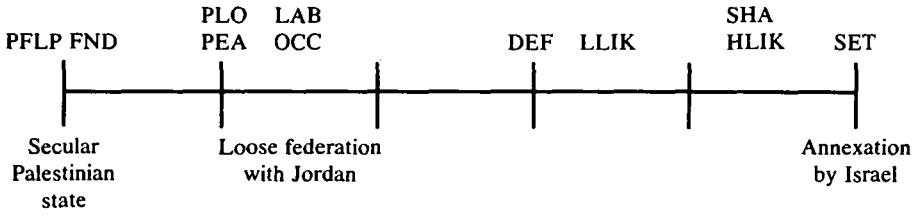

FIGURE 3. *Alternative structure of the negotiations: Israelis and Palestinians only*

The perceptual analysis indicates that Shamir views himself as in a strong position to shape the terms of a settlement in negotiations with the Palestinian interests. But to enter into such negotiations would likely precipitate a serious internal political struggle in which he would face stiff opposition from the settlers and the hard-line members of the Likhud party. Peres and the Labor party, according to this analysis, appear much less problematic for Shamir than do the more rightist political elements within Israel. As long as this perception remains in place, it will be extremely difficult to move toward a peace settlement.

Is there a strategy that could lead to significant progress toward peace? To answer this question, I utilized the model to construct a "movie" of the negotiating process. The PLO executive committee, as noted, faces pressure to moderate its stance slightly from the Palestinians living under military occupation. The analysis shows that such moderation by the PLO does *not* alter the predicted settlement. Nor does it alter PLO leverage with critical groups.

A gradual process of moderation by the PLO alone, moving from its initial position in stages to a position even just beyond the Labor party, does *not* increase Israeli responsiveness. Even if Arafat were to endorse a settlement that yields something less than a semiautonomous state loosely affiliated with Jordan, no prior beliefs by Israeli interests would be altered. But such moderation, interestingly, would neutralize opposition by extremist elements in the Palestinian movement. Thus, moderation by the PLO leaders would weaken their rivals in the PFLP and among the fundamentalist Muslims. Those groups would become politically isolated and irrelevant in negotiations. We can anticipate that they would respond to such a situation by increasing terrorist acts, aimed not only at the Israelis but perhaps also at the PLO leadership. If the analysis is correct and if the PLO adopted a strategy of incremental moderation, the future of the PFLP would be to flicker out of the picture.

What might happen if these groups were no longer relevant actors? The model solution suggests that Arafat would stabilize his political position, leaving himself devoid of serious political opposition either among the Palestinians or within Israel, but he would achieve this stabilization at a high

price. Without the thorn of the PFLP, the settlement of negotiations would revert back to token concessions by the Israelis instead of a peace that gives the Palestinians a livable solution to their problem.

The analysis here does not leave us sanguine about the future in the Middle East. While the most extremist elements from the Israeli perspective could be neutralized if Arafat were to moderate his stance and stabilize his own political leadership by doing so, such diminution in tensions in the area would come at the expense of sacrificing the gains for which the Palestinians have been fighting. If Arafat does choose to moderate his stance, this suggests that he is willing to sacrifice both the Palestinian cause and his opponents at the alter of his personal political welfare. If he doesn't choose to do this, however, we can be confident that Arafat views the PFLP as a critical strategic ballast, helping to legitimize his image as a moderate without his having to make significant future concessions. In either case, there appears to be no reason to anticipate more than modest concessions by the Israelis to the interests of the Palestinians in the near future.

Conclusion

A model for forecasting political choices and for explaining the perceptual conditions that lead to those choices has been delineated. Applications of the model to the prospects for a multilateral peace conference in the Middle East provide insights into the motivations behind recent actions by the Soviet Union, the United States, King Hussein, Yassir Arafat, Shimon Peres, and Yitzhak Shamir. By viewing multilateral negotiations in a rational choice context, we are able to elucidate the contents of calculations that decision makers must make if they are trying to do what they *believe* is in the best interest of their nation. By modeling the decision process, we are able to discern when perceptions and reality are likely to deviate from each other. Through the use of comparative statics simulations, we are able to gauge the responses of all the actors to changed circumstances. In this way, we can identify the likely impact of Soviet moderation, Israeli intransigence, Jordanian vacillation, or U.S. intervention.

In the end, a model—whether verbal or mathematical, whether nonquantitative or quantitative—is only as reliable as the data that inform it. Here I have illustrated the potential that arises when an explicit modeling process is linked to the detailed knowledge of experts on the substantive problem being investigated. Through the judicious use of modeling and of area expertise, it is possible to derive issue-specific analyses that are more reliable and more informative than can be achieved through modeling alone or through area expertise by itself.