

Summer 2010

## Strategic Theory, Methodology, Air Power, and Coercion in the 2006 Israel-Hezbollah War

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Strategic Theory, Methodology, Air Power, and Coercion in the 2006 Israel-Hezbollah War

by

Zachary Jones

(Under the Direction of Krista Wiegand)

Abstract

This thesis analyzes the air power, coercion, strategic theory, and strategic methodology in the 2006 Israel/Hezbollah War. In state versus non-state actor conflicts, air power's utility is different from state versus state conflicts. The dynamics of coercion also differ greatly from state versus state conflict. Additionally the strategic theories, and the methodologies used to develop these theories differ as well, both in their goals and their utility. By examining the 2006 Israel/Hezbollah war, which is an excellent example of a high-intensity conflict between a very capable state military, and a well-equipped non-state actor, Hezbollah, I analyze the ways in which air power is most useful in state versus non-state actor conflicts, the efficacy of coercion in such conflicts, and the role of strategic theory and methodology in such conflicts. I conclude that air power is best used against material high value targets, and against outside state sponsors of non-state actors, as non-state actors often blend amongst non-combatants, disperse their men and material widely, and are difficult to target with accuracy. I also conclude that the basic logic of coercion used in state versus state conflict is sound, but that the logic is complicated by the non-state actor's reliance on outside powers for war material, meaning that attempts to coerce without applying pressure to the outside power will be unlikely to succeed. Finally I conclude that strategic theory and methodology are of the greatest importance to success, and that the most important factor in both is adaptability. He who adapts fastest often wins in asymmetric warfare.

INDEX WORDS: Israel, Hezbollah, Hizballah, Lebanon, Non-state actors, Asymmetric warfare, Strategic theory, Strategic methodology, Effects-based operations, Systemic operational design, Coercion, Air power

Strategic Theory, Methodology, Air Power, and Coercion in the 2006 Israel-Hezbollah War

by

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B.A., Georgia Southern University, 2009

A Thesis Submitted to the Graduate Faculty of Georgia Southern University in Partial

Fulfillment

of the Requirements for the Degree

MASTER OF ARTS

STATESBORO, GEORGIA

2010

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Strategic Theory, Methodology, Air Power, and Coercion in the 2006 Israel-Hezbollah War

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Electronic Version Approved:

July 2010

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## CHAPTER 1

### INTRODUCTION

This thesis aims to provide a deeper understanding of the use of air power, and long range fires in general, against non-state actors. A rather recent example of a high-intensity conflict between a state and a relatively robust, high-capability non-state actor is the 2006 war between Lebanese Hezbollah and Israel. This conflict is particularly relevant to this question because of Hezbollah's reputation as the *crème de la crème* of terrorist/insurgent groups and Israel's air power, which remains unrivaled in the region and second only to the U.S. in its technological superiority. Analyzing such a conflict is no small task, even when only a portion: the air campaign. As such I will focus much more on the overall strategic doctrine and on theater level analysis rather than delving too deeply into particular engagements. The essential question I ask is what, if any, role air power should play in conflicts between state and non-state actors of varying capabilities and in conflicts of varying intensity. An answer to this question would advance our current understanding of how coercion between states and non-state actors works, and more particularly how air power affects attempts at coercion by states against non-state actors. However, involved in the answering of this question are several other fundamental questions, which while not initially the focus of my research, quickly became vital to my search for an answer to my initial question. Thus in addition to my examination of air power's utility in state versus non-state actor coercion I will examine strategic theory and methodologies for developing strategy with special focus on how strategic theory and methodologies for developing theory were used during the 2006 war, and how they relate to air power in general.

Any developed examination of the use of air power to coerce an opponent must be rooted in the strategic theories that the instance in question is based upon. The emergence of strategic bombing during the First World War coincided with the emergence of a number of strong proponents of air



power such as Giulio Douhet and Billy Mitchell whose work strongly shaped strategic decisions during the Second World War and onward into the 20<sup>th</sup> century. Later theorists such as John Boyd and John Warden have also had significant influence upon Western air power doctrine. To more fully grasp the type of conflict within which coercive air power was applied one must also be presented with some discourse on the nature of state-non-state actor conflict: particularly the intersection between conventional and traditional unconventional warfare. Additionally, influential doctrines such as systems theory, effects based planning/operations, and systemic operational design will be examined with particular attention paid to their influence on decision-making in the 2006 war and their applicability to future state versus non-state actor contests.

Once built upon a strong theoretical base analysis of the conflict can begin proper. In addition to a general history of the origin of the conflict and the air campaign, I will specifically be examining the military capabilities of the Israeli Air Force, and Hezbollah in general. The military capabilities of both sides are obviously instrumental in deciding the outcome of any conflict. Once aware of the relative capabilities of both the IAF and Hezbollah more general political objectives on both sides can be more readily understood. Political objectives will not simply be taken as the stated goals of the leadership of Israel and Hezbollah. Objectives will be determined through wide examination of different accounts and their relation to actions by both actors; hopefully leading to a more nuanced understanding of the true political objectives pursued by both sides. After establishing a baseline understanding of what both sides wanted and what means each had at its disposal in order to achieve those ends, strategic interaction between the two can be examined. This discussion will be primarily limited to the contest between the Israeli Air Force and Hezbollah's rocket forces. Following this the types of coercive strategies pursued by Hezbollah and Israel will be examined, including identification of what specific actions adhered to which type of coercion.

I will conclude with a discussion of the effectiveness of air power as it was applied in the 2006 war, how its use might have been improved during that conflict, and how that relates to future conflicts between states and non-state actors with similar characteristics. Despite Hezbollah's hierarchical political organization, the horizontal structure of its military wing severely hampers the effects of command and control disruption, an effect common in state versus non-state actor conflicts. Similarly steps taken by Hezbollah that are common amongst non-state actors such as fighting and basing from populous areas, aggressive information campaigns on the international stage, small-unit autonomy, and dispersal of personnel and equipment, to a large degree reduce the damage that a state is able to inflict from the air. Only with intelligence far more comprehensive and accurate than is likely to be available can a determined non-state actor be defeated from the air. However my research suggests that there are vulnerabilities inherent in high-capability non-state actors that can be exploited by states with significant air-power. High-capability non-state actors invariably have state-sponsors which supply them with arms, material, and often training. In exchange the sponsor typically enjoys some operational control. Although the degree of coercion will likely vary according to the level of operational control exercised by state-sponsor, coercion is more likely to be successful against the sponsor, particularly in the case of Hezbollah's sponsor Syria, which is rich in valuable targets, is controlled by a vulnerable regime, and is both a contributing supplier and way-station for almost all of Hezbollah's war material. If the sponsor exercises a great deal of operational control, coercion may be successful in a relatively short time period, depending on the domestic viability of acquiescence, and the relative importance of whatever actions the non-state actor is taking to the sponsor. At the very least supply will be disrupted or halted altogether, which will over the long term decrease the strategic threat posed by the group. In short, absent uncharacteristically comprehensive and accurate intelligence, attacking a state-sponsor is the clearest way to coerce and/or deter a non-state actor.

Overall lessons learned is not the objective of this thesis, as indeed there are already numerous monographs and short books examining what the Israelis did and didn't do well (with a special emphasis on what they failed at). This thesis instead aims to provide an examination of the continued usefulness of air power as a coercive instrument, especially when used by strong Westernized states against non-state actors that are organized in a somewhat hierarchical manner (i.e. Hezbollah, or the Taliban rather than a fully networked group such as Al-Qaeda). The external validity of conclusions drawn from a single conflict are questionable at best, but given space and time constraints and the fact that this conflict offers the most recent concluded (for the time being anyhow) example of such a conflict, it may nonetheless provide a useful insight.

## CHAPTER 2

## WHAT IS STRATEGY?

Before delving into the particulars of the strategic thought that was in use during the Second Lebanon War and that which preceded it, and which it is built upon, it is necessary to define a few terms. These terms are derived primarily from a study of the strategic thought of John Boyd who will be discussed intermittently somewhat later. These are drawn in due turn from a number of different sources that reach back as far as goliaths such as Sun Tzu and Carl von Clausewitz. *Military theory* is the aggregate of theories, doctrines, and beliefs belonging to a particular individual, community or period.<sup>1</sup> It refers to the concepts, hypotheses, or principles developed by soldiers and civilians (political actors in general) to solve military problems. *Operational art* is the body of knowledge dealing with the use and behavior of military forces in a military campaign aimed to achieve strategic or operational level military objectives.<sup>2</sup> Such campaigns are normally confined in time and geographic scope. *Doctrine* is the aggregate of fundamental methods of fighting, often tacit or implied. Ideally doctrine provides the foundation for military training and education, as well as force structure and organization.<sup>3</sup> *Strategy and strategic theory* pertain to the use of military force and war between political communities.<sup>4</sup> Strategy tells one how to conduct a war, or how to achieve political objectives using the military instrument.<sup>5</sup> As Clausewitz says strategy is the use of engagements for the object of the war: tacit and explicit threats as well as of actual battles and campaigns to advance political purposes.<sup>6</sup> Strategy need not necessarily be purely military strategy but also grand strategy that incorporates all aspects of power available to a

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<sup>1</sup> Frans Osinga, *Science, Strategy and War: The Strategic Theory of John Boyd* (London & New York, Routledge, 2007):8-9.

<sup>2</sup> Ibid.

<sup>3</sup> Antulio Echevarria, *After Clausewitz, German Military Thinkers Before the Great War* (Lawrence: University Press of Kansas, 2000): 7-8.

<sup>4</sup> Osinga, 2007: 8-10.

<sup>5</sup> Carl von Clausewitz, *On War*, Howard, Michael & Paret, Peter, eds. And trans. (Princeton, New Jersey: Princeton University Press, 1976): 128.

<sup>6</sup> Osinga, 2007: 8-10.

particular political community. John Boyd's definition here is particularly relevant because it emphasizes the dynamic nature of the dialectic between two or more opposing wills (the belligerents) whose dispute is resolved through force in a world where chance, uncertainty and ambiguity dominate, and can be expected to be functionally irreducible.<sup>7</sup> Although these definitions are by no means concrete and are often defined significantly differently, this is how the terms will be used herein. The following characteristics of strategy are however stated as enjoying near universal agreement amongst prominent strategic thinkers.

- Strategy concerns both organization and environment: the organization uses strategy to deal with changing environments;
- Strategy affects overall welfare of the organization: strategic decisions are considered important enough to affect the overall welfare of the organization;
- Strategy involves issues of both content and process: the study of strategy includes both the actions taken, or the content of strategy, and the processes by which actions are decided and implemented;
- Strategies exist on different levels: firms have corporate strategy (what business shall we be in?) and business strategy (how shall we compete in this business?);
- Strategy involves various thought processes: strategy involves conceptual as well as analytical exercises.<sup>8</sup>

It is also important to appreciate both the difficulty and inherent limitations in the development of strategic theory. Strategic theory is not scientific, although at times practitioners may exhibit scientific pretensions, parsimony is largely absent from strategic theory. Strategic theory and its development fall strictly in the realm of the useful, rather than that of the rigorous. Wars, as are most human endeavors,

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<sup>7</sup> Ibid.

<sup>8</sup> Ibid.

are immensely complex; so much so that Clausewitz went so far as to assert that no positive doctrine of warfare could be developed. Effective strategies thus take strong note of the chaos involved in such complex socio-political interactions. Thus the reasons for developing and examining strategic theory lie not so much with the advancement of knowledge in a way similar to a science such as biology in which one theory is built upon by another, but rather in the explanatory value of a theory which may, within its context, offer a great deal of insight into a particular success or failure at achieving a strategic objective. Uncertainty does not mean that all strategic theories are equal, and may be categorized accordingly:

1. A level that transcends time, environment, political and social conditions and technology (Clausewitz and Sun Tzu).
2. A level that explains how the geographical and functional complexities of war and strategy interact and complement each other (Corbett on naval warfare).
3. A level that explains how a particular kind of use of military power strategically affects the course of conflict as a whole (Mahan<sup>9</sup>, Douhet<sup>10</sup>, Schelling<sup>11</sup> on the role of maritime power, air power and nuclear power respectively).
4. A level that explains the character of war in a particular period, keyed to explicit assumptions above the capabilities of different kinds of military power and their terms of effective engagement (the use of air power as a coercive tool).<sup>12</sup>

Based on the above categorization, this study will examine the application of theories that discuss how military power affects the course of a conflict as a whole to a particular period which has inherent assumptions (explicitly stated) about the capabilities of different kinds of military power (state militaries

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<sup>9</sup> Philip Crowl, "Alfred Thayer Mahan: The Naval Historian," in *Makers of Modern Strategy: from Machiavelli to the Nuclear Age*, ed. Peter Paret (Princeton: Princeton University Press, 1986): 444-480.

<sup>10</sup> Giulio Douhet, *Command of the Air*, trans. Dino Ferrari (New York: Coward-McCann, 1942).

<sup>11</sup> Lawrence Freedman, "The First Two Generations of Nuclear Strategists," in *Makers of Modern Strategy: from Machiavelli to the Nuclear Age*, ed. Peter Paret (Princeton: Princeton University Press, 1986): 735-778.

<sup>12</sup> *Ibid*, 12.

and non-state actor's military capabilities) and their terms of effective engagement. This relationship between the more abstract, higher levels, and that of the lower (though still not tactical or even operational) is primarily important because of its ability to educate the decision-maker on what actions are likely to produce a favorable result: as Stephen Walt says "The strategists task is to formulate a 'theory' explaining how a state can ensure its security and further other interests."<sup>13</sup> The development of said theory will be tied to the environment in which and for which it was developed. These formative factors include:

- The nature of war during successive periods;
- The specific strategic circumstances of the countries involved;
- The personal and professional experience of the particular thinker or producers of the theory;
- The intellectual and cultural climate of the period in question.<sup>14</sup>

Thus the following examination of the most prominent air power theorists upon which the doctrine used by the IAF during the Second Lebanon War was based must necessarily take into account the context in which the theory was developed, however prescient the thinker may seem, or transcendent his theory may be.

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<sup>13</sup> Stephen Walt, "The Search for a Science of Strategy," *International Security*, Vol. 12, No. 1 (Summer 1987): 140-65.

<sup>14</sup> Osinga, 2007: 12.

## CHAPTER 3

## ORIGINS OF COERCIVE AIR POWER

The idea that air power could be used as a coercive tool in a military conflict originated primarily with a small number of highly insistent, tenacious, and eventually influential men immediately before, during, and after World War I. The most prominent of these men, the so-called “fathers of air-power” were Giulio Douhet, Billy Mitchell, and Hugh Trenchard: creators of what was eventually to become the air forces of Italy, the US, and the UK. As is often the case during radical shifts in technology and thus doctrine, there was resistance to these men’s ideas (this is putting it mildly). With the exception of the British, who apparently saw the development of strategic bombing capabilities as an easy way to replace costly garrisons used for imperial policing, the military establishments of Italy and the US reacted forcefully against the development of air power and its advocates: court martial, demotion, and jail time were punishments inflicted on these radicals. However after the relentless blood-letting of World War I these ideas began to gain more traction.<sup>15</sup>

Douhet, in his 1921 book *The Command of the Air* was the first to fully elucidate a theory of air war. As was the case with both Mitchell and Trenchard it was mainly focused on extolling the purported virtues of strategic bombing, rather than aerial support of land forces.<sup>16</sup> Douhet argued that air power was revolutionary because of its ability to ignore ground forces and instead attack what Clausewitz terms a strategic center of gravity: the source of power that provides moral or physical strength, freedom of action, or will to act.<sup>17</sup> In the post-Napoleonic era of total war, Douhet felt that the civilian population of a target country was the center of gravity, which if punished enough would undo its war-fighting ability. The Douhet model calls for massive (though what constitutes ‘massive’ is questionable)

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<sup>15</sup> James Corum & Wray Johnson, *Air power in Small Wars: Fighting Insurgents and Terrorists* (Lawrence: University of Kansas Press, 2003): 51-92.

<sup>16</sup> Douhet, 1942: 28, 47-48, 57-58, 309.

<sup>17</sup> Clausewitz, 1976: 90-99.



punishment of the enemy's civilian population; thus unraveling the social basis of resistance and eventually forcing civilians to pressure their government either into early capitulation or inciting revolution. The requisite amount of fear that would shatter civilian morale was to be created through a combination of high explosives, incendiaries, and poison gas (to keep firefighters and other emergency workers from extinguishing incendiaries) that would both cause direct damage to morale by killing civilians and destroying infrastructure (as well as food stuffs, etc.) and indirectly by limiting freedom of action (which would also contribute to economic collapse, and thus the destruction of civilian morale).<sup>18</sup>

Although at that time deliberately attacking civilians would have been considered a campaign of state terrorism, and rejected on moral grounds, Douhet justified civilian punishment because he predicted that if the aerial punishment were sudden, intense, and continuous enough, wars could be won in a significantly shorter amount of time, ultimately saving lives. Douhet categorized targets as: industry, transport infrastructure, communications, and "the will of the people," the latter of which was the most central to his theory. The use of aircraft for roles other than strategic bombing was considered unnecessary except for the protection of the main force of strategic bombers. Air power was conceived by Douhet as wholly offensive, and in no need of support by land or naval forces. Air power was not a revolutionary addition to traditional armies, but their replacement, an assertion that obviously did not sit well with Army or Navy officers. Similar resistance was felt by Douhet's contemporaries: Mitchell and Trenchard. Although neither was to so fully develop a theory of how air power was to coerce those it was applied to, both nonetheless followed similar paths: fighting for the creation of independent air commands and placing great faith in the ability of air power to win wars. Although Douhet's theories today do not seem as directly useful to debates regarding air power, echoes of his work will be seen repeatedly in the more modern theorists.

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<sup>18</sup> Douhet, 1942: 28, 47-48, 57-58, 309.

World War II saw the first large scale application of Douhet's theory. Although developed during World War I, neither the Allies nor the Central Powers had either the intellectual flexibility or the capabilities with which to execute such a strategy. During World War II however, both the Axis and Allies aggressively pursued strategic bombing campaigns: particularly the Allies during the latter stages of the campaign in Europe and in the Pacific. Despite bombing of a scale that vastly exceeded Douhet's requirements, it is difficult to argue that air power came even remotely close to fulfilling Douhet's rather audacious claims. Despite the fact that the Allies dropped some 2.7 million tons of ordinance during the European campaign it was not until the Soviets took Berlin that the war in Europe truly ended.<sup>19</sup> Allied bombers had relentlessly pounded German industry, railways, command and control, and cities themselves without early capitulation. Although it could be argued that the gross inaccuracy of the bombing left much industry still operable, it is nonetheless clear that Douhet's central thesis failed in Europe. Despite horrific bombing such as was displayed in Dresden, the German people did not rise up and either demand peace or overthrow the Nazis, but instead absorbed the punishment. Such was also the case in the Pacific, as virtually all of Japan's major cities were burned to the ground, leaving hundreds of thousands dead and millions more displaced.<sup>20</sup> Japanese surrender was not forthcoming until two days after the detonation of a second nuclear weapon on the Japanese mainland, leaving a total of approximately 220,000 dead when both attacks are combined. It is unclear however, that the unprecedented destruction unleashed on Hiroshima and Nagasaki alone would have guaranteed Japanese surrender. Without the Soviet breach of the Neutrality Pact it is unclear that the already divided Japanese cabinet would have accepted the terms of the Potsdam Declaration as they did.<sup>21</sup> In terms of their ability to punish civilian populations and destroy infrastructure nuclear weapons are unparalleled. If punishment did not clearly effect capitulation without reservation when nuclear

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<sup>19</sup> Robert Pape, *Bombing to Win: Air Power and Coercion in War* (Ithaca: Cornell University Press, 1996): 254-313.

<sup>20</sup> Robert Pape, "Why Japan Surrendered," *International Security Vol. 18, No. 2* (Autumn 1993): 199-201.

<sup>21</sup> Ibid.

weapons were used, civilian punishment as a coercive strategy is subject to a large measure of doubt.

Despite this, variations on Douhet's theory would persist.

## CHAPTER 4

### MODERN THEORISTS

Fifty years later air power had undergone rapid technical improvements and theorists have likewise adapted their theories. Aircraft can carry significantly higher payloads longer distances and drop ordinance with greater accuracy than ever before. A new, more pragmatic generation of air power theorists emerged in the post-Vietnam era attempting to apply the more technologically advanced instrument of air power to its modern opponents. The most prominent of these theorists is John Warden III, author of *The Air Campaign*. Out of his mind largely arose the basis on which all recent uses of air power to coerce have been based. The concepts developed by Warden and contemporaries such as John Boyd form the core of what is often referred to as the revolution in military affairs, or RMA, which began in earnest in the post-cold war environment that saw discussions of “the end of history” and the beginning of a unipolar world where America stood unrivaled by any state or block of states.<sup>22</sup> In light of time and space constraints I will refrain from a lengthy discourse on RMA. The United States’ use of the concept generally referred to a transition from large, bulky conventional forces designed to stop a Soviet invasion in Europe to a smaller, more mobile, but more lethal force.<sup>23</sup> Leveraging technological superiority, the US was to develop a smaller, more advanced military with the ability to execute two major theater wars and maintain a prompt global strike capability. In view of these goals, defense procurement naturally focused on acquisition of stand-off weapons and weapons platforms such as the F-22, F-35, NLOS, and more advanced additions to mechanized units in the form of the FCS (a family of highly advanced networked armored vehicles of varying roles). In short, training and technological superiority were viewed as the key to victory in any future combat scenario. This thesis was seemingly

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<sup>22</sup> Francis Fukuyama, *The End of History and the Last Man*, (New York: Free Press, 2006).

<sup>23</sup> Anthony Cordesman, “The Lessons of Afghanistan: Warfighting, Intelligence, Force Transformation, Counterproliferation, and Arms Control,” *Center for Strategic and International Studies* (2002); Colin Gray, *Strategy for Chaos: Revolutions in Military Affairs and the Evidence of History* (Portland, Routledge: 2004).

validated to a large degree during the 1991 Gulf War, of which John Warden is given credit for large input into the design of the air campaign that was undoubtedly instrumental in the removal of Iraqi forces from Kuwait and the extremely light casualties sustained by coalition ground forces. Boyd's influence can be seen in any number of areas, even reflected within Warden's theory.

### Warden's Concentric Systems Theory

Fundamental understanding of the core tenets of Warden's systems theory, upon which later strategic theories and concepts utilized by the IDF and the US were based, is necessary for analysis of a conflict which often was at least nominally based on these concepts. Bearing in mind the accuracy with which Warden and the theorists that built upon systems theory concepts' were implemented, success and failures during the 2006 war may reflect the overall degree to which systems theory reflects the reality of present day conflicts that are not limited to state versus state conflicts or non-state actors that limit themselves to classical guerilla warfare. It may also inform our understanding of attitudes towards air power prior to and during the 2006 war, particularly the degree to which it could be effective in achieving a political or military objective. What follows is a purely expository account of the primary currents of Warden's thought.

Warden's air war theory, as described in his seminal work *The Air Campaign* begins by dividing warfare into four levels: grand strategic, strategic, operational, and tactical.<sup>24</sup> He defines the *grand strategic level* of war as where the most basic but most fundamentally important decisions are made such as the decision to go to war, against whom, for what reasons, etc. The *strategic level* of war, "concerns the overall conduct of the war, the approximate forces that will be made available, and the

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<sup>24</sup> John Warden III, *The Air Campaign* (Lincoln: toExcel Press, 2000): 1.

weights of effort in various theaters.”<sup>25</sup> The *operational* level involves figuring out how to accomplish strategic objectives with the forces allotted. Thus the operational level is that which concerns the actual application of military power (non-military power as well sometimes). The *tactical* level is where opponents actually meet in combat, whatever the type. For our purposes tactical discussions will remain largely absent, but as F.E. Adcock said “Battles are sometimes won by generals; wars are nearly always won by sergeants and privates.” This aphorism is worth remembering when contemplating strategy, if for nothing other than a dose of humility in any estimations of future success or failure. The core of Warden’s theory revolves around his view of how an opponent is structured. Understanding how a particular opponent is structured as an organization, whether one’s opponent is a state, a terrorist group, a drug cartel, or the local parent teacher association will, quite logically, afford one great insight into how to disrupt the organization’s ability to function if one were so inclined. Since the object of war is defeat of an opponent with the least cost in blood and treasure, understanding the structure and structural weaknesses is vital to a strategic campaign of any sort. Although it was once the case, total war has largely been absent from military doctrine since the end of the Cold War. Instead of complete annihilation, opponents aim to merely change the other’s behavior in some way, big or small (this has few theoretical exceptions, and even fewer practical ones: that is there are few who oppose Western militaries that are conceivably capable of executing such a campaign). The ability to defeat an opponent without destroying him is obviously one that greatly appeals to decision-makers who must not only defend against physical threats to security but also the threat of unfavorable international opinion, as both Israel and the US have experienced on numerous occasions. Warden’s systems theory describes hierarchical organizations as a cascade of concentric circles that interact, and are dependent on one another. A state, for example, has at its core its cadre of leaders, followed by system essentials, infrastructure, population, and its fielded military. A recurring theme amongst air power enthusiasts has

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<sup>25</sup> Ibid, 2.

been the idea that contrary to Clausewitz destruction of the enemy military is not the essence of war; the essence of war is convincing the enemy to accept your position, and fighting his military is at best a means to an end and at worst a total waste of time and energy.<sup>26</sup> Thus, directly or indirectly, all of our energies in war should be focused on changing to the mind of the enemy organization's leadership.<sup>27</sup> Hierarchical systems of varying types exhibit remarkably similar methods of organization. Warden's theory exists in the *operational* realm. That is, analysis and exploitation of the systems that make up the enemy organization is accomplished through the use of national power, typically military, to attack strategic centers of gravity as revealed by analysis of an enemy's systems. Although it would seem upon further review that this theoretical perspective is also on the *strategic* level, it is more useful to view them as melded. The levels of conflict exist on a continuum and are not in any way disparate concepts but rather levels of abstraction from the tactical.<sup>28</sup> Warden's systems theory is mainly concerned with the identification and exploitation of "centers of gravity" (a term first coined by Clausewitz) which he defines as the "hub of all power and movement."<sup>29</sup> A concentric ring diagram shows the basics of a nation state, viewed as a system. Naturally the most critical ring is the command ring because,

"it is the enemy command structure, be it a civilian at the seat of government or a military commander directing a fleet, which is the only element of the enemy which can make concessions, that can make the very complex decisions that are necessary to keep a country on a particular course, or that can direct a country at war."<sup>30</sup>

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<sup>26</sup>This may be falsely attributed to Clausewitz instead of the French General Antoine-Henri Jomini, see: John Shy, "Jomini," in *Makers of Modern Strategy: from Machiavelli to the Nuclear Age*, ed. Peter Paret (Princeton, Princeton University Press: 1986): 186-216.

<sup>27</sup> John Warden III, "Air Theory for the Twenty-first Century," in *Battlefield of the Future: 21<sup>st</sup> Century Warfare Issues*, (Maxwell Air Force Base: Air University Press, 1995): <http://www.airpower.maxwell.af.mil/airchronicles/battle/chp4.html>

<sup>28</sup> Warden III, 2000: 5.

<sup>29</sup> Clausewitz, 1976: 595.

<sup>30</sup> John Warden III "The Enemy as a System," *Air power Journal* Spring 1995, (April 12, 2010): [http://www.airpower.maxwell.af.mil/airchronicles/apj/apj95/spr95\\_files/warden.htm](http://www.airpower.maxwell.af.mil/airchronicles/apj/apj95/spr95_files/warden.htm)

Capturing or killing a state's leader has frequently been decisive; however it is apparent that this has become more difficult as time has gone on. Nonetheless command communications may remain vulnerable or the command circle may be pressured indirectly.<sup>31</sup> The intent in either case would be to degrade the command element's ability to effectively marshal control over the dependent rings, allowing a more coordinated opponent to exploit this confusion.<sup>32</sup> In an instance where significant enough pressure cannot be brought directly against the command element, pressure can be applied to one or more of the other outer rings so that particular courses of action may become impossible for the opponent to pursue. System essentials or organic elements are those facilities or processes without which the state or organization cannot maintain the status-quo.<sup>33</sup> This need not be specifically war related industry but will nonetheless be vital to the war effort. Essential facilities for modern states would include oil refining capabilities or the ability to import refined petroleum (or reserves) and power generation capabilities.<sup>34</sup> Without these two organic essentials it quickly becomes difficult to maintain the ability to employ modern weapons and to continue to avoid making concessions to one's opponent. Sometimes even minor damage to vital industries is enough to coerce the command element into making concessions because:

- Damage to organic essentials leads to the collapse of the system
- Damage to organic essentials makes it physically difficult or impossible to maintain a certain policy or to fight
- Damage to organic essentials has internal political or economic repercussions that are too costly to bear<sup>35</sup>

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<sup>31</sup> Ibid.

<sup>32</sup> Ibid.

<sup>33</sup> Ibid.

<sup>34</sup> Ibid.

<sup>35</sup> Ibid.



Although it would seem that given the enormity of an industrialized state's infrastructure that it would be near impossible to destroy all of these vital points, these hubs are few in number and relatively fragile (facilities are typically above ground and cannot be hardened).<sup>36</sup> Below these vital industries comes infrastructure which includes the state's transportation system and the majority of the state's industry that does not fall into the above category.<sup>37</sup> Destroying infrastructure targets paralyzes the enemy's ability to produce war material and to effectively transport it to vital areas. Effective targeting of transportation systems has often had a paralyzing effect when states are engaged in maneuver warfare whose success is largely dependent on freedom of movement.<sup>38</sup> Static defensive positions and the pursuit of other strategies lessens the effect of such targeting, and this ring is overall less vulnerable because infrastructure targets are both more numerous and are often highly redundant.<sup>39</sup>

The next most critical ring is the population. Warden is quite aware of Douhet's theory, and does not place great faith in such a strategy. He notes that "moral objections aside, it is difficult to attack the population directly. There are too many targets, and, in many cases, especially in a police state, the population may be willing to suffer grievously before it will turn on its own government."<sup>40</sup> He does assert that Douhet's theory rests on a solid historical foundation; besieged cities have normally surrendered when the pain and suffering became too much for the civilians to bear. Despite the seemingly opposite effect that occurred during World War II (although neither the stiffening of civilian morale nor merely the notion that the punishment had not reached a sufficient level has much evidence to support it), punishment of civilian populations has had different results in different places. There are certainly instances in which it was likely that punishment of civilians played a decisive role in concessions, such as the "war of the cities" during the Iran-Iraq war, which likely contributed to Iran's

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<sup>36</sup> Ibid.

<sup>37</sup> Ibid.

<sup>38</sup> Ibid.

<sup>39</sup> Ibid.

<sup>40</sup> Ibid.

armistice with Iraq.<sup>41</sup> Thus civilian punishment cannot be categorically ruled out as ineffective (moral concerns aside), but it is inherently difficult and has a spotty record of success in the preceding century.<sup>42</sup>

The last ring holds the enemy state's military forces. Instead of viewing these forces as the most vital component of the enemy system in war, Warden views them merely as means to an end, the end being the political objectives of the state that led to war. Therefore their function is to both protect its state's rings and to threaten its opponent's. Warden notes that this view is one not held by classical military theorists who, writing in the Continental period would have had to contend with enemy armies and were not presented with the range of attack options available to a modern state in the modern era. Attacks are directed to affect the decision calculus of the enemy command ring, not to directly affect its fielded forces (though this is a probable consequence nonetheless).

Leaders of an enemy system continually reevaluate the conditions of the conflict and the relative costs and benefits of certain actions such as; the cost of rebuilding, the effect on the state's economic position in the postwar period, the internal political effect on their own survival, and whether the cost is worth the potential gain from continuing the war. This calculus likely will not include merely physical, quantifiable things such as the status of one's military forces or industrial capacity, but also intangibles such as morale, national pride, etc. It is obvious that the former lends itself well to identification by intelligence collection efforts by one's opponent while the latter does not (indeed it may be unknown to the state itself). Warden's solution to this problem is to merely focus on the material concerns in the command's decision calculus because strategic entities in modern times are highly dependent on physical means, regardless of whether they are a guerilla organization or a modern state (although

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<sup>41</sup> David Segal, "The Iran-Iraq War: A Military Analysis," *Foreign Affairs* (Summer 1988): <<http://www.foreignaffairs.com/print/43387>>; Global Security, "Iran-Iraq War (1980-1988)," <<http://www.globalsecurity.org/military/world/war/iran-iraq.htm>>

<sup>42</sup> Pape, 1996: 315-316.

admittedly the latter more so). Warden says “If the physical side of the equation ((Physical) x (Morale) = Outcome) can be driven close to zero, the best morale in the world is not going to produce a high number on the outcome side of the equation.”<sup>43</sup> This array of concentric rings exists not only at the strategic level (the organization as a whole) but also within the operational level (fielded forces).<sup>44</sup> In attacking higher level rings at the operational level (destroying logistics and command and control elements), it is possible to degrade the opponent’s forces ability to effectively respond to the rapidly changing battle-space. Warden’s theory advocates avoidance if possible rather than engagement with the enemy’s fielded military forces, which are by nature designed to resist attack.<sup>45</sup> Although engagement may prove impossible to avoid and although it is necessary to engage with higher level rings, the “clash of armies” is an inefficient use of one’s military power.<sup>46</sup> Attackers are well advised to use parallel attack: that is to execute near simultaneous attack on the highest rings available: creating strategic paralysis.<sup>47</sup> An opponent whose leadership has been decapitated, organic industries destroyed, and operational theater level capabilities degraded cannot defend against a rapidly moving and striking opponent. This Muhammad Ali theory of war (“Float like a butterfly sting like a bee!”) is both at the core of the US initiated RMA, and of what eventually became known as Effects-based Operations (EBO).

### Effects-based Operations

Effects-based operations /planning are a conceptual outgrowth of Warden’s “the enemy as a system” concept. Instead of the primary goal of offensive or defensive operations being annihilation or attrition of the enemy’s military capabilities that indirectly influence the enemy’s decision calculus,

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<sup>43</sup> Warden, 1995.

<sup>44</sup> Ibid.

<sup>45</sup> Ibid.

<sup>46</sup> Ibid.

<sup>47</sup> Ibid.

actors utilizing EBO based strategies instead focus on desired end-states, presumably allowing for a reduction in casualties, and increased efficiency across the board. Allen Batschelet's study "Effects-based operations: A New Operational Model?" provides an excellent introduction into a concept that has fragmented into a variety of different meanings.<sup>48</sup> The features he identifies as vital to the concept of EBO are:

1. Focus on Decision Superiority (a derivative of Boyd's OODA loop)
2. Applicability in Peace and War (Full-Spectrum Operations)
3. Understanding of the Adversary's Systems
4. Ability of Disciplined Adaptation
5. Application of Elements of National Power
6. Ability of Decision-Making to Adapt Rules and Assumptions to Reality.

Present military doctrine in the US and Israel no longer employs the EBO concept, not because the basic logic of EBO is invalid, but because the concept consistently inflated the predictability of the outcome of strategic attack and conflict in general. It often resulted in confusion amongst commanders below the theatre level because orders designed to create "effects" rather than destroy capabilities proved difficult to execute, especially when in a situation where Batschelet's third feature (Understanding of the Adversary's Systems) had not actually been accomplished. EBO was essentially overly optimistic about its ability to understand the enemy's decision calculus in a vacuum, and proved even less accurate in the chaotic fog of war. The influence of EBO concepts on the IDF has been previously cited as one of the main reasons for Israel's failure to achieve its strategic objectives.<sup>49</sup> This in some ways proves problematic for my examination of the IAF's application of air power in the 2006 war.

<sup>48</sup> Milan Vego, "Effects-Based Operations: A Critique," *Joint Forces Quarterly*, Issue 41 (Q2 2006): 51-57.

<sup>49</sup> Avi Kober, "The Israeli Defense Force in the Second Lebanon War," *Journal of Strategic Studies*. vol 31 No.1 3-40 (February 2008)16-28 and 37-38; Mat M. Matthews, *We Were Caught Unprepared: The 2006 Hezbollah-Israeli War*, The Long War Series Occasional Paper 26 (Fort Leavenworth, Ks: Combat Studies Institute Press, 2008): 23-38 and 61-65.

If specific Israeli failures can be attributed to reliance on EBO based doctrine, it may color any judgment as to the effectiveness of strategic attack in state actor versus non-state actor conflicts. Fortunately actual cases in which EBO concept application can be identified are few and are mainly related to the later ground incursions by IDF forces. An instance in which EBO could be blamed for strategic failure would be one in which direct attrition was foregone in favor of a more unconventional approach such as attacks on symbolic targets, infrastructure not clearly related to logistics pipelines, and “raiding” instead of occupying positions with the intent of eliminating enemy presence in an area. The IAF consistently favored a balance between strategic attack on higher circle targets and traditional interdiction aimed at disrupting logistics and degrading capabilities directly.

#### Decapitation as a Strategy

Decapitation of enemy leadership has been both implicitly and explicitly the centerpiece of campaigns against state and non-state actors both during the era in which EBO was in vogue and up until the present. Warden states that “leadership decapitation is the most critical element in determining a nation’s will to fight,” and that such decapitation is often decisive: the removal of said leader or leaders resulted in significant organizational degradation or collapse.<sup>50</sup> Robert Pape has claimed to the contrary that decapitation is often not possible and that it is not usually decisive even if successful.<sup>51</sup> Coercion based on attacks on this highest ring are unlikely to succeed in coercing an opponent because it is difficult to find, fix, and eliminate leaders, the death of a leader during war often brings less policy change than expected, and in most organizations succession is unpredictable.<sup>52</sup> More recently Jenna Jordan has showed that the purported advantages of leadership decapitation are even

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<sup>50</sup> Warden III, 2000: 44-50.

<sup>51</sup> Pape, 1996: 79-86.

<sup>52</sup> Ibid.

more vacuous than Pape had shown. After examining 298 incidents of leadership targeting against terrorist organizations from 1945-2004 she found that leadership targeting was ineffective as a whole, and that in larger, religiously based groups the marginal value of leadership targeting was in fact negative: decapitation strategies led to greater group longevity.<sup>53</sup> She suggests “older organizations will have developed the networks and support systems necessary to replenish key members.”<sup>54</sup> Decapitation may be effective against younger, ideological, hierarchical groups, but is very unlikely to be effective against groups such as Hezbollah and Hamas and may produce second order consequences such as increased violence, splintering, retaliation, or other unwanted effects.<sup>55</sup> If even successful leadership targeting against larger religious or separatist groups does not push groups over the baseline for organizational degradation, decapitation would be an unwise strategy to follow if its usefulness is measured solely on its ability to degrade or destroy enemy organizations (not satisfy domestic constituencies). The continual appeal of this strategy, Jordan suggests, is because of reliance on the “charismatic leader theory” and social network analysis.<sup>56</sup> In the former it is suggested that in groups with prominent leaders which provide direction and ideological inspiration, removal of said leader will result in degradation or collapse. In the latter network hubs are identified. Important persons which maintain contact with otherwise isolated cells or organizational structures are targeted in an attempt to destroy the organization’s ability to communicate between its component parts. Although both theories seem plausible enough at first glance, they are not empirically supported, particularly amongst the current crop of groups which have adapted to leadership targeting strategies by decentralizing leadership and/or granting greater autonomy to junior leaders. Even in hierarchical organizations, long thought to be particularly vulnerable to decapitation, operational autonomy has increased: decreasing

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<sup>53</sup> Jenna Jordan, “When Heads Roll: Assessing the Effectiveness of Leadership Decapitation,” *Security Studies* Vol. 18 (2009): 753-755.

<sup>54</sup> *Ibid*, 745-753.

<sup>55</sup> *Ibid*, 749-753.

<sup>56</sup> *Ibid*, 726-731.

the effect of a successful decapitation. Because of the prominence of decapitation in systems theory and thus its importance in EBO concepts, the overall efficacy of both the overall pursuit of decapitation and its effects if successful are of the utmost importance.

### Systemic Operational Design

Systemic Operational Design, or SOD, is in the Israeli form the brainchild of now retired Brigadier General Dr. Shimon Naveh. Developed at the IDF's Operational Theory Research Institute, SOD's philosophical origins can be found primarily within the writings of French philosophers Gilles Deleuze and Felix Guattari's books *Anti-Oedipus* and *A Thousand Plateaus* as well as Jean-Francois Lyotard and architect philosophy Paul Viirilio.<sup>57</sup> Deleuze-Guattari theory, originally a philosophy of resistance and liberation begun during student revolt in 1968, was developed by Naveh and his colleagues into the military embodiment of systems theory. "I tried to extricate us from the Western separation between practice and theory. This hero, the commander, the operative person, lives in a permanently coalescing space. He needs a theory in order to think critically about the object of his observation, and the moment he acts, he changes the world, thus obliging him to recast the theory," says Naveh to interviewer Yotam Feldman.<sup>58</sup> Naveh uses the language of construction to describe the system of a state military; he says "We wanted to create an intermediate level between the master craftsman, the tiling artisan or the electrician, who is the equivalent of the battalion or brigade commander, and the entrepreneur or the strategist, the counterpart of the high commander, who wants to change the world, but lacks knowledge in construction," in the absence of this link "entrepreneurs and master craftsmen cannot communicate:" armies are unable to implement their strategic planning by tactical means, one of the

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<sup>57</sup> Yotam Feldmen, "Dr. Naveh, or, how I learned to stop worrying and walk through walls," *Haaretz*, 25 September 2010, Friday Supplement, < <http://www.haaretz.com/magazine/friday-supplement/dr-naveh-or-how-i-learned-to-stop-worrying-and-walk-through-walls-1.231912>>

<sup>58</sup> Feldmen, 25 September 2010.

many problems present during the 2006 war.<sup>59</sup> Naveh's esoteric theory of operational art has been cited many times as one of the primary reasons for failures in the 2006 campaign, and is often ignorantly lumped in with EBO concepts, which are quite distinct.<sup>60</sup> Effects based operations and planning map political, economic, military, social, and infrastructure informational concepts and assign them a Newtonian causal logic that promotes conceptual rigidity.<sup>61</sup> This mechanistic attempt at understanding warfare, a human endeavor, fails because human constructs are inherently fluid and thus assigning such mechanistic probabilities relies on fundamentally false assumptions.

SOD arose as an alternative; radically different in its fundamental assumptions and conceptual framework. It is quite the opposite of the "hard-systems thinking" present in EBO and related conceptual frameworks such as system of a systems analysis (SOSA) and operational net analysis (ONA); both products of the now defunct rapid decisive operations (RDO) that was introduced into US joint doctrine during the 1980s.<sup>62</sup> The effective realms of EBO and SOD are embodied by the difference between complicated and complex systems. A complicated system is composed of parts and structures logically separable from their environment, such as the time-table for deploying units on D-Day. Complex systems are dynamic, interactive, and adaptive elements that cannot be logically separated from their environment; thus including all human interaction, especially in warfare.<sup>63</sup> Humans and their relationships are immensely complex and demand inductive and abductive reasoning for diagnosis and synthesis. SOD deals with the following questions:

- What is effective learning and adapting while campaigning?
- What is design in relation to planning?

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<sup>59</sup> Ibid.

<sup>60</sup> See discussion of EBO and SOD in: Amos Harel & Avi Issacharoff, *34 Days: Israel, Hezbollah, and the War in Lebanon*, trans. Ora Cummings & Moshe Tlamim (New York: Palgrave-Macmillan, 2008).

<sup>61</sup> Huba Wass de Czege, "Systemic Operational Design: Learning and Adapting in Complex Missions," *Military Review* January-February (2009): 2-3.

<sup>62</sup> Ibid, 3-4.

<sup>63</sup> Ibid, 3.



- What is the logic and method of effective design?
- How do we institutionalize design?<sup>64</sup>

SOD's development is tied to the arguably recent development of complex asymmetric threats following the end of the Cold War, which are characterized by limited wars with limited goals. Fundamentally SOD is a concept of learning which recognizes that adaptation to a rapidly evolving situation is of the utmost importance, and aims at facilitating adaptation. There is no beginning and end state because SOD at its core rejects the notion that reality is exactly mirrored in one's consciousness, that the mental construction of reality is the same as reality: a derivation of the fundamentally Western attempt at creating an idealized end-state by overcoming obstacles between an ideal in one's mind and reality (as opposed the generally Confucian and Taoist East which generally did not frame life in terms of idealized ends).<sup>65</sup> With this in mind it becomes obvious that "end state" is nonsensical: there is a currently provisionally desired state which is believed to be desirable based on current information, but since this is a complex system in which human relationship interaction will determine what is possible and what is not, the desired end state cannot be known, only pushed towards what one now conceives of as a "good" end-state. As in John Boyd's OODA (observe, orient, decide, act) loop and Richard Dawkin's mnemonic theory of evolution adapting faster than one's competitors is the key to survival or success in campaigning<sup>66</sup>. This adaptive campaigning model recognizes the fundamental chaos and inherent unpredictability in conflict involving so many unpredictable variables and purposely alters the methods

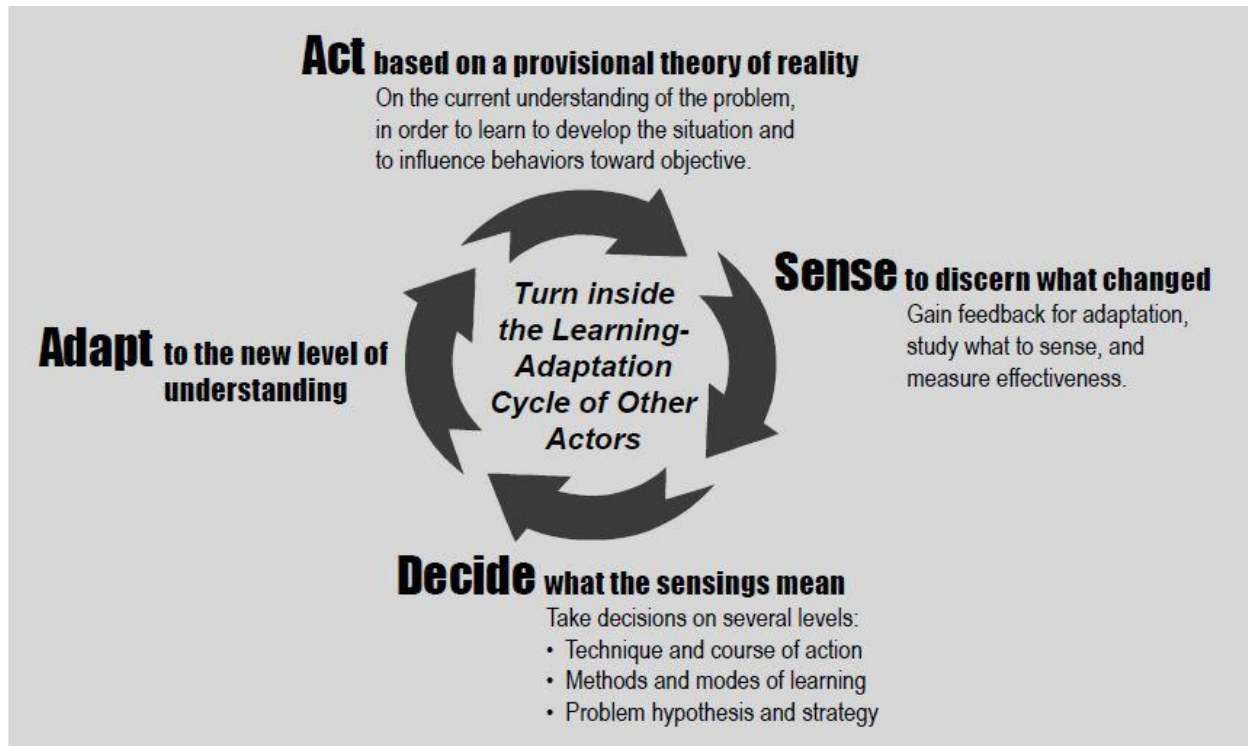
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<sup>64</sup> Ibid, 4.

<sup>65</sup> Ibid, 4-5.

<sup>66</sup> For Dawkins' mnemonic theory of evolution see: Dawkins, Richard, *The Selfish Gene* (New York, Oxford University Press, 2006). For Boyd's OODA loop and related discussion of the development of its associated concepts see: Osinga, 2007.

by which a campaign is designed to accommodate this uncertainty (see Figure 1).<sup>67</sup>



**Figure 1. Adaptive campaigning model.**

Collective understanding of the aforementioned concepts is vital to the design and implementation of a successful campaign. To foster such collective understanding implementers of SOD must be constantly learning through subordinate feedback and through collaborative involvement in all stages of the adaptive campaigning mode without inhibiting alternate views or blunting criticisms of present perceptions (a tall order to be sure).<sup>68</sup> Figure 2 shows the intersection between design and planning: the former sets the problem to be solved and the latter solves it as defined.<sup>69</sup>

<sup>67</sup> Czege, 2009: 4-5.

<sup>68</sup> Czege, 2009: 7-8.

<sup>69</sup> Ibid, 6.

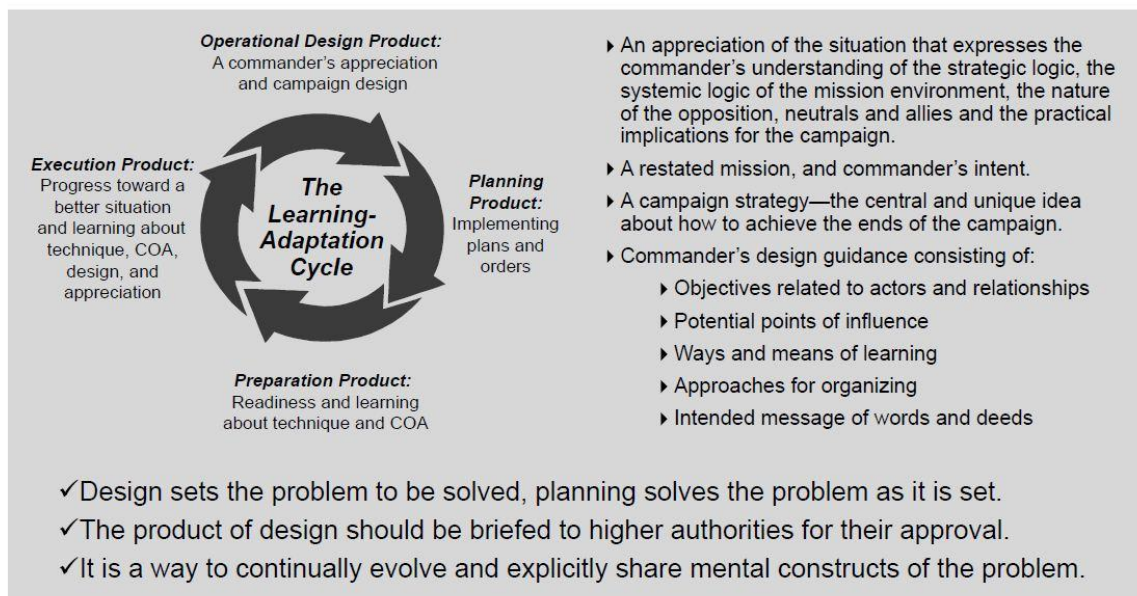
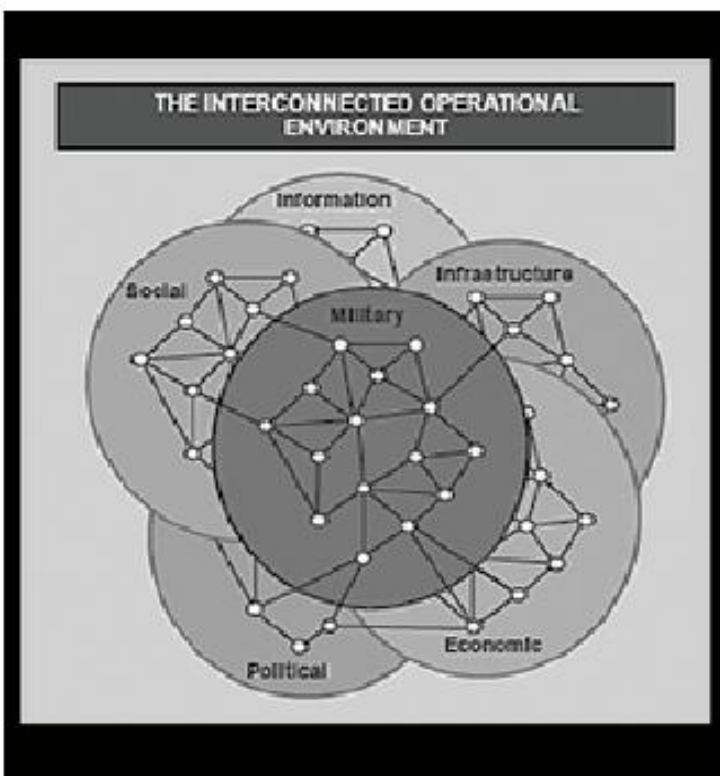


Figure 2. A provisional conceptual problem framing guide.



The PMESII systems-of-systems portrayed in JP 3-0 and 5-0 is **complicated**, not complex. A complicated system is made up of many parts but behaves in a linear (that is predictable) fashion. Automobiles and jumbo jets are complicated systems. These are systems that actually exist in the world. Technical missions deal with the logic of such systems.

The current military mission environment is not such a system, it is **complex**. A complex system is a system that consists of a large number of interactive parts in which the number of relationships and feedback mechanisms make system behavior unpredictable in magnitude of response. Relationships are hidden, constantly evolving, and impossible to bound. They are also marked by self-organization and emergence of the capability to generate system changes without external input. Relationships of thinking humans are extremely complex.

Figure 3. The interconnected operational environment.

A cognitive methodology that promotes collaborative design in a rigorous and disciplined way is more likely to achieve collective understanding of all aspects of the adaptive campaigning process.<sup>70</sup> It is likely to be better defined, better documented, and easier to revise because all who were involved in the first collaborative effort have a good idea of the narrative leading to the current state.<sup>71</sup> SOD is once again vastly different from the “hard systems thinking” present in EBO and SOSA concepts, which assume reality is structured and predictable and were widely believed to be applicable to a variety of current missions.<sup>72</sup> Complex systems are marked by self-organization and “emergence”—the capability to generate system changes without external inputs.<sup>73</sup> The collaborative process is improved when it is extended one or two levels downwards, but becomes counterproductive if taken further. Recursive learning enabled through candid absorption of subordinates views is enabled and integrated into commander led collaborative design and planning. Vital to this is the ability of subordinates to question key assumptions without rank being a relative factor. The philosophy and methodology is built by a shared understanding continually improved layer-by-layer through the recursive dialectical process of

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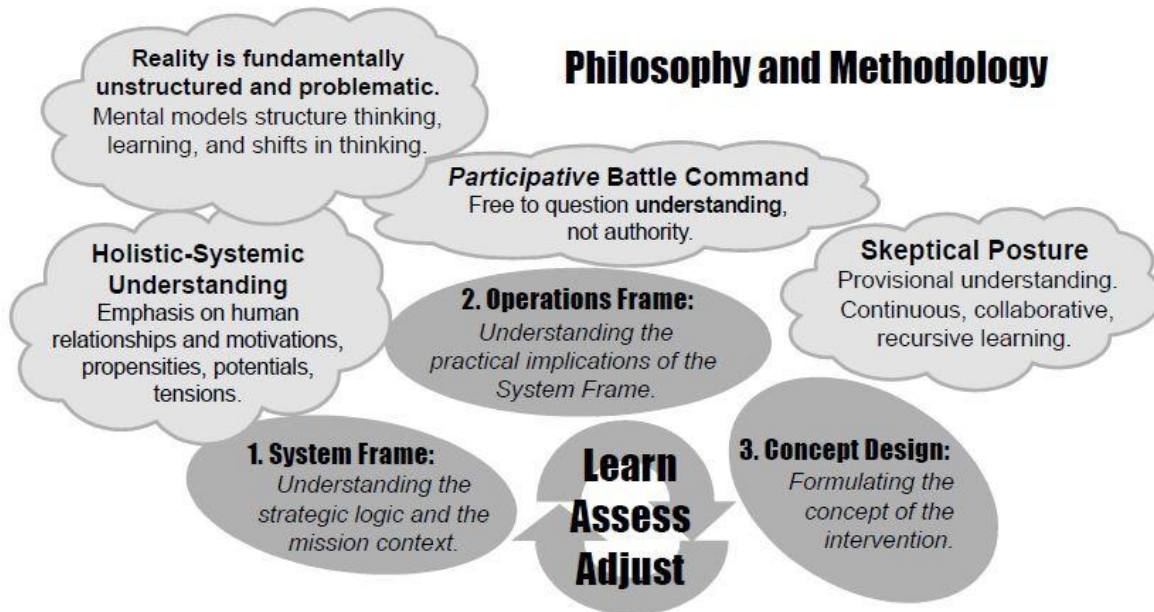
<sup>70</sup> Ibid, 3.

<sup>71</sup> Ibid, 7.

<sup>72</sup> Czege, 2009: 7.

<sup>73</sup> Ibid, 7.

adaptation (see Figure 4).



Build a shared understanding layer-by-layer through a recursive dialectical process:

- Form a tentative explanatory theory based on the best information available.
- Test it by identifying problems or tensions between the theory and new information and perspectives.
- Construct a new theory to resolve such problems.
- Maintain cross-talk higher to lower, among command team and with subordinates.

**Figure 4. Philosophy and methodology.**

This unending “journey of learning” is enhanced by the development of explicit models of strategic causality that are both graphic and narrative. Such an explicit construction of the system frame serves both as an official record that can be referenced during subsequent adaptations made as a result of changed assumptions or environmental changes and a useful referent as a baseline of knowledge regarding the current understanding of the relevant actors relationships, patterns of emergence, and how intervention is to influence these networks to move the situation towards the desired end-state at that time. The transition from design to planning is characterized by meta-questioning of the system of opposition. Meta-questioning is an intellectual trick designed to tease out relationships during the

planning process.<sup>74</sup> For example many Lebanese in the South are Shia. A meta-question would be “How does being a Shia in southern Lebanon affect their views on Hezbollah, Israeli rhetoric, Israeli over flight during peacetime, or Israeli incursions?” In the design to plan translation process understanding of the system of opposition must address the following:

- How we can learn about it.
- What are the impacts of culture, politics, economic, and social dynamics on the opposing system’s behavior.
- What is the nature and structure of its “logistical” system.
- What is its visible and invisible modes of operational maneuver.
- How might this system of opposition be disrupted.<sup>75</sup>

This type of systematized thinking about the system of opposition would also need to be applied to one’s own system: know yourself and know your enemy as Sun Tzu’s dictum suggests. The “journey of learning” is graphically described in figure 5.<sup>76</sup> Critical to a comprehensive understanding of the discourse in SOD is an understanding that the development of how ideas and relationships form within a community practicing SOD is best considered from the perspectives of agency, narrative and artifact structure, and socio-cultural relationships: the human environment from which it emerges.<sup>77</sup> Deeper cultural awareness achieved through the development of area specialists who gain a deeper understanding of regional dynamics through continued exposure to one complex system elevates the degree to which design may be successful in accurately reflecting relationships within the system of opposition.<sup>78</sup> A whole host of additional factors may include the effects of competing moral philosophies

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<sup>74</sup> Czege, 2009: 10.

<sup>75</sup> Ibid, 10-11.

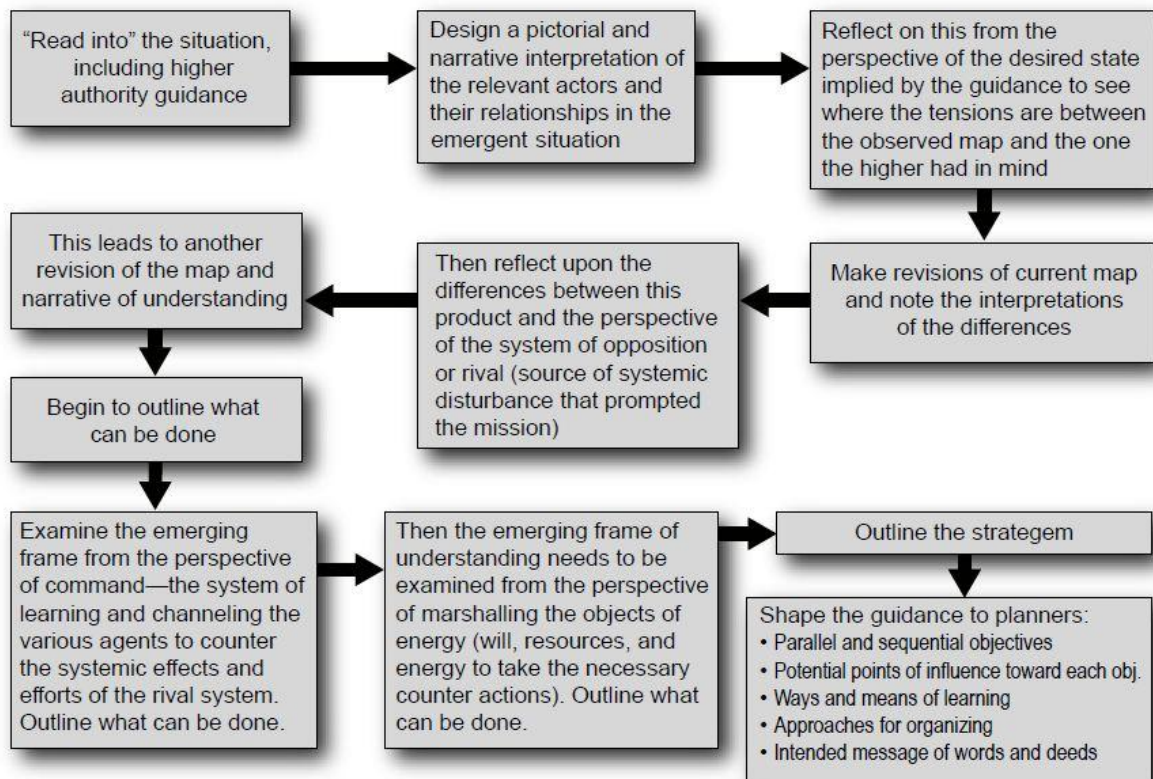
<sup>76</sup> Ibid, 9.

<sup>77</sup> Joseph DiPasquale, “Discourse in Systemic Operational Design,” School of Advanced Military Studies: United States Army Command and General Staff College Monograph Series, 25 May 2007: 40-41.

<sup>78</sup> Ibid.



on design development, the ways moral perspectives inform intelligence interpretation, the effects political discourse has on interpreting enemy logic, the role cultural discourse plays in interpreting enemy logic, gender and generational effects on design development, and religious philosophical effects on interpretations.<sup>79</sup> It is easy to see that in a complex system the list of relevant factors is basically infinite. SOD accepts this chaos as a fundamental condition of conflict and thus stands a significantly greater chance at increasing campaign success if properly implemented than do “hard systems conceptions” which rely on overly mechanistic assumptions about systems and our ability to modify them through external inputs.



**Figure 5. The “journey of learning.”**

<sup>79</sup> Ibid.

## CHAPTER 5

## MILITARY COERCION

Military coercion comes in two primary, generally distinct forms; punishment and denial. Through punishing the enemy or denying him the ability to accomplish his objectives it is possible to convince the enemy to acquiesce to some or all of your objectives.

“Punishment strategies seek to inflict enough pain on enemy civilians to overwhelm their territorial interests in the dispute. The hope is either that the government will concede or the population will revolt. Punishment strategies do not, however, usually offer significant leverage.”<sup>80</sup>

Pape’s definition of punishment is clearly influenced by Douhet’s thesis, but lacks the preciseness of his descriptions of his denial theory of military coercion<sup>81</sup>. Punishment is primarily about inflicting pain but not necessarily only on enemy civilians. During World War II, this definition may have been more than adequate, however with the rise of high-capability non-state actors such as Hezbollah who’s fighting style sits somewhere between conventional combined arms warfare and terrorism, and often swings drastically in one direction or the other, matters have grown more complex. When dealing with non-state actors who do not directly control cities or have clear control over population centers it becomes increasingly difficult to determine who exactly to punish, and thus what actually constitutes “enemy civilians.”

Continuing with Pape’s line of argument he outlines the basic logic of military coercion as a simple equation shown here:

$$R = B p(B) - C p(C),$$

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<sup>80</sup> Pape, 1996: 21.

<sup>81</sup> Ibid, 15-18.



Where: R = value of resistance  
 B = potential benefits of resistance  
 P(B) = probability of attaining benefits by continued resistance  
 C = potential costs of resistance  
 P(C) = probability of suffering costs.<sup>82</sup>

Punishment thus aims at increasing the potential costs of resistance (C) such that the value of resistance (R) is less than zero. P(C) and C are both determined primarily by the punisher (aside from the fact that we are dealing with perceptions here) and are determined by perceptions of present capabilities and past actions. A spotty deterrent record will often be bolstered through costly signaling designed to impress upon the targeted organization the state's willingness and ability to inflict punishment.

Generally uncontrollable by the state threatening or attempting coercion are the value of resistance, the potential benefits of resistance and to a lesser degree the probability of attaining benefits by continued resistance (enemy perceptions of the likelihood of obtaining benefits through continued conflict may be directly impacted by costly signaling, threats, direct conflict, or any number of other factors). Thus in cases where R and B are extremely high, or comparatively high when compared to the state attempting or threatening to coerce, coercion is likely to fail regardless of whether the main aim of the campaign is denial or punishment.<sup>83</sup> In such cases total defeat and territorial occupation are often necessary for capitulation (this was the case with Germany during World War II and nearly the case with Japan as well). Instances in which the norm that prohibits punishment strategies is likely to be broken are total war scenarios in which one or both parties' fight is existential and in conflicts which involve one or more pariah states which have little if any sensitivity to international pressure short of military intervention.

Coercion by denial is of the same intent, but utilizes altogether different methods. Here Pape's definition again is directed primarily towards states, but is applicable to insurgent groups in many cases.

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<sup>82</sup> Pape, 1996: 16.

<sup>83</sup> For Pape's definition of a strategy of denial, and the differences between denial and punishment see "Explaining Military Coercion": Pape, 1996: 12-54.

“Coercion by denial operates by using military means to prevent the target from attaining its political objectives or territorial goals. The coercing state could threaten, for example, to capture territory held by the opponent or to destroy enough of the opponent’s military power to thwart its territorial ambitions. The coercer may try to stop the opponent from either gaining or holding territory, depending on whether the goal is to prevent an attack, stop an ongoing attack, or force territorial concessions.”<sup>84</sup>

Coercion by denial plays a vital role in the establishment of deterrence which “tries to persuade a state not to initiate a specific action because the perceived benefits do not justify the estimated costs and risks; coercion involves persuading an opponent to stop an ongoing action or to start a new course of action by changing its calculations of costs and benefits.”<sup>85</sup> When non-state actors are thrown into the mix the picture naturally becomes more complex. Since non-state actors generally do not have territorial goals or military power of the same identifiable character as states do, application of a denial strategy of military coercion by a state against a non-state actor is difficult at best and impossible at worst. A strategy of coercion by denial pursued by a non-state actor against a state is much easier to describe.

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<sup>84</sup> Pape, 1996: 13.

<sup>85</sup> Ibid, 14-15.

## CHAPTER 6

## WARFARE TAXONOMY

Traditionally there has been a dichotomous categorization of types of warfare. Conventional maneuver warfare was viewed as radically different from classical guerilla warfare. It is certainly true that there are a great deal of differences between an insurgent group such as *Lashkar-e-Taiba* or *Jaish-e-Mohammed* and a US Army Brigade Combat Team, but there are also a great many similarities. Since in many ways the taxonomy developed to categorize opponents is vital to both our understanding of our adversaries and how we deal with them, it is obviously important to be as precise in our definitions as possible. It is perhaps especially relevant to coercive strategies that rely primarily on stand-off firepower. Opponents occupying the conventional end of the warfare spectrum have generally been more vulnerable to air attack, while those occupying the guerilla side of the warfare spectrum have been less so. However, it is my contention that the traditional dichotomous definitions of “conventional” and “guerilla” are generally poor descriptors when the tactical dispositions of a group are examined. That is to say that there are a variety of attributes typically ascribed to classical guerilla groups that are used in modern combined arms warfare, and a number of features typically ascribed to conventional fighting units manifested by non-state actors involved in insurgency. Rather than an either/or categorization it is more useful to describe the tactical and strategic decisions of a group at that time; as despite the moniker assigned a particular organization, there are no restrictions on the employment of tactics drawn from throughout the spectrum of conflict. An excellent example of what is often called a “hybrid” threat is Lebanese Hezbollah. Hezbollah’s conflict with Israel in 2006 is instructive in directly applying strategy and tactics to a continuum instead of as roughly dichotomous.

One of the primary features described as unique to conventional doctrine, and a major difference from guerrilla warfare, is the intention to hold ground. It is presumed that conventional

militaries are capable of taking and holding ground while guerillas are not capable of such a tactic, or the pursuit of such a tactic would have devastating consequences in terms of the survival of the units involved.<sup>86</sup> A conventionally armed force would presumably be loath to give up air-superiority in the first place and would likely continue to prevent unrestricted air superiority with man portable air defense systems (MANPADs) , surface to air missiles (SAMs) or anti-aircraft artillery (AAA). Since guerillas typically lack the aforementioned weaponry and/or the expertise to use it successfully, attempts to hold ground after being positively identified are likely to end in defeat. Guerillas instead are expected to engage in hit and run attacks characterized by snipers, roadside bombs, booby-traps, and other forms of surprise attack after which they are expected to melt away into the surrounding terrain.<sup>87</sup> The key point is that guerillas are not expected to accept decisive engagement. By decisive engagement I mean a condition wherein defenders remain in position under assault even after the attacker has advanced far enough that the defenders cannot readily withdraw without being overrun. The Department of Defense defines it as “an engagement in which a unit is considered fully committed and cannot maneuver or extricate itself. In the absence of outside assistance, the action must be fought to a conclusion and either won or lost with the forces at hand.”<sup>88</sup> Instead guerillas engage primarily in harassing actions designed to degrade the enemy’s will over time and his ability to fight. The Viet Cong well represent this spectrum of conflict, almost always shunning decisive engagement while engaging in harassing actions primarily against soft targets. On the other end of the spectrum lies the Maginot Line, thin static defenses designed to directly repulse enemy attack without withdrawal and counterattack.

The aforementioned tactical dispositions ascribed to classical guerilla warfare currently feature prominently in orthodox conventional doctrine as well. Delaying tactics in such famous instances such as

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<sup>86</sup> Robert Taber, *War of the Flea: The Classic Study of Guerilla Warfare*, (Washington D.C., Potomac Books, 2002):39-57.

<sup>87</sup> Ibid, 136-149.

<sup>88</sup> <<http://www.js.pentagon.mil/doctrine/jel/doddict/data/d/01536.html>>

Xenophon's withdrawal from Persia and MacArthur's retreat from the advancing Japanese in the Philippines have long been present in conventional warfare orthodoxy.<sup>89</sup> In a theater defense a commander may often trade space for time in order to regroup or weaken the enemy force. In such a situation units would not accept decisive engagement but would instead primarily engage in the types of techniques just described as guerilla techniques: sniping, ambushes, and other forms of surprise attack albeit with the higher level capabilities typical of an organization fighting in a traditionally conventional manner. When engaging in a mobile defense a commander orients his force not primarily according to terrain but rather according to the position of the enemy; almost verbatim a description of the "difference" between conventional and guerilla warfare. Harassing fires and ambushes can be conducted by armored units of main battle tanks or mechanized infantry as well as by partisans with small arms. Mobile defenses have been the rule rather than the exception after the fantastic failure of the Maginot Line during World War II and to a lesser degree even before that (German *an-sich-hernankommenlassen* or "invitation to walk right in").<sup>90</sup>

Defense in depth will likely include a variety of the abovementioned delaying tactics employed across the enemy axis of advance, many if not most of which will not involve decisive engagement on the part of the defenders. Prime examples of defense in depth are Operation Desert Shield in 1990 where some 50,000 troops were emplaced to fight a delaying action through a defensive zone 80 miles deep before fighting a decisive engagement perhaps even past that.<sup>91</sup> Also included in this toolkit is what is conventionally referred to as interdiction, but in guerilla warfare literature is accepted as essentially the same as other attacks designed to disrupt. Interdiction is usually aimed at logistical pipelines or communications networks that enable enemy forces to effectively coordinate an advance or similar

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<sup>89</sup> Xenophon, *The Anabasis of Cyrus*, trans. Ambler, Wayne (Ithaca: Cornell University Press, 2007).

<sup>90</sup> Timothy Lupfer, "Doctrine: Changes in German Tactical Doctrine During the First World War," (Ft. Leavenworth, Kansas: U.S. Army Combat Studies Institute, 1981): 1-36.

<sup>91</sup> U.S. Department of Defense, *Conduct of the Persian Gulf War*, Final Report to Congress Pursuant to Title V of Public Law 102-25 (Washington D.C: U.S. Government Printing Office, 1992): 40.

action. Successful interdiction degrades an enemy's ability to maneuver effectively and degrades their capabilities over time as well. Since the advent of air power the notion of "safe" rear areas has become even less of a reality. As is the case in counter-insurgency campaigns there are no truly safe rear areas in a modern state to state conventional military clash. Naturally this defense in depth does not continue forever, and the depth of the defensive line will vary wildly, but once again this is a feature often exhibited by guerilla groups as well, particularly some recent examples such as Hezbollah's defense in depth of Southern Lebanon during the 2006 war. This has been the case with guerilla groups in general who may continually trade space for time, but may choose to stand and fight when its safe havens, base camps, or weapons caches are threatened and the enemy can be fought on somewhat favorable terrain. Furthermore, since an insurgency is a dispute over political control of a territory, the guerilla group in question eventually intends to control the territory that the conventional state military aims to retain.

Associated with the surprise attacks and lack of decisive engagement guerillas typically place vital importance on concealment and camouflage which can mean sometimes hiding in densely forested or otherwise difficult or impassable terrain, or within a sympathetic populace. Although on first glance it may appear that a conventional army would not be forced to utilize such extreme or morally repugnant forms of cover and concealment history is replete with examples of both. Imperial Japanese forces defended Peleliu from a mountaintop series of caves, Iraqi forces intentionally set up air defenses so that they could not be struck without collateral damage to civilian structures, etc. The mere proportion of non-combatants vs. combatants killed during World War II is a testament to the fact that this technique was repeatedly employed. Conventional warfare has continually moved in this direction as well after the mass slaughter that occurred between massed infantry moving in the open during World War I. Particularly with the vastly increased intelligence, surveillance, and reconnaissance technology now available militaries cannot afford massed movement in the open without risking aerial devastation. Cover and concealment is vital for both guerillas and conventional militaries.

Additionally related to the notion that guerillas are distinctly characterized by a focus on concealment is the associated dispersal of personnel. Guerillas are presumed to avoid concentration; instead relying on small semi-autonomous units that infiltrate and disrupt enemy rear areas<sup>92</sup>. As was the case with intent to hold ground and cover and concealment, dispersal of personnel has been a feature of conventional doctrine since the end of World War I. Technical innovations during and immediately after World War I (mainly machine guns and aircraft) forced militaries to adapt to an environment in which large concentrated formations were ineffective and highly vulnerable<sup>93</sup>. Modern infantry no longer move in long linear formations but instead as small units moving tactically from cover to cover, not unlike guerillas.

Guerilla and conventional warfare are also said to differ in strategic intent. Because of their relative lack of capabilities compared to those at the disposal of a state, guerillas must at best seek to coerce rather than to compel, to persuade (violently) rather than to force. Conventional militaries are said to instead pursue what Thomas Schelling termed “brute force” strategies which work by forcing an enemy to acquiesce rather than trying to modify his decision calculus such that acquiescence is the most rational choice.<sup>94</sup> An examination of conventional conflicts over the past century reveals that brute force is a strategy that is not pursued often, and only as a last resort. In instances in which annihilation, or unconditional surrender are sought, brute force is often the only method available. A state will endure an enormous amount of punishment before ceding its entire territory to a foreign power, and obviously existential wars cannot be won by coercion.<sup>95</sup> Obviously it would be much easier for an opponent to simply acquiesce to the aggressor, and thus if it is possible states will likely attempt coercion before a resort to brute force.

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<sup>92</sup> Stephen Biddle & Jeffery Friedman, *The 2006 Lebanon Campaign and the Future of Warfare: Implications for Army and Defense Policy* (Carlisle, PA: Strategic Studies Institute, 2008): 15-16.

<sup>93</sup> George Raudzens, “War-Winning Weapons: The Measurement of Technological Determinism in Military History,” *The Journal of Military History* Vol. 54 (October 1990): 403-433.

<sup>94</sup> Thomas Schelling, *Arms and Influence*, (New Haven: Yale University Press, 1966): 2-6ff.

<sup>95</sup> Pape, 1996: 314-329.

Even in total war scenarios such as were seen during World War II coercion was the intent of most if not all of the strategic bombing over Germany and Japan. Bombing was directed at population centers, industrial targets, government buildings, and other infrastructure in an attempt to both reduce the enemy's capacity and will to continue resistance<sup>96</sup>. Coercion was successful in the Pacific theater and the Allies were able to forgo what would have undoubtedly been a very costly invasion of the Japanese home islands. Although it was likely not the strategic bombing itself but instead a confluence of events including the Soviet invasion of Manchuria, the nuclear weapons dropped on Hiroshima and Nagasaki, the lack of desperately needed war material cut off by the Allied blockade, and the credible threat of land invasion, coercion did work even in a total war scenario and Japan did indeed surrender without being unequivocally conquered<sup>97</sup>. Another example of a combination of brute force and coercion can be found in the 1991 Gulf War. Coalition forces forcibly removed the Iraqi military from Kuwait while also striking a variety of targets within Iraq designed to degrade command and control capabilities as well as raise the cost of continued resistance within Kuwait.<sup>98</sup> Coercive strategy is nearly ubiquitous in both conventional and guerilla warfare and is certainly not the dominion of one or the other. Clausewitz treats political-military coercion as a fundamental feature of war and discusses its use at length in *On War*.<sup>99</sup>

None of this is to suggest that guerilla warfare and conventional warfare are the same thing but instead that the many differences are in degree rather than of kind. Conventional militaries are generally more concerned with taking and holding ground, less focused on harassing actions, more willing to accept decisive engagement, less concerned with cover and concealment, and more likely to pursue a strategy of brute force. These degrees of difference are in large part attributable to the

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<sup>96</sup> Ibid, 254-313.

<sup>97</sup> Pape, 1993: 199-201.

<sup>98</sup> Pape, 1996: 211-253.

<sup>99</sup> Clausewitz, 1976: 90-99.



financial difference between non-state and state actors. This difference is the fundamental asymmetry between state and non-state actors, but one that is already being broken in some cases. The differences in financial resources available to state actors versus non-state actors allow the former to develop capabilities far beyond those non-state actors are able to develop. This resource difference in turn determines the capabilities available to each actor and with the two combined (resources and capabilities) strategy as well. An actor incapable of facing the opposing army in a conventional manner will adapt to target that enemy's weaknesses; perhaps turning towards irregular warfare or warfare by proxy. Asymmetry is also not a unique feature of guerilla warfare. While it is undoubtedly true that conflict involving a non-state actor is almost always asymmetric in terms of capabilities, this is a feature of almost all conflicts across the spectrum. It is exceedingly rare that there is a true parity of capabilities between opponents, and in any case conflict between two equal opponents would be an ill-advised decision on the part of the aggressor.

## CHAPTER 7

## HEZBOLLAH

As former deputy secretary of state Richard Armitage has said in an oft-quoted statement, Hezbollah is the “A team” of terrorist groups.<sup>100</sup> This statement in general represents the defining characteristic of Hezbollah’s military capability when compared with other insurgent/terrorist groups the world over. Hezbollah is in fact such a departure from the norm in terms of both capabilities and effectiveness that CSIS (Center for Security and International Studies) scholar Andrew Exum measures Hezbollah against state Arab militaries rather than other non-state actors.<sup>101</sup> This is perhaps not surprising when it is noted that Hezbollah is widely believed to be considerably more powerful than the Lebanese military and that a significant portion of Lebanese population believes that *Muqawama* (the resistance) is vital to the security of the Lebanese state (thus Hezbollah does in a way function as a state military).<sup>102</sup> Hezbollah was originally a splinter group of the Shiite militia Amal that was formed with the assistance of the Iranian Revolutionary Guard Corps (IRGC) al-Qods force<sup>103</sup>. Hezbollah carried out attacks against Israel and other Western targets during the Lebanese civil war and after the end of the Lebanese Civil War with the signing of the Taif Accord, began to focus primarily on the IDF.<sup>104</sup> After the assassination of Hezbollah’s secretary general in 1992 Hassan Nasrallah took over, and with him a

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<sup>100</sup>Richard Armitage, “9/11 a Year On: America’s Challenges in a Changed World” (speech at United States Institute of Peace, Washington D.C., September 5 2002).

<sup>101</sup> Exum, 2006: 13-14.

<sup>102</sup> According to the Lebanese Opinion Advisory committee in April 2008 around 48% of Lebanese wanted the national defense to include *Muqawama* while 51% wanted only the national police and army to be responsible for defense. This split changed drastically to 38% and 62% in July 2008 after the clashes in west Beirut between Hezbollah, Amal, the SSNP and the PSP in the Chouf, which concluded with the Doha agreement creating a unity government with a Hezbollah coalition veto power. This is contrary to assumptions that the 2006 war prompted widespread disdain of Hezbollah as suggested by: Michael Totten, “Who Really Won the Second Lebanon War,” *Commentary Magazine*, 30 January 2009, <<http://www.commentarymagazine.com/blogs/index.php/totten/52642>>

<sup>103</sup> Global Security, “Qods (Jerusalem) Force Iranian Revolutionary Guard Corps (IRGC – Pasdaran-e Inqilab):” Global Security, <<http://www.globalsecurity.org/intell/world/iran/gods.htm>>

<sup>104</sup> The 1989 Taif Accord was the basis for the end of the civil war, though fighting between various factions continued until October 1990.

radical shift in operational doctrine and tactics.<sup>105</sup> Hezbollah ended its reliance on suicide attacks and began a classical guerilla campaign against the IDF presence in the Israeli security zone in southern Lebanon and a targeted assassination campaign against the Israeli allied South Lebanese Army (SLA).<sup>106</sup> After the unilateral Israeli withdrawal from the security zone in 2000, which Hezbollah took credit for (and was widely believed to be responsible for throughout the Arab world), Hezbollah continued to strike at Israel because of the continued occupation of the Sheeba Farms region, and Israel's continued possession of Lebanese prisoners.<sup>107</sup> Nasrallah had vowed to kidnap Israeli soldiers to trade for Lebanese prisoners, a formula that had worked in the past, and thus was not unexpected by the Israelis, especially considering that Hezbollah had attempted kidnapping several times between November 21<sup>st</sup> 2005 and the July 11<sup>th</sup> kidnapping of Ehud Goldwasser and Eldad Regev on the Israel-Lebanon border near Zar'it that precipitated the 2006 war.<sup>108</sup>

Prior to the 2006 war it is widely believed that Hezbollah maintained somewhere around 1,000 regular fighters who were often given advanced weapons training.<sup>109</sup> The bulk of Hezbollah's fighting force was made up of village fighters whose numbers are inestimable because they generally lack direct ties to Hezbollah. In fact the resistance encountered during the Israeli assault on Maroun al-Ras was made up primarily of Amal fighters, a one-time political rival to Hezbollah.<sup>110</sup> The military wing of Hezbollah, unlike its political arm, is organized in a horizontal fashion that is more networked than hierarchical. Hezbollah fighters were organized into small, independent squads that were granted a great deal of autonomy from higher echelon commanders whose communications would likely be

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<sup>105</sup> Exum, 2006: 2.

<sup>106</sup> Matthews, 2008: 3-10.

<sup>107</sup> Krista Wiegand, *Bombs and Ballots*, (Ashgate, 2010): 106.

<sup>108</sup> The July 12 operation was Hezbollah's 5<sup>th</sup> kidnapping attempt since the aforementioned November 21<sup>st</sup> attempt. See Zeev Schiff, "Kidnap of Soldiers in July War Was Hezbollah's Fifth Attempt," *Haaretz* (Tel Aviv): September 19, 2006.

<sup>109</sup> Exum, 2006: 7.

<sup>110</sup> *Ibid*, 9-10.

disrupted during an Israeli attack.<sup>111</sup> These squads of seven to ten men were arranged with enough prepositioned supplies so that resupply would not be vital to their continued ability to resist. This remarkable amount of autonomy granted to junior commanders and general lack of a logistical pipeline did however ensure that most units would fight from more or less static defensive positions; without direction from commanders able to see the big picture small units would be unable to maneuver to support one another.<sup>112</sup> These fighters were equipped with an array of assault rifles, anti-tank guided missiles (ATGMs), surface to surface missiles and rockets, surface to sea guided missiles, and even an unmanned aerial vehicle. However, Hezbollah's vast stocks of surface to surface missiles and rockets were the only truly strategic weapons they possessed. Hezbollah had large stocks of short range 122mm Katyushas with a maximum range of 20km, modified "extended range" Katyushas capable of reaching 34km, Iranian 240mm Fajr-3s with a range of 43km, Syrian-made 220mm Urgan rockets with a range of 70km, 333mm Fajr-5s with a range of 75km, Syrian and Chinese manufactured 302mm Khaibar-1s with a range of 100km, and Iranian-made 610mm Zelzal-2s capable of hitting targets as far away as 210km.<sup>113</sup> Specific numbers of each type are generally unknown, and estimates vary wildly, but it is roughly estimated that prior to the 2006 war Hezbollah had around 13,000 Katyushas, approximately 500 Fajr-3 and Fajr-5s, and a couple dozen Zelzal-2s.<sup>114</sup> The majority of the short-range Katyushas are launched from disposable launchers that can be positioned virtually anywhere and are often fired by timer, rendering counter-battery fire ineffective because the launchers are not re-used and there is no crew in

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<sup>111</sup> Ibid, 5.

<sup>112</sup> Ibid.

<sup>113</sup> Yiftah shaper, "Artillery Rockets: Should Means of Interception Be Developed?" *Strategic Assessment* 9, No. 2 (Autumn 2006): Jaffee Center for Strategic Studies, Tel Aviv University; Noam Ophir, "Look Not to the Skies: The IAF vs. Surface-to-Surface Rocket Launchers," *Strategic Assessment* 9, No. 3 (November 2006): Jaffee Center for Strategic Studies, Tel Aviv University; Amir Kulick, "Hizbollah vs. the IDF: The Operational Dimension," *Strategic Assessment* 9, No. 3 (November 2006): Jaffee Center for Strategic Studies, Tel Aviv University; GlobalSecurity.org; Exum, 2006: 6.

<sup>114</sup> Ophir, 2006.

the vicinity. By contrast Iranian made Fajr-3 and Fajr-5s are carried on Japanese-made Isuzu truck launchers: more viable targets for strike aircraft or counter-battery artillery fire.<sup>115</sup>

Hezbollah's force posture in southern Lebanon was clearly constructed to deal with an Israeli incursion originating from the southern border. The region in which the 2006 war primarily took place begins at the southern Chouf region of Mount Lebanon and extends to the border with Israel; ending at the Litani river gorge to the north, the Bekaa Valley in the east, the Mediterranean Sea to the West, and Israel to the south. The rocky, hilly landscape does not lend itself well to the open-desert maneuver warfare practiced by the IDF during the 1967 and 1973 wars.<sup>116</sup> Small towns sitting atop hills along the border were converted to hilltop fortresses by Hezbollah and used to great effect when targeting armored and mechanized columns that were inevitably channeled into the adjacent wadis by the terrain.<sup>117</sup> These hilltop fortresses were supported by an array of sophisticated bunkers that were painstakingly camouflaged and hardened to withstand Israeli counter-battery fire, often by reinforced concrete. There may have been as many as 500 of these so-called "nature-reserves" which were used as fighting positions, ammunition dumps, and launch sites for Katyushas.<sup>118</sup> Examination of Hezbollah's capabilities alone reveals the core of their strategic objective in the face of an Israeli incursion: attrition. Given the relatively static deployment of units it is clear that Hezbollah was not planning a classical guerilla hit-and-run resistance, but neither is there evidence that Hezbollah thought it could repel a full Israeli assault, especially given their deployment of significant numbers of their regulars at the Litani River, presumably expecting IDF forces to drive there rather quickly. Thus it seems clear that Hezbollah's objective was to slow the Israeli advance by inflicting as many casualties as they could; a task they executed rather well through their inventive employment of ATGMs, their method of organization's

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<sup>115</sup> Global Security, "Hizballah Rockets," GlobalSecurity.org, <<http://www.globalsecurity.org/military/world/para/hizballah-rockets.htm>>

<sup>116</sup> Exum, 2006: 3.

<sup>117</sup> Ibid, 2-4.

<sup>118</sup> Ibid, 4.

natural resistance to the effects of interdiction and/or decapitation, and strategic and operational confusion on the part of the Israelis.

Hezbollah's strategic objectives during the war were rather simple, but its motivations for the initiation of the conflict and its continued belligerency in the face of overwhelming Israeli firepower are more complex. Hezbollah's primary objective after the war began in earnest was to maintain the ability to continue resistance throughout the Israeli campaign.<sup>119</sup> For Hezbollah not losing was winning. Given the gross disparity in military capabilities between the two belligerents and the fact that Hezbollah was not presently seeking concessions from Israel other than a cessation of hostilities and a prisoner swap (yes Hezbollah did want the return of the Sheeba Farms, but this did not play prominently during the 2006 war), merely not being annihilated by the IDF would solidify Hezbollah's position as the vanguard of Arab resistance to Israel.<sup>120</sup>

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<sup>119</sup> Andrew Exum, "Hizballah at War: A Military Assessment," *The Washington Institute for Near East Policy*, Policy Focus #63, December 2006, 8

<sup>120</sup> *Ibid.*

## CHAPTER 8

## ISRAEL

Israel maintains what is clearly the most technologically advanced air force in the Middle East, one that has continually displayed its dominance against the air forces of Egypt, Syria, and Jordan.<sup>121</sup> In the 2006 war Israeli capabilities were instead focused on a land-based non-state actor: Hezbollah. The capabilities necessary to counter such a threat are unlikely to be the same as those required when fighting a semi-symmetric opponent. Despite the fact that in this scenario it makes little sense to directly compare the military capabilities of Israel and Hezbollah absent an examination of strategy, such capabilities nonetheless remain vital to an understanding of what options states have when fighting against asymmetric opponents such as Hezbollah. Thus understanding baseline technical capabilities is vital to any deeper understanding of strategic interaction. For ground attack Israel relies on an array of fixed and rotary wing aircraft that are almost entirely US in origin, although many are modified significantly from their original form. Over the course of the 34 day conflict about 100 F-15I, F-16D, and F-16I aircraft combined with around 48 AH-1 Cobra, AH-64 Apaches, and AH-64D Longbows flew the approximately 12,000 combat sorties. These platforms carried a variety of munitions including the BLU-109 (a penetrator weapon which is unguided without JDAM and utilizes a delayed-action fuse), JDAM (joint direct attack munitions), satellite-guided bombs, electro-optically guided 1,000 and 2,000 lb munitions, a variety of US and domestically produced air to ground missiles, CBU-58/71 cluster bombs and US manufactured GBU-28 earth penetration weapons.<sup>122</sup> Although accurate numbers regarding the

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<sup>121</sup> For information on IAF performance in the Six-Day War see Michael Oren, *Six Days of War: June 1967 and the Making of the Modern Middle East*, (New York: Random House, 2003): 171; for air campaign against the Syrian Military see: Matthew Hurley, "The Bekka Valley Air Battle," *Air power Journal* (Winter 1989): <<http://www.airpower.maxwell.af.mil/airchronicles/apj/apj89/win89/hurley.html>>

<sup>122</sup> After one of Hezbollah's heavily reinforced bunkers in south Beirut reportedly survived an attack, including a strike in which IAF F-16s dropped 23 tons of munitions on the target almost simultaneously, Israel attempted to accelerate delivery of the GBU-28, although most were unavailable until after the war. Arie Egozi, "Israeli air power falls short," *Flight International*, 1 August 2006.

numbers of these weapons present in Israeli arsenals prior to and delivered during the conflict, there is some evidence, and a number of commentators who have suggested that Israel was very short of the penetrator weapons it needed to hit Hezbollah's hardened facilities in Beirut and some of its hardened facilities south of the Litani as well.<sup>123</sup> Unlike Israeli ground forces, which were revealed in post war assessments to have been grossly underfunded (training allocations for reservists were reduced, equipment issue substandard, joint-training almost non-existent) the IAF maintained high levels of readiness and other than the aforementioned possible lack of some vital types of weaponry, did not have any major problems with training or equipment.<sup>124</sup>

Although there is great debate over the real objectives of Israeli policymakers at different points during the war a consensus view of what the strategic objectives behind the Israeli escalation can be approximated when a variety of opinions are considered and weighed against Israeli actions; thus revealing true strategic intent. Objectives can rarely be taken at face value since public pronouncements intended for mass consumption are often crafted with specific effects in mind and are likely to be oversimplified to a distorting degree or directly misleading. The perceived lackluster performance of the Israeli government during the war precipitated a number of critical inquiries which in many cases laid bare the campaign objectives, although a great degree of disagreement remains nonetheless. Although the kidnapping precipitated the conflict, the return of the captured soldiers was not a priority because the location of the missing IDF soldiers would be impossible to ascertain, especially since both were likely quickly spirited out of Lebanon; likely into Syria or perhaps even Iran.<sup>125</sup> Israel's goals were primarily to reinforce its deterrent which was believed to have been recently damaged by its unilateral withdrawals from the security zone in south Lebanon in 2000, and its withdrawal from Gaza in 2005, and

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<sup>123</sup> Ilan Kfir, *Haadama Raasha* (Tel Aviv: Ma'ariv, 2006). 178.

<sup>124</sup> Noam Ophir, "Back to Ground Rules: Some Limitations of Air power in the Lebanon War," *Strategic Assessment*, August 2006, Vol. 9, No. 2.

<sup>125</sup> Harel & Issacharoff, 2008:76-77.



to create a new political reality in Lebanon in which Hezbollah would cease to be a military force and the Lebanese government's control would extend to the Israeli border.<sup>126</sup> These objectives were the underlying reasons for all of Israel's airstrikes during the opening days of the war as well as the later ground campaign that aimed to eliminate the Katayusha threat to northern Israel by driving to the Litani.

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<sup>126</sup> *Ibid*, 76-81.

## CHAPTER 9

### ANALYSIS

#### Strategic Objectives

Analysis will be conducted from the top down; from the most abstract to the most concrete. The objectives that were sought by both sides were determined by perceptions of their own capabilities and those of their opponent. Miscalculation or misperception at such a high level will cause systemic failures that will likely increase in severity as the level of abstraction decreases. Israel clearly failed to create an environment in Lebanon which would precipitate Hezbollah's disarmament. Although the IDF defeated Hezbollah in every battle, Hezbollah's capabilities were not so degraded that it ceased to be a functional military force. Hezbollah was able to defiantly increase the number of rockets launched the day before the cease-fire went into effect, demonstrating Israel's failure at this task. Furthermore the previously mentioned perception of victory for Hezbollah further undercut Israeli deterrence, although the lack of conflict between Israel and Hezbollah since the 2006 war may be evidence of improved Israeli deterrent. This will ultimately only be determined by a continued lack of aggression of any sort by Hezbollah against Israel indicating that Hezbollah has determined that the probable benefits derived from a successful prisoner snatch or other such actions are not commiserate with the costs of massive Israeli retaliation.

It is debatable to what degree successful resistance to the Israeli incursion helped Hezbollah domestically. There are of course many Lebanese who were positively furious with Hezbollah for inviting such terrible retaliation by Israel, but others that instead directed their ire towards Israel. There are a number of anecdotes available that support the former view, but without accurate polling data the

degree to which Hezbollah's ability to withstand the Israeli onslaught helped or hindered them domestically is pure speculation. Nonetheless it is worth noting that Prime Minister Faud Sinora was reportedly harshly critical after hearing of Hezbollah's successful kidnapping, and Secretary General Nasrallah went so far as to say that he would not have authorized the kidnapping if he had anticipated the severity of the Israeli response.<sup>127</sup> Hezbollah was clearly successful in attaining its objectives, but at a great cost to Lebanon; a fact that may or may not have degraded its domestic standing. Like Egypt after the 1973 Yom Kippur War, Hezbollah and other anti-Israel Arab states viewed the war as a "divine victory," as Nasrallah proclaimed, despite the fact that the war was disastrous from a technical military perspective. Hezbollah failed to inflict even moderate casualties on the IDF or on Israelis living in areas vulnerable to rocket fire. In contrast the IDF destroyed every Hezbollah unit it decisively engaged while suffering very light casualties despite its generally sub-par performance in many instances. Economic damage was inflicted in large part because of the large scale evacuation of northern Israel, although some is attributable to damage caused by rocket fire. The economic damage suffered by Lebanon was many orders of magnitude greater than that which Israel had suffered, a financial burden that Hezbollah itself would be saddled with. So although Hezbollah did achieve its objectives they came at a hefty price that Nasrallah has plainly admitted was not worth it.

### Operational Art/Doctrine

SOD was rejected in favor of EBO and SOSA concepts that were present in US Joint doctrine prior to the 2006 war.<sup>128</sup> Shimon Naveh had by the time of the 2006 war been essentially forced into

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<sup>127</sup> Harel & Issacharoff, 2008:250.

<sup>128</sup> Matthews, 2008: 22.

retirement.<sup>129</sup> The only officers that by Naveh's estimation had any real grasp of SOD concepts were General Gal Hirsh and General Aviv Kochavi, both commanders of divisions during the 2006 war.<sup>130</sup> After having been blurred with EBO concepts into a singular theory to criticize, it has been asserted that because of the complexity and intellectual denseness of SOD that it often merely confused officers who lacked any real understanding of the concept and thus degraded actual operational effectiveness because of confusing or otherwise misunderstood orders.<sup>131</sup> A specific instance of this cited is General Hirsh's order to brigades of Division 91 to advance across the Israeli border, which was initially only executed by a single brigade, although several days later by the remainder.<sup>132</sup> Controversy over the incident has resulted in accusations that Gen. Hirsh's orders were incomprehensible due to his overuse of SOD specific language that was not understood by the majority of the brigade commanders. Although Naveh admits that Hirsh "has a problem being too creative sometimes and he's being over carried by his use of language," he thinks that the failure stems from two other factors. Naveh first of all believes that the assertion that the orders were incomprehensible was an excuse used to cover their cowardice, and that incoherence on the part of the upper echelons of command was more directly responsible for the confusion.<sup>133</sup> Although the former cannot be substantiated since the orders are not accessible to the public, the latter is well supported in the public record. Chief of Staff Halutz repeatedly publically demonstrated his adherence to EBO concepts and his unrepentant almost total reliance on air power and other forms of stand-off attack.<sup>134</sup> Notable was his assertion that we "need to do away with the concept of land battle," and his "spectacle of victory" supposedly presented after the victory in Bint

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<sup>129</sup> Matt Matthews, "Interview with BG (Ret.) Shimon Naveh," Operational Leadership Experiences Collection, Combat Studies Institute, 1 November 2007.

<sup>130</sup> Feldman, 25 September 2010.

<sup>131</sup> Matthews, 2008: 23-38 and 61.

<sup>132</sup> Matthews, 2007, 8-9.

<sup>133</sup> *Ibid*, 9.

<sup>134</sup> *Ibid*, 8.

Jubayl, by most accounts not a premeditated, intentional action.<sup>135</sup> Examination of the design and plan developed by the IDF consistently reveals little understanding and almost no adherence to SOD concepts; exculpating them from blame for Israel's inability to strike a death blow to Hezbollah's military wing. Lt. Col. Ron Tira, formerly of the Air Planning Staff of the IAF suggests instead that the problem was:

“The over-zealous embrace of the American effects-based operations (EBO) idea. EBO's aim is to paralyze the enemy's operational ability, in contrast to destroying its military force. This is achieved by striking the headquarters, lines of communication, and other critical junctions in the military structure. EBO [was] employed in their most distinct form in the Shock and Awe campaign that opened the 2003 Iraq War. However, the Americans used EBO to prepare the way for their ground maneuvers, and not as an alternative to them.”<sup>136</sup>

Tira also suggests that SOD, while not as problematic as EBO, was nonetheless highly disruptive, contrary to Naveh's claims. Tira notes that the form of SOD in place was designed to cover “strategy, force transformation, EBO as well as introducing a new military language and new structure for staff work methodology, battlefield analysis, and orders structure and contents.”<sup>137</sup> This was not Shimon Naveh's form of SOD, but was nonetheless very much inspired by it, though the fact that Tira says that the borders between EBO and SOD were blurred casts some doubt on the relation between Naveh's concept and the doctrine in place during the 2006 war. Tira pointed out that the doctrine:

“Similar to SOD... replaces the “old” structure of Mission, Commander's Intent, Forces and Tasks... with a whole new world of Political Directive, Strategic Purpose, System Boundaries, operational Boundaries, Campaign's Organizing Theme, Opposite System Rationale... and so on. Field commanders

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<sup>135</sup> Matthews, 2007, 8.

<sup>136</sup> Ibid, 62.

<sup>137</sup> Ibid.

did not like the new doctrine, principally because they didn't understand it. Of the 170 pages long doctrine document, many experienced officers didn't understand more than half. Officers responsible for planning EBOs in the Air Force, could not understand the definition of EBO (more precisely the in Hebrew Effect-Based Campaigns) or of the definition of the word "Campaign" in the document. The terminology used was too complicated, vain, and could not be understood by the thousands of officers that needed to carry it out... The new terminology and methodology was supposed to be limited to higher levels of command, and at the level of theater command and definitely at the division level, the old terminology and methodology should have been used. Nonetheless, it trickled down... Commanders need to speak in simple accessible manner, composed essentially of two things: what do we occupy and what do we blow up. This is understandable. When an order is given to render the enemy "incoherent" or to "achieve standoff domination of the theatre" field commanders simply do not know what to do and cannot judge how well or how bad they are progressing."<sup>138</sup>

Tira is almost certainly right about the incomprehensibility of the doctrine in place. Given Naveh's admissions about the difficulty in grasping the concepts it seems likely that the doctrine's language could have been quite confusing, especially when inappropriately used at lower levels. The apparent melding of EBO and SOD concepts which are in many ways fundamentally opposed to each other in their base assumptions and aims could only have added to the confusion. Despite SOD's nominal involvement in the doctrinal fiasco, it is difficult to find fault with the fundamental concepts of SOD, especially in contrast to systems theory derived EBO, which played prominently throughout the war. Regardless of the fundamental soundness, misappropriation of the concepts, and inappropriate use of esoteric language used in the concept certainly were problematic.

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<sup>138</sup> Ibid, 26-27.

## Punishment

How states adapt to non-state actors will depend on the specific situation, but will likely result in a transfer of responsibility. Although the rise of high-capability non-state actors may not turn out to be an epochal shift in world politics, there are several recent cases that highlight exactly the type of problem and the reaction just noted. After Israeli defense officials announced that they believe Syria is transferring SCUD missiles capable of striking anywhere in Israel (with much larger conventional warheads as well as chemical warheads) to Hezbollah they almost immediately made it known that Syria would be held responsible for any aggression from Hezbollah, which does not primarily operate in Syrian territory.<sup>139</sup> This transfer of responsibility may seem obvious, and that pointing it out is similarly unnecessary, however it illustrates two major problems with the application of a punishment strategy in today's international system. Because Hezbollah is not the actual government of Lebanon (although it does exercise de-facto control over large areas of south Lebanon) members of Hezbollah are largely intermixed with the large portions of society that either are only indirect supporters of Hezbollah, are ambivalent, or are unsupportive of the organization. Punishment directed against a civilian population with such a diversity of opinion precludes this as a viable strategy because it would inevitably lead to the deaths of civilians unsupportive or generally unaffiliated with Hezbollah which would result in a decline in international legitimacy and support for Israel, regardless of initial levels of either, and would additionally reinforce Hezbollah's contention that it is necessary to keep its military capability in order to halt Israeli aggression.<sup>140</sup> A transfer of responsibility to Syria provides a solution to some of these problems, as it may in similar situations elsewhere. Unlike Hezbollah, Syria has population centers and

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<sup>139</sup> Mark Lavie, "Israeli officials: Syria gave Hezbollah Scuds," Associated Press, April 14<sup>th</sup>, 2010, < <http://www.msnbc.msn.com/id/36520789/>>; Uzi Mahnaimi, "Israel warns Syria over Hezbollah attacks," The Times Online, April 18<sup>th</sup>, 2010, < [http://www.timesonline.co.uk/tol/news/world/middle\\_east/article7101106.ece](http://www.timesonline.co.uk/tol/news/world/middle_east/article7101106.ece)>.

<sup>140</sup> Here I am referring to Hezbollah and the Lebanese government's noncompliance with UNSC 1701 which ended the 2006 Israel-Hezbollah conflict and required that specifically Hezbollah be disarmed, and that the Lebanese government assert total territorial sovereignty. Document located here < <http://daccess-dds-ny.un.org/doc/UNDOC/GEN/N06/465/03/PDF/N0646503.pdf?OpenElement>>

infrastructure which are vital to the survival of President Bashar al-Assad's continued rule. Particularly in Syria's case, where a very small minority group occupies the seat of government, punishment may very well be effective. The comparative ease in targeting vital Syrian infrastructure and population centers stands in stark contrast to Hezbollah's comparative lack of available targets. During the 2006 war there were some that advocated holding Lebanon responsible for Hezbollah's actions, and some Lebanese infrastructure unrelated to Hezbollah was struck in the early days of the war, however it was clear even at the time that the Lebanese government was not sponsoring Hezbollah the way Iran and Syria were and are. The Lebanese government at the time was in desperate need of leverage over Hezbollah, thus targeting Lebanese infrastructure to force the government to exercise leverage it did not have was entirely counterproductive. Additionally the international community has collectively instituted norms of behavior that prohibit punishment as a strategy. Even with borderline pariah states (states that are either excluded from the international community in some fashion or are in some way marginalized) such as Israel, a country rather well-known for its disregard for international norms when dealing with security issues, has consistently avoided using large scale punishment strategies against its opponents, focusing instead on interdiction and decapitation.<sup>141</sup> Claims that during the 2006 Israel-Hezbollah conflict Israel engaged in indiscriminate bombing are almost wholly factually unsupported.<sup>142</sup> Post-war bomb damage assessment revealed that to the contrary the bombing was consistently highly accurate and discriminatory aside from a few obvious failures which resulted in unintentional civilian casualties. This new norm of highly discriminatory targeting seems likely to persist in all future scenarios except for

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<sup>141</sup> See "targeting for effect" in: William Arkin, *Divining Victory: Airpower in the 2006 Israel/Hezbollah War*, , (Maxwell Air Force Base, Alabama, Air University Press, 2007): 105-127.

<sup>142</sup> For accusations that Israel was essentially trying to exterminate the population of Lebanon see: Gilbert Achcar, & Michel Warschawski, *The 33-Day War: Israel's War on Hezbollah in Lebanon and Its Consequences*, (Boulder & London: Paradigm Publishers, 2007): 37-40; For bomb damage assessment see Arkin, 2007: 75-105.



a total war between states, or a conflict in which a true pariah state is involved.<sup>143</sup> In either such case, whether a state is fighting for its survival or the state in question is not in any major way sensitive to international pressure short of military intervention, the norm against punishment is likely to be broken.

Throughout the conflict Hezbollah pursued a strategy of punishment through the use of its arsenal of short and medium range rockets. Although in some cases rockets were targeted at military installations, their general inaccuracy meant that the majority were merely targeted at populated areas in northern Israel. Such rocket strikes aimed to cause damage to the population and infrastructure, driving up costs by damaging property, killing and wounding non-combatants, and causing economic paralysis because of the necessary mass evacuation. Although the rockets were not particularly effective at actually causing casualties, they were quite effective at causing economic damage. Furthermore, because Hezbollah was able to protect this asset through enormous numbers and wide dispersal, they played an important role in Hezbollah's strategy despite their inability to inflict damage even roughly commiserate with what the IAF was able to dole out.

#### Denial

Prior to the 2006 war Hezbollah's large rocket arsenal and visibly well-trained military wing served as a deterrent against Israeli aggression; the existence and careful display of these capabilities was intended to drive up Israel's estimations of the costs that would be incurred if it engaged in conflict with Hezbollah. After the July 12<sup>th</sup> kidnapping created conditions in which the demand for retaliation within the Israeli government overwhelmed estimations of cost and hostilities began, Hezbollah was forced to rely on a strategy of coercion because of its clear inability to decisively defeat the IDF in battle.

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<sup>143</sup> Such as was the case during the 1991 Gulf War: Saddam's Iraq was clearly a pariah state and attempted to break up the coalition through bombardment of Israel, which would presumably force Arab coalition states to leave the coalition

Hezbollah's denial strategy could not begin in earnest until the beginning of the ground campaign on 17 July 2006. Since Hezbollah lacked significant numbers of man portable air defense systems (MANPADs) and had only a single success at downing any type of Israeli aircraft (rotary or fixed wing),<sup>144</sup> Hezbollah was only capable of engaging IDF ground forces in combat. Hezbollah's basic strategy was to exploit Israel's reputation for casualty sensitivity by inflicting maximum casualties on advancing IDF units. Although in some cases attempts were made to permanently deny strategically important ground to advancing IDF units, decisive engagement always resulted in eventual IDF victory. The primary vehicle for this strategy remained casualty infliction with the hope that the casualty infliction would coerce Israel into a ceasefire favorable to Hezbollah as well as reinforce Hezbollah's deterrence towards Israel, who would remember the terrible losses suffered at the hands of Hezbollah, and also reinforce its status as the vanguard of Arab resistance against Israel aggression, particularly amongst its domestic audience. This strategy all but failed by most accounts. Although remarkably effective for a non-state actor, and perhaps even when compared to state Arab militaries, Hezbollah was unable to inflict enough casualties on the IDF to affect Israel's decision calculus in any significant way. This is both because of the disparity between the quality and quantity of men and equipment in any given battle but also because of a overly optimistic estimation of how sensitive Israel is to casualties during instances in which its security is threatened.<sup>145</sup> Perhaps if Hezbollah had not pursued its strategy of punishment and had also been significantly more successful at inflicting casualties denial could have been effective, as Israel would have less to lose if it were to seek an earlier cease fire than the one reached after 34 days of intense conflict.

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<sup>144</sup> Amos Harel et al., "24 IDF soldiers killed Saturday in South Lebanon," *Haaretz*, 11 August 2006, <<http://www.haaretz.com/news/24-idf-soldiers-killed-saturday-in-south-lebanon-1.194929>>

<sup>145</sup> Exum, 2006: 8; Avi Kober, "From *Blitzkrieg* to Attrition: Israel's Attrition Strategy and Staying Power," *Small Wars and Insurgencies* Vol. 16, No. 2 (2005): 234-235.

Denial was also pursued by Israel against Hezbollah. As mentioned before denial can be difficult to apply to non-state actors because they do not generally rely on equipment or occupy territory in the overt way that states do. In this sense Hezbollah's position somewhere between the industrial method of state-state conflict in which long logistical pipelines are vital, and classical guerilla warfare in which logistics matter little compared with support from the population, makes it especially difficult to coerce by denial. Like classical guerillas, Hezbollah's horizontal military structure and abundance of prepositioned supplies ensured that at least for the short term, interdiction of whatever logistical pipelines existed will have had at best a much delayed effect. Unlike classical guerillas, Hezbollah's tenacious defense of its previously occupied territory and its recognition that the reestablishment of a permanent Israeli presence in southern Lebanon, a necessary precursor to the execution of the counter-insurgency strategy aimed at countering a classical guerilla strategy, was unlikely, all but ensured that denial could at best only be partially effective. Locating and destroying dispersed, time-sensitive targets that were often surrounded by civilian structures is difficult to do. Successes at this difficult task are furthermore unlikely to be repeated with the frequency necessary to communicate to Hezbollah's leaders that continued resistance is worse for their organization than ceding to Israeli demands, especially since the destruction of Hezbollah's military wing was a major campaign objective; thus making the war existential for Hezbollah.

### Hybrid Conflict

The 2006 Israel-Hezbollah war is a particularly instructive example of why conflict taxonomy can only be done on a continuum. Hezbollah forces employed a large amount of static defensive positions, counterattacked occupied positions a number of times, and accepted decisive engagement when they encountered favorable odds or were protecting a particularly vital position. At the same time Hezbollah

fighters also exhibited a great number of behaviors typically characteristic of classical guerilla warfare. Although Hezbollah did hold ground, occupy static defensive positions, and counterattacked, they also often gave up ground not strategically vital and continually launched harassing attacks on IDF forces in the field as well as the constant launching of hundreds of Katayushas launched into northern Israel. Stephen Biddle and Jeffery Friedman developed a quantitative assessment based on reports regarding the duration of firefights, the proximity of attackers to defenders, the incidence of counterattack, the incidence of harassing fires and unattended minefields, the proximity of combatants to civilians and the use of uniforms to distinguish combatants from civilians. This analysis aimed to determine a general overall picture of Hezbollah's theater level plan at the tactical level. Prior to the 2006 war seemingly little thought had been given to the notion that a non-state actor could challenge Israel's conventional superiority in any way. The examination showed that Hezbollah engaged in a number of very long engagements with both infantry and IDF tanks. This was not always the case, but was centered around strategically important points such as Marun ar Ras, Bint Jubayl, and Ghanduriyih.<sup>146</sup> Firefights are reported as lasting up to 2 days of continued contact, indicating clearly that Hezbollah was, at least at points at which it was strategically important enough, decisively engaging with the IDF. During these extended firefights Hezbollah fighters repeatedly chose not to withdraw, instead fighting until overrun at Shaked, Marun ar Ras, Aytarun, and Markaba. In a number of these cases Hezbollah fighters actually held their fire until IDF soldiers had passed into their defensive perimeter leaving them no option to withdraw from the beginning of the firefight. In all of these cases the Hezbollah fighters were all reported as having been killed after the IDF had overrun their positions.<sup>147</sup> Engaging in close quarters battle is not something that is typical of guerilla warfare as it is inherently high risk; one would presume that a guerilla would want to damage the enemy as best he can without putting himself in an impossible situation. Additionally Hezbollah fighters actually counterattacked to regain Marun ar Ras. The

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<sup>146</sup> Biddle & Friedman, 2008: 35-36.

<sup>147</sup> Ibid, 35-36.

counterattack which apparently originated from Bint Jubayl was a coordinated assault covered by a supporting team manning an anti-tank guided missile. Multiple attempts were made to retake the position, apparently at one point reaching hand to hand combat, but the effort was ultimately unsuccessful. Similar counterattacks were made on Ayta ash Shab, Muhaybib, Ghanduriyih, and Dayr Siryan as well, although like Marun ar Ras were also unsuccessful.<sup>148</sup> Counterattack is a very uncommon tactic for an irregular force to pursue. In Hezbollah's case it proved very costly and achieved little, however one can imagine that with improved capabilities it could be an obstacle for militaries designed to do counterinsurgency or counter-terrorism, as the IDF was largely in 2006. Hezbollah also did not make use of the civilian population as a means of cover after the beginning of hostilities, although the undoubtedly could have. By the time the very late Israeli race to the Litani River began almost all the residents had left; IDF soldiers reported little to no mingling with the civilian population that remained.<sup>149</sup> These clearly conventional tactics were used astride more classical guerilla tactics. While a number of strategic locations along the border were held until destroyed the bulk of the Hezbollah fighters did not so commit themselves, but conducted ambushes, mined avenues of approach, attacked garrisoned infantry with ATGMs, and generally avoided decisive engagement and eventual destruction by the IDF. The two types of tactics coexisted with each other and seemed to compliment the capabilities Hezbollah possessed rather well.

Despite the conventional tactics Hezbollah obviously did not pursue a brute force strategy which in any case would have been impossible given the economic and military asymmetry between the two. Hezbollah, whether a true fundamentalist organization that is dedicated to the destruction of Israel, or a more moderate one mellowed with age, must realize that removing Israel with the means they have at their disposal is simply impossible and thus coercion is the only real solution. Bearing this in mind it

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<sup>148</sup> Ibid, 38-40.

<sup>149</sup> Ibid, 43-44.

becomes poignant to wonder where on the continuum of conflict a group like Hezbollah belongs, and what that means for strategy oriented towards such a group. The current debate centering on the role of counterinsurgency in military doctrine would be well advised to take note of the simple fact that preparing for a future in which non-state actors are the primary threat to national security does not mean that conventional military proficiency is not needed. To the contrary, in fact, the 2006 Israel-Hezbollah War showed that a military seemingly perpetually focused on counter-insurgency and counter-terrorism in the Palestinian territories was ill-prepared to deal with a high-capability non-state actor that was ready to face Israel in a more conventional way. Non-state actors can and will continue to use tactics from throughout the spectrum of conflict depending on their adversary. State militaries would be wise to do the same. The gross asymmetry between most state and non-state actors forces the less militarily capable of the two to seek out the other's weaknesses and to exploit them. Although this perpetual search for a proverbial chink in the armor is nothing new, it is important to remind ourselves that the adaptation does not move in one direction and that because of budget realities absolute dominance cannot be maintained in every area. A balance must be achieved that reflects the current threats, but is malleable enough so that change, which is inevitable, will not break our backs.

#### The IAF and Hezbollah's Rocket Arsenal

Hezbollah's arsenal of surface to surface rockets and missiles (SSRs and SSMs) posed a challenge for the IAF. Syrian and Iranian mid-range missiles and rockets were the most pressing threat due to their ability to strike as far south as Tel Aviv and Haifa, their increased accuracy, and their ability to carry larger warheads capable of greater destruction than the shorter range unguided artillery rockets. Both larger SSRs and most of the medium range SSMs operated from mobile launchers capable of disguising themselves amongst non-combatant vehicles, firing quickly, and then quickly leaving the launch area to

avoid retaliation. Launch vehicles for medium range rockets often carried an array of launch tubes in order to simultaneously fire a salvo of rockets, while many of the medium range SSMs used custom launchers that were significantly more complex. Launchers could be destroyed before launch or immediately afterwards. Pre-launch strikes against supply depots where rockets or missiles are stored would only be possible with positive intelligence and does not primarily rely on the IAF's capabilities. Post-launch strikes do rely almost entirely on the IAF's surveillance, target acquisition, and prompt strike capabilities. Pre-launch strikes rely primarily on the availability of accurate and timely intelligence about the locations of storage facilities and launch vehicles. In expectation of a preemptive strike, rockets and missiles are likely to be stored in hardened facilities, in densely populated areas, and be widely dispersed in order to make it difficult to identify targets, to destroy them, and perhaps politically counterproductive to do so. With wide dispersion it is likely that the enemy will continue to possess significant capabilities even if a number of targets are destroyed. Overall it is unlikely that a pre-emptive strike will eliminate all rocket and missile forces absent uncharacteristically perfect intelligence.

Post-launch target identification and destruction depends on a number of factors. Launchers can be identified by their heat signature, smoke being given off by launches, and by the trajectory of the rockets already fired. Timely target identification is vital because of the high mobility of many launchers and thus is dependent on persistent surveillance supplied by long-loitering surveillance aircraft, radars tracking rocket trajectories, or satellites observing launch signatures. Assuming promptness in this regard it is then necessary to "close the loop," to minimize the time between target identification and target destruction. Because of the relatively favorable circumstances for the IAF in the 2006 war, the time from target identification to target destruction was often very short; often between 45 seconds to one minute according to an anonymous IAF officer quoted in the *New York Times*.<sup>150</sup> The IAF's

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<sup>150</sup> Steven Erlanger, "Israel Committed to Block arms and Kill Nasrallah," *New York Times*, August 20, 2006, <<http://www.nytimes.com/2006/08/20/world/middleeast/20mideast.html>>

advantages included favorable weather, the almost total lack of threats to air supremacy, and the relatively short distance from base to area of operations. As a result, strike aircraft were able to maintain an almost totally persistent presence over launch areas which acted to deter launching and aided in the quick destruction of launch sites. The question of whether performance in this area can be improved upon depends on advancements in target identification and the speed with which the sensor to shooter loop is closed. In this way unmanned combat aerial vehicles (UCAV) such as the Predator, Reaper, or Israeli manufactured Elbit Hermes may enable a faster signal to shooter cycle. Presently UCAVs in service lack the speed and payload capacity to strike multiple targets nearly simultaneously unless deployed in significantly greater numbers or when used in conjunction with fixed wing strike aircraft. Continued adaptations to improved capabilities in this area are more simultaneous launches from geographically separated areas, thus decreasing the ability of aircraft to promptly target all launchers, and a move towards reliance on short range rockets, the latter of which occurred to a great degree in the 2006 war.

Hezbollah's reliance on short range 220mm and 302mm rockets may be at least partially attributable to early Israeli success at destroying Hezbollah's medium range rockets and missiles. On the night of July 12<sup>th</sup> IAF strike aircraft hit 94 targets in a mere 34 minutes. The strike was later learned to have been targeted on Hezbollah's stock of Iranian made Zelzals, Fajir-3s, Fajir-5s, and their launchers, with reports suggesting that anywhere between 18 of the 19-21 launchers<sup>151</sup>, 54 launchers<sup>152</sup>, or 59 launchers<sup>153</sup> depending on which sources one reads. In the opening days of the war the IAF claims to have destroyed some 80% of Hezbollah's medium range rockets, effectively forcing them to rely of shorter range Katayushas which are both less accurate and less powerful. Verification of the percentage

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<sup>151</sup> Cordesman, 2006.

<sup>152</sup> Uzi Mahnaimi, "Hubling of the supertroops shatters Israeli army morale," *Sunday Times* (UK): 27 August 2006, <[http://www.timesonline.co.uk/article/0,,2090-2330624\\_1.00.html](http://www.timesonline.co.uk/article/0,,2090-2330624_1.00.html)>

<sup>153</sup> Markovsky & White, 2006.



of medium and long range rockets and missiles is unlikely to occur because Hezbollah has, for obvious reasons, not been forthcoming about their arms stockpiles either before or after the war, and in any case released figures are likely to be grossly inflated precisely because such figures are unverifiable. Despite this, Israel's claim seems to be supported by Hezbollah's conduct during the war: relatively few medium range rockets and missiles were fired. By Israeli police figures 92 rockets were fired at Haifa, 7 at Alufa, 6 in Beit Shean, 2 in Tirat HaCarmel, 2 near Hadera, and 1 near Zikhron Yaakov; all cities outside of the range of short range Katayushas near the Israel-Lebanon border.<sup>154</sup> Although some suggest that this does constitute heavy fire, and is evidence that the July 12 operation was not effective, nor primarily targeted on the Zelzals, the aforementioned record of observed rocket fire lends at least some credence to the IAF's claims.<sup>155</sup> Compared to the much heavier rocket fire endured by northern cities such as the Kirat Shmona area which was hit by some 1,102 rockets, the bombardment was light. This may have been due to the IAF's early success at destroying an impressive amount of medium range rockets and their launchers, or perhaps because Hezbollah either lacked significant numbers prior to the war, or abstained for political reasons. Intelligence assessments prior to the war do indicate that Hezbollah was seeking larger, longer range rockets and missiles, casting a large measure of doubt on the idea that the lighter bombardment of the abovementioned cities was because Hezbollah did not possess significant numbers of medium range rockets and missiles. Similarly there is little reason to believe that Hezbollah would have abstained from firing rockets further south for political reasons. Indeed as just indicated Hezbollah did fire a number of rockets and missiles into cities in the middle of Israel, just not in as great numbers as were fired into northern Israel. The volume of continuous rocket fire is alone enough to disabuse one of the idea that Hezbollah decided to not fire medium range rockets. Simply put it seems highly unlikely that Hezbollah didn't have significant numbers of medium range rockets, and

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<sup>154</sup> Calculation was made by comparing distance from 5km inside Lebanon to maximum effective range of Hezbollah's different rockets. This is a conservative estimate because often firing positions were significantly farther north than the baseline 5km used in the calculation.

<sup>155</sup> Arkin, 2007: 142.

even more unlikely that it had them and chose not to use them. As a result it seems far more believable that the IAF significantly damaged Hezbollah's longer range capabilities, and perhaps deterred them from using their remaining stores absent some measure of defensive capability.

### IAF Targeting

Israeli air strikes targeted Hezbollah affiliated buildings in southern Beirut, Hezbollah headquarters at Haret Hreik, Lebanese coastal radars, as well as numerous suspected Hezbollah positions in southern Lebanon.<sup>156</sup> On 13 July 2006 the Israeli government announced that it had attacked headquarters, bases, training camps, installations, arms slicks, Al-Manar television, a Hezbollah affiliated transmission tower in Baalbek, 2 Lebanese military airfields in addition to Beirut International Airport, fuel storage facilities and gas stations throughout the South, and bridges over the Litani, Zahrani, and Awali rivers.<sup>157</sup> Aside from the later addition of some Hezbollah affiliated financial and industrial buildings every type of target just mentioned was struck within the first 24hrs of conflict. Assertions that the Israel aerial campaign was indiscriminate in its targeting are not supported by independent bomb damage assessments made after the war. It is clear from the beginning of the conflict that Israeli targeting was deliberate and considered: Israel did not strike core assets of the Lebanese government including its power grid and water treatment facilities.<sup>158</sup> This is despite Israel's public pronouncements that the Lebanese state was ultimately responsible for Hezbollah's actions and private exclamations by Chief of Staff Halutz saying that they would "turn Lebanon back by 20 years."<sup>159</sup> Despite such a public pronouncement Israel claims that all the targets it struck in Lebanon, including the hundreds of high-rise apartments demolished in southern Beirut's Dahieh neighborhood, were targeted as a result of a careful

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<sup>156</sup> Arkin, 2007: 105.

<sup>157</sup> Arkin, 2007: 115-123.

<sup>158</sup> Ibid, 106.

<sup>159</sup> Harel & Issacharoff, 2008:78.

examination of their military necessity and whose validity was confirmed by intelligence.<sup>160</sup> Given the locations of the abovementioned targets, the immense amount of ordinance dropped, and especially the relatively high population density of Dahieh, the amount of civilian casualties inflicted prior to the beginning of the land campaign on July 17<sup>th</sup> was remarkably low.<sup>161</sup> This is additionally remarkable because of Hezbollah's intentional placement of its military capabilities in predominantly civilian neighborhoods and in civilian buildings. The IDF reported that Hezbollah offices and headquarters were often "surrounded by civilian institutions and densely populated civilian residential buildings."<sup>162</sup> Israel drew much criticism from its targeting including reports by Amnesty International that "the extent of the damage suggests that Israeli strikes were aimed at any building that may have housed any activity associated with Hizbullah [*sic*], including non-military activities. As such they would have been direct attacks on civilian objects, and may also have been carried out as a form of collective punishment of Dhahiyeh's [*sic*] residents."<sup>163</sup> A UN fact-finding mission determined that:

"While Hezbollah was in conflict with Israel, it does not follow that every member of Hezbollah could be justifiably targeted. Individuals do not become legitimate military objectives unless they are combatants or civilians directly participating in hostilities. Many members and supporters of Hezbollah do not meet either criterion. Similarly, not every building owned by or associated with Hezbollah constituted a legitimate military objective. Hezbollah is, in addition to being an organization using violence, a political movement and social services enterprise, particularly in the *Dahiye* [*sic*] and the areas of southern Lebanon with a Shiite majority population."<sup>164</sup>

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<sup>160</sup> Arkin, 2007: 105.

<sup>161</sup> *Ibid*, 75-104.

<sup>162</sup> IDF, ITIC/CSS, Part Two, 62-63.

<sup>163</sup> Amnesty International, Israel/Lebanon, "Out of all proportion."

<sup>164</sup> UN, "Implementation of General Assembly Resolution 60/251," 10-11.

Israel argued that the simple fact that buildings that had been completely demolished were next to buildings that remained relatively unscathed was evidence of selective targeting, but absent the release of specific targeting data which will undoubtedly remain classified, the UN mission has rejected that claim.<sup>165</sup> Additionally Israel warned residents of impending attack, which while it certainly helped to reduce civilian casualties also undoubtedly severely degraded the effectiveness of the strikes. Warning of an impending attack clearly gave Hezbollah commanders and staff time to relocate along with the civilians, meaning the majority of Israeli airstrikes merely demolished empty buildings. Failure to damage Hezbollah command and control elements probably required more airstrikes which subsequently caused more civilian casualties despite forewarning. Thus one might question the advantage of warning targets in advance to avoid civilian casualties which will continue mounting because the ineffective airstrikes continue.<sup>166</sup> This is of course if decapitation is an effective strategy in the first place, a proposition that should at the least be subject to great skepticism.

The IAF's focus on the destruction of roads and bridges was ostensibly intended to impede Hezbollah's logistical pipeline. Hezbollah asserts that they had no particular need to mobilize forces or maintain large logistical pipelines because "all the weapons were in the right place."<sup>167</sup> Although it is probably true that the IDF was correct in saying that "arms and ammunition were transported from Syria by trucks and vans," it is also likely that for the duration of the war "enough weapons and munitions had been pre-positioned in the south to reduce the requirement for dangerous resupply over distances."<sup>168</sup> There is some evidence to suggest that early strikes against arms resupply from Syria did stop shipments of larger weapons systems that could be identified from the air. On 25 July 2006 US State Department terrorism coordinator Henry Crumpton said that "the flow has been slowed if not

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<sup>165</sup> Arkin, 2007: 110.

<sup>166</sup> Ibid, 110-111.

<sup>167</sup> Anthony Shadid, "Inside Hezbollah, Big Miscalculations; Military Leaders Caught off Guard by Scope of Israel's Response in War," *Washington Post*, 8 October 2006.

<sup>168</sup> David Markovsky & Jeffery White, "Lessons and Implications of the Israel-Hizballah War: A Preliminary Assessment," *Washington Institute for Near East Policy*, Policy Focus #60, October 2006, 47.

completely stopped... of the large missile systems,” because of the IAF’s success at targeting such systems in transit.<sup>169</sup> Simply because Hezbollah is a non-state actor and is not dependent on large amounts of military material or high technology the targets struck are of questionable utility. Given Hezbollah’s use of Lebanese civil society as a shield it becomes even more so. Noted analyst Anthony Cordesman states that “unless the IDF shows that Hezbollah lost a major amount of weaponry in such attacks, the attacks may have done Israel as much harm in terms of future hostility as good in terms of immediate tactical benefits.”<sup>170</sup> Since the immediate tactical benefits of many of the command and control targets hit were likely greatly diminished by the aforementioned attempts to reduce civilian casualties it seems probable that the effects were almost entirely counterproductive apart from successful strikes on medium range rockets in storage and their launchers, which if destroyed as reported by the IDF, were clearly militarily necessary targets. States will continue to have difficulty trying to balance military effectiveness with low collateral damage. In this case it seems that overemphasizing the need to limit collateral damage resulted in a situation where there was little collateral damage but also little military benefit.

The effectiveness of air power in achieving Israel’s strategic objectives remains unknown primarily because accurate estimates of how much damage Hezbollah suffered because of air power and the status of Israeli deterrence towards Hezbollah remain unknown. Despite this frustrating ambiguity there are nonetheless a variety of clues regarding air power’s usefulness in state versus non-state actor contests that have become apparent. The first and most general conclusion about air power’s use against non-state actors is that it is almost always directly ineffective. Air power was primarily successful against Hezbollah’s stocks of larger more advanced rockets that are typically only operated by states. This highlights the central logic of the transfer of responsibility. Although holding the Lebanese

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<sup>169</sup> Ann Roosevelt, “Fighters Not Moving from Iraq to Lebanon, Official Says,” *Defense Daily*, 28 July 2006.

<sup>170</sup> Anthony Cordesman, “Preliminary ‘Lessons’ of the Israeli-Hezbollah War.” Washington, DC: Center for Strategic and International Studies (CSIS). Working draft, 17 August 2006: 5.

government which was already headed by the anti-Hezbollah, anti-Syrian Fouad Siniora which was likely incapable of executing the desired changes, the core concept remains valid. Although denial and punishment are not particularly effective on states when vital interests are at stake, it is unlikely that support and/or operational control of a foreign guerilla or terrorist organization would qualify as vital. Thus states are more likely to be susceptible to coercion when the issue at stake is support of a foreign based non-state actor. It is worth noting that the speed and degree to which targeting state sponsors of non-state actors will result in changed behavior is entirely dependent on the strength of the relationship between the two. In instances where a state is the primary supplier of weaponry, and exercises direct operational control over its proxy, coercion of the state sponsor is likely to produce rapid changes in behavior, while sponsors without significant operational control are less likely to be able to precipitate rapid changes. Although there is considerable debate surrounding the subject it is widely believed that Hezbollah operates as a commando division of the IRGC and that it is largely under the operational control of Tehran and/or Damascus in addition to being totally reliant on them for weapons resupply and all training on more complicated weapons systems. Since non-state actors by definition rarely indigenously produce their own war material, coercing state sponsors is likely to be effective at deterring arms transfers and moderating non-state actor behavior. It would be hard to imagine Syria allowing Hezbollah to provoke Israel like it did on July 12<sup>th</sup> prior to its withdrawal in 2005.

A second general observation about the efficacy of air power in state versus non-state actor conflicts primarily relates to the relationship between public opinion and targeting. It is a central tenet of counterinsurgency doctrine that a minimum of force must be used in any given situation to avoid the unnecessary deaths of enemy non-combatants. Bearing this in mind it is important to realize that despite precision guided weapons reputation as “surgical strike” weapons it is simply very unlikely that no civilian casualties will be suffered when 2,000lb bombs are being dropped into urban areas. Operations against targets surrounded by civilian infrastructure should be carefully weighed; does the

probable outcome of executing the strike outweigh the potential negatives that are gradually accrued by the aforementioned inevitable collateral damage to non-combatants and infrastructure? During the 2006 war Israeli warnings undercut the already questionable utility of striking leadership targets while at the same time still increasing civilian casualties. Targets deemed absolutely militarily vital should be struck without the overuse of measures designed to protect non-combatants in the area.

Although at first glance it may appear that the short range rocket threat Hezbollah poses to northern Israel is undefeatable by air power alone, this may not be the case if combined with effective implementation of artillery intercept systems such as the soon to be deployed Iron Dome. Layered defense systems combined with prompt acquisition and destruction of larger weapons systems may be remarkably effective at countering the Hezbollah rocket threat as it existed during the 2006 war. Adaptation to new capabilities and doctrines is sure to occur, making it unlikely that Hezbollah's strategic threat to Israel will remain the same as it was in the summer of 2006. Large numbers of MANPADs would certainly be a game changer, especially if a variety of models are deployed to make air defense suppression more difficult. In short, it will undoubtedly constantly be important to be looking ahead to future threats rather than fighting "the last war." Air power's efficacy will depend on the capabilities it is tasked with degrading, the structure of the enemy organization, the method by which the enemy aims to achieve its political objectives, and a seemingly infinite array of other vital factors.

## CHAPTER 10

## Conclusion

It seems unlikely that any truly general rules for air power can be extracted from this analysis. Air power is neither strategically useless nor supreme in any type of conflict, a fact that holds for this type of conflict as well. Nonetheless some specific characteristics of air power and of many non-state actors may serve to inform us of what air power can and cannot do in such a conflict. Air power can effectively deal with large weapons systems, fixed targets, and infrastructure. Non-state actors generally do not have many of these targets. Targets of this type that can be identified should be struck quickly, forcefully, and without warning to maximize their effect. If these targets are positively identified they are likely to be especially time-sensitive. Attempting to strike targets which do not fall into any of the three above categories is likely a waste except when flying as close air support for ground forces. Transferring responsibility to state sponsors of the belligerent group serves a similar purpose, although the effectiveness of such a strategy depends largely on the relationship between the state and its proxy. Effective coercion depends on the complex relationship between coercer and target and is well described in its basic form by Pape's formula for military coercion:  $R = B p(B) - C p(C)$ . Air power enthusiasts have long overestimated the effectiveness of coercion by strategic attack from the air. Similarly, the backlash against these air power boosters has created unrealistic and unsupported claims about air power's ineffectiveness. Air power is simply another tool in the military toolkit. Successful coercion depends on selecting the right tools for the right job and employing them effectively. War is a human affair and does not conform to neat theories. The relevant variables in any interaction are basically infinite and so we should exercise great caution in determining a causal link between any phenomena in war. This is perhaps the most important lesson gleaned from my study of air power during the 2006 war: be humble in your conclusions.



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