1996

The Future Negotiations Over Jerusalem, Strategical Factors and Game Theory

Moshe Hirsch

Follow this and additional works at: http://scholarship.law.edu/lawreview

Recommended Citation
Available at: http://scholarship.law.edu/lawreview/vol45/iss3/6
THE FUTURE NEGOTIATIONS OVER JERUSALEM, STRATEGICAL FACTORS AND GAME THEORY

Moshe Hirsch*

I. Introduction .............................................. 699
II. The Provisions of the Israeli-Palestinian Agreements
    Regarding Jerusalem .................................... 699
III. Basic Elements of Game Theory ............................ 702
IV. Is It Possible to Apply Concepts of Game Theory to the
    Question of Jerusalem? ................................... 705
V. The Elements of the “Game” of Jerusalem .................. 707
    A. The Players .......................................... 707
    B. The Strategies ........................................ 709
    C. The Payoffs .......................................... 709
VI. The Structural Features of the “Game” of Jerusalem ...... 711
    A. Zero-Sum Games ...................................... 711
    B. Exit Options ......................................... 712
    C. Embedded Games ..................................... 714
    D. Domestic Win-Sets .................................... 715
VII. Possible Structural Changes and the Future Negotiations
    Over Jerusalem .......................................... 717
VIII. Conclusions ............................................. 721

I. INTRODUCTION

Numerous Middle Eastern analysts consider the long-standing dispute over Jerusalem the most formidable stumbling block to the achievement of a genuine and durable peaceful solution to the Arab-Israeli conflict. The gap between the positions of the two main rivals, Israel and the Palestinians, seemed so vast in the past that even the very initial arrange-

* Lecturer, The Faculty of Law and the Department of International Relations, the Hebrew University of Jerusalem and Researcher at the Jerusalem Institute for Israel Studies. Visiting Scholar, Georgetown University Law Center 1995-1996. I would like to express my deep gratitude to Prof. Ruth Lapidoth, Prof. Marshall Breger, Ms. Ora Ahimeir, Mr. Gideon Rotem, and Ms. Ruth Levush for their valuable comments. The views expressed in this article are the author's alone.
ments the parties reached in the 1993 Declaration of Principles on Interim Self-Government Arrangement\(^1\) (DOP) astonished most observers. Indeed, the DOP’s provisions regarding Jerusalem demonstrate that both parties have significantly deviated from their traditional positions, setting the stage for a new phase in the long and disputed history of Jerusalem.

The DOP provisions state, *inter alia*, that the future of Jerusalem will be negotiated between Israel and “the Palestinian people representatives” (the "Palestinians") in the permanent status negotiations to commence in 1996.\(^2\) The central aim of this article is to employ some concepts developed in the sphere of game theory to identify the factors standing at the base of the dispute over Jerusalem and analyze their influence upon the outcome of the future negotiations. It should be emphasized at the outset that this article, like game theory in general, does not aim to suggest what political goals are to be adopted or what desirable regime the parties should agree upon. Rather, the aim is limited to clarifying the structural features of the dispute and to analyzing the likely implications of possible structural changes.

Finally, it should be noted here that, though it is common to refer to the “question of Jerusalem,” the controversy over the future of Jerusalem generally is restricted to control over East Jerusalem. Almost all the involved parties agree that West Jerusalem should remain under Israeli control.\(^3\) This discussion, therefore, will be limited to the future of East Jerusalem.

II. The Provisions of the Israeli-Palestinian Agreements Regarding Jerusalem

Three principal issues regarding Jerusalem are regulated in the recent agreements between Israel and the Palestine Liberation Organization (PLO): the jurisdiction of the Palestinian Council, the elections to that Council, and the negotiations on the permanent status. The parties to the 1993 DOP and the 1995 Israeli-Palestinian Interim Agreement on the

---

2. DOP, supra note 1, art 5, at 1529.
West Bank and the Gaza Strip (the 1995 Interim Agreement) agree that a Palestinian Council will be established for a transitional period not exceeding five years. Both instruments provide that the Palestinian Council will not have jurisdiction in Jerusalem for the five year interim period. This statement contradicts the traditional PLO position that Israel should withdraw from East Jerusalem, the intended capital of the Palestinian state.

According to both agreements the Palestinians of Jerusalem will have the right to participate in the election process for the Palestinian Council. The election arrangements in Jerusalem are elaborated in the 1995 Interim Agreement. These arrangements, implemented on January 24,

---


5. DOP, supra note 1, art. 1, at 1527 (defining the Council as the “Palestinian Interim Self-Government Authority, the elected Council (the ‘Council’), for the Palestine people in the West Bank and the Gaza Strip”); see also 1995 Interim Agreement, supra note 4, fifth recital to the Preamble (noting that the one aim of the peace process is to establish a “Palestinian Interim Self-Government Authority”).


7. See DOP, supra note 1, arts. IV - V, at 1528-29 (stating that “[j]urisdiction of the Council will cover West Bank and Gaza Strip territory, except for issues that will be negotiated in the permanent status negotiations”); 1995 Interim Agreement, supra note 4, art. XVII. Moreover, in paragraph 5 of Annex II to the DOP, supra note 1, at 1537, the Palestinian side undertook to locate all the “offices responsible for carrying out the powers and responsibilities of the Palestinian authority . . . in the Gaza Strip and in the Jericho area pending the inauguration of the Council.” See Joel Singer, Aspects of Foreign Relations under the Israeli-Palestinian Agreements on Interim Self-Government Arrangements for the West Bank and Gaza, 28 ISRAEL L. REV. 268, 292-93 (1994) (explaining the function of paragraph 5 of Annex II of the DOP). The parallel provision is located in Article I(7) of the 1995 Interim Agreement, supra note 4.


9. DOP, supra note 1, Annex I, Protocol on the Mode and Conditions of Elections, art. 1, at 1535. This article provides: “Palestinians of Jerusalem who live there will have the right to participate in the election process, according to an agreement between the two sides.” Id.; see also 1995 Interim Agreement, supra note 4, art. II(3).

10. See 1995 Interim Agreement, supra note 4, Protocol Concerning Elections, Annex II, art. VI (discussing details such as polling locations, campaigning, international observation, and voting procedures); see also Joel Singer, The West Bank and Gaza Strip: Phase Two, 7 JUSTICE 1, 4-6 (Dec. 1995) (explaining the Electoral Process under the 1995 Interim Agreement).

As to the more distant future, beyond the interim period, both the 1993 and the 1995 instruments state that the issue of Jerusalem's future will be one of the subjects on the agenda for the permanent status negotiations to commence not later than May 4, 1996.\footnote{See DOP, supra note 1, art. V, at 1528-29; \textit{id.}, Agreed Minutes, at 1542; 1995 Interim Agreement, supra note 4, art. XXXI(5). Article XXXI (5) provides: "Permanent status negotiations will commence as soon as possible, but not later than May 4, 1996, between the Parties. It is understood that these negotiations shall cover remaining issues, including: Jerusalem, refugees, settlements, security arrangements, borders, relations and cooperation with other neighbors, and other issues of common interest." \textit{Id.}} Unquestionably, this arrangement represents a clear deviation of both parties from their long-standing policies. Israel's leaders formerly asserted that the status of Jerusalem was not open for negotiations, while their Palestinian counterparts insisted that any solution affecting the West Bank also should apply to East Jerusalem.\footnote{See \textit{Klein}, supra note 8, at 40 (commenting on the Palestinian position regarding Jerusalem); Lapidoth, supra note 8, at 420 (explaining the traditional position of Israel regarding Jerusalem).}

The emerging situation from the above developments is somewhat mixed. The prominent fact is that Israel will continue to exercise control over East Jerusalem in the transitional period. Israel did not agree to relinquish this control in the future permanent settlement accord. On the other hand, Israel did agree to apply the election arrangements to East Jerusalem which are quite different from those applying to other areas under its sovereignty. As to the future, it seems that the parties' consent to negotiate the issue of Jerusalem in the permanent status negotiations indicates that the current arrangements in East Jerusalem are modifiable to a certain degree.

### III. Basic Elements of Game Theory

In this section some basic elements of game theory will be explained. The aim here is not to present a general introduction to game theory but
rather to expose briefly its most basic notions which will enable us to analyze the problems relating to the future of Jerusalem.\textsuperscript{14}

Game theory is a discipline "designed to treat rigorously the question of optimal behavior" of decision makers in strategical situations.\textsuperscript{15} The term 'strategical' refers to situations in which the outcomes depend not only on the decision-maker's conduct alone, nor solely on those of nature, but also on the conduct of other participants (the latter fact led some scholars to label the theory "Interactive Decision Theory").\textsuperscript{16} The participants are assumed to be rational in the sense that they strive to maximize their interests and assume that the other players aim to achieve the same goal.\textsuperscript{17} The attainment of this goal does not necessarily direct the actors to "beat" each other and not infrequently they are required to "help" the others as a condition to realize their own aim.\textsuperscript{18} In its formative years game theory was developed chiefly by mathematicians and then rigorously applied to economics. The theory also was applied in other disciplines such as political science, international relations, law, sociology, and biology.\textsuperscript{19}

Game theory models interactions between the participants in two principal forms of representation: the normal (or strategic) form and extensive (or tree) form.\textsuperscript{20} A matrix showing each player's payoff for each combination of strategies often represents a normal game. The normal representation is more appropriate for simultaneous decision-making while the extensive form representation also displays the information each

\begin{enumerate}
\item[(16)] Robert J. Aumann, \textit{Game Theory, in The New Palgrave: Game Theory} 2 (John Eatwell et al. eds., 1987); see Morgenstern, supra note 15, at 62.
\item[(17)] See Fudenberg & Tirole, supra note 14, at 4.
\item[(18)] Id.
\item[(19)] See Ken Binmore, \textit{Essays on the Foundations of Game Theory} 15 (1990); Fudenberg & Tirole, supra note 14, at 4; Von Neumann & Morgenstern, supra note 14, at 1-29; Aumann, supra note 16, at 2; Morgenstern, supra note 15, at 62.
\item[(20)] See Aumann, supra note 16, at 2-3; see also Binmore, supra note 19, at 15; Gibbons, supra note 14, at 2, 115 (illustrating the normal and extensive forms of representation); Von Neumann & Morgenstern, supra note 14, at 1-29; Morgenstern, supra note 15, at 62-63.
\end{enumerate}
player knows when making his decisions.\textsuperscript{21} A “game” is defined as “any interaction between [players] that is governed by a set of rules specifying the possible moves for each participant and a set of outcomes for each possible combination of moves.”\textsuperscript{22}

The basic elements of the normal form game are: 1. \textbf{THE PLAYERS}—the actors who make the decisions (either individuals or collective decision-making units like firms or states); 2. \textbf{THE STRATEGY SPACE}—the range of moves available to a player in a given situation (e.g., to cooperate or to defect); 3. \textbf{THE PAYOFFS (“utilities”)—}the outcome generated for the players from a chosen move or strategy.\textsuperscript{23}

Reducing some set of interactions to a normal or extensive game, the next step is to determine the game’s solution. Finding the “solution” of a game may serve two major purposes: first, a normative goal, as it may guide us to the best strategy a rational player may adopt; and second, a predictive aim, as it may indicate how rational players are likely to behave in such situations. A simple example is the notion of dominant strategy. A strategy is considered strictly dominant to any other when it is the best choice for a player regardless of what the other players will do.\textsuperscript{24} When it is possible to identify a single dominant strategy, we safely can assume that a rational player will adopt the dominant strategy and reject the subordinate ones.\textsuperscript{25} While a strict dominance strategy will not solve many games, the Nash-equilibrium solution applies to a much broader spectrum of games. A Nash-equilibrium is the combination of strategies, representing the best response of each player to the predicted strategies of the other players. Such a prediction may be called “strategically stable” or “self-enforcing” because no single player is interested in deviating from his predicted strategy.\textsuperscript{26}

This is only a limited exposition of the most basic elements of game theory; and some others will be presented in the following parts.


\textsuperscript{22} See Heap \& Varoufakis, \textit{supra} note 14, at 1-2, 4.

\textsuperscript{23} See Baird \textit{et al.}, \textit{supra} note 21, at 7-9; Fudenberg & Tirole, \textit{supra} note 14, at 4-5; Gibbons, \textit{supra} note 14, at 2-4; Von Neumann \& Morgenstern, \textit{supra} note 14, at 15-16, 48-54.

\textsuperscript{24} See Baird \textit{et al.}, \textit{supra} note 21, at 11-12.

\textsuperscript{25} Id. at 13-14; Fudenberg \& Tirole, \textit{supra} note 14, at 6-8. A dominant strategy can also be found by a process of iterated elimination of strictly dominated strategies. See Gibbons, \textit{supra} note 14, at 4-8.

IV. IS IT POSSIBLE TO APPLY CONCEPTS OF GAME THEORY TO THE QUESTION OF JERUSALEM?

Having explained the basic concepts of game theory, the reader might wonder whether it is possible to apply such concepts to the question of the future of Jerusalem. The major difficulties to game theoretic analysis of this problem relate to three principal factors: (1) the assumption regarding the rationality of the players; (2) the possibility of assigning accurate payoffs to the players moves; (3) the role of factors that game theory does not take into account.

As explained above, one of the most basic assumptions of game theory is that the players are rational. The rationality assumption is the most notable obstacle for the application of the theory to the question of Jerusalem because there is considerable doubt that the national decision-makers dealing with this issue proceed in a rational way. Indeed, one of the central factors explaining why it is so difficult to find an appropriate solution for the question of Jerusalem is located on the symbolic or psychological level rather than on the rational one.

One of the principal reasons underlying the dispute over Jerusalem is that the controversy exceeds the city's boundaries. In contrast to almost all other cities in the world, the future of Jerusalem is important not only to those who inhabit the city. During the last decades Jerusalem has become a major national and religious symbol for Jews, Muslims, and Christians all over the world. Thus, the main struggle is not for territorial, strategical, or economic gains, but rather for symbols.

Given the symbolic character of the dispute, is it 'rational' to analyze it in a rational framework such as game theory? A distinction should be made here between the process of choosing an appropriate aim and the process of its attainment. As explained above, the players in game theoretic models are assumed to be rational in the sense that they strive to maximize their interests. It is not a pre-condition to the application of the theory that the chosen interest be selected in a rational process. The focus here is on the instrumental sense of rationality,27 i.e., on the manner in which the selected interest will be maximized.

As to the dispute over East Jerusalem, the principal interest of the main contending parties, Israel and the Palestinians, is to exercise sovereignty or control over Jerusalem. While it is true that the factors motivating the decision-makers to adopt this interest as a desirable one are not wholly rational, we safely can assume that the actors do strive to maxi-

---

27. Shaun H. Heap, Rationality, in THE THEORY OF CHOICE: A CRITICAL GUIDE, supra note 26, at 4-5; HEAP & VAROUFAKIS, supra note 14, at 5.
mize this interest. Thus, the symbolic (or irrational) factors standing behind the aim of exercising sovereignty or control over East Jerusalem do not bar us from applying concepts of game theory to the process of attaining this aim.

The second difficulty the tools of game theory encounter in the analysis of the question of Jerusalem relates to the possibility of allocating accurate payoffs to expected outcomes. The knowledge that both parties are interested in exercising sovereignty or control over East Jerusalem does not enable us to assign a numerical payoff to this outcome. The problem is further complicated if an attempt is made to allocate accurate payoffs to some intermediate outcome, such as partial control over East Jerusalem or certain sections of it. In fact, this problem recurs in numerous situations in which concepts of game theory are employed to analyze social phenomena.

In some cases, it is possible to assign ordinal payoffs to expected outcomes (i.e., to organize the various outcomes in accordance with the order of priorities for the relevant player) and then to allocate a respective ordinal number to each outcome. The employment of this method may assist us in arriving at interesting inferences in numerous situations, but without knowing the "distance" between payoffs on an interval scale, it is impossible to calculate accurately the probabilities with which each party would choose each. Furthermore, in some cases it is impossible to attribute even ordinal payoffs to the different results and, as a consequence, to calculate the accurate probability that a certain decision will be made. Even in such situations, as we shall see below, game theoretic analysis may well be a valuable tool to provide us with significant indications regarding the expected trends of decision-makers and the pattern of decisions likely to be adopted in particular settings.

The third difficulty of analyzing the question of Jerusalem in light of game theory concepts lies in the fact that various personal and social factors are not taken into account in such an analysis. It is undeniable that factors external to game theory frequently influence the behavior of states and other political entities. Such factors relate, for example, to the psychological characteristics of the decision-makers and to social values prevailing in the decision-makers' environments. Indeed, this basic fact should be kept in mind throughout this article and whenever one attempts to analyze social phenomena with the aid of concepts of game

28. For a discussion of this method of assigning payoffs, see Heap & Varoufakis, supra note 14, at 5-11; Duncan Snidal, The Game Theory of International Politics, 38 World Pol. 25, 46-48 (1985); see also Steven J. Brams, Game Theory and Politics 13-16 (1975) (using the ordinal method of assigning payoffs to analyze a specific case).

theory. While game theory may shed light on one of the more central aspects of the dispute over Jerusalem's future, game theory certainly is not the only methodology to be used in a comprehensive study of that question.

In summary, the two principal difficulties accompanying an analysis of the question of Jerusalem's future using concepts of game theory are the impossibility of assigning numerical payoffs to specific outcomes and the influence of external factors which game theory does not take into account. These difficulties do not exclude the importance of such an analysis, but rather restrict its ramifications. Though the first difficulty bars us from arriving at precise conclusions, game theoretic analysis nevertheless provides a valuable tool to detect important indications regarding the expected trends of decision-makers and the pattern of decisions in particular settings. The second difficulty demonstrates one of the limits of game theoretic analysis, but certainly does not deprive such an analysis of any significance.

V. The Elements of the "Game"30 of Jerusalem

The first phase in a game theoretic analysis of a particular situation is to define the basic elements of the situation in terms of game theory. Here we must define who the players are, the moves available to them, and the payoffs in the "game" of Jerusalem.

A. The Players

The players in the "game" of Jerusalem may be divided into three circles in accordance with the level of their involvement and interests in the game.

1. External Circle

In the external circle we find the players which have some general, but no direct, interest in the future of Jerusalem. These players do not claim a significant position in the future regime of the City. The players in this circle are, e.g., the United States, the European Union, and the United Nations.

2. Middle Circle

The players in the middle circle claim, explicitly or implicitly, some significant role or special rights in the future system to be established in East

30. The term "game" is employed here and throughout this article to refer only to an interactive situation within the framework of game theory.
Jerusalem, and particularly regarding the administration of the Holy Places. Here we may find Jordan, the Vatican, and various churches and Christian denominations that possess religious buildings or sites in the City (e.g., the Greek Orthodox and Armenian Church).

3. Inner Circle

The players in the inner circle expressly claim the legal right of sovereignty or control over East Jerusalem. The main players in the core of the game are Israel and the Palestinians.

While the players in all circles have some influence over the future regime to be established in East Jerusalem, their levels of respective influence are different. It is quite clear especially since the conclusion of the 1993 DOP, that the players in the inner circle have the crucial role of shaping the future arrangements to be applied to the City, while the other players will have to accept the "deal" they strike. Some of the players in the other circles may have some objections to the agreement Israel and the Palestinians reach, but their ability to block its implementation seems

31. Jordan was considered a main player in the past. From 1967 to the early 1970s, Jordan demanded that Israel withdraw from East Jerusalem, as well as the whole West Bank, so that Jordanian sovereignty would be restored in this area. See Hirsch et al., supra note 3, at 135. Since the early 1970s, however, this position has gradually changed especially following the 1974 Arab Summit Conference at Rabat. Id. The new Jordanian policy, which does not claim sovereignty over East Jerusalem, was formally expressed in a speech that King Hussein delivered on July 31, 1988. Id. In this speech, the King announced "the dismantling of the legal and administrative links between Jordan and the West Bank," including East Jerusalem. Id. Despite the King's declaration, however, "Jordanian officials nevertheless indicated that Jordan would continue to play its historical role as the guardian of the Islamic Holy Places in Jerusalem." Id.; see HRH Crown Prince Hassan Bin Talal, A Study on Jerusalem 17-49 (1979); see also Israel-Jordan: Treaty of Peace, Oct. 26, 1994, art. 9, reprinted in 34 I.L.M. 43, 50 (recognizing Jordan's special historic role in the Muslim Holy Shrines in Jerusalem). For a discussion of more recent developments regarding Jordan's position, see Klein, supra note 8, at 43-56.

32. The Vatican's position regarding East Jerusalem has also changed over the years. In the past (at least until 1967), the Vatican supported the idea of internationalization. Hirsch et al., supra note 3, at 127-28. More recently, however, Vatican representatives have advocated the idea of a "special status" for the Old City, supported by international guarantees to ensure the rights of the three monotheistic faiths. Id. at 128; see G.I. Irani, The Papacy and the Middle East, 1962-1984, at 75-81 (1986); R.P. Stevens, The Vatican, the Catholic Church and Jerusalem, in The Legal Aspects of the Palestine Problem with Special Regard to the Question of Jerusalem 172 (H. Kochler ed., 1981).

33. For a survey of the main parties' legal claims to East Jerusalem, see Yehuda Z. Blum, Leonard Davis Inst. for Int'l Relations, The Juridical Status of Jerusalem 1 (1974); Cattan, supra note 3, at 111-21; see also Hirsch et al., supra note 3, at 18-21; Lauterpacht, supra note 3, at 48-49; W. Thomas Mallison & Sally V. Mallison, The Palestine Problem in International Law and World Order 197-201, 206, 233 (1986); Y. Dinstein, Zion Shall be Redeemed in International Law, 27 Hapraklit 5 (1971) (Hebrew); Stevens, supra note 32, at 162-63.
Strategical Factors and Game Theory

quite modest. This observation does not exclude the possibility that certain players in the middle or outer circles will have some role in the negotiating process, or in the future regime that the main actors agree upon.\textsuperscript{34}

\section*{B. The Strategies}

Three principal strategies are available to the main players in the negotiations over the future of Jerusalem:

1. To continue exercising (for Israel) or to gain (for the Palestinians) full sovereignty or control over all parts of East Jerusalem;

2. To relinquish the claim to full sovereignty or control over all parts of East Jerusalem; or

3. To negotiate partial arrangements, of which there exists an endless range of possible territorial and functional arrangements for sharing sovereignty or control over the whole or parts of the territory of East Jerusalem. Examples of possible partial arrangements are discussed below.

\section*{C. The Payoffs}

The expected payoffs for each party from the exercise of full sovereignty or control over all parts of East Jerusalem are considerable. As explained above, the issue of Jerusalem has become a major national and religious symbol for both the Israeli and the Palestinian peoples (and much beyond them). The importance of the Jerusalem issue for both peoples prescribes very high negative payoffs for the party that would relinquish its claim to sovereignty or control over all parts of East Jerusalem. The price of the latter strategy seems so immense that it may well be insurmountable for national leaders on both sides. This fact practically rules out almost any possibility that the two main players will accept an agreement embodying one of the two extreme strategies.

This directs us to the third strategy: reaching some partial arrangement. It is clear that the payoffs arising for the parties from some partial arrangement will correspond to the content of the specific agreement. Beyond this general observation, it is noteworthy to point out that some elements of partial arrangements may carry asymmetric payoffs for the players. An identification of all such elements is of importance and may narrow the practical range of possible partial arrangements that the main players are likely to accept. Such a comprehensive task, however, exceeds the limits of this study, and we will have to limit ourselves to the

\textsuperscript{34} See supra part IV, A.1.2. (discussing the possible roles of the players in the middle and outer circles).
identification of the most principal elements that produce asymmetric payoffs.

For Israel, the negative payoffs expected from certain partial arrangements may be higher than those expected for the Palestinians. This is particularly true with regard to the Western Wall and the new Jewish neighborhoods in East Jerusalem. The government of Israel might suffer considerable negative payoffs if it would relinquish control of or recognize Palestinian sovereignty over the Western Wall, as the site is most sacred to Jews. The immense negative payoffs arising from such a concession practically rule out this possibility.

The issue of the new Jewish neighborhoods in East Jerusalem illustrates the technique of "preemption" or "irrevocable commitment," which is well-known in game theory. The employment of this technique enables a player to change the payoffs produced from some move by committing, at an early stage, certain resources, part of which must be "sunk" (i.e. unrecoverable in a later stage). Such action increases the negative payoffs arising for the investing party from a particular move and, if the commitment is unambiguously visible to the other player, it changes the other player's equilibrium strategies. Since the Israeli seizure of East Jerusalem in 1967, Israeli governments have committed vast amounts of financial and personal resources to build new neighborhoods and settle more than 150,000 Jews in this part of the City. The negative payoffs expected for Israel from withdrawing from these areas, or from relocating a significant number of Israeli inhabitants, seem very high. This fact considerably reduces the likelihood that Israel will adopt such a move. In fact, it seems that the Palestinians are aware of these facts, and some of their leaders already have indicated implicitly that they would be ready to recognize Israeli sovereignty and control over these new neighborhoods in the future.

35. See Baird et al., supra note 21, at 60-61.
37. The 152,000 Jews living in East Jerusalem constitute 48.9% of the overall population in this part of the City. The Statistical Yearbook of Jerusalem.
38. See Klein, supra note 8, at 40. The legal actions Israel took at the municipal level in July, 1967, also may be perceived, to some extent, as a preemption act. Shortly after the Israeli seizure of East Jerusalem, the Israeli Parliament and government enacted a series of legislative measures resulting in the application of Israeli law, jurisdiction, and administration to East Jerusalem. See The Jerusalem Question and Its Resolution: Selected Documents 167 (Ruth Lapidot & Moshe Hirsch eds., 1994) (providing the text of this legislation). The legal significance of these enactments has been examined in several decisions Israeli courts handed down, embodying the unequivocal conclusion that East Jerusalem had become part of the State of Israel. See id. at 489-90, 502-06, 535-39 (discussing various cases that reached this conclusion). While these legislative and judicial actions are
For the Palestinians, some elements of a partial arrangement may produce greater negative payoffs than for Israel. This fact is most prominent with regard to the Al-Aqsa Mosque and the Dome of the Rock on the Temple Mount (al-Haram ash-Sharif in Arabic). Because both sites are sacred to Islam, Palestinian recognition of Israeli sovereignty or control over these shrines would generate considerable negative payoffs for the Palestinians. Again, the expected negative payoffs from such a Palestinian move practically rules out this possibility.

Similarly, though to a lesser degree, the Palestinians might suffer significant negative payoffs if the new arrangement fails to establish or recognize some link between the Palestinians living in East Jerusalem, and the Palestinian entity in the West Bank and the Gaza Strip. As noted above, the Palestinians previously asserted that East Jerusalem is an integral part of the West Bank, and the same legal regime should apply to both territories. The recent agreements between Israel and the Palestinians include some link between the Palestinians of East Jerusalem and the Palestinian Council. The election arrangements the parties agreed to entitled these Palestinians to participate in the election process in the West Bank and Gaza Strip.

VI. THE STRUCTURAL FEATURES OF THE "GAME" OF JERUSALEM

While numerous analysts agree that the question of Jerusalem's future is the most difficult issue on the agenda between Israel and the Palestinians, different reasons have been presented to explain this difficulty. In this section we shall discuss some structural features that shape the problematic interaction in the "game" of Jerusalem. The identification of the structural stumbling blocks and the comprehension of their content will lead us to consider, in the next section, possible changes that may influence future negotiations between the parties.

A. Zero-Sum Games

"Zero-sum game" (or constant-sum game) is unquestionably one of the most famous concepts of game theory which served, especially in the early stages of the theory's development, as a polar case and historical point of departure. The key feature of a zero-sum game is that the sum of payoffs is constant: "[i]n a two-player zero-sum game, whatever one
The players in zero-sum games have opposed preferences and are considered rivals. Players in such situations are in conflict and are not inclined to cooperate. Thus, as long as the structure of a given situation is that of a zero-sum game, the likelihood of a compromise is significantly reduced.

The basic structure of the dispute between Israel and the Palestinians over Jerusalem has strong features of a zero-sum game. The parties perceive the conflict over East Jerusalem chiefly as a territorial dispute. Each party is interested in gaining full and exclusive sovereignty or control over all parts of the eastern City. Needless to say, these preferences are bitterly opposed, as any gain for one party directly entails a loss for the other.

As explained above, as long as the situation has the basic features of a zero-sum game, the prospects for a compromise between Israel and the Palestinians is significantly reduced.

B. Exit Options

One of the central factors influencing the outcomes of a bargaining process is the “exit option” available to each player in case of bargaining failure. Exit options influence the readiness of the respective parties to leave the negotiation table, and as Frederik Zeuthen observed in his celebrated article, Economic Warfare, the parties’ readiness “to fight the matter out” determines the course of the negotiations. The principal

---

41. FUDENBERG & TIROLE, supra note 14, at 4; see JAMES D. MORROW, GAME THEORY FOR POLITICAL SCIENTISTS 74-75 (1994); see also LUCE & RAFFA, supra note 14, at 56-59 (describing the concept of a two-person zero-sum game); VON NEUMANN & MORGENSTERN, supra note 14, at 46-47, 98-100 (discussing the formulation of a two-person zero-sum game).


43. The game of Jerusalem is not a pure zero-sum game. While each gain for one player entails a loss for the other, the value of such payoffs is not always symmetrical. As part V.C, supra, notes, the parties’ acceptance of several arrangements might generate greater negative payoffs for one party than the positive payoffs produced for the other. See MORROW, supra note 41, at 75 (noting that “almost all interesting social phenomena create mixed motives for the parties involved” and therefore are not good models of zero-sum games).

question arising here is: What is the alternative for each party if an agreement is not concluded? In the “game” of Jerusalem, two kinds of exit options may be relevant: (1) legal exit options and (2) factual exit options.

1. Legal Exit Options

Starting with the legal exit options, the legal system relevant to the question of sovereignty or control over Jerusalem is international law. International law, as municipal systems of law, provides default rules applicable to the relationship between the parties, as long as the parties do not reach an agreement embodying different rules. The content of these default rules has a considerable bearing upon the outcome of the bargaining process and, therefore, it is commonly said that negotiations are conducted “in the shadow of law.” Generally, the content of alternative legal rules narrows the range of possible arrangements the parties agree to.

One of the principal factors explaining the difficulty in resolving the dispute over Jerusalem lies in the fact that international law does not provide the parties with clear default rules, if any, to the question “Whose Jerusalem?” States and scholars have presented numerous legal positions on this question, but neither the international community nor any authoritative institution widely accepted them. As in other legal spheres, where law does not give clear answers to existing problems, its influence upon the behavior of the actors diminishes. This is clearly the case with the extent of international law’s influence upon the course of the “game” of Jerusalem. Thus, the absence of legal exit options enhances the role of factual alternatives available to the parties.

(“[The parties’ best alternative without agreement imply the limits to any agreement.”); see also Janice G. Stein, The Political Economy of Security Agreements: The Linked Costs of Failure at Camp David, in Double-Edged Diplomacy: International Bargaining and Domestic Politics 77, 87-90 (Peter B. Evans et al. eds., 1993) (examining the importance of the participating parties’ exit options during the 1978 Camp David negotiations).

45. See, e.g., Baird et al., supra note 21, at 224 (analyzing how legal rules affect the types of bargains parties strike).

46. Important (though not frequent) exceptions to this observation are mandatory rules of any legal system that the parties to an agreement cannot modify. In international law, for example, “[a] treaty is void if, at the time of its conclusion, it conflicts with a peremptory norm of general international law.” Vienna Convention on the Law of Treaties, May 22, 1969, art. 53, reprinted in 8 I.L.M. 679, 698-99.

2. Factual Exit Options

The factual alternatives to bargaining failure between Israel and the Palestinians over the issue of East Jerusalem are asymmetric. In the absence of an agreement between the parties, the current situation is likely to proceed into the future, and this exit option is in Israel's favor. Israel currently maintains control over East Jerusalem, and this situation is expected to continue unless Israel unilaterally decides to relinquish such control or an outside power forces it to do so; both developments, however, seem very remote. Israeli insistence on preserving the present status quo, however, would not satisfy minimal Palestinian demands and expectations (following the DOP's provisions), and such a situation may lead to a deadlock in the permanent status negotiations. Cessation of or considerable delay in the negotiations may result in violent clashes between Palestinians and Israelis. Such a possible development, however, even if it were to materialize, is not likely to lead Israeli leaders to relinquish control over East Jerusalem or to be more flexible regarding future compromise; but it may well generate negative payoffs for both sides.

Thus, the exit option to bargaining failure in the "game" of Jerusalem is a certain continuation of Israeli control over all of Jerusalem, with the possibility of an impasse in the negotiations and some violent activities by the Palestinians. While this alternative might produce negative payoffs for both sides, it is clearly more favorable to Israel than to the Palestinians. The existence of such a favorable exit option for Israel indicates that Israel's readiness to face a bargaining failure in the "game" of Jerusalem is significantly greater than the Palestinians' readiness to face a bargaining failure. Moreover, this feature explains Israel's past policy of refusing to enter into negotiations over the future of Jerusalem.

C. Embedded Games

The above analysis of the structure of the "game" of Jerusalem may explain why the main parties have not reached a final compromise thus far, but the initial compromise achieved in the 1993 DOP can hardly be explained. Furthermore, as to future prospects for any agreed upon settlement, given the above factors, Israel does not seem to have a considerable incentive to relinquish even part of its control over East Jerusalem and to bear the ensuing negative payoffs. Indeed, if the "game" of Jerusalem had been an isolated one, the pre-1993 deadlock likely would have proceeded into the future. The concept of "embedded games" may ex-

48. It should be noted that since 1967 Israel has allowed the Muslim Waqf to administer the Al-Aqsa Mosque and the Dome of the Rock.
plain the dramatic change in the 1993 DOP, and possible ones in the future.

Frequently, the failure to analyze a social phenomenon properly by game theoretic models stems from misidentification of a particular situation as "the" game while, in reality, it is embedded in a larger game.49 The characterization of a given game as a "subgame" within a larger one, and the identification of the larger game itself, has important implications for its analysis.50 Particularly, as in other cases, focusing on only the interactions between Israel and the Palestinians in the "game" of Jerusalem may hinder our ability to properly understand the whole "game" and its likely course of play.

The "game" of Jerusalem is of great importance to both Israel and the Palestinians, but it certainly is not the only one, and not even the most crucial one, between them. Rather, the "game" of Jerusalem is embedded in a larger framework, in which the "master-game" is the regime to be established in the West Bank and the Gaza Strip, and the degree of independence Israel will accord to the Palestinian self-governing authorities. The linkage between these two issues was formed in the negotiations between the two parties that concluded the 1993 DOP. The Palestinians were not ready to sign the agreement stipulating the principles for Palestinian self-government in the West Bank and Gaza Strip unless Israel included some compromise regarding Jerusalem in the agreement. The parties reached only an initial compromise,51 but without this linkage between the two sub-games, the likelihood of such an agreement would have been slight.

D. Domestic Win-Sets

The significant factors influencing the outcomes of the negotiations over Jerusalem are located not only on an international level, but on a domestic level as well. As Robert Putnam analyzed, the dynamics of many international negotiations can be conceived usefully as a two-level game.52 At "the national level, domestic groups pursue their interests by

49. See BAIRD ET AL., supra note 21, at 191-95 (describing and providing examples of embedded games). Id. at 194.
50. See id. at 192-94. For a technical definition of "subgame," see GIBBONS, supra note 14, at 122-25.
51. See supra part II.
52. Robert D. Putnam, Diplomacy and Domestic Politics: The Logic of Two-Level Games, 42 INT'L ORG. 427, 434 (1988), reprinted in DOUBLE-EDGED DIPLOMACY: INTERNATIONAL BARGAINING AND DOMESTIC POLITICS, supra note 44, app. An expanded collaborative project followed Putnam's two-level game analysis. DOUBLE-EDGED DIPLOMACY: INTERNATIONAL BARGAINING AND DOMESTIC POLITICS, supra note 44. For some refinement and criticism of the two-level game approach (i.e. incorporation of alli-
pressuring the government to adopt favorable policies and politicians seek power by constructing coalitions among those groups. At the international level, governments seek to maximize their own ability to satisfy domestic pressures, while minimizing the adverse consequences of foreign developments. Each national leader appears at both game boards. The underlying fact is that the domestic constituents must endorse any agreement concluded on the international level.

Putnam defined a “win-set” for a given domestic constituency as the set of all possible international agreements that would “win” the endorsement among the domestic constituents. Thus, by definition, any successful international agreement must fall within the domestic win-set of each of the parties to the agreement; or, in other words, the agreement is possible only if those win-sets overlap. The clear result is that the larger the win-set of each player, the more likely they are to overlap; or, the opposite, the smaller the win-sets, the greater risk that the negotiations will break down. One factor influencing the win-sets of the parties is the extent of homogeneity of the domestic constituents regarding the issue at the negotiation table. It is not rare that some segment of one party’s domestic population supports the contention of the other party (e.g., regarding trade liberalization). Generally, the more diffuse the positions are within the domestic constituents of the parties, the easier it might be to achieve an agreement on the international level.

The relative size of the respective domestic win-sets affects not only the likelihood of successful negotiations, but also the distribution of the payoffs between the players. Generally, the larger the win-set of a party, the more amenable he is to granting concessions in the other party’s favor; or, conversely, the player with the narrower win-set is in a better position to compel the other player to make greater concessions. Thus,
Strategical Factors and Game Theory

quite paradoxically, a narrower win-set might be considered an advantage during international negotiations.\textsuperscript{\textit{61}}

The size of the respective win-sets of Israel and the Palestinians provides one significant reason why it has been so difficult to achieve an agreement in the game of Jerusalem. As stated above, the question of Jerusalem has become a major national and religious symbol for peoples on both sides, thus significantly reducing the win-sets of both players and the likelihood of an overlap. An examination of the level of homogeneity within the domestic constituents of the parties reinforces the conclusion. The domestic constituents of both parties are quite unified in that regard, i.e., the majority of the domestic populations of both Israel and the Palestinians is very much interested in having its government exercise sovereignty and control over East Jerusalem. As explained above, this factor increases the likelihood of a bargaining failure.

VII. Possible Structural Changes and the Future Negotiations Over Jerusalem

The above analysis of the basic structure of the "game" of Jerusalem raises two principal questions: the first question is whether the structural factors are static or amenable to changes; the second question is what are the effects of some possible changes upon the outcomes of future negotiations. As shown below, the main parties or the players in the middle and external circles certainly may modify some structural features. In this section, we shall analyze possible changes and their likely implications.

One factor that has a major influence upon the outcome of future negotiations, whether some compromise is reached or a bargaining failure occurs, is the structure of the "game" of Jerusalem as a zero-sum game. As explained previously, the key feature of a zero-sum game is that whatever one player wins the other loses.\textsuperscript{\textit{62}} Players in such situations are considered to be in conflict and are not inclined to cooperate or compromise.\textsuperscript{\textit{63}} So far, the "game" of Jerusalem has had strong features of a zero-sum game and, as long as this situation prevails, the likelihood for a compromise is significantly reduced. Three principal techniques may transform the structure of the game into a non-zero sum game: (a) increasing the payoffs for some moves; (b) expanding the scope of the game; or (c) combining several sub-games into one game.

The first technique to change the structure of a zero-sum game is to provide the players (either one or both) with some additional payoffs if

\textsuperscript{\textit{61}} Putnam, supra note 52, at 440.
\textsuperscript{\textit{62}} Supra part VI.A.
\textsuperscript{\textit{63}} Supra notes 41-43 and accompanying text.
an agreement is reached, but without a correlative loss to the other party. The players in the external and middle circles (e.g., the United States or the European Union) primarily may supply the new payoffs. The players in these circles may provide the main players with various kinds of assistance, the most notable (but not the most important) being economic assistance. Thus, for instance, the United States or the European Union may channel significant financial resources into East Jerusalem to raise the standard of living of the Palestinians residing in that area, or to establish new medical or academic institutions in the Jewish neighborhoods. Economic assistance also may take the form of trade preferences, whereby the United States or the European Union may grant privileged trade concessions to products manufactured in East Jerusalem (either by Jews or Palestinians) and imported into their territories.

Economic payoffs are not the only payoffs in game theory and the “game” of Jerusalem well illustrates a game in which social, religious, and symbolic gains outweigh economic ones. Non-economic payoffs that players outside the inner circle provide may consist of international recognition. States in the middle and the external circle, such as the United States and European Union, may decide to recognize Jerusalem as the capital of the State of Israel, and transfer their embassies to the City. To Israel, such a move might be considered a significant payoff. As for the Palestinians, the United States and European Union may choose to recognize the Palestinian Authority as having some international status, or assist it to become a sui generis or regular member of some intergovernmental organizations.

The second possible technique to change the structure of the game is to have the main players themselves expand its scope. An expansion of the game into new domains that do not have a zero-sum character may transform the structure of the game into a non-zero one. The game of Jerusalem may be enlarged to include either new territories or symbols, or both. On the geographical level, the city boundaries may be expanded to include areas that currently are not within Jerusalem. The enlarged Jerusalem...
Strategical Factors and Game Theory

salem may include adjoining territories in the West Bank. Though there is some controversy over the final status of the West Bank, the dispute over its status does not have the strong zero-sum features of the “game” of Jerusalem.67

On the symbolic level, the “game” of Jerusalem may be expanded to include new symbols. As noted above, the main struggle in Jerusalem is for symbols; and the main parties may create some new symbols, mainly religious and cultural in nature themselves. Thus, for instance, new symbols may take the form of new title roles such as the Guardian of the Muslim Holy Places in Jerusalem, the Chairman of the Consultative Committee on the Muslim Holy Places in Jerusalem, or of raising a religious Muslim (not national) flag over some Muslim Holy shrines. Symbolic functions in the Muslim Holy Places may well play a significant role in the “game” of Jerusalem, and their allocation should not be necessarily limited to the main players. In fact, granting such roles to some Arab states may encourage them to provide significant payoffs (either financial or non-financial) to the main players.

Last, but not least, the possibility of establishing new religious buildings or monuments in Jerusalem should not be lightly discarded. The importance of such new sites certainly will be on a much lower scale than the Western Wall or the Al-Aqsa Mosque, but this does not mean that they will be of no significant symbolic importance at all for the parties. The establishment of new religious buildings or monuments may assist the main parties to allocate symbols, both among themselves and with players in the other circles. If this method is employed, the new religious sites should not be, of course, only Muslim or Jewish ones, but new Christian sites also may be established in East Jerusalem.

The third possible method to change the structure of the “game” of Jerusalem is to embed it in some other sub-game. Here, it may be desirable to embed the sub-game of Jerusalem with other sub-games that do not have inherent zero-sum features. The difference between the herefore described method of expanding the game and that of embedding it within some other sub-game, lies in the nexus between the relevant game


67. While under Israeli law, East Jerusalem is considered a part of the State of Israel, see supra part V., this is not the case with the West Bank and the Gaza Strip.
and the new element. While the technique of expansion assimilates the new element into the existing game, the method of embedding creates a link between the two sub-games, yet preserves their independence.

The frontrunner sub-game to be embedded within the "game" of Jerusalem is the permanent status of the West Bank and Gaza Strip. The linkage between these two issues already was formed in the negotiations leading to the 1993 DOP, and this pattern may recur in the next round of negotiations. In light of past experience, however, it should be emphasized that employment of the method of embedding does not inevitably suggest that Israel will be the player who makes the concessions in the Jerusalem sub-game, in favor of some gain in the sub-game of the West Bank and Gaza Strip. In fact, it is certainly possible that the direction will be the opposite. For instance, it is possible that Israel would be ready to relinquish its opposition to the establishment of a Palestinian state in exchange for Palestinian recognition that East Jerusalem (or almost all of it) is under Israeli lawful sovereignty. Of course, this is only one example of numerous possible trade-offs between the two sub-games. Beyond the possibility of embedding the Jerusalem sub-game within that of the permanent status of the West Bank and Gaza Strip, the parties also may consider other sub-games, such as those involving security arrangements and economic relations.

The win-sets of the respective parties also may undergo some changes and modify the likelihood that the parties will reach an agreement. As explained above, the greater the domestic win-sets of the players, the more likely they are to overlap and lead to an agreement. The win-sets of the parties may be enlarged or narrowed in accordance with changes in the payoffs produced to the parties, or in line with a combination of the "game" of Jerusalem with other sub-games. These possible changes are enumerated above, and need not be repeated here. If changes to the "game" of Jerusalem modify the preferences of only some segments of the domestic population (as expected in our case), it will lessen the current level of homogeneity within the domestic constituents and increase the likelihood of an agreement. As noted above, the more diffuse the domestic positions are, the easier it might be to achieve an agreement on the international level.

The larger the win-set of a party on the domestic level, the more amenable the party is to concessions on the international level. This fact

68. See supra part VI.C.
69. Supra part VI.D.
70. See discussion supra, part VII.
71. See supra part VI.D. (discussing domestic win sets).
72. See supra VI.D. (same).
may lead the parties to seek to enlarge the win-set of the other side during the negotiations (e.g., by communicating directly with the other sides' domestic constituents), and likewise, because the player with the narrower win-set is in a better position to compel the other player to greater concessions, the negotiators may attempt to portray their respective sides as having very narrow win-sets.\footnote{For a discussion of the possible ways to enlarge an opposing party's win-set, and to exaggerate the tightness of the negotiator's domestic win-set, see Putnam, supra note 52, at 454-55; see also Knopf, supra note 52, at 602.}

VIII. Conclusions

The structural features of the "game" of Jerusalem, especially its character as a zero-sum game with small domestic win-sets, explain why it is so difficult to negotiate a solution to the question of Jerusalem. An examination of the exit options available to the parties reveals the asymmetric bargaining positions of the parties, with a clear preference for Israel. Moreover, the existence of viable exit options explains Israel's past policy regarding negotiations over Jerusalem. These structural features alone indicate the low probability that a compromise between Israel and the Palestinians will be achieved in the future.

The probability of a successful compromise will increase, however, if the structure of the "game" of Jerusalem is changed either by increasing the payoffs generated to the parties in the event of agreement, or by expanding the game's functional scope (through the technique of embedding or enlargement). Such moves, if the contending parties adopt them, may enhance their ability to exchange payoffs in a broader domain, and make it easier for them to reach some compromise. If an agreement is not achieved in the next round of negotiations, Israel will continue to exercise control over all parts of East Jerusalem, with the Palestinians possibly terminating the negotiations in all tracks or even initiating violent activities. Israel's current preferred exit option seems so solid that it would be very difficult, even with the employment of the above methods, to balance completely the competing bargaining positions of the parties. This factor leads to the conclusion that certain structural changes may increase significantly the probability of a compromise between the parties, but Israel's preferred position likely will continue to overshadow the future course of the "game" of Jerusalem.

In light of the preceding analysis, we may examine the contributions of game theory to the research on the question of Jerusalem and its resolution. Game theory is focused on one set of factors, i.e. strategical factors, in the interaction between the players in the "game" of Jerusalem. Game
theoretic analysis does not take into account external factors, such as personal characteristics of the decision makers or social values prevailing in their communities. The significance of the latter factors in numerous interactive situations indicates that game theory should not be the only instrument used to analyze social phenomena like the controversy over the future of Jerusalem. The limitation to only interactive factors, however, enables us to concentrate on one set of variables, and to explore in depth their effects on the behavior of the players and the interplay between these variables.

An analysis of the controversy over Jerusalem using concepts of game theory enables us to identify some important structural features standing at the base of the conflict, and to understand the course of the "game" up to the present time. Furthermore, the comprehension of these factors provides a valuable instrument to modify the course of the "game" by changing its structural features. It should be noted, however, that while theoretically it is always possible to change the structure of an interactive situation, such changes are not possible in all cases. This is true, for example, with regard to a change in the exit options in the "game" of Jerusalem, since it is doubtful whether customary international law or future agreements between the parties will modify the legal exit options in the coming years. Similarly, the factual exit options in the "game" of Jerusalem theoretically might be changed by the main players or by those in the middle and the external circles, but the likelihood of a significant development in that respect is quite remote.

This brief article is not intended to cover all issues relating to game theory and the future negotiations over Jerusalem. The article rather focuses on certain elements of the "game" of Jerusalem, and how structural changes are likely to affect the parties' ability to reach an agreement. Game theory concepts deal not only with the outcome of reaching an agreement or bargaining failure, but also with the allocation of payoffs between the players. This subject was touched upon only slightly in some parts of this article, and deserves a separate study. Furthermore, this article focuses mainly on structural factors, while further studies may explore the influence of other variables (e.g., risk aversion, information, urgency) on the future course of the "game" of Jerusalem. Such possible studies may add an additional and interesting dimension to the current literature on the future of Jerusalem, and perhaps even assist those actively seeking a solution to the question of Jerusalem.