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Source: *The Journal of Conflict Resolution*, Vol. 44, No. 3 (Jun., 2000), pp. 333-358  
Published by: Sage Publications, Inc.  
Stable URL: <http://www.jstor.org/stable/174630>  
Accessed: 03/02/2010 07:55

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# Fair Division, Adjusted Winner Procedure (AW), and the Israeli-Palestinian Conflict

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A dispute resolution mechanism called Adjusted Winner (AW), developed by Brams and Taylor, is used to propose a plausible solution to the final status issues between Israel and the Palestinians. Unlike conventional negotiating procedures, AW possesses desirable qualities including equitability, efficiency, and envy-freeness. Based on data from an original survey, results show that when the issues of security and borders are kept separate, Israel is likely to have its demands met on the issues of security, East Jerusalem, normalization of relations, and water. The Palestinians will win on the issues of sovereignty, Israeli settlements in the West Bank, Israeli settlements in Gaza, and Palestinian refugees. Both sides will need to compromise on the issue of boundaries. If security and borders are lumped together as one issue, Israel and the Palestinians will share on the issue of East Jerusalem.

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**F**ormal theory of fair division dates back to the work of Steinhaus (1948) and his students, Stefan Banach and Bronislaw Knaster, when they raised the issue of fair division for more than two people. More common fair division procedures, such as strict alternation and divide and choose (and their variants), fall short of meeting several fair division criteria.

Unlike other bargaining techniques, the new fair division procedure of Adjusted Winner (AW) developed by Brams and Taylor (1999, 1996) has several compelling properties, including equitability, efficiency, and envy-freeness. AW has been applied to a number of international disputes, including the Panama Canal treaty, Camp David Accords, and the Spratly Islands.<sup>1</sup> This article applies the AW procedure to the final status issues between Israel and the Palestinians.

The Israeli-Palestinian peace process achieved substantial progress under Israel's Labor Prime Minister Yitzhak Rabin from 1992 to 1995. Israel and the Palestinians signed a number of agreements: Oslo I (1993), Gaza-Jericho Agreement (1994), and

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1. For applications of this procedure, see Brams and Taylor (1999), Brams and Togman (1998), Denoon and Brams (1997), and Brams and Taylor (1996).

**AUTHOR'S NOTE:** A previous version of this article was presented at the International Studies Association Annual Convention, Washington, D.C., February 16-20, 1999. I would like to thank Steven Brams for his comments on parts of this article.

Oslo II (1995).<sup>2</sup> Peace talks suffered a setback with the assassination of Rabin by a militant Jew in November 1995 and the accession to power of Benjamin Netanyahu of Likud in June 1996. Netanyahu, who ran on the issue of security, was not as committed to the Oslo process as was Rabin. Nonetheless, two agreements were signed during Netanyahu's tenure: the Hebron Accord of January 1997 and the Wye Agreement of October 1998.<sup>3</sup> Discontent resulting from the Wye Agreement forced Netanyahu to hold new elections in May 1999.

In the May Israeli elections, Ehud Barak, a more moderate leader and a supporter of the Oslo process, defeated Netanyahu.<sup>4</sup> As a consequence, there is great optimism that the peace process can now move forward and tackle the remaining final status issues between the two sides. When the final status talks resume, what shape will an agreement take? What would a fair division solution look like?

Using the AW procedure, this article presents a plausible illustration of how the outstanding issues between the two parties are likely to be resolved. To identify and rank each issue in terms of its importance to each side, I rely on available information in the form of working documents, plans, interim agreements, and statements relating to the final status issues. In addition, I use the results of an original survey I sent to members of the Middle East Studies Association (MESA) who were selected for their knowledge of this conflict.

I will argue that the solution obtained under the AW procedure is a plausible outcome in a future Israeli-Palestinian peace treaty. The next section describes the fair division procedure known as AW.

2. The Arab-Israeli peace process began with the Madrid Conference in October 1991. The Madrid meeting launched multilateral and bilateral tracks. Multilateral negotiations have been ongoing, and the issues have ranged from water to arms control and regional security. However, success has been reached mainly on the bilateral level. The Oslo Accord (also known as the Declaration of Principles or Oslo I) is an interim agreement designed to advance the parties to a final peace treaty after 5 years. The Gaza-Jericho Agreement called for the withdrawal of Israeli forces from Gaza and Jericho on the West Bank and for the transfer of power to the Palestinian Authority (PA). Oslo II granted the Palestinians more civil and administrative control over the West Bank and called on Israel to withdraw from Palestinian cities and towns. The agreement divided the West Bank into three different zones of control: Zone A came under Palestinian control, Zone B fell under joint Israeli-Palestinian jurisdiction, and Zone C was left under Israeli control. A number of works, including some by the participants, have appeared about the peace process. In particular, see Segev (1998), Abbas (Abu Mazen) (1995), Peleg (1998), Savir (1998), and Baskin and al Qaq (1997). In addition to published texts, the reader also can find useful documentation related to the peace process by consulting the following web sites: [www.peace-now.org](http://www.peace-now.org) (Peace Now Movement Home Page); [www.pna.net](http://www.pna.net) (Palestinian Authority's home page); and [www.israel.org](http://www.israel.org) (Israel's Ministry of Foreign Affairs).

3. The Hebron agreement called on Israel to partially redeploy its military forces from the town as called for in Oslo II. Most of 1997 and 1998 were marked by conflict and stalemate over the issues of Israeli settlements and further Israeli redeployment. Nonetheless, active American involvement yielded the Wye Agreement. An expansion of Oslo II, the agreement further transfers 13% from Area C as follows: 1% to Area A and 12% to Area B. Furthermore, 14.2% from Area B will become Area A. This latest breakthrough will give the Palestinians control over 40% of the West Bank.

4. After forming his coalition government, which is a mixture of secular and religious parties, Barak has promised to implement the Wye Agreement and reopen negotiations with Syria over the Golan Heights.

### AW PROCEDURE

The AW procedure is applicable to disputes with divisible issues or goods. Two players allocate points to the issues or goods based on their preferences. AW produces a settlement that is

- envy free—neither player will trade its portion for that of the other,
- efficient—any allocation that is better for one player will be worse for the other, and
- equitable—both players receive the same number of points.

For a detailed explanation and proof that AW satisfies these properties, see Brams and Taylor (1996, chap. 4). For these properties to be met, two assumptions are made: linearity and additivity. Linearity assumes that marginal utilities do not diminish but stay the same. Additivity means that points can be added across goods or issues to derive a total, suggesting that one issue is separate from another. If this proves to be a problem, then a possible solution would be to group related issues together as one issue.<sup>5</sup>

Under AW, each side is given 100 points to distribute across goods. The goods are then granted, based on each player’s allocation of points, according to the following procedure:

1. Initially, players win the goods on which they have placed the greater points.
2. If the total number of points won by each player is equal, then the procedure ends.
3. If one side wins more points than the other, some points will have to be transferred from the side with more points to the side with fewer points. This is called an “equitability adjustment” (Brams and Taylor 1996, 70).
4. The transfer process starts with the good that has the lowest ratio of the party with more points to the party with fewer points. If the division of points is still unequal, then the procedure moves to the next issue with the next-lowest ratio, and so on.

This procedure can be illustrated with a simple example.

Suppose two states, State 1 and State 2, must divide three issues or goods between them. Based on how important each issue is to each state, the sides allocate their points as follows (the greater point allocation for each issue is underlined):

	Issue 1	Issue 2	Issue 3	Total
State 1	<u>20</u>	20	<u>60</u>	100
State 2	10	<u>50</u>	40	100

Initially, Issues 1 and 3 are awarded to State 1 giving it 80 points, and Issue 2 is granted to State 2 for a total of 50 points. To achieve equitability, some points must be transferred from State 1 to State 2 to give equal points to each player. Issue 3 has a lower winner-loser ratio ( $60/40 = 1.5$ ) than Issue 1 ( $20/10 = 2$ ). If the points for Issue 3 are given to State 2, the total would place State 2 far ahead of State 1. To equalize the

5. Lumping issues together usually results in lower point totals for each player (Brams and Taylor 1999, 98).

point totals for each player, a percentage of Issue 3 must be transferred to State 2, making it necessary for both sides to share or split Issue 3. Let  $x$  denote the fraction of Issue 3 State 1 will keep, with the rest transferred to State 2. To equalize the points for both sides, we set State 1's points (left side of the equation) equal to State 2's points (right side of the equation):

$$20 + 60(x) = 50 + 40(1 - x),$$

which yields  $x = 70/100 = .7$ . Thus, State 1 retains 70% of Issue 3, giving it 62 points ( $20 + 42$ ), whereas State 2 is awarded Issue 2 and 30% of Issue 3 for a total of 62 points ( $50 + 12$ ).

This outcome meets the criteria of fair division. Each state obtains at least half of its points. More important, each side is awarded those issues it values most, therefore giving it no reason to envy what the other received. The solution also satisfies the efficiency requisite of fair division. In this case, there is no other outcome that will give the two parties more points. Finally, the equitability criterion is met by the equitability adjustment built into AW—each side receives 62 points.

### FINAL STATUS ISSUES

The Oslo Accord states that the final status issues are to be negotiated according to UN Security Council Resolutions 242 and 338. But these resolutions leave many issues open for negotiations and arguments. Interim agreements since 1993 also stipulate that the outcome of the final status negotiations (FSN) should not be prejudiced by agreements reached during the interim period.

Technically, the first meeting of the FSN began on May 5, 1996, in Taba, Egypt. Due to disagreements over the interpretation and implementation of the interim agreements, no further talks have occurred. Nonetheless, we have much information about the positions of each side on each of these issues. In fact, some understandings or documents already have circulated about the FSN issues. For example, the Abu-Mazen-Beilin plan of 1995 (negotiated by Arafat's deputy and Yossi Beilin of the Labor Party) and the Labor-Likud working document of January 1997 offer important information about the likely outcome of future negotiations. In addition to these sources, I apply the results of an original survey I conducted specifically for this article about the relative importance of each issue to each party.

The final status issues that have been specifically mentioned thus far include the Gaza settlements, West Bank settlements, East Jerusalem, normalization of relations, Palestinian refugees, Palestinian sovereignty, security, water, and boundaries.<sup>6</sup> This section explores the positions of each side on these issues and incorporates the results of the survey found in Table 1.

6. These issues were singled out because they have been raised and discussed by Israel and the Palestinians and other academics working on this conflict. The goal of capturing the most salient issues dividing the two sides also was supported by the responses in the survey. Respondents were asked to write in additional issues that had not been included in the survey, but only several individuals made suggestions.

TABLE 1  
 Survey Results: Frequencies of Responses (valid percentages)

	Rating for Israel/Rating for Palestinians					
	<i>Least Important</i>	<i>Less Important</i>	<i>Somewhat Important</i>	<i>Quite Important</i>	<i>Very Important</i>	<i>Most Important</i>
Gaza settlements	15.5	25	20.2	23.8	11.9	3.6
West Bank settlements	1.2	6	11.9	21.4	38.1	22.6
		3.6	3.6	19	45.2	27.4
East Jerusalem		1.2	4.8	7.1	39.3	47.6
		2.4	3.6	3.6	19	71.4
Normal relations	8.3		1.2	8.3	22.6	67.9
		10.7	23.8	23.8	17.9	15.5
Palestinian refugees	13.1	14.3	29.8	23.8	8.3	10.7
		25	35.7	4.8	11.9	13.1
Palestinian sovereignty	2.4	7.1	11.9	22.6	33.3	22.6
		20.2	21.4	10.7	22.6	9.5
Security	1.2		2.4	1.2	4.8	90.5
		10.7	14.3	22.6	29.8	11.9
Water		2.4	7.1	14.3	41.7	34.5
		4.8	7.1	21.4	40.5	26.2
Boundaries		3.6	4.8	20.2	32.1	39.3
		2.4	3.6	19	32.1	42.9

NOTE: Top numbers for each issue represent frequencies for Israel, and bottom numbers for each issue represent frequencies for Palestinians.  $N = 84$ .

### ISRAELI SETTLEMENTS IN GAZA

One of the more crucial issues during the final status talks will be settlements. Thus far, both sides have agreed to postpone discussing this issue until the final peace negotiations. Historically, Israel always has claimed the necessity of settlements for its sovereignty and security. From 1967 to 1977, Labor governments justified settlements in terms of security. Likud expanded on Labor's practice in the 1980s and attached a national and religious significance to them. The growth and scope of Israeli settlements expanded rapidly under Likud. Today, there are approximately 150 settlements totaling 161,000 settlers in the West Bank, 10 settlements totaling 180,000 in East Jerusalem, and 16 settlements with a population of 6,000 in Gaza (*Journal of Palestine Studies*, Summer 1998, 139).

Although Israeli public statements make reference to the right of Jews to settle anywhere in Palestine, settlements in Gaza do not hold any special meaning to Israelis. Israel will ask to maintain some of the settlements grouped closely together but be willing to dismantle others, such as those that divide the Gaza in two. Given the small number of settlers in Gaza, Israel will likely withdraw from most of this territory. This assessment of Israel's position is supported by the survey data, which show a normal distribution of responses on how important this issue is to Israel (only 15.5% of respondents rated it as *most* or *very important*).

The Palestinians always have argued that all Israeli settlements in the occupied territories are illegal and contradict international laws and resolutions. The Palestinians will demand total Israeli withdrawal from the Gaza strip. However, they might be willing to give up control of some of the settlements located in the northwest and southwest corners of the strip. Again, results from the survey show that this issue is much more important to the Palestinians than it is to the Israelis (60.7% rated it as *very* or *most important*).

#### ISRAELI SETTLEMENTS IN THE WEST BANK

Unlike the settlements in Gaza, settlements in the West Bank are more important to Israel because they hold religious, national, and symbolic significance. The character and number of the settlers also differ from the Israeli settlers in Gaza. The weight of this issue to Israel is reflected by the distribution of responses in the survey (72.6% rated this issue as *most* or *very important*). Breaking with past Israeli statements, Prime Minister Rabin argued that settlements had not greatly enhanced Israel's position (Aronson 1996, 10). However, Rabin's victory in 1992 did not diminish the growth of settlements; Rabin simply wanted to expand settlements around Jerusalem and not support outlying ones. In fact, an unprecedented growth of settlements was planned for the 5-year interim agreement (Oslo I).

The building effort in East Jerusalem has been geared to consolidating Israel's control over the territory and establishing a unified Jerusalem. Current estimates show that Jews form a majority in East Jerusalem. The Israeli government already has spent a considerable amount of money building the infrastructure to link settlements in East Jerusalem to the rest of Jerusalem. Israel is also laying the groundwork to connect bypass roads through all the settlements in the West Bank.

The Israeli position on Israeli settlers in the West Bank is reflected in Oslo II. This agreement divides the West Bank into three zones. Zone A, approximately 1% of the West Bank, includes the major Palestinian cities and gives the Palestinian Authority full control over civilian matters. Zone B, about 27% of the West Bank, makes up the rest of Palestinian population centers (villages and towns) and provides for joint Palestinian-Israeli control. However, Israel retains overall security arrangements. Zone C, comprising the rest of the West Bank (72%), incorporates most Israeli settlements, military bases, and other state lands. Israel holds sole control over this area. The Wye Accord in October 1998 called for a further transfer of 13% of land from Zone C to the Palestinians.

The Israel position has been that no settlements will be abandoned or evacuated. What is apparent is the similarity of views between Labor and Likud on the issue of settlements. Most Israelis view settlements in Greater Jerusalem as part of Israel. Hence, from the Israeli perspective, settlements in the West Bank refer to those outside of Greater Jerusalem. Furthermore, Israel will request that settlers remaining as part of a new Palestinian state are to be granted special status, permitting them to maintain their links with Israel. In all the interim agreements thus far, the status of the Israeli settlers is protected by Israel. The Palestinians have no authority over these settlements.

The issue of Israeli settlements in the West Bank is also significant to the Palestinians—it directly affects the shape and jurisdiction of a future Palestinian state. Such Palestinian concerns are illustrated by the data in the survey, which show that 86.9% of respondents believe this issue to be *most* or *very important*.

The Palestinians always have maintained that Israeli settlements in the Occupied Territories are illegal and a violation of the Fourth Geneva Convention. Although the Oslo Accord calls for the freezing of settlements in the Occupied Territories, the expansion and building of new ones will likely prejudice the final status negotiations by establishing certain facts on the ground.

The Palestinians already have made some concessions in the interim agreements with respect to land in the West Bank. For example, Oslo II recognizes the right of Israel to state or absentee land located under the jurisdiction of the Palestinians. Israel already has classified anywhere from 50% to 70% of the West Bank in this category. The clause also calls for the continuation and expansion of settlements, even if they fall under Palestinian control. It is likely that the Palestinians will concede to Israel's annexation of some settlements. They also will agree to allow some of the settlements to remain as part of a new Palestinian state.

#### EAST JERUSALEM

This issue is perhaps the most contentious between the two sides. Both parties claim East Jerusalem as central to their sovereignty. Results from the survey show that respondents defined East Jerusalem as *most important* for both sides (71.4% for Israel and 67.9% for the Palestinians).

Israel captured East Jerusalem from Jordan during the 1967 war. By the end of June 1967, it extended its laws and administration over East Jerusalem. In August 1980, Israel passed a basic law that formally declared Jerusalem its capital. Since then, Israel has proceeded to separate East Jerusalem from the rest of the West Bank.<sup>7</sup> It has managed to change the demographic and geographic character of East Jerusalem to its advantage. In 1995, the Jewish Municipality Planning Department announced that Jews in East Jerusalem outnumbered Palestinians 168,000 to 160,000.

Israeli leaders from Rabin to Netanyahu have consistently rejected any scheme that divides the city of Jerusalem. Israel argues that East Jerusalem is not part of the West Bank but rather is a disputed territory falling outside of the principles of the Fourth Geneva Convention dealing with the treatment of occupied territories.

Israel's behavior since the Oslo peace process provides some insight into its position on East Jerusalem. Thus far, Israel has objected to any Palestinian move that would dilute its control over East Jerusalem. For example, it has not allowed the Palestinian Authority to have jurisdiction over the Palestinian inhabitants of East Jerusalem. Finally, Israel opposes UN Resolution 181, which places Jerusalem outside the partition plan of 1947.

7. For a comprehensive portrait of Jerusalem, see Dumper (1997).



East Jerusalem is a national issue for the Palestinian people. Palestinians envision the Arab population of East Jerusalem as part of a capital of a future Palestinian state. Most Palestinian national institutions are located in East Jerusalem.

The Palestinians consider all Israeli settlements in East Jerusalem to be illegal and contrary to existing international law and UN resolutions. They point to the numerous UN resolutions passed over the years supporting their position and criticizing Israel's policies with respect to East Jerusalem.

The Palestinian position is based on UN Resolution 242, which defines East Jerusalem as part of the West Bank. According to this resolution, Israel should withdraw from Arab territories conquered during the 1967 war.<sup>8</sup> Furthermore, Palestinians claim that Israel has no right to enact any changes that are likely to prejudice the outcome of the final status talks. This position is supported by the Oslo Accord.

However, there are recent indications that the Palestinian side might be flexible on the issue of East Jerusalem. In 1996, Arafat made a statement, after Netanyahu's speech to U.S. Congress, suggesting that Jerusalem be a united capital for both peoples. Moreover, the Abu-Mazen-Beilin plan calls for Jerusalem to remain Israel's undivided capital, whereas a Palestinian capital should be established in Abu Dis, adjacent to East Jerusalem but outside its municipal boundaries. The Islamic religious sites would come under Palestinian sovereignty. However, this plan received very little Palestinian support at the time.

#### NORMALIZATION OF RELATIONS

For Israel, normalization of relations is the equivalent of peace. Israel now has two models on which to base its demands for normalization of relations: Camp David and the Israeli-Jordanian Agreement. Survey responses show that this issue is more important to the Israelis than the Palestinians. A total of 33.4% of respondents judged this issue to be *very* or *most important* to Israel, whereas only 19% gave it the same rating for the Palestinians. Given the geographic proximity of the two entities, it is imperative for Israel to enlist the cooperation of the Palestinians on a number of issues. Normal relations will have to include diplomatic relations, economic relations (a large percentage of Palestinian imports come from Israel), cooperation on cultural and religious sites, transportation, communication, and security measures.

Establishing normal relations with Israel is also important to the Palestinians. Israel's cooperation is required on a number of issues, including transportation or passage between the two Palestinian territories, treatment of the Arab residents, and management of religious sites and water. Furthermore, economic links between the two sides will be necessary. The Palestinian labor force depends on Israeli employment for a large part of its livelihood.

8. There is disagreement over what the term *territories* refers to. Israel claims that the term does not refer to all the territories gained in the 1967 war and does not require it to withdraw from all of the territories. On the other hand, Arab states and the Palestinians insist that the term refers to all of the territories gained in the war.

## PALESTINIAN REFUGEES

Although the issue of refugees has been discussed by the multilateral working group on refugees, those talks have focused primarily on humanitarian dimensions (Tamari 1996). Furthermore, the Oslo Accord placed the discussion of the settlement of the 1967 refugees in a quadripartite committee consisting of Jordan, Israel, Egypt, and the Palestinians. It was agreed that the question of the 1948 refugees would be treated bilaterally between Israel and the Palestinians during the final status talks.

There are two main aspects to the refugee issue: right of return (who should be allowed to return and where) and compensation (who should receive it and how much). Complicating this debate are disagreements over the definition and size of the Palestinian refugees. Generally, the definition of Palestinian refugees is based on the United Nations Relief and Works Agency (UNRWA), which was created to deal specifically with Palestinian refugees. UNRWA defines Palestinian refugees as any persons or their descendants who lived in Palestine between June 1, 1946, and May 15, 1948, and lost their homes or means of livelihood as a result of the 1948 conflict (Zureik 1996, 9). Furthermore, refugees include other categories that go beyond the 1948 conflict, such as the 1967 refugees or those refugees resulting from deportations. Finally, the two sides differ over the total number of the 1948 and 1967 refugees. Approximately 3 million Palestinian refugees were registered with UNRWA in 1995. If displaced persons from the 1967 war are included, the total number of refugees equals 4 million.

Israel's calculations for the 1948 and 1967 refugees are much smaller than Palestinian estimates. Israel claims that the Palestinian estimate is inflated and believes the actual number to be about one half of that total (Zureik 1996, 25). Controversy also exists about the number of refugees resulting from the 1967 war: UNRWA puts that figure at 350,000; Arab figures reach 400,000; whereas Israeli figures total only 200,000 (Zureik 1996, 22).

Israel has consistently refused to repatriate the 1948 refugees. Historically, Israel held the belief that Palestinian refugees should be absorbed by other Arab countries. It argued that it could not permit the return of Palestinian refugees because they would constitute a threat to the Israeli state. Israel has maintained that the right of return applies to nationals and the Palestinians were not nationals during the 1948 war (Peretz 1993). Furthermore, Israel claims that the right of return is weakened by UN Resolution 242, which calls only for a "just settlement of the refugee problem." Resolution 242 left the definition of a refugee vague—did it apply to the 1967 or 1948 war?

On the other hand, Israel is willing to partially compensate the 1948 refugees but only as part of an overall settlement and through an international organization. It insists that compensation should be at the collective, not the individual, level. One study calculates the compensation due the refugees to be \$142 billion in 1984 prices if based on lost property (movable and immovable) plus loss of career opportunity and psychological damage, and \$92 billion if limited to material losses only (Kubursi 1996).

The refugee issue is more significant to the Palestinians than the Israelis. Survey responses show that, whereas 55.9% said that this issue is *most* or *very important* to the Palestinians, only 22.6% indicated it had the same importance to Israel. From the start,

Palestinians have blamed Israel for the refugee problem. Palestinians have insisted on the right of return and compensation for the refugees. For the Palestinians, the basis for the settlement of the refugee issue dates back to General Assembly Resolution 194 (III), which called on Israel to facilitate the return of the refugees and compensate those who did not wish to return. Moreover, displaced Palestinians should be handled according to Resolution 237 of June 14, 1967, which calls on Israel to facilitate the return of those who fled the area since the outbreak of hostilities. UN Resolutions 242 and 338 also call for a settlement of the refugee issue.

More recent and unofficial views about the Palestinian refugee problem have advanced positions that might be acceptable to Palestinian leadership. Khalidi (1994, 1990) has called on Israel to symbolically accept UN Resolution 194 and admit that an injustice has been committed instead of the principle of the right of return. This interpretation also is supported by Zayyad (1994), a member of the Palestinian Council, who argued that Palestinians could implement the right of return to a Palestinian state.

#### PALESTINIAN SOVEREIGNTY

Israel always has opposed the idea of granting the Palestinians full autonomy. In the past, they pushed the option of some type of confederation with Jordan. Now that Jordan has severed all administrative ties with the West Bank, this leaves the Palestinians free to declare their own state. In the current peace process, Israeli statements have hinted at some Palestinian autonomy over Palestinians areas but still object to a full-fledged Palestinian state.

Current peace plans call for a Palestinian entity that would be somewhat controlled by Israel. In practice, expected notions of sovereignty might be possible in the Gaza strip but unlikely in the West Bank. Israel envisions different spheres of authority, depending on the issue. For example, Israel expects to play a dominant role when it comes to security and protection of the settlers. Nonetheless, the Abu Mazen-Beilin plan suggests a possible Israeli acceptance of an independent Palestinian state.

For the Palestinians, sovereignty is perhaps the most important goal. Over the decades, Palestinians have used a variety of approaches ranging from diplomacy to terrorism in pursuit of this objective. The severing of Jordan's claim and administrative link with the West Bank, coupled with the Palestinian uprising in the Occupied Territories in 1987, led to the unilateral declaration of an independent Palestinian state in 1988. The territories of this new state would comprise the West Bank and the Gaza strip.

Anything short of Palestinian statehood is not likely to be acceptable to the people or the leadership. This view is supported by the results of the survey, in which 90.5% of the respondents rated this issue as *most important* for the Palestinian side.

#### SECURITY

Security is an extremely important issue for Israel, and in the survey 83.3% of respondents ranked it above all other issues. On the other hand, security was judged to

be less important to the Palestinians, with 10.7% of respondents rating it as *most important*.

Israel will not permit the formation of a Palestinian entity that in the future would endanger the security of its people. By relinquishing control over most of the West Bank, Israel perceives it would lose an important buffer zone in case of an Arab attack. The concern for Israelis is not so much over the Palestinian threat as a fear that the West Bank will be used by other invading forces. Israel will demand some control over the Jordan Valley border and Green Line.

A Palestinian state would have to be demilitarized. Also, Israel will demand that no foreign military be stationed in a new Palestinian state. It will insist on maintaining some intelligence-gathering capabilities in the West Bank to ensure the Palestinians are complying with this Israel concern.

The other major threat for Israel is terrorism. Since the Oslo Accord of 1993, Israel consistently has complained that the Palestinians have not done enough to curb terrorism. Israel will insist on extradition rights and sharing of information related to this issue.

Palestinians recognize Israel's security concerns but disagree on the limitations such demands pose for Palestinian sovereignty. They argue that, given the instability in the region, a new Palestinian state must be able to protect itself from outside threats. Recent plans and documents suggest that Palestinians are likely to agree to demilitarization, cooperating with Israeli security forces, and possibly accepting some Israeli troop presence in certain areas.

Terrorist acts from Israeli extremists also will be a concern for Palestinians. Palestinians argue that whatever security arrangements are made to meet Israel's concerns should apply to the Palestinians as well.

## **WATER**

Given its significance in the Middle East, water often has been contested by Israel and the Arab states. Water is a bilateral as well as a multilateral issue. With respect to water resources, there are questions that concern the Israelis and Palestinians (ground-water) and those that involve other states (Jordan basin). The primary water resources for Israel and the Palestinians are the underground aquifers, generally known as mountain and coastal aquifers (Elmusa 1996, 7-11). Surface water is mainly provided by the Jordan River. The conflict over the Jordan basin after 1948 led to the Johnston Plan of 1955, which set usage quotas of the Jordan basin to the riparian states. Israel's victory in the 1967 war allowed it to bring most of the headwaters of the Jordan River under its control.

Discussion between Israel and the Palestinians will revolve around two main issues: equitable rights and joint management. Since 1967, Israel has exercised control over the water resources of the West Bank and Gaza, restricting the use of water by Palestinians. As a result, there is a noticeable gap in the extraction and use of water between Israel and the Palestinians in favor of Israel.

In all, there have been three interim agreements on the issue of water: Oslo I, Cairo Agreement (which transferred water management to the Palestinian Authority), and

Oslo II (which gave the Palestinians more water and preserved settlers' water levels). The interim agreements so far suggest the following principles: equitable utilization of water rights and joint management.

Israel's dependence on water and vulnerability are reflected by responses in the survey: 76.2% rated this issue as *most* or *very important*. Israel looks to the principle of prior use as a basis for negotiations. The Israelis also are concerned about joint management of West Bank and Gaza water sources. Obviously, Israel wishes to ensure that settlers in the West Bank will have enough water to meet their needs. Furthermore, Israel is interested in exploring new water sources but seeks primarily to sell its water desalinization technology to states in the region.

The overriding demand of the Palestinians will be water rights. Survey data show that 66.7% of respondents rated this issue as *most* or *very important* to the Palestinians. They feel that they should be entitled to the water sources of the West Bank and Gaza after a peace settlement is reached. Palestinians view the current water allocations as unequal and seek to change the current situation. They contend that the principle of equitable utilization should be determined by the social and economic needs of the two sides. Currently, only Palestinian water sources are jointly managed. The other pressing issue for the Palestinians is water for Gaza and its source of supply.

## BOUNDARIES

The results in the survey show that this is a very important issue for both sides, with 71.4% of respondents giving it a rating of *most* or *very important* for Israel and 75% of respondents choosing the same categories for the Palestinians. The issue of boundaries is closely tied to the various UN resolutions that have been passed since the onset of the conflict.

Israel maintains a different interpretation of UN Resolution 242. It is willing to withdraw only from part of the Occupied Territories. Several plans that recently have been circulated for discussion support this view. In late 1997, two main plans were debated during the ministerial team sessions: Defense Minister Mordechai's plan (supported by Netanyahu) and Minister Sharon's plan. Other information about the borders in a final settlement comes from three closely related maps that were incompletely presented and based on the plans alluded to above. Although there are some inconsistencies among the maps, they offer some insight into Israeli thinking on this issue.

Under Defense Minister Mordechai's plan, Israel would retain 52% of the West Bank, with about 40 settlements falling outside Israeli control; Sharon's plan leaves 64% of West Bank under Israeli control (*Journal of Palestine Studies*, Spring 1998, 124). Both plans reflect Israel's interest in maintaining control over the whole Jordan Valley. There appears to be an Israeli consensus emerging about retaining control over Greater Jerusalem and at least one half of the West Bank.

The Sharon map gives the Palestinians the least amount of territory, reserving 30% to 39% of the West Bank to Palestinian rule, centering on the three major Palestinian areas of Nablus, Ramallah, and Hebron. The Sharon plan would leave 30 Israeli settlements surrounded by Palestinian territory. The plan also envisions a 20-kilome-

ter-wide strip along the Jordan Valley border and a 7-to 10-kilometer-wide strip along the Green Line border falling under Israeli control.

The Allon Plus map is a middle option, which Netanyahu unveiled in mid-1997. It grants the Palestinians up to 46% of the West Bank and adds another 10 settlements that would be surrounded by Palestinian territory. It also envisions a 15-kilometer belt along the Jordan Valley border (*Journal of Palestine Studies*, Spring 1998, 138-39).

The Palestinians consistently have insisted that the only just resolution of the border issue is for the borders to revert back to the pre-June 1967 war. This position is based on the principle supported by the international community and expressed in UN Resolution 242, calling on Israel to withdraw from territories gained in that conflict. This position would require the withdrawal of Israel from all of Gaza and the West Bank, including East Jerusalem.

None of the maps or recent plans discussed above meets the expectations of the Palestinians in the negotiations. However, the Abu Mazen-Beilin plan suggests that the Palestinians will agree to make some concessions on the border issue to account for Israeli interests in East Jerusalem and the Green Line. In return, the Palestinians expect a passage corridor between the West Bank and Gaza.

## RANKING OF ISSUES

Although officially the final status talks have not taken place, enough information from a variety of sources, including documents, plans, maps, and statements by officials, exists to evaluate the relative importance of each issue to each side. Furthermore, past negotiations and interim agreements provide many clues about how each side views each issue to allow us to rank the final status issues.

To help make such a determination, I supplemented the available literature on these issues with an original survey I conducted about the final status issues (see the appendix). The survey was sent to 264 members (43 of whom reside outside the United States) of MESA who listed their discipline as one of the following: political science, history, economics, geography, law, Middle East/Near East studies, and international relations and had a geographic focus on Israel, Palestine, West Bank, or Gaza.<sup>9</sup>

The goal was to collect data from these knowledgeable individuals about the importance of each of the final status issues to Israel and the Palestinians. The respondents were requested to rate each issue on a 6-point scale ranging from *most important* to *least important*. Respondents were asked to base their rating of each issue on their perceptions of how important it is for each side to get its way on each issue.<sup>10</sup>

9. The list of names was not randomly drawn. Due to the fact that it was a small population (*N*) to start with and the return rate was likely to be low, a decision was made to send the survey to all members who met the prerequisites mentioned. Furthermore, the list included faculty as well as Ph.D. students who were listed in the directory. Using a coding procedure, I was able to determine that 59.5% of the respondents are faculty members.

10. The AW procedure assumes, a priori, that each side understands what winning and losing mean for each issue. Survey respondents were not provided with information on what it meant for Israel and the Palestinians to win or lose on each issue. Respondents were told only that the data would be used to arrive at ratings for the issues. Thus, it is possible that a consensus on what it means to win or lose on each issue is

As stated earlier, the AW procedure assumes that issues are separate from one another. The way in which the issues have been defined mostly meets this assumption. Respondents were presented with nine different issues and asked to assign a weight to each issue. Understandably, there may be a question about whether there is a link between boundaries and some of the other variables. It can be argued that boundaries are related to such issues as settlements or security. Security concerns or decisions about which settlements are to be included or excluded are likely to influence how boundary lines will be drawn. To address this concern, the data can be explored, using the distribution of responses, to check for a high association between the issues.

Cross-tabulation analysis was conducted of all the final status issues for each side. Table 2 represents only those outcomes for which a statistically significant link exists. Surprisingly, the table shows that more responses are associated for the Palestinian rankings. The significant relationships discovered in Table 2 were explored further to evaluate the strength and direction of the association by conducting a bivariate correlation analysis among the variables.

As expected, the significant associations present in Table 2 also are reflected in the same variables under bivariate correlation, but the strength of the relationship is not high. The correlation coefficients ranged from .2 to .4, with more variables showing a significant association for the Palestinian rankings. Given that the highest correlation coefficient does not account for more than 23% of the shared variance between the two variables, one can confidently conclude that the variables are not highly correlated.

The separation of issues can be justified on substantive grounds as well. If a respondent rates two issues the same, does that mean the rating of one issue is influencing the rating of the other? Or does it mean that both issues have the same level of importance to a particular side? Given the way in which the survey was laid out and the fact that respondents were told they could assign the same value to more than one issue, one can reasonably interpret the same rating for more than one issue as having the same level of importance.

Summary statistics for the 84 returned surveys are presented in Table 3. An examination of the ratings of issues for each side and between the two sides yields important insights. First, the highest-rated issues for both sides are security for Israel and sovereignty for the Palestinians. The lowest-rated issue for Israel is Palestinian refugees, and normalization of relations is the least important for the Palestinians.

Second, the average rating for some of the issues for both Israel and the Palestinians is similar in importance. For example, respondents indicated that the issues of water and boundaries have the same significance for Israel and more or less the same weight

missing. As the results of the survey show, there is more consensus on some issues than others. A good illustration is the case of Palestinian sovereignty. In the Israeli case, a consensus is lacking on how important is this issue to Israel. On the other hand, there is a great deal of agreement about the significance of this issue to the Palestinians.

Discussion of final status issues approximates defining winning and losing by explaining the positions of Israel and the Palestinians on each issue. The assumption used in this study is that because the survey was sent to experts about this conflict, they have sufficient knowledge to rate the importance of each issue to each side. Indirectly, this method is the best one available to gather data about the relative weights of these issues. However, even if explicit definitions of winning and losing for each issue were provided, there would still be a lack of consensus among the respondents about the relevance of certain issues.

TABLE 2  
Cross Tabulation of Final Status Issues

	Gaza Settlements	West Bank Settlements	East Jerusalem	Normal Relations	Refugees	Palestinian Sovereignty	Security	Water	Boundaries
Gaza settlements		37.547 df=25 Significance = .05						31.188 df=20 Significance = .053	
West Bank settlements	45.471 df=16 Significance = .000		56.086 df=20 Significance = .000						42.162 df=20 Significance = .003
East Jerusalem	25.467 df=12 Significance = .013	31.686 df=12 Significance = .002			30.781 df=20 Significance = .058				
Normal relations						42.147 df=25 Significance = .017	38.046 df=20 Significance = .009		
Refugees	40.921 df=20 Significance = .004	39.796 df=20 Significance = .005	36.872 df=15 Significance = .001						
Palestinian sovereignty	25.652 df=16 Significance = .059	28.850 df=16 Significance = .025			69.996 df=20 Significance = .000				
Security				40.890 df=25 Significance = .024				29.968 df=20 Significance = .018	39.010 df=16 Significance = .001
Water	39.980 df=16 Significance = .001	27.695 df=16 Significance = .034	19.092 df=12 Significance = .080	34.001 df=20 Significance = .026	34.106 df=20 Significance = .025	25.949 df=16 Significance = .055	28.998 df=20 Significance = .088		29.447 df=16 Significance = .021
Boundaries	24.479 df=16 Significance = .080	25.081 df=16 Significance = .068				33.936 df=16 Significance = .006		29.376 df=16 Significance = .022	

NOTE: Results above the diagonal reflect cross tabulation for distribution of responses for Israel, and results below the diagonal are for distributions of responses for the Palestinians. The first number in each cell represents the Pearson chi-square value.



TABLE 3  
Ratings of Issues

<i>Final Status Issue</i>	<i>Israel</i>			<i>Palestinians</i>		
	<i>Mean</i>	<i>Median</i>	<i>Standard Deviation</i>	<i>Mean</i>	<i>Median</i>	<i>Standard Deviation</i>
1. Israeli settlements in Gaza	3.97	4	1.37	2.41	2	1.13
2. Israeli settlements in West Bank	2.14	2	1.04	1.72	2	0.87
3. East Jerusalem	1.45	1	0.90	1.43	1	0.69
4. Normalization of relations	3.22	3	1.47	3.67	4	1.45
5. Palestinian refugees	4.21	5	1.69	2.54	2	1.28
6. Palestinian sovereignty	3.74	4	1.71	1.20	1	0.75
7. Security	1.25	1	0.74	3.49	3	1.43
8. Water	2.01	2	0.99	2.23	2	1.06
9. Boundaries	2.00	2	1.05	1.89	2	0.98

NOTE: Means reflect ratings based on a 6-point scale ranging from 1 = *most important* to 6 = *least important*.

for the Palestinians. Thus, respondents perceive such issues as East Jerusalem, water, West Bank settlements, and boundaries to have approximately the same significance for both sides.

Third, the smallest spread in the responses for Israeli ratings are for the issues of East Jerusalem, security arrangements, and water, suggesting that there is more agreement among the respondents on the importance of these issues. This observation is borne out by looking at the distribution of responses. For example, 60 of 84 respondents (71.4%) gave the highest rating possible on the issue of East Jerusalem, and 70 out of 84 respondents (83.3%) rated the issue of security for Israel as the most important.

The distribution of responses for the Palestinian ratings is the smallest for the issues of Palestinian sovereignty, East Jerusalem, and West Bank settlements, again suggesting consensus on the significance of these issues to the Palestinians. The distribution of responses for these issues is highly skewed to the highest rating levels. For example, 90.5% of respondents indicated that Palestinian sovereignty was the most important for the Palestinians.

The largest spread in the distribution of points for the Palestinians exists for the issues of normalization of relations and security arrangements, suggesting that more differences of opinion exist about these issues. For Israel, an approximately normal distribution of responses was found for the issues of Gaza, normalization of relations, and Palestinian sovereignty.

Table 3 allows us to rank the issues for each side in two ways. Using the mean score for each issue, we can arrive at the rankings found in Table 4. The ratings range from *most important* (1) to *least important* (9). This procedure yields a plausible ranking of issues for each side. Given that in some cases the mean scores between issues for each

TABLE 4  
Ranking of Issues: Two Methods

<i>Rank</i>	<i>Israel</i>	<i>Palestinians</i>
A. Based on average rating for each issue <sup>a</sup>		
1	Security	Palestinian sovereignty/statehood
2	East Jerusalem	East Jerusalem
3	Water	West Bank settlements
4	Boundaries	Boundaries
5	West Bank settlements	Water
6	Normalization of relations	Gaza settlements
7	Palestinian sovereignty/statehood	Palestinian refugees
8	Gaza settlements	Security
9	Palestinian refugees	Normalization of relations
B. Based on median scores <sup>b</sup>		
1	East Jerusalem	Palestinian sovereignty/statehood
	Security	East Jerusalem
2	Water	West Bank settlements
	Boundaries	Boundaries
	West Bank settlements	Water
		Palestinian refugees
		Gaza settlements
3	Normalization of relations	Security
4	Palestinian sovereignty/statehood	Normalization of relations
	Gaza settlements	
5	Palestinian refugees	

a. The rating scale reflects the following: 1 = *most important* to 9 = *least important* for each side.

b. Ranking values reflect the following: 1 = *most important* and 5 = *least important*.

side are roughly equal, one can also group certain issues into categories of importance by using the median value. The results are displayed in the bottom half of Table 4.

## POINT ALLOCATIONS AND AW SOLUTION

A major challenge to using the AW procedure is devising a method for allocating points across issues. There are a variety of ways this can be accomplished. After defining the most important issues, one way to assign points is to calculate how much each issue would be worth to each party, compared with other issues.<sup>11</sup> The practical aspects associated with such a procedure are discussed by Raiffa (1982). Thus, if Issue 2 is worth twice as much as Issue 3, twice the number of points would be assigned to that issue. Because the survey provides us with concrete data about the importance of each

11. Although each side can misrepresent its preference on an issue to try to receive more points, Brams and Taylor (1996) show how such a strategy can easily backfire and hurt the players.

TABLE 5  
Hypothetical Rankings and Point Allocations

Final Status Issue	Israel			Palestinians		
	Mean	Ranking	Points	Mean	Ranking	Points
1. Israeli settlements in Gaza	3.0	Somewhat important	7.7	4.6	Very/quite important	<u>10.8</u>
2. Israeli settlements in West Bank	4.9	Very important	<u>12.6</u>	5.3	Very important	12.5
3. East Jerusalem	5.5	Most important	<u>14.1</u>	5.6	Most important	13.2
4. Normalization of relations	3.8	Quite important	<u>9.7</u>	3.3	Somewhat important	7.8
5. Palestinian refugees	2.8	Somewhat/less important	7.2	4.5	Very important	<u>10.6</u>
6. Palestinian sovereignty	3.3	Somewhat important	8.5	5.8	Most important	<u>13.6</u>
7. Security	5.7	Most important	<u>14.6</u>	3.5	Somewhat important	8.2
8. Water	5.0	Very important	<u>12.8</u>	4.8	Very important	11.3
9. Boundaries	5.0	Very important	<u>12.8</u>	5.1	Very important	12.0
Total	39.0		100	42.5		100

NOTE: Means reflect the reversed coding used in the original survey, that is, 6 = *most important*; 5 = *very important*; 4 = *quite important*; 3 = *somewhat important*; 2 = *less important*; 1 = *least important*. Mean scores have been rounded to the nearest tenth. The greater point allocation for each issue is underlined.

issue to each side, we can apply this information to devise a more refined and exacting procedure to assign points across issues.

**OUTCOME 1: SURVEY SCALE POINTS AS CARDINAL UTILITIES**

Operating under the assumption that the points in the survey scale can be perceived as cardinal utilities, we can use the mean for each issue as a data point. This assumption can be defended given that respondents were presented with a choice of assigning a specific weight to each issue.

To calculate how many points to assign each issue, we divide the mean for one issue by the sum of the means of all issues for each side and multiply by 100:

$$Weight\ of\ Issue(i) = \left( \frac{mean(x_i)}{\sum_{i=1}^{i=9} mean(x_i)} \right) \times 100.$$

This will provide a fraction (normalized to a 100-point scale) that will allow us to assign points for each issue.

To reflect the true weight of each fraction, the original 6-point scale is reversed so that a rating of 6 becomes *most important* and a rating of 1 is equivalent to *least important*. For example, in Table 5, the 7.7 points allotted by Israel to the first issue is obtained by taking the mean for that issue and dividing it by the total sum of the means for all issues and multiplying by 100 (3.0/39 × 100 = 7.7%). Thus, out of a total of 100

points, Israel allocates 7.7 points for the issue of Gaza settlements. The greater point allocation for each issue in Table 5 is underlined.

Under the AW procedure, in the first round of play, Israel would have its demands met on the issues of Israeli settlements in the West Bank, East Jerusalem, normalization of relations, security, water, and boundaries for a total of 76.6 points ( $12.6 + 14.1 + 9.7 + 14.6 + 12.8 + 12.8$ ). The Palestinians would be awarded their positions on Israeli settlements in the Gaza strip, Palestinian refugees, and Palestinian sovereignty for a total of 35 points ( $10.8 + 10.6 + 13.6$ ).

After the first round, it is apparent that an equitability adjustment is needed to give each side the same number of points. We start with Issue 2 ( $12.6/12.5 = 1.01$ ), which has the lowest point allocation ratio of Israeli to Palestinian points. Transferring all the points of this issue to the Palestinians will yield 47.5 points ( $35 + 12.5$ ), leaving Israel with 64 points ( $76.6 - 12.6$ ).

Another round is needed to equalize the points between the two sides. The next issue that has the lowest allocation of Israeli to Palestinian points is boundaries ( $12.8/12 = 1.07$ ). Again, this issue in whole or in part must be transferred to the Palestinians to achieve equitable division.

The only way to achieve this outcome is for both sides to share or receive a fraction of their demands on the issue of boundaries. Let  $x$  represent the fraction Israel will retain from Issue 9 and the rest transferred to the Palestinian side for the same issue:  $(14.1 + 9.7 + 14.6 + 12.8) + 12.8x = (10.8 + 12.5 + 10.6 + 13.6) + 12(1 - x)$ . Solving for  $x$ , the result is  $24.8x = 8.3$ ;  $x = .335$ .

Thus, Israel is given .335 of Issue 9 plus Issues 3, 4, 7, and 8 for a total of 55.5 points, and the Palestinians are awarded .67 of Issue 9 in addition to Issues 1, 2, 5, and 6 for a sum of 55.5 points. Having achieved equitability, the rounds of play end.

How might this 33% and 67% split for Israel and the Palestinians, respectively, be reflected in concessions? The Palestinian demand for the borders to revert back to the pre-June 1967 line will not be accepted by Israel. The Palestinian negotiators will likely concede to Israeli demands concerning the Green Line (the line separating the western border of the West Bank from the rest of Israel) and the Jordan Valley. Also, Israel probably will agree to establish a Palestinian corridor between Gaza and the West Bank.

## OUTCOME 2: CURVILINEAR RESCALING OF THE SURVEY SCALE

It can be argued that the distances on the 6-point scale do not represent the same weight, and therefore the assumption made in Outcome 1 above (simple linear relationship) should be changed.<sup>12</sup> In other words, the value between a rating of 3 and 2 does not have the same significance or weight as a value between 5 and 4 on the scale used in the survey. For example, it is reasonable to suggest that a rating of *most important* be four times as important ( $4x$ ) as a rating of *somewhat important*, suggesting that

12. I would like to thank Steven Brams for bringing this point to my attention and for his comments on the survey.

TABLE 6  
Hypothetical Rankings and Point Allocations (curvilinearity)

Final Status Issue	Israel			Palestinians		
	Mean	Ranking	Points	Mean	Ranking	Points
1. Israeli settlements in Gaza	11.0	Somewhat important	5.69	22.4	Very important	<u>10.35</u>
2. Israeli settlements in West Bank	24.7	Very important	12.77	28.6	Very important	13.22
3. East Jerusalem	31.5	Most important	<u>16.29</u>	31.5	Most important	14.56
4. Normalization of relations	16.5	Quite important	<u>8.53</u>	13.1	Somewhat important	6.05
5. Palestinian refugees	10.7	Somewhat important	5.53	21.5	Very important	<u>9.94</u>
6. Palestinian sovereignty	13.6	Quite important	7.03	34.2	Most important	<u>15.80</u>
7. Security	33.5	Most important	<u>17.32</u>	14.3	Quite important	6.61
8. Water	25.9	Very important	<u>13.39</u>	23.8	Very important	11.0
9. Boundaries	26.0	Very important	<u>13.44</u>	27.0	Very important	12.48
Total	193.4		≈100	216.4		≈100

NOTE: Means reflect the reversed coding used in the original survey and the squaring of values on that scale, that is, 36 = *most important*; 25 = *very important*; 16 = *quite important*; 9 = *somewhat important*; 4 = *less important*; 1 = *least important*. Mean scores have been rounded to the nearest tenth. The greater point allocation for each issue is underlined.

the distribution of points should represent a curvilinear relationship. Would the solution under the AW procedure be different under this method? To answer such a question, the analysis was rerun by squaring the points on the scale to reflect such a predicted relationship. The new scale points range from 36 = *most important* to 1 = *least important*. Thus, an issue considered to be most important has four times the weight of an issue that is somewhat important.

Table 6 represents the newly calculated means and point allocations using this procedure. The greater point allocation for each issue is underlined. Again, the allocation of points was arrived at by taking the mean of each issue and dividing it by the sum of the means for each side and multiplying by 100. As can be seen, the results are very similar to those obtained by using the simple linear procedure, with the exception of issue 2. Compared to Table 5, in which Israel receives a fraction of a point more on this issue than the Palestinians, the new procedure allots the Palestinians more points on this issue. However, even with this small difference, applying the AW procedure yields the same the solution.

In Table 6, the first round of the AW procedure awards Israel Issues 3, 4, 7, 8, and 9 for a total of 68.97 points ( $16.29 + 8.53 + 17.32 + 13.39 + 13.44$ ). The Palestinians are granted Issues 1, 2, 5, and 6 for a sum of 49.31 points ( $10.35 + 13.22 + 9.94 + 15.80$ ). To achieve equitability, both sides must receive a fraction of Issue 9 (boundaries), which has the lowest ratio of Israeli to Palestinian points ( $13.44/12.48 = 1.076$ ). Let  $x$  represent the fraction Israel will receive and  $(1 - x)$  the fraction the Palestinians will share from Issue 9:  $(16.29 + 8.53 + 17.32 + 13.39) + 13.44x = (10.35 + 13.22 + 9.94 + 15.80) + 12.48(1 - x)$ . Solving for  $x$ , the outcome is  $25.92x = 6.26$ ;  $x = .24$ .

The solution of the procedure grants Israel 55.53 points plus .24 of Issue 9 for a total of 58.8 points. The Palestinians receive 49.31 plus .76 of Issue 9 for a total of 58.8 points. Under this new procedure, the total number of points each side receives is slightly higher, but the results are the same as in the previous procedure: Israel succeeds on Issues 3, 4, 7, and 8, and the Palestinians win on Issues 1, 2, 5, and 6. Both sides compromise on Issue 9. Given this same outcome, we can be confident of the robustness of the data, the procedure, and assumptions used to allocate points across the issues.

#### **COLLAPSING SECURITY AND BORDERS INTO ONE ISSUE**

The independence of issues has been extensively addressed methodologically and substantively in this article. The way in which the issues are defined does not disallow one actor who wins on one issue from winning on another issue. In reality, carving out separate issues is a difficult task. As mentioned earlier, it can be argued that on some level, there is a link between the issues of boundaries and security, even though the issue of security entails much more than boundaries. In cases in which issues cannot be treated separately, the solution is to group them together under one category. How would the outcome in Table 5 be affected if we collapse the issues of security and borders into one?

Joining the two issues of security and borders, Israel would receive 27.4 points, compared to the Palestinians' 20.2 points in Table 5 for this issue. Once again, in the first round, Israel would be awarded Issues 2, 3, 4, 8, and the combined points for security and borders for a total of 76.6 points ( $12.6 + 14.1 + 9.7 + 12.8 + 27.4$ ). As under the first scenario, the Palestinians would receive 35 points ( $10.8 + 10.6 + 13.6$ ). In the second round, Issue 2 (Israeli settlements in the West Bank) would be transferred to the Palestinians for a new total of 47.5 points, leaving Israel with 64 points ( $76.6 - 12.6$ ). Another round must be played to achieve equitability. The next issue that has the lowest Israeli to Palestinian ratio is East Jerusalem ( $14.1/13.2 = 1.07$ ). Both sides would have to accept a fraction of this issue.

Let  $x$  represent the fraction Israel will keep (left side of the equation) and  $(1 - x)$  the amount that will be transferred to the Palestinians (right side of the equation):  $(9.7 + 12.8 + 27.4) + 14.1x = (10.8 + 12.5 + 10.6 + 13.6) + 13.2(1 - x)$ . Solving for  $x$ , the result is  $x = .396$ .

Israel is given .396 of Issue 3 plus 49.9 for a total of 55.5 points. The Palestinians would receive 47.5 points plus .604 of Issue 3 for a total of 55.5 points. Having achieved equitability, the rounds of play end. In this scenario, both players receive the same number of points as if the issues of security and boundaries were not lumped into one category. The only difference between the two scenarios is that when the two issues of security and boundaries are combined, both sides are required to compromise on the issue of East Jerusalem instead of boundaries, as would be the case when the two issues remain separate.

Which outcome is more likely? Because a peace agreement between Israel and the Palestinians has not been concluded (as of January 2000), both outcomes are possible. However, all existing information indicates that the first scenario in which the issues of security and boundaries are treated separately is the more likely of the two. Given Israel's strong and consistent position on the issue of East Jerusalem, it is unlikely that Israel would be willing to give up 60% of its control over this part of the city when the issues of security and borders are defined as one. On the other hand, the issue of boundaries presents much more flexibility and lends itself to compromise.

Again, if the issues of security and boundaries are treated as one in Table 6 (squaring the scale points), the results of the AW procedure are the same. Both sides receive approximately the same points (58.4) and share a fraction of Issue 3 (East Jerusalem). Under this scenario, Israel will be awarded 36% of Issue 3, compared to 64% for the Palestinians. This solution, when compared to the case in which the issues of security and borders are treated separately, is less likely for the reasons provided above.

#### HOW PLAUSIBLE ARE THESE OUTCOMES?

Before discussing the plausibility of these outcomes, a number of questions must be addressed. What are the proper conditions for applying a fair division procedure like AW? Given Israel's preponderant power, why would it seek an equitable settlement with the Palestinians?

Several conditions, including timing and stalemate, must exist for AW to be adopted. Israel and the Palestinians are motivated to conclude a peace treaty as soon as possible. This goal recently was reinforced by statements made by both sides that expressed a desire to reach agreement on the final status issues within a year. It is evident that at this stage of the conflict, each party has concluded that it cannot achieve its political objectives through military means. After decades of fighting, Israel and the Palestinians have reached a stage of a "hurting stalemate" (Zartman 1989). Various developments have led to this conclusion: the 1982 Palestinian defeat in Lebanon, the Palestinian uprising in the occupied territories in the late 1980s (Intifada), the end of the cold war, and the recent momentum of peace talks and treaties.

It would not be in Israel's long-term interest to conclude a lopsided agreement in its favor. First, it is not likely that the Palestinian leadership or the Palestinian people would accept such an agreement. Since the signing of Oslo I, Arafat has been sensitive to the need to obtain a treaty that can at least satisfy the minimum demands of the Palestinian people. This concern translates into not conceding too much to the Israelis. Second, given Israel's goal to live in peace with its neighbors, it would prove counterproductive to impose a harsh settlement on the Palestinians. A one-sided agreement not only would cause resentment but also legitimize extremist Palestinian elements to continue to use force against Israel (Shikaki 1998). On the other hand, a perceived fair agreement is likely to last longer and promote cooperation between the two sides. Third, given the extant sympathy for the Palestinian people, the international community would react negatively to what would be perceived as an unjust treaty. Finally, it is critical that an equitable solution is reached between the two sides if Israel hopes to establish normal ties with the Arab world.

The point allocations found in Tables 5 and 6 represent a plausible solution for the final status issues between the two sides. Both outcomes, using two different point allocation techniques, yield the same solution. If security and borders are considered separate issues, Israel will have its demands met on the following issues: East Jerusalem, security arrangements, water, and normalization of relations. The Palestinians will obtain their goals on the following issues: Israeli settlements in Gaza, West Bank settlements, Palestinian refugees, and, of course, Palestinian sovereignty. Both sides must make compromises or get partial satisfaction of their demands on the issue of boundaries.

Based on the various plans, documents, and maps that have circulated for discussion so far (Abu-Mazen-Beilin plan of 1995 and the Labor-Likud working document of January 1997 [which shares many elements with the Abu Mazen-Beilin Plan]), the solution arrived at using the AW procedure is quite plausible.

For the Palestinians, no peace agreement will be acceptable unless it grants them statehood. Israeli officials have hinted that they might be willing to make this concession to the Palestinians. In addition, this is an outcome supported by the international community.

The Palestinians will likely achieve their goals on the issue of Gaza settlements. They already control most of the territory, and Israel would be willing to relocate some of the inconvenient settlements that divide this strip of land.

As for the issue of refugees, the Palestinians have softened their position on the right of return when they accepted the distinction between the 1948 and 1967 refugees in the various interim or Oslo agreements. Israel has indicated its willingness to help compensate and absorb refugees outside its borders.

Israel also will concede to Palestinian demands on the issue of the West Bank. Although the maximum Palestinian demands include East Jerusalem, recent documents for discussion show that the Palestinian definition of the West Bank omits settlements in Greater Jerusalem and refers primarily to settlements outside of Greater Jerusalem.

The big adjustment in borders will come from Gaza and the West Bank, not including East Jerusalem. Ya'ir Hirschfeld, who accompanied Beilin during the negotiations with Abu Mazen, revealed that the Palestinians accepted the principle of no return to the pre-1967 lines.

For Israel, any agreement that does not address its demands on the issues of East Jerusalem, security, and water will be a nonstarter. The solution under AW accurately reflects these concerns.

Over the decades, many proposals about the future of Jerusalem have been discussed. Heller and Nusseibeh (1993) suggested some form of joint ownership or management of East Jerusalem. More recent proposals expand the municipal boundaries of the city to include Palestinian towns so that the Palestinians could claim their capital just outside of East Jerusalem. As far as Israelis are concerned, East Jerusalem is part of Jerusalem. Israeli leaders have been unanimous in their rejection of any scheme that calls for a divided Jerusalem. Given the realities that have been established on the ground in East Jerusalem, even since the Oslo Accord of 1993, it is next to impossible



to envision this territory reverting back to the Palestinians. A recent Israeli public opinion survey supports this predicted outcome.<sup>13</sup>

The Abu Mazen-Beilin plan of 1995 envisions the boundaries of Jerusalem expanded to include Jewish settlements such as Ariel, Ma' ale Adumim in the east, and the Etzion Bloc. Thus, most of the settlers (70%) will remain under Israeli rule. Settlers in a future Palestinian state would need to be given dual citizenship or status as permanent residents.

This is critical for the Palestinians to accommodate Israeli demands on the issue of security. If the interim accords are any indication, the Palestinians have shown substantial flexibility on this issue.

Israel currently controls the distribution of water. Its demands for joint management and sufficient share of water will likely be met by the Palestinians.

The whole idea of trading land for peace is for Israel to establish normal relations with its neighbors. The Palestinians have no serious objections to establishing normal relations with Israel. In fact, in some areas, such as economics, it is in the Palestinians' interest to do so.

Finally, on the issue of boundaries, Israel will obtain its goals with respect to the settlements near the Green Line and greater Jerusalem. The borders of a new Palestinian state will be drawn to reflect this outcome.

When security and borders are lumped into one issue, the outcome of AW is the same as the results obtained under the scenario in which these two issues are considered separately, with one exception. Equitability adjustment will be on the issue of East Jerusalem instead of borders.

## CONCLUSIONS

The goal of this article is to apply a fair division technique (AW procedure) to propose a plausible outcome for the Israeli-Palestinian conflict. This technique was chosen over other negotiation procedures for its desirable qualities of envy freeness, equitability, and efficiency.

Although existing information in the form of documents, interim agreements, and working plans is helpful in defining and ranking the issues, the results of an original survey on the final status issues were used to provide expert opinion on the relative importance of the issues to each side. Aggregate responses from knowledgeable academics on the final status issues between Israel and the Palestinians reinforce the significance of these issues to each side. The calculated mean score for each of the issues made it possible to rank such issues for each side. Furthermore, by using the distribu-

13. A public opinion survey of Israeli Jewish attitudes on Jerusalem, written by Elihu Katz and Shlomit Levy of Israel's Guttman Institute and Jerome Segal of the University of Maryland, suggests compromise is possible on certain parts of the city, particularly Arab areas. More important, the survey also illustrates the centrality of Jerusalem to the respondents, with 98% considering Jerusalem to be *important to very important* to them (*Journal of Palestine Studies*, Spring 1997, 149-51). Furthermore, 80% of the respondents objected to East Jerusalem becoming a Palestinian capital. The study is based on 1,530 face-to-face interviews with Israeli Jews in Israel and the occupied territories between September 1995 and January 1996.

tion of the responses in the survey, we were able to devise a robust procedure (using two different techniques) for the allocation of points for each issue.

Application of the AW procedure under two different scenarios yielded the same outcome. The fair division technique (treating security and borders as separate issues) shows Israel obtaining its goals on the issue of security, East Jerusalem, water, and normalization of relations. The Palestinians would have their demands met on the issues of statehood, West Bank and Gaza settlements, and Palestinian refugees. Both actors would need to compromise on the boundary issue. When security and borders are defined as one issue, the outcome of the procedure is the same; instead of both sides receiving a fraction of borders, they share on the issue of East Jerusalem.

This article has illustrated how the AW procedure, particularly when it is based on survey data, can fruitfully be used to propose a plausible solution to real international conflicts. The solution under the AW procedure is similar to the understandings found in the various plans, maps, working documents, and interim agreements since the Oslo process began.

### APPENDIX Final-Status Issues Survey

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Dear Colleague:

The purpose of this survey is to determine whether there is a consensus about the final-status issues and, more important, whether it is possible to arrive at ratings for these issues. Individual responses will remain anonymous—only aggregate data will be used from this survey.

This survey is being sent to all MESA members who teach and research Arab-Israeli issues. The research is being conducted for my personal scholarly purposes and is not a MESA-sponsored project. Your participation is greatly appreciated.

Use the following scale, which ranges from (1) *most important* to (6) *least important* to rate the importance of each issue to Israel and the PLO. The rating should be based on your perception of how important each issue is to Israel and the PLO.

<i>Most</i>	<i>Very</i>	<i>Quite</i>	<i>Somewhat</i>	<i>Less</i>	<i>Least</i>
<i>Important</i>	<i>Important</i>	<i>Important</i>	<i>Important</i>	<i>Important</i>	<i>Important</i>
1	2	3	4	5	6

The categories represent how important it is for each party to get its way on each issue. Please note that the same ranking can be applied to more than one issue. For example, issues of land and water can each have a ranking of 1.

Final-Status Issues	Israel's Ranking	PLO's Ranking
1. Israeli settlements in Gaza	_____	_____
2. Israeli settlements in West Bank	_____	_____
3. East Jerusalem	_____	_____
4. Normalization of relations	_____	_____
5. Palestinian refugees	_____	_____
6. Palestinian sovereignty	_____	_____
7. Security arrangements	_____	_____
8. Water	_____	_____
9. Boundaries	_____	_____

Please list and rate any additional issues that you believe should be included in the above list.

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