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13. August 2009

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An Evolutionary Game Theoretic Study of the Israeli Policy towards Lebanon

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Abstract

Israel's policies regarding Lebanon have been dependent on public opinion, which is very volatile. The citizens of Israel did not favor the occupation of the security zone in South Lebanon because of the Four Mothers movement, and it influenced the government to withdraw military forces unilaterally in May 2000. When Hizbollah attacked the Israel Defense Force (IDF) patrol and abducted two soldiers on the northern border, the Israeli citizens supported the government's decision of waging a war in retaliation.

This study aims to shed light on the causal mechanism of the influence of public opinion on the defense policy in the rational framework of deterrence strategy. I chose the evolutionary game theory approach as my research method. My study yielded the following result: the deterrence is not stable when the aggression level of the defenders is less than the level of the critical condition. The Israeli government made a decision to conduct unilateral withdrawal under the pressure of passive defenders among the people. However, the IDF could begin the operation in Lebanon because of a substantial number of supporters who hoped to restore the deterrence. This study concludes that the Israelis exhibited strong intension and an aggressive attitude toward the deterrence.

Keywords: Deterrence, Evolutionary Game Theory, Second Lebanon War, Israel, Hizbollah

Contents

1. Israel Security and Deterrence Theory

Deterrence is considered to be one of the essential concepts of national security or the most sophisticated analytical framework among the security studies under the discipline of international politics.[1] Political scientists have developed suitable theories of deterrence in different armed systems or situations such as nuclear deterrence or unconventional deterrence for conflicts involving nuclear weapons,[2] and conventional deterrence[3] for conventional arms conflicts among nations. Further, it is appropriate for asymmetrical conflicts between sovereign states and armed organizations or terrorists. The argument about deterrence is not necessarily systematic and has not been developed further because numerous researchers have entered this field in different contexts.

The concept of deterrence is popular and commonly used not only in the Israeli defense doctrine, but also in academic material on Middle Eastern international politics. Avner Yaniv and Yair Evron contributed to historical as well as theoretical deterrence studies in the context of Israeli national security.[4] Inbar (1996: 71) states that deterrence is one of the three pillars of the Israeli military doctrine. The state of Israel has developed its conventional military power so as to deter the Arab states from launching a massive attack with support of the United States. The other pillars such as early warning and a decisive victory are emphasized in the crisis stage in case of failure of conventional deterrence. The Israel's formula for victory is to mobilize the reservists in the wake of an early warning in order to strike the enemies intensively and force them to the status quo.

Conventional deterrence for Arab-Israel warfare has not been considered to be a very important issue among political and military leaders after the 1973 Yom Kippur War. Instead, both leaderships and ordinary citizens are more concerned about smaller scale violence or low intensive conflicts (LIC) such as terrorism. There is an endemic problem of counter-terror in the framework of deterrence because it is almost impossible to completely deter a terrorist attack on modern society.[5] Thus, a change from the general perspective involves investigating the deterrence of terrorist organizations without inference based on the nuclear deterrence theory that must not escalate a crisis at any cost.

Almog (2004) presents the idea of cumulative deterrence, which has led to the past victories of Israel. In this case, the nation seeks to create an image of overwhelming military supremacy for enemy states and relies on retaliation against specific hostile acts in order to maintain its image of enormous power. "And through a combination of threatened retaliation and military superiority, Israel has been able to shape and reinforce its deterrent image in the Middle East."[6] The concept of cumulative deterrence is

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[1] Tsuchiyama (2004: 177) presents a description of deterrence with citations of the statements of David Baldwin and Joseph Nye. Morgan (1983) makes a distinction between immediate and general deterrence. Morgan (2003) discusses also coercive diplomacy as a kind of deterrence.

[2] Art and Waltz (1971) mention deterrence before and after the nuclear age.

[3] Mearsheimer (1983) is an innovative work that deals with conventional deterrence.

[4] See Yaniv (1987) and Evron (1987, 1994, and 2007).

[5] Schweitzer (2007: 127) mentions this in the context of the Second Lebanon War.

[6] See Almog (2004: 12).

supported as an analytical framework by Zeev Maoz.[7] Bar (2008) suggests making a distinction between strategy and tactics to analyze the deterrence of terrorist organizations. A random form of tactical management cannot deter a particular attack by a Katyusha rocket, but the Israelis are able to contain terrorist organizations with strategic deterrence by manipulating their relationship with the host population or patron states. According to an argument by Shmuel Bar,[8] even non-state armed organizations such as the Hizbollah or Hamas are strategically containable because both of them govern the Lebanese region and are supported by Iran and Syria. Meanwhile, Iran regards Hizbollah as an important deterrent factor from the perspective of its potential confrontation with Israel over the nuclear issue. Moreover, Syria is dependent on Hizbollah as a buffer power against Israel.[9] The proxy relationship between them seems to be easily deterred in the form of a conventional adversary.

Meanwhile, Lupovici (2009: 214–215) indicated the overemphasis on the concept of deterrence with respect to defense in Israeli media and publications. His constructivist approach of International Relations or IR underscored that of the Winograd interim report, which urged the public to realize that Israel should deter the Hizbollah and that the erosion of deterrence had resulted in the Second Lebanon War. "The context of deterrence identity led Israel to interpret the actions taken by Hizballah as a deterrence failure. In the absence of this context, there would have been no need for Israel to go to war."[10] I disagree with this interpretation of the outbreak of the war on Lebanon. Lupovici's style of explanation was not very persuasive because his discourse analysis and process tracing did not seem to clarify the causal relationship between deterrence identity and Israel's decision to conduct air strikes on Lebanon. He focused on the context only with respect to the time line, and inadequately investigated the correlation between identity of deterrence and the Israeli incursion. He did not show control over several conditions for identifying the causality. His reference to counterfactuals in the above citation was not sufficient to satisfy the last test of control over any of the conditions.

Thus, the concept of deterrence has been applied widely in Israeli security studies. However, little attention was paid to the effect of public opinion on national security in the framework of deterrence. In my opinion, deterrence is an idea that is similar to that of realist school that focuses on a state as a unit of analysis and places less emphasis on domestic affairs within the unit. A formal model of deterrence usually defines a state or a government as a player in the structure.[11] To the best of my knowledge, no research work has hitherto been conducted to determine the role of electorates of democratic regimes in crisis that does not involve studies of audience cost. Fearon (1994) presented a

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[7] Maoz (2006) explains how Israel resorts to extensive use of limited forces for low-intensity warfare by cumulative deterrence.

[8] Personal interview with Bar on March 2, 2009 in Herzliya and Bar (2007).

[9] Here, we can consider deterrence policies with regard to Iran or Syria in the context of the international system or as a third image, as proposed by Kenneth Waltz. However, this topic would be furthered discussed in another research work.

[10] See Lupovici (2009: 216).

[11] See Powell (1990), Nicholson (1992), Zagare and Kilgour (2000), Schultz (2001), and Sartori (2005).

series of studies on crisis bargaining with the concept of audience cost described by a function. While the audience cost hypothesis was an innovation in the study of crisis management, it had several areas of concern with respect to the case of Israel. One of them involves the dubious logic that a democratic leader finds it difficult to conduct a back down in order to avoid a war under pressure from voters. Few journalistic works about the Israeli decision making process in international crisis comprehensively describe the trend of public opinion.[12] Rather, public opinion seems to be shifting in favor of the government, following a difficultly made decision during an emergency. Over three quarters (77%) of the total number of Israeli citizens supported the Lebanon War in June 1982. Nevertheless, sympathizers of the war decreased drastically to 27 percent in 1985.[13] As discussed later, this was repeted in the case of the Second Lebanon War.

Apparently, it is assumed that a majority of the electorate supports the government during difficult situations such as a war. This implies that we should recognize a proposition that the public has less information than political leaders with respect to evaluating a relevant foreign policy. Robert Jervis mentioned "the problem of dealing with complex and ambiguous information leads people to adopt shortcuts to rationality that simplify perceptions."[14] The prospect theory admits an underlying tendency in people to strongly respond to strategic or economic loss than to comparative gains in an international conflict.[15] It is easy to lead an estimation of increasing patriotic supporters for a government in a crisis as well as that of retaining the supporters after the emergency from the above arguments. Is estimation for explaining the trend of opinion polls during and after the wars on Lebanon adequate for investigation?

This study aims to shed light on the causal mechanism of the influence of public opinion on the defense policy in the rational framework of deterrence strategy. The author agrees with the suggestion of Maoz (2006: 227): "It is fair to argue, therefore, that public opinion was not an extremely powerful factor in forcing the government to change its strategy in Lebanon." However, we will recognize that citizens in a democratic regime possess some power to influence the government in their desired direction with respect to a different logic from audience cost. If the government were armed with strong support from the nation, it would then be able to exercise leadership in warfare. On the other hand, the history of Israel shows that the political elite have reconsidered a national security policy under the pressure of people's opposition. By employing a method such as the evolutionary game theory, an account of how the interacting behaviors of numerous players, which are similar to the fluctuations of public opinion, are generated. This study attempts to build a micro-foundation of mass behavior on the deterrence theory, which lacks content from the psychological perspective of the public. The theoretical provision for this has hitherto been insufficient despite extensive research

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[12] See Kfir (2006), Rapaport (2007), Shelah and Limor (2007), and Harel and Issacharoff (2008).

[13] Maoz (2006: 227) presents a table showing Israeli support for the First Lebanon War from 1982 to 1987.

[14] See Jervis, Lebow, and Stein (1989: 18).

[15] See Levy (1992: 285).

emphasizing the psychological effects on the logic of deterrence.[16]

In the following section, I establish and solve a formal model of dynamics of public opinion using the tools of evolutionary game theory. The unique model is constructed on the basis of the deterrence mechanism even though it incorporates the attitude of the electorate. The orbit of solutions in the model will provide an explanation for the dynamic relationship between the process of foreign policy decision making and public opinion. In the next section, I present some case studies that are explained by the implication from my formal model. The 2000 unilateral withdrawal of Israel Defense Force from "the security zone" in Lebanon demonstrates the effect of public opinion on strategic change in Israel. The 2006 Second Lebanon War exhibits the "rallying 'round the flag" phenomenon[17] wherein the combination of political and military leadership wages a war without any apprehension regarding the support from an overwhelming majority.

2. The Evolutionary Dynamics of Public Opinion

Let us consider the core of our analytical framework before the formalization of the dynamics of public opinions during war. Consider a simple deterrence game in which two players, a challenger and a defender, move according to their specific strategies. The challenger is able to choose an aggressive or passive attitude as per its decision. The alternatives for the defender are the same as that of the challenger. The game tree is depicted in Fig.1. Passive attitude by the challenger leads to the status quo; this does not result in a crisis. If the challenger follows an aggressive approach, the game depends on the defender's move, which means that a crisis may be imminent. If the defender chooses a passive approach, the impact of the crisis may be in its concession. Else, the crisis may escalate to a war.
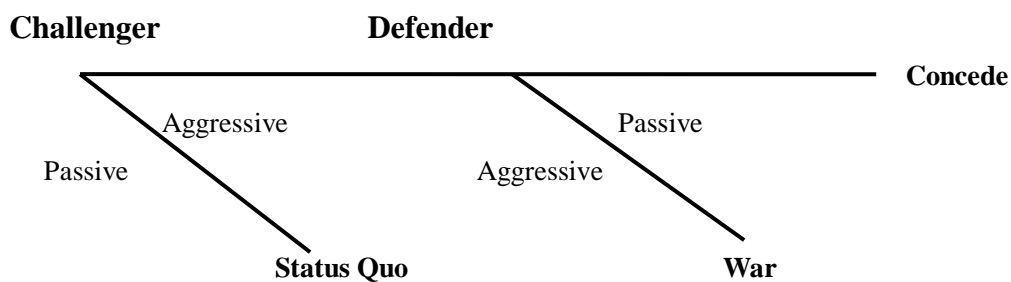

Figure 1: Deterrence Game

Table 1 shows the payoff of the deterrence game. A few players reach the same point, zero, at status

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[16] Jervis, Lebow, and Stein (1989) is a prominent work that presents a theoretical relationship between deterrence and the psychology of decision makers by using several case studies.

[17] Kuperman (2003) examines the phenomenon as the effect of domestic pressure on governmental decisions to use military force.

quo. When the defender concedes the aggressive attitude of the challenger and the crisis does not escalate, the defender loses and the challenger achieves the payoff V. Unfortunately, if a war occurs, the challenger would win with probability "p" in the analytical framework. Therefore, the payoff of the challenger is given as $pV - c_1$; c_i, $i \in \{1, 2\}$; and 1 is the challenger, whereas 2 is the defender, which refers to the cost of war of i. The defender's payoff is $-pV - c_2$ during the stage of crisis escalation.

	Challenger	Defender
Status Quo	0	0
War	$pV - c_1$	$-pV - c_2$
Concede	V	$-V$

Table 1: Payoff Matrix of Deterrence Game

Evolutionary game theory is useful for formalizing a dynamic game among multiple players without considering aspects of rationality, such as public opinion. We assume that people are not necessarily rational and that they exhibit an aggressive attitude during times of crisis. The notations are explained as follows: Strategy A refers to an aggressive approach by both players, whereas strategy B refers to a passive approach by both. The fraction x (t) indicates that the challenger chooses strategy A on time line – t. Let y (t) be the fraction of the defender's playing strategy A on time line – t. U_{ij} is the utility function of player i with strategy $j \in \{A, B\}$. It is assumed that trial-and-error dynamics is used to rethink the strategy in accordance with the repeated interactive process in the game.[18] Israel has had several wars with Arab states in addition to conflicts with armed organizations. It is suitable to adapt the trial-and-error type learning dynamics in investigating Israeli attitudes. Consider the increments *x* and *y* of both fractions for deriving a differential equation. The formal form of the expectations of Δx and Δy are given by the following equations:

$$E(\Delta x) = x(1 - x)(U_{1A} - U_{1B})$$

$$E(\Delta y) = xy(1 - y)(U_{2A} - U_{2B}). \qquad (1)$$

The purpose behind the *x* added on the right side of the E(Δy) equation may require an explanation. The notation *y* refers to the probability that the defender follows an aggressive approach. The defender can determine his option only after the challenger has moved on to the aggressive approach. The significance of y (t) holds if and only if the aggressive challenger emerges on the probability *x*.

A differential equation is a tool to analyze the dynamics of the probabilities that both the challenger

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[18] Evolutionary game theory has formalized social phenomena into a dynamic game; a state change over time. Oura (2008, 179–184.) explains the trial-and-error method as one of the learning dynamics for players in a group setting for selecting their strategies.

and the defender choose strategy A or B on the time line. It can be expressed in the following form:

$$E(\Delta y)/E(\Delta x) \ = \frac{dy}{dx} = y(1-y)\{(1-p)V - c_2\}/(1-x)\{-pV + c_1)y + V\}. \tag{2}$$

Consider a stationary in equation (2). The ranges of x and y are the same, to one from zero. The corner points are (0, 0), (0, 1), (1, 0), and (1, 1). They refer to each result of the game. A back down by the challenger leads to status quo, which means that $x = 0$ and $y = 0$ or 1. The defender's concede is the result of both $x = 1$ and $y = 0$. The crisis escalates to war at $(x, y) = (1, 1)$. While the corners are stationary states, stabilities may not always exist in the game.

Observe the right term of the product in upper equation (1), $U_{1A} - U_{1B} = y(pV - c_1) + (1 - y)V - 0$. When U_{1A} and U_{1B} are indifferent, we regard the condition of y as $\lambda = V/\{(1\ p)V + c_1\}$. λ exists over a range from zero to one because λ is a specific value of y. If $y < \lambda$, $E[\Delta x]$ is positive. This implies that the challengers will be aggressive with an expectation of no retaliation. If $y > \lambda$, the defenders indicate a high likelihood of retaliation, then $E[\Delta x]$ is negative; and the challengers will exhibit passive attitude. Under the condition that the right term of the product in lower equation (1) is negative, $U_{2A} - U_{2B} < 0$, the evolutionary dynamics of public opinions in the deterrence game are shown in Fig.2.
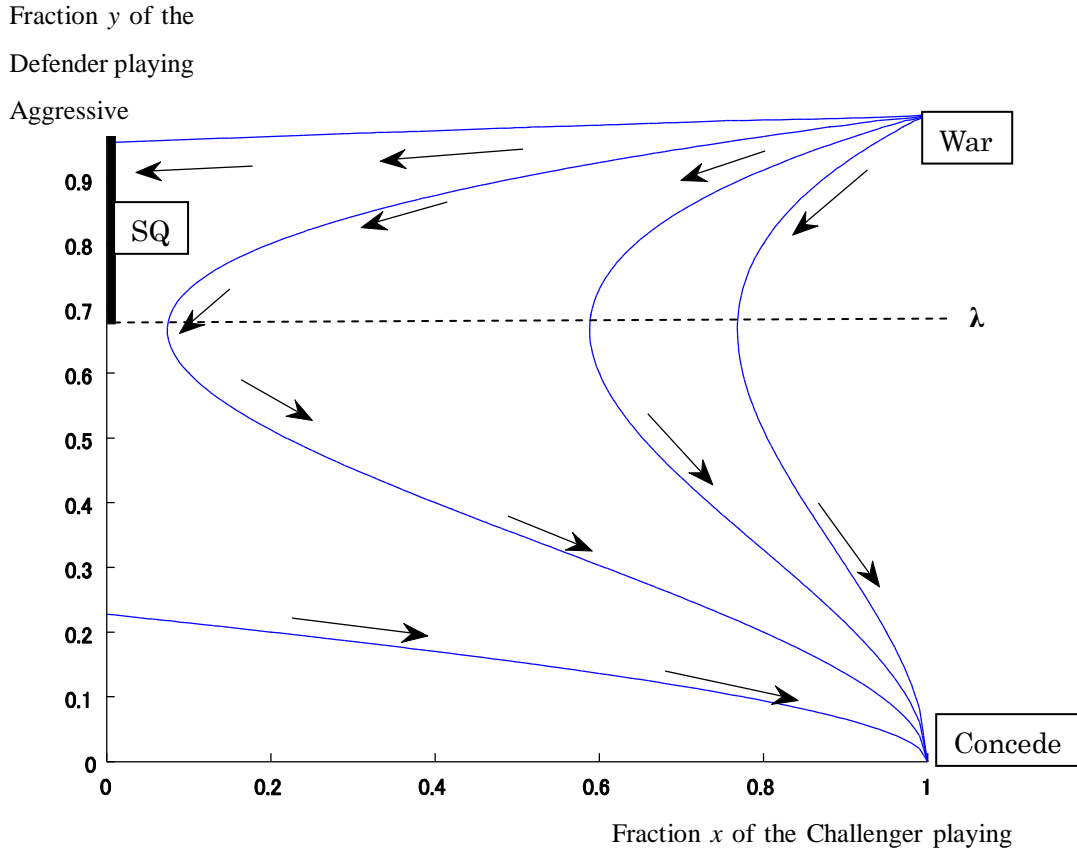
Fraction y of the
Defender playing
Aggressive

Fraction x of the Challenger playing

Figure 2: Unstable Deterrence Game Dynamics

When the utility of the defender's following strategy 2 or passive is larger than it following strategy 1 or aggressive, the equilibrium is status quo or concede. Even if a war has occurred, it does not hold on and the dynamics move easily to other stationeries—SQ, Status Quo, which is represented by a bold line between λ and one, or concede, under the condition. While status quo is a stable result, it is only a trivial case because the dynamics have a tendency to aim for the point $(1, 0)$ or the concede with only a small part of fraction x. Fig. 2 is a phase diagram that describes the solution vectors. Fraction x decreases over time, where $y > λ$; otherwise, x increases. $E[\Delta y]$ is always negative because of $U_{2A} - U_{2B} < 0$, so that the fraction of y must decrease over time. Therefore, under the condition of $U_{2A} - U_{2B}$ is negative, it follows from these arguments that the threat of deterrence is not reliable for the challenger and that the situation forced the defender to concede in conflicts.

Let us consider other criteria in the dynamic game of deterrence. Suppose that the defenders prefer following strategy B to strategy A, which means that player 2's utility with strategy B is larger than that with strategy A. The behavior of x is the same in the case of unstable deterrence; $E[\Delta x] > 0$, where $y > λ$, $E[\Delta x] < 0$ otherwise. This condition results in that $E[\Delta y]$ is always positive because $U_{2A} - U_{2B} > 0$. Fig. 3 shows the phase diagram of the game with the interaction of the challengers and defenders.
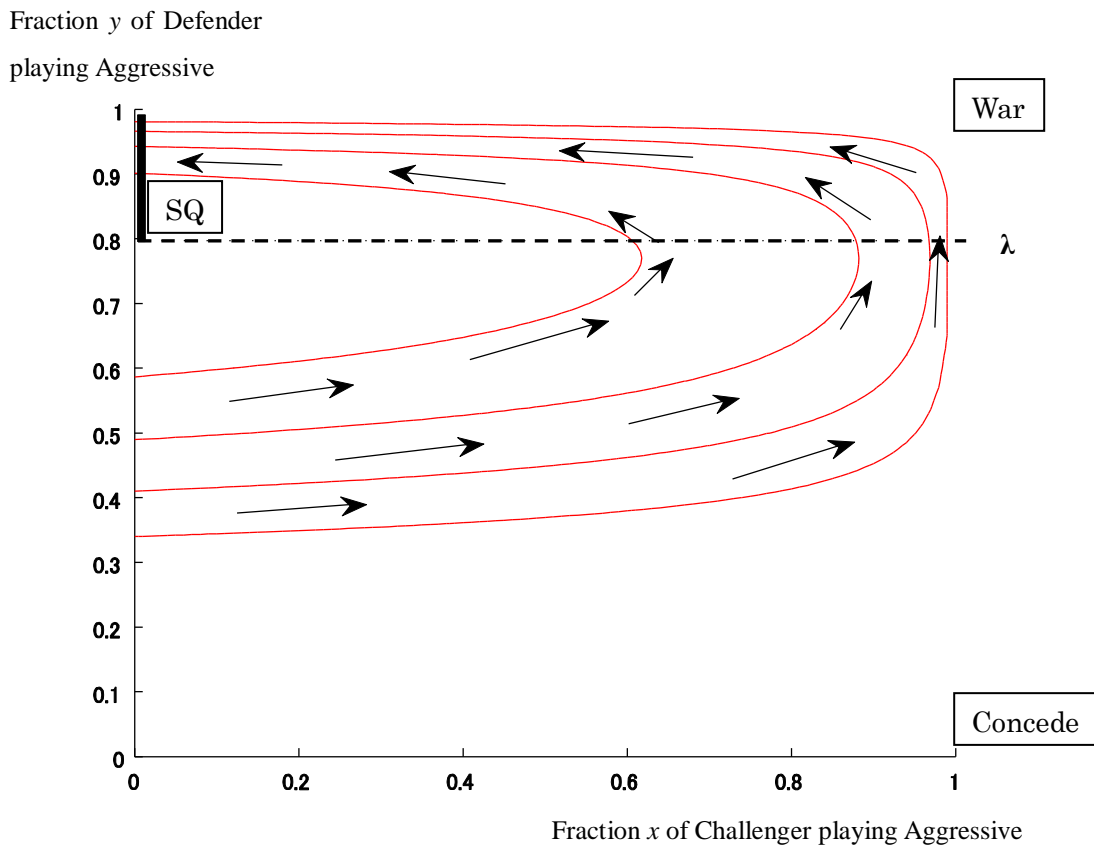

Figure 3: Stable Deterrence Game Dynamics

All solution orbits converge at the bold line on the vertical axis, which refers to the status quo. Assuming that $U_{2A} - U_{2B} > 0$, the payoff to aggressive defenders is always higher than that to passive defenders. Excluding the perception problem, the challengers can recognize the intention of the defenders, and thus, the threat of deterrence is credible. Fraction x for the challengers gradually increases, as observed by its consistent left-to-right movement under line λ. The flows show the increasing prevalence of bellicose mood in the real world. However, the crisis may almost escalate to war, and it may end the status quo when the challenger acknowledges the amount of fraction y. The solution (0, 1) is stationary as well as stable for both challengers and defenders. As a result, the deterrence is sustainable.

The stable deterrence game has a paradoxical implication. In spite of the equilibrium, a crisis can easily escalate according to the growth of the fraction x, who play aggressively. If the political leaders of the challenger expected that the fraction y of the defenders who "retaliate" is low because of misperception or wishful thinking, they would resort to risky and provocative actions. This argument describes frequent escalation in international disputes among the players with tough public.

3. Empirical Illustration of Unilateral Withdrawal from Lebanon and the Second Lebanon War

3.1. Case Study I: IDF's Unilateral Withdrawal from Lebanon

The IDF continued to occupy South Lebanon as a "security zone" for over fifteen years. The end of the occupation, led by Prime Minister Ehud Barak, occurred on May 24, 2000. Why did Israel decide to end the occupation for the security of the northern border? Did Israel believe that the concept of strategic depth no longer make sense under the threat of Iran's ballistic missiles? Were the Syria-Israel peace negotiations likely to succeed and did the government perceive the occupation as an obstacle to further reconciliation with Syria? Else, did the occupation in Lebanon become a burden for the political economy in Israel?

According to Kaye (2002–03), Israeli citizens groups, particularly the Four Mothers movement, exerted domestic pressure on the government to withdraw from Lebanon. These groups were organized by war bereaved or ordinary people who questioned the significance of Israel's military presence in Lebanon. The 1997 helicopter crash that killed thirty-eight soldiers had a strong impact that led to rethinking the necessity of the "security zone." The increasing number of combat casualties emphasized the strategic value of the occupation in Lebanon. Fig.4 presents the number of Israeli soldiers killed in South Lebanon. It shows that 74 soldiers were killed in only 1997.

Citizen groups led a movement to criticize the Lebanon policy and debate over the national security problem about northern Israel, which was regarded as taboo. The voice of supporting unilateral withdrawal from Lebanon without negotiation was increasing gradually in the late 1990s. According

to the poll conducted by the Jaffee Center for Strategic Studies, a minority of citizens, 41 percent, recommended unilateral withdrawal in 1997. The military evacuation supporters leaped upward by 44 percent in 1998 and then became a majority (55%) in 1999. Ultimately, a large majority in 2000, 62 percent of Israelis, supported ending the occupation in Lebanon.[19]
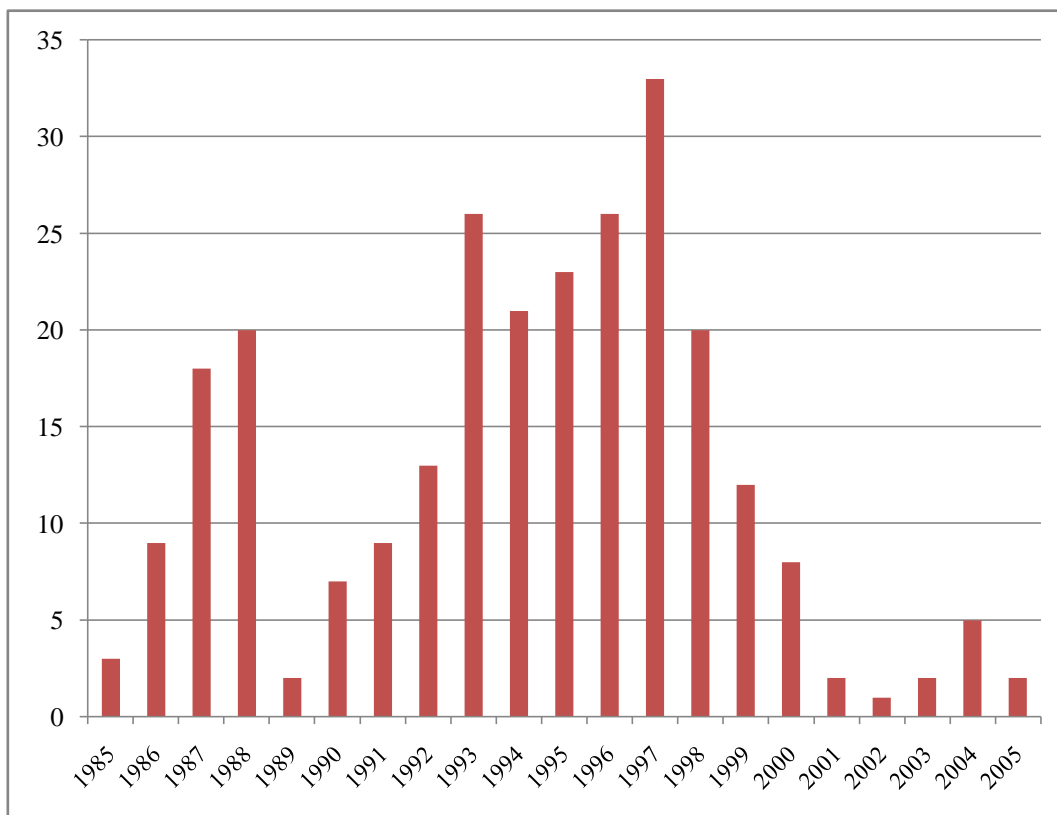

Figure 4: IDF Combat Casualties in South Lebanon

Source: Ronen Bergman (2007) *Point of No Return*. Kineret: Zmora-Bitan, pp.335–336.

(*) The number of people killed in 1997 does not include the victims of the helicopter accident.

The Lebanese problem became a central issue in the 1999 election campaign. Three years earlier, the government of Israel conducted a military operation in Lebanon, which was called "Grapes of Wrath." This was in response to a series of Hizbollah attacks on Kiryat Shumona and Northern Galilee. It arose from speculation by Prime Minister Simon Peres, who wanted to appeal his "strong" side in foreign policy to the electorate. In spite of his effort, Benjamin Netanyahu won the next direct election for the Prime Minister in 1996. Fig.4 clearly shows the growing cost of Israeli presence in South Lebanon during the latter half of the 1990s. According to Steinberg (2001: 192), "[i]n early 1998, following more attacks and Israeli casualties, Netanyahu launched his second initiative on Lebanon," which called for withdrawal supported by Defense Minister Yitzhak Mordechai, who was the head of the

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[19] See Arian (2000: 24)

Northern Command of the IDF. This approach did not yield any results during his tenure. Meanwhile, the Prime Ministerial candidate of the Labor Party, Ehud Barak, criticized Netanyahu's initiatives for the Lebanese problem.

Barak had issued a statement about bringing IDF troops back as a campaign pledge, and defeated Netanyahu in the 1999 elections. Barak's pledge turned into reality on May 24, 2000, despite opposition from military leaders and analysts. It may seem too simple to consider that the decision to withdraw from the security zone arose from strong public support. However, the undeniable fact is that Israeli public opinion played an important role in influencing the policy makers for a dramatic turning point in Israeli security policy. On the other hand, strategic specialists would generally regard unilateral withdrawal as a concession to Hizbollah. According to Hizbollah, the withdrawal of the IDF signified its triumph, and thus, it could appeal its own as changeable power to the deterrent balance between itself and Israel. In fact, Hassan Nasrallah addressed the emancipation proclamation in South Lebanon as the declaration of the victory of Hizbollah[20] on May 26 2000, and gained popularity among Lebanese citizens. Therefore, the episode of the unilateral withdrawal of the IDF from South Lebanon reflected the dynamic mechanism of the unstable deterrence game showed in Fig.2.

3.2. Case Study II: The Second Lebanon War

The Israeli government decided to conduct air strikes in the reign of Lebanon on the night of July 12, 2006. The massive bombardment was regarded as retaliation for the three IDF soldiers who were killed and two who were abducted at the border by Hizbollah. In an interview broadcasted on an Al-Manar TV program, Secretary General Hassan Nasrallah stated that his party was responsible for the incident and he appealed to the Israeli government to negotiate for an exchange of soldiers for prisoners. However, Israeli Prime Minister Ehud Olmert rebuffed the negotiation for the prisoner's exchange; the decision of his cabinet was to hold a war.

This marked the beginning of thirty-three days of war between a democratic state and an armed organization in the Middle East. Israel not only assaulted the bases of resistance in South Lebanon and Beirut, but also caused extensive damage in various regions to influence on Lebanon's public opinion not to support Hezbollah. The war killed 1187 Lebanese citizens, displaced 740 thousand people, as well as created 230 thousand refugees out of the state. Israel's fierce attacks caused the destruction of social infrastructure in Lebanon, such as roads, dwellings, bridges, power plants, airports, and docks.[21] According to Romm (2007: 52), Hizbollah lost a vast majority of long-range rockets—dozens of Zelzal II—as well as a large portion of medium-range rocket launchers (around one thousand of Fadjr III and Fadjr V) within thirty five minutes. This implied that their strategic deterrence power disappeared in an instant. Their entire range of arms of militia included only 13,000 Katyusha–type

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[20] It means the so-called "spider's web" speech in Bint Jbail.
[21] See Osoekawa (2008: 131) and Suechika (2009: 190).

short-range small rockets[22] that were fired at enemy territory across the border. However, nearly 4,000 rockets targeted at population centers in the northern area were adequate to intimidate daily life in Israel during the war. Hizbollah effectively operated mobile launcher systems for the remaining Katyusha rockets with cell phones and motorbikes under command of the headquarters in order to hide and fire rockets. Further, the organization of the militia was decentralized and was suitable for hit-and-run tactics within the territory, difficult for reconnaissance in IDF ground operations, particularly in the Baalbek Valley.[23]

It is believed that the government of Israel made several mistakes during the war in Lebanon. The Winograd Committee, appointed by the government for investigation, stated that there were many serious failures in the decision making process among the combination of unskilled political leaders, and that the office staff preferred a military settlement. The Defense Minister during that period, Amir Peretz, had no experience in foreign or defense affairs. In fact, he had never served as a member of the Knesset Foreign Affairs and Defense Committee without even combat experiences. Apparently, it was difficult for him to play the role of a leader during wartime. Olmert was also as inexperienced as Peretz in military matters. A public opinion poll a month before the war indicated their unpopularity arising from their inexperience.[24] The Chief of Staff Dan Harutz was severely criticized in the Winograd Report because the committee regarded him as the main source of information concerning the military operation and he occupied the position to present correct information and appropriate opinions with recommendations of the civilian leadership. The Winograd committee indicated his responsibility was greater from his disinformation about the preparation of the operations[25].

The IDF was ready to draft a plan regarding military operations for deterrence to Hizbollah's attack in 2000.[26] It was widely believed that Harutz relied on the air force to destroy "terrorist" organizations.[27] The conditions in Israel were such that it could easily wage a war against Lebanon. According to Evron's diagnosis of the Israeli-Hizbollah deterrence equation, "Israeli response appears to have indeed strengthened Israeli deterrence against Hizbollah." Further, "Israel was right to avoid it (the large scale operation) during the last campaign because of the burden of a long and costly counterinsurgency campaign, but it might opt for it were Hizbollah to provoke it."[28] Here, we will not evaluate, but discuss this war as an empirical case study for our evolutionary game theoretic model.

Fig. 5 indicates that over eighty percent of the citizens had justified the government's decision

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[22] Sobelman (2004) points out that the arsenal serves as the main component in the deterrence power of Hezbollah.

[23] See Farkash (2007: 79).

[24] According to Ben Meir (2007: 88), only 40 percent of the Israelis approved of Olmert as the prime minister. Further, the positive rating was particularly low, with a value in the range of the middle twenties.

[25] The Press Release of the Winograd committee, April 30, 2007.

[26] See Harel and Issacharoff (2008: 59–73) for details on the preparation for the war at the General Headquarters of IDF.

[27] See Kober (2008: 18, 21–22).

[28] See Evron (2007: 40).

regarding IDF attack on Lebanon during the war.[29] The research unit of the BI and Lucille Cohen Institute of Tel Aviv University conducted several waves of public opinion surveys for Israeli citizens, and was able to present fluctuations in the opinions and attitudes toward government policy on the warfare. This showed that the Israelis held a stern and strict attitude during the duration of the operation in Lebanon. Ben Meir (2007: 90) explained that there was a clear consensus among the Israelis on Hizbollah's attack as unprovoked violence on their own sovereign and undisputed territory that originated from areas unilaterally withdrawn six years ago. Further, Elran (2007: 108) mentioned that the public attained a determination to withstand the burden of war with reference to a survey conducted on August 1, 2007, by the Tami Steinmetz Center.
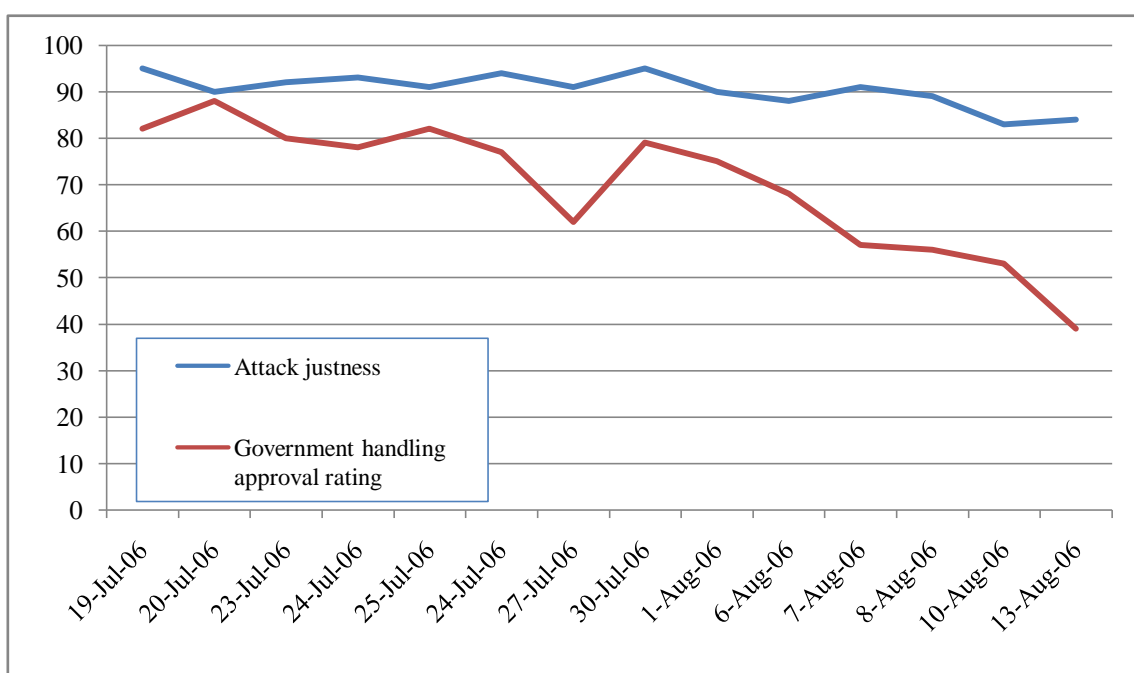

Figure 5: Justification of the War and Approval of the Government's Performance

Source: Shavit, Ya'ar, Herman, and Adler (2006).

The Lebanese Government Secretary Nabih Beri issued a proclamation about prisoner's exchange for Israel as an initiative by the government on July 23. This implied that the Lebanese government aligned with Hizbollah ten days later at the beginning of the war in order to tackle the bombardment by Israel. According to Harel and Issacharoff (2008: 145), Israel began to seriously consider an exit plan for the war. However, the IDF lost nine soldiers during the battles of Bint Jbail and Maroun er Ras. The sudden drop in the government handling approval on July 27 seemed to reflect the previous day's firefights in Bint Jbeil where the IDF encountered strong defenses.[30] Over 200 storm-like Katyusha

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[29] The exact question for the justification of the war was "Is the Israeli attack on Lebanon justified or unjustified?"

[30] See Bidel and Friedman (2008: 31).

rockets struck northern Israel on August 2.[31] On August 10, a Katyusha rocket attack killed fifteen reserve soldiers at Kibbutz Kfar Giladi. These events may have made the Israeli public opinion more hostile and bellicose. Meanwhile, the approval of government leadership on the war was eventually decreasing, and in fact, it was fewer than forty percent on the day when ceasefire was declared. Ben Meir (2007: 97–98) presented some reasons for the slump in the evaluation of the Prime Minister, Defense Minister, and IDF Chief of Staff from high preference to disapproval. The first reason was that there were exaggerated expectations from the government since it set unrealistic goals to eliminate Hizbollah, destroy its base and depots, and rescue the kidnapped reservists. The second one was that the broadcasting of the increasing number of causalities banished the optimism regarding the war, particularly after the ground operations. The last reason involved grievances among the returning reservists from the battlefield. They expressed complaints about mismanagement, confusion, turmoil, and gloomy prospects among the leadership. Consequently, their widespread dissatisfaction led to a decrease in the popularity of political and military leaders. This seems to be an ominous signal of the censure of responsibility of the Olmert government during wartime.

It is important to mention here that the case of the Second Lebanon War follows the same logic of the stable deterrence game that is shown in Fig.3. The raid in the northern front provoked Israeli reprisal and triggered the extreme acts of violence in Lebanon, supported by an overwhelming majority of the public. The start of the war may be regarded as a case of poor judgment, and the expansion of the ground operations may be perceived as a mistake by the government from the modern perspective not only because of the disempowerment of Hizbollah's rockets, but also because of the lack of progress in implementing disarmament by the international intervention conducted by the UN Security Council Resolution 1559 of 2004. Israelis may bear considerable losses to fight with Hizbollah in South Lebanon. This follows that the citizens felt the war cost was not worth the benefit. However, the situation returned to the status quo after the declaration of ceasefire on August 13. The Second Lebanon War ended with a United Nations Security Council ceasefire implemented by Israel and Hezbollah at the morning on August 14.

4. Conclusion

Many researchers, journalists, and analysts regard that the war ended in failure for the Israelis[32] and some even believe that Hizbollah is regarded as the "winner of the war."[33] This may not be a minor opinion among Israeli commentators. However, is it a proper assessment with respect to considering

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[31] Romm (2007:57) presents the number of Katyusha rockets fired during the war.

[32] Achcar with Warschawski (2007: 40–41), Brom (2007: 13), Eiland (2008:31), Harel and Issacharoff (2008: 241), and a personal interview with Bar on March 2, 2009.

[33] Deeb (2008: 72) mentioned that "Not only in Lebanon, but also across the Middle Eastern region, it believed that the July war was a victory for Hizballah." Norton (2007: 149) concluded that "when successful resistance in South Lebanon helped to inspire Palestinian militants to wage their own uprising against Israel, a pro-Hezbollah sentiment emerged in the Palestinian territories on the West Bank and the Gaza Strip."

the logic of deterrence? The war in Lebanon ended without victors[34] in my evaluation. The reason for the recognition of failed military operations in the summer of 2006 among the public is that Prime Minister Ehud Olmert set an impossible goal of conducting an air strike during a short time span, and as a result, the nation was disappointed at the performance under the leadership of the Israeli government. As shown by Brom (2007: 19), the war could have lasted only for the first three days. It is true that the mismanagement of the cabinet and the general staff of Israel led to the failure at the Second Lebanon War.

Both Hizbollah and the residents of South Lebanon suffered from considerable physical and psychological damage caused by the warfare. Hassan Nasrallah owed his duty to rehabilitate the Shiite community, to repair destroyed houses, to support the life of the bereaved and the refugees, and to compensate for the lost possessions of his main electorates, not as the head of an armed organization, but as the leader of a political party, the secretary general of the Lebanese Islamist Party, that had fourteen representatives in the parliament.[35] Further, he must endeavor to rebuild the bruised organization and its military as well as civilian infrastructure. While Israel could not completely eliminate Hizbollah, it substantially destroyed its military force. Hizbollah has to recover before it could regain and increase its deterrent capability against Israel with the support of Iran and Syria.

The state of Israel retaliated an assault and kidnapping conducted by Hizbollah. Nasrallah did miscalculate the response of Israel; he admitted this later,[36] and eventually, the crisis escalated to war. The revolutionary game theoretic model successfully depicts the dynamics of bellicose opinion among Israeli citizens in wartime. The logic of stable deterrence game dynamics drove the war between Israel and Hizbollah into the status quo. However, Israel should not have spent thirty-three days for the war, and it should not have conducted the ground operations in South Lebanon in order to restore deterrence.

Democratic governments require strong support from the electorate in order to conduct a severe project like a war. Deterrence policy necessitates bellicose passion among citizens under a democracy. If a challenger chose an aggressive policy and a crisis is turned on, the status quo would be restored with the condition $y > \lambda$. Otherwise, a defender would be compelled to concede its position because of the increase in fraction x among the population. The general staff of the IDF could not reject the order of unilateral withdrawal from the security zone in South Lebanon under the pressure of public opinion in 2000. The withdrawal of the Israeli army is considered as concede arising from the defender's passive move in Fig.1. A majority of the citizens believed that the occupation at the south of the Litani River was not secured by sporadic violence. On July 12, 2006, under the impression that the military incident threatened the status quo, the Israeli government made the decision to use the force. Thus, as

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[34] Zisser (2007: 135) made a similar diagnosis.

[35] See Zisser (2007: 141–144).

[36] Several studies present this episode. See Norton (2007: 137) and Schweitzer (2007: 128).

shown by the model, the citizens supported the decision of the government to retaliate against Hizbollah.

Eight–and-a-half months since the end of the war, the Tami Steinmetz Center for Peace Research of Tel Aviv University conducted a poll about the Second Lebanon War. The result showed that a clear majority of 57% still justified the war in Lebanon,[37] even though the rate of support decreased largely from that during the wartime. This implies that the public believes that the decision to conduct a war is justifiable in order to restore deterrence. However, the cost was too expensive to pay for recovering the status quo.

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[37] Yaar and Hermann (2007: 2) exhibited a preponderance supported the war after the publication of the Winograd interim report.

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