AIR COMMAND AND STAFF COLLEGE

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ARE THERE FIVE RINGS OR A LOOP IN FOURTH GENERATION WARFARE?

A STUDY ON THE APPLICATION OF WARDEN'S OR BOYD'S THEORIES IN 4GW

by

Juerg Studer, Major, Swiss Air Force

A Research Report Submitted to the Faculty

In Partial Fulfillment of the Graduation Requirements

Dr. Donald A. MacCuish

Maxwell Air Force Base, Alabama

April 2005

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Preface

After the successful adaptation of the theories of Colonel John Boyd and Colonel John Warden in recent operations, such as Operations ENDURING FREEDOM (OEF) and IRAQI FREEDOM (OIF), nobody would fundamentally question their validity. However, the surviving members of Al Qaeda in Afghanistan have dispersed and warfare in Iraq has changed. Today's soldiers no longer fight the Taliban or the Republican Guard in a third generation warfare (3GW) conflict, where the emphasis is maneuver. Rather they confront terrorists and insurgents, which are relying on fourth generation warfare (4GW), bringing war to the people.

This paper will examine whether the theories, successful in second and especially in third generation warfare can also be applied in the vast, amorphous and changing field of fourth generation warfare.

AU/ACSC/5043/2005-04

Abstract

Throughout history, war has changed its face and developed into a myriad of manifestations. Therefore, also the classifications of warfare and the theories to win war had to adapt to those changes. One of the most recent theories revolves around the phenomenon the world faces today with warfare waged by terrorists and insurgents. The fourth generation warfare (4GW) model is still young and evolving and one cannot find it in official documents of the Department of Defense (DoD). However, already it has established itself more and more in the writings of today's military theorists. In this paper, this author will give a brief summary of the most common existing models of warfare and highlight certain characteristics and strategies exploited and followed by the players employing 4GW.

Two theorists, John A. Warden III and John R. Boyd shaped modern airpower. From Operation DESERT STORM to Operation IRAQI FREEDOM (OIF), their names are featured prominently in a number of analyses, books and articles. The US forces proved that their theories are valid when applied by a modern military force in a maneuver war waged with precision weapons. Nevertheless, one will define those operations as third generation warfare (3GW) and the validity of the theories in the Global War on Terrorism (GWOT), which is widely fought by terrorists as 4GW is still to prove. This paper will give a short summary of the two theories and then explicitly investigate the validity of the two theories in 4GW.

Introduction

[W]ar is an act of force, and there is no logical limit to the application of that force.

—Carl von Clausewitz[1]

War has been a loyal companion of humankind throughout history. It has seen different forms, magnitudes, objectives and players. It has also inspired a myriad of theorists to define, catalogue and distinguish war. However, war is an amorphous comrade and there is no limit to its application. In addition, there seems to be no limits in the appearance of war as Clausewitz stated.[2] The author will concentrate on fourth generation warfare (4GW) in this essay, knowing that not all the past or present wars are wars of the fourth generation and most certainly, future wars will not be fought exclusively according 4GW techniques. However, 4GW is a ubiquitous problem; it can be found in the cities of Iraq, in the mountains of Afghanistan, in the jungles of Indonesia and even in the streets of New York. As war itself, 4GW is also an amorphous entity. It might be intermingled with second or third generation warfare (2GW, 3GW) and one might need 2GW and 3GW elements to fight a 4GW opponent. A closer look at recent conflicts such as Operation ENDURING FREEDOM (OEF) and Operation IRAQI FREEDOM (OIF) will reveal many examples where 4GW opponents are fought with 2GW or 3GW techniques.

The 4GW model is still young and evolving. Few theorists explicitly try to solve the 4GW dilemma, the impasse to fight an opponent that does not respect the rules of warfare of our Western society. This essay will investigate whether one can apply the theories of the two most

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[1] Carl von Clausewitz, *On War*, trans. Michael Howard and Peter Paret, Michael Howard and Peter Paret ed. (Princeton, NJ: Princeton University Press, 1976), 77.
[2] Ibid.

recent and controversial air power theorists to solve the above-mentioned 4GW problem. It shall

be a point of departure for a more thorough discussion on how Western society can efficiently

fight non-state actors without repeating mistakes of the past, where nations won the battles but

lost the war.[3]

Epochs, Waves and Generations

> *[T]here is no doubt that the war convention represents a tangible reality. Like all human creations, it is rooted in history, and hence liable to change.*
>
> —Martin van Creveld[4]

War has been a constant companion of humankind throughout history and people

influenced it by the way they were working.[5] Since ancient times, when the Egyptians, the

Greeks or the Chinese fought their conflicts, humankind was studying war and its origin.

Conflicts can be symmetric, dissymmetric, and asymmetric or a combination of all three forms.

In symmetric conflicts, the two opposing adversaries dispose of armed forces that are similar in

all aspects such as force structure, doctrine and assets and have comparable tactical, operational

and strategic objectives.[6] A conflict is dissymmetric when one of the opposing forces is superior

by means of force structure, doctrine and assets, but both parties are striving for similar political

and military objectives.[7] In an asymmetric conflict, one of the opponents is unable or unwilling

to wage the war with comparable force structure, doctrine and assets and has different political

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[3] Examples are the Vietnam War the Sandinista revolution and the first Intifada. For details see Col Thomas X. Hammes, *The Sling and the Stone*, First Edition ed. (St. Paul, MN: Zenith Press, 2004), 56-110.

[4] Martin van Creveld, *The Transformation of War* (New York, NY: The Free Press, 1991), 198.

[5] Alvin and Heidi Toffler, *War and Anti-War: Survival at the Dawn of the 21st Century*, First Edition ed. (Little, Brown & Co., 1993), 33.

[6] Chef der Armee, "Reglement Taktische Fuehrung XXI (TF XXI)," ed. Civil Protection and Sports Swiss Department of Defence (2004), 8.

[7] Ibid.

and military objectives than his adversary.[8] There are many definitions of war but for different

types of war itself, there exist even more explanations. Total war, limited war, and small war are

only a limited selection of this myriad of terms. Theorists also tried to categorize the way man

fought his war. Today we find many different categorizations and this author will mention only

a few, namely epochs, waves, and generations.

　　　Dr T. Lindsay Moore and Robert J. Bunker developed the theory of epoch wars in a

research seminar in 1987.[9] Their theory divided Western civilization and its way to wage war

into four epochs, each of them focused on energy sources.[10] First epoch war was based on

human energy and can be placed in the time of the ancient Greeks or Romans.[11] The use of

animal-based energy was the foundation for the second epoch war, which Moore and Bunker

place in medieval times with its cavalry-based type of warfare.[12] The exploitation of mechanical

energy in the form of machines and engines made for the third epoch war, which spans from the

age of Absolutism to the Blitzkrieg of World War II (WWII).[13] Bunker and Moore define two

forms of fourth epoch war, which they also call warfare based on post mechanical energy,

advanced technology warfare or non-Western warfare.[14] They further define non-Western

warfare as terrorism and low-intensity conflict (LIC), and think of it as being mostly equivalent

to 4GW.[15]

　　　Alvin and Heidi Toffler developed a theory of warfare based on the economic and

societal changes of civilization.[16] They defined the first wave war as an agricultural war, which

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[8] Ibid.
[9] Robert J. Bunker, "Generations, waves, and epochs," *Airpower Journal* Vol. 10, no. Issue 1 (1996): 23.
[10] Ibid.
[11] Ibid.: 24.
[12] Ibid.
[13] Ibid.
[14] Ibid.: 24 & 25.
[15] Ibid.: 25.
[16] Toffler, *War and Anti-War: Survival at the Dawn of the 21st Century*,31.

bore the characteristics of a seasonal war and soldiers were paid by land instead of money.[17] The

industrial revolution made the second wave war possible.[18] Its range in time lasted roughly from

the late 17th century to the end of the 20th century and it manifests itself in such different wars as

the Napoleonic wars, the Civil War, the two World Wars and the wars in Korea and Vietnam.[19]

According to the Tofflers, the third wave war started in the late 1970s, early 1980s and it is

largely based on knowledge.[20] They also see today's world divided in first, second and third

wave states, each with its own distinct agendas.[21] This situation creates friction and turmoil and

promotes what the Tofflers call "the rise of the soft edge state" or the shift from a world of

nations to a myriad of feudal first wave states, traditional second wave states and modern third

wave city-states.[22] Chief executive officers (CEO) of multinational companies and religious

leaders will have a more prominent role in the future world system.[23]

In 1989, Bill Lind and a team of officers created the term fourth generation warfare.[24]

When Napoleon stood on the battlefield with his army spread out in straight lines, marching

straight forward to the opposing army in a war of attrition, he was using first generation warfare

(1GW) techniques on Europe's battlefields.[25] Barbed wire, the machine gun and indirect fire

influenced the tactics of second generation warfare (2GW), which was based on massed

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[17] Ibid.,33-36.
[18] Ibid.,38.
[19] Ibid.,38-56.
[20] Ibid.,43 & 139.
[21] Ibid.,219.
[22] Ibid.,242 & 43.
[23] Ibid.,244.
[24] William S. Lind, Col Keith Nightengale, Captain John F. Schmitt, Col Joseph W. Sutton and LtCol Gary I. Wilson, "The Changing Face of War: Into the Fourth Generation," *Marine Corps Gazette* (1989): 22-26.
[25] Ibid.: 23.

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firepower rather than massed military formations.[26] Second generation warfare remained linear

and the conflicts were largely wars of attrition.[27]

Third generation warfare (3GW) for the first time saw non-linear tactics and found its

base on maneuver combined with firepower rather than attrition.[28] Guderian's tank warfare

tactics is a typical example of third generation warfare.[29] Fourth generation warfare (4GW)

takes the war to the people instead of the armed forces and its object is to provoke a collapse of

the enemy internally rather than destroying his armed forces physically.[30] The fourth generation

battlefield does not only include the armed forces' area of operation but also contains more or

less the whole society of the enemy.[31] Because modern societies are dependant on oil, electrical

power, technological equipment, and communications, they become very vulnerable. The

objectives of an asymmetric player in a 4GW conflict are not restricted to military targets but

include political, social, economic and even psychological aspects.[32]

Fourth generation warfare is not yet fully developed but is still evolving.[33] One could

also say that it is amorphous and adaptive. Actors using 4GW techniques are constantly reacting

to the response of their opponents. The goal of 4GW is to make the enemy collapse internally

rather than physically destroy it.[34] Therefore, 4GW becomes a logical choice for terrorist groups

and other asymmetric players. To sum it up, one could say that 4GW includes many aspects of

the better-known definitions of small wars, limited wars, LIC and asymmetric wars.

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[26] Ibid.
[27] Ibid.
[28] Ibid.
[29] Ibid.
[30] Ibid.
[31] Ibid.: 23-24.
[32] Matthew Kee Yeow Chye, "Victory in Low-intensity Conflicts," *Journal of the Singapore Armed Forces* Vol. 26, no. 4 (2000): n.p., on-line, Internet, 15 March 2005, available from http://www.mindef.gov.sg/safti/pointer/back/journals/00/Vol26_4/4.htm.
[33] LtCol Thomas X. Hammes, "The Evolution of War: The Fourth Generation," *Marine Corps Gazette* (1994): 35.
[34] Lind, "The Changing Face of War: Into the Fourth Generation," 23.

On Fourth Generation Warfare

When whole communities go to war – whole peoples, and especially civilized peoples – the reason always lies in some political situation, and the occasion is always due to some political object. War, therefore, is an act of policy.

—Carl von Clausewitz[35]

The German military strategist Carl von Clausewitz divided society into the people, the commander and his army, and the government.[36] According to Clausewitz, the purpose of the opponent's army was to protect the country. He believed that to win a war, you must first destroy the army.[37] As a logical consequence, the government and the people will then strive for peace.[38] The people, he believed, should be totally excluded from the war. This differentiation between combatants and non-combatants became the baseline for the humanitarian way of thinking of western armed forces. Different treaties, conventions, and agreements throughout the 19th and 20th centuries documented this distinction.[39] The most important agreements are the protocols of the two Hague Conferences of 1899 and 1907 and the Geneva Conventions.[40]

Since the Peace of Westphalia in 1648, 4GW represents one of the largest changes in warfare because the state has lost its monopoly of war.[41] Almost 200 nations signed the Geneva Conventions but the actors waging a 4GW conflict do not recognize the monopoly of the armed forces of a state and its representatives, army, police, border guard etc. This is especially true if

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[35] Clausewitz, *On War*,86-87.
[36] Ibid.,89.
[37] Ibid.,91.
[38] Ibid.
[39] The Avalon Project, *The Laws of War* (Yale Law School, 2005 [cited 2 February 2005]; available from http://www.yale.edu/lawweb/avalon/lawofwar/lawwar.htm.
[40] The original text of the protocols of The Hague Conferences and the Geneva Conventions are both written in French. They are deposited in the respective countries, The Netherlands for the Hague Protocols and Switzerland for the Geneva Convention.
[41] Interview with William S. Lind on 27 January 2005

the nation is a weak and failing state due to corruption or the inability of its government. Unjust distribution of wealth, poverty, corruption, repression, and the collapse of the social structure encourage the emergence of groups willing to attain their objectives through insurgency, guerilla, or terrorist acts.[42] Additionally, if the state no longer has the power to protect its citizens, the people will look for an alternative and turn towards whatever group or organization can provide them with protection and security.[43] This is exactly what happened in Somalia and Afghanistan, and it is one of the most important characteristics of 4GW.

Often latent ethnic, religious, or cultural conflicts exist due to arbitrarily built frontiers and states. If one combines these with the situation mentioned before, then the people will not identify themselves with the nation but rather with their tribe or ethnic group. Poor life standards with hunger and misery are a perfect soil for the birth of ideological or religious fanatics. Terrorist groups often find their legitimacy in the combination of an "idea" with an ideology or a religion. This ideologically or religiously legitimate idea stimulates the terrorist group members to take up arms and to fight.

Characteristics

The characteristics of 4GW are fundamentally different from the ones of the other generations of war. A 4GW conflict is a war of ideas and emotions; it is a war of non-state actors. In a 4GW environment, the state has lost its monopoly of war and people's loyalty shifts to non-state entities.[44] The asymmetric player in 4GW does not necessarily want to control vast

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[42] Kee Yeow Chye, "Victory in Low-intensity Conflicts," n.p.

[43] William S. Lind, Major John F. Schmitt, and Col Gary I. Wilson, "Fourth Generation Warfare: Another Look," *Marine Corps Gazette*, no. December 1994 (1994): 35-36.

[44] Lind cited in G.I. Wilson, Greg Wilcox and Chet Richards, *Fourth Generation Warfare & OODA Loop: Implications of The Iraqi Insurgency* [Powerpoint Presentation] (Internet, December 2004 2004 [cited 26 February 2004); available from http://www.d-n-i.net/fcs/ppt/4gw_ooda_iraq.ppt., Powerpoint Presentation slide 8.

territories and therefore does not need the definition of a frontline and a hinterland.[45] He does

not differentiate between combatants and non-combatants; everyone, military personnel as well

as civilians, men, women, or children who do not share his ideas are a potential target.[46]

Because his targets might be civilians in their normal environment, the asymmetric player wants

to blend in and not use a military uniform to label himself as combatant.

As soon as a 4GW conflict is fought with an ethnic, religious or ideological background,

the symbols of the enemy will become a target as well. These symbols could be a government

building such as the Pentagon or of religious or cultural nature as the mosques in Kosovo, or a

theater in Moscow. It can also be a person, a state leader such as President Mubarrak or an

attorney such as Aldo Moro. However, this strategy can fall back on to the asymmetric player as

well, as several leaders of Hamas and Hezbollah realized.[47] Many actors in 4GW find their

financial resources in criminal acts such as drug trafficking or slave trade. One can see an

example of this phenomenon in the so-called 'Tri-Border Area' in South America.[48] Islamic

terrorist groups, such as Al Qaeda, Hamas, Al-Jihad and others have found a safe place to raise

and launder money, plan their attacks, and recruit followers.[49] Several organized criminal groups

such as the Lebanese Mafia, some Chinese Triads and others are known to cooperate with

Islamic terrorist groups to raise and launder money.[50]

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[45] Heiko Weiner, "Low Intensity Conflicts" (Seminarpaper, Universitaet der Bundeswehr, Fakultaet fuer Sozialwissenschaften, 2001), 9.
[46] Ibid.
[47] Ibid.,10.
[48] Rex Hudson, "Terrorist and Organized Crime Groups in the Tri-Border Area (TBA) of South America," ed. Federal Research Division (Library of Congress, 2003), 1. The tri-border area is a region in South America with three population centers, each in a different country. These population centers are Puerto Iguazú (Argentina), Foz do Iguaçu (Brasil), Ciudad del Este (Paraguay).
[49] Ibid.
[50] Ibid.,3

Actors

Actors in 4GW are nation-states, terrorists, or extremist organizations. In 2004, the US Department of Defense identified a number of states that possessed biological and/or chemical weapons and were active in the domain of weapons of mass destruction (WMD) proliferation.[51] Furthermore, one can find many of those nations in a US Department of State (DoS) report on global terrorism identifying seven nations as state sponsors to international terrorist groups.[52] In 2004, the DoS identified 39 organizations as "Terrorist Organizations" fulfilling the criteria according to Section 219 of the Immigration and Nationality Act (INA).[53] However, it would proceed beyond the framework of this study to name them all and investigate their background and their objectives.

There are voices that even define the actor in 4GW as a new class of combatant. In his article "The New Warrior Class" Ralph Peters defined this new warrior class, attributing to it distinct differences towards the traditional soldier and he also mentioned some "social pools" where those warriors are drawn to form their armies.[54] However, as experiences in the past and today show, prominent figures of some terrorist groups possess a middle-class background and are sometimes well educated. Osama Bin Laden and Rabbi Meir Kahane are two examples of such well-educated leaders of a terrorist group. Some Muslim militants, who were recently

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[51] US Department of Defense, "Department of Defense Chemical, Biological, Radiological, and Nuclear Defense Program: Annual Report to Congress," ed. US Department of Defense (2004), n.p., on-line, Internet, 15 March 2005, available from http://www.acq.osd.mil/cp/nbc04/04cbrndpreport.pdf.

[52] US Department of State, "Patterns of Global Terrorism 2003," ed. US Department of State (2004), xv, on-line, Internet,16 March 2005, available from http://www.state.gov/documents/organization/31912.pdf.

[53] US Department of State, "Fact Sheet: Foreign Terrorist Organizations," ed. US Department of State Office of Counterterrorism (2004), n.p., on-line, Internet, 29 December 2004, available from http://www.state.gov/s/ct/rls/fs/04/37191.htm.

[54] Peters' idea of "social pools" is featuring mostly lower-class warriors or people that failed in their society. See Ralph Peters, "The new Warrior Class," *Parameters* Summer (1994): n.p., on-line, Internet, 16 March 2005, available from http://carlisle-www.army.mil/usawc/Parameters/1994/peters.htm.

accused of planning or committing terrorist acts, were educated at universities in the US or UK.[55]

According to recent research, the percentage of Palestinian suicide bombers holding an education

beyond high school is more than triple than that of the average population.[56] Therefore, this

author believes that 4GW actors are not emerging exclusively from the underclass but probably

form a cross-section of our society, including well-educated individuals.

Objectives and Weapons

One of the main objectives in 4GW is to influence or to change the mind of the enemy

populace as well as the policy makers.[57] However, the leaders of the warring parties in a 4GW

conflict sometimes define their objectives according to their personal area of interest. They

usually combine the objectives with an ideological or religious background. Sometimes the

driving factor is simply control of an area rich in natural resources (oil, gold, diamonds etc.).[58]

One of the strengths of a 4GW actor is the ability to blend in with his surroundings,

exactly as the guerillero blends in the population. "The former may be likened to water and the

latter to the fish who inhabit it" as Mao Zedong once said.[59] Therefore, he will either conceal his

weapons or use devices that one can generally not identify as a weapon at first glance.

Consequently the 4GW opponent can and will turn everything into a weapon, as it drastically

became apparent with the events on 9/11.

The actors in 4GW use conventional arms in traditional, but also in non-traditional ways

to achieve their effects. To booby-trap the dead with a hand grenade gives it a function its

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[55] Candace de Russy, "Terror with an Ivy Wreath: Radical Scholarship, Fractured Identities, and National Security," in *Lecture at the New York University* (New York: 2003), n.p., on-line, Internet, 16 March 2005, available from http://www.cs.ucla.edu/~kaoru/NYU-2.doc.

[56] Alan B. Krueger, "Poverty Doesn't Create Terrorists," *New York Times*, no. 29 May 2003 (2003): n.p., on-line, Internet, 16 March 2005, available from http://www.mtholyokee.edu/acad/intrel/bush/povterror.htm.

[57] Hammes, *The Sling and the Stone*,208.

[58] Ibid.,11.

[59]Mao Zedong, *Guerilla Warfare*, trans. Samuel B. Griffith II (Fort Bragg, NC: Frederick A. Praeger, 19uu), 53.

inventors probably did not intend it to have. A rocket-propelled grenade (RPG) was originally

designed for use against tanks and armored vehicles yet it was a RPG that brought down the first

Black Hawk in Mogadishu.[60] These are only two examples of the ingenuity of 4GW actors.

The 4GW fighters show even more innovation and literally turn everything under their

hands into a weapon, whether it is cars, airliners, paper cutters or shoes. The use of these benign

devices makes it difficult to identify and track the threat, assess its intention, and neutralize it.

Future Threats

In 1995, the Japanese people had a small taste of what a future threat from terrorist

groups could be like. A radical Buddhist religious group, Aum Shinrikyo, carried out a Sarin gas

attack on the Tokyo subway, killing 12 people.[61] The death toll may not seem impressive and

the reasons for the attack remain unclear, but one thing is certain, at that moment the terrorists

opened Pandora's Box. The future of 4GW may well include the use of chemical, biological,

radiological, nuclear or high explosive (CBRNE) weapons. The range of damage to the society

and the population can be as limited as it was in Tokyo, but it could have a potential devastating

effect. A large dirty radiological bomb placed on a ship in the port of New York could close

down one of the world's largest ports, as well as part of the city and its financial centers.

Future threats will most certainly include Information Operations (IO). IO are not

targeting an object, but aiming to influence the mind. One could see the power of IO during the

war for Kosovo. After the accidental bombing of a passenger train and later a refugee, convoy

the Serbs mounted an information campaign that almost broke the North Atlantic Treaty

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[60] Mark Bowden, *Black Hawk Down* (New York, NY: Penguin Books, 1999), 71-80.
[61] unknown, *Aum Shinrikyo* (Wikipedia, [cited 17. Januar 2005); available from
http://en.wikipedia.org/wiki/Aum_Shinrikyo.

Organization (NATO) cohesion and inflicted severe restrictions on the use of NATO air power.[62]

Using IO in conjunction with a major attack, such as the detonation of a nuclear device, would

have a particularly destructive effect. Imagine the detonation of an atomic bomb in Baghdad or

Riyadh – to give Charles Dunlap's "Military City" a name. [63] Would the world not think of an

accident caused by the United States? The effect on world society and economy would be

disastrous.

Strategic, Operational, and Tactical Levels of War

In 4GW, one will still find the three levels of war – strategic, operational and tactical – as

defined in *Joint Publication 3-0*.[64] However, those levels are subject to numerous changes and

there are perhaps three new levels of war emerging. Colonel John Boyd mentioned three ways

of interaction and isolation in his strategic perspectives and Bill Lind defined those ways as

levels of war, the moral, mental, and physical level of war.[65]

One of the main strategies of 4GW actors is to "change the mind of enemy policy-

makers."[66] However, the enemy policy-makers in western democracies are dependant on their

people, their voters. Therefore, frequently the strategy of 4GW actors tries to reach the decision-

making politicians over the voice of the street. Influencing the public opinion sounds very

familiar to those who remember the strategies of the Viet Minh in the War in Indochina. Truong

Chinh, one of the leading theorists of North Vietnam, developed the strategies of the Viet Minh.

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[62] Benjamin S. Lambeth, *The Transformation of American Airpower* (Ithaca, NY: Cornell University Press, 2000), 205.

[63] Charles J. Jr. Dunlap, "How We Lost the High-Tech War of 2007," *Weekly Standard* Volume 001, no. 19 (1996): n.p., on-line, Internet, 16 March 2005, available from http://www.weeklystandard.com/Content/Public/Articles/000/000/001/569nzbrd.asp.

[64] William S. et al Lind, "FMFM 1-A: Fourth Generation Warfare," (2004), 6.

[65] Ibid.,7. For John R. Boyd see John R. Boyd, "The Strategic Game of? and?" in *A Discourse on Winning and Losing* (Maxwell AFB, Alabama: 1987), 34-37. AU Library, call Nr. M-U 43947.

[66] Hammes, *The Sling and the Stone*,208.

He wanted to isolate the French government, persuade the French people and the French soldiers to oppose the war and turn the world opinion against France.[67]

Another important strategy of 4GW actors is to spread their ideological or religious beliefs. Some authors believe that the vision of Bin Laden and other contemporary radical Muslim fundamentalists is to unite the Muslim world into a single nation.[68] Earl Tilford even designs an extreme picture of a "worldwide Islamic caliphate", which he predicts to be established by the beginning of the 22nd century.[69] By virtuously making use of the media, and targeting international organizations and non-governmental organizations (NGO), the asymmetric players' strategy clearly focuses on the political will of their adversaries.

To achieve their strategic objective, 4GW players shape their operations to attack the vulnerabilities of their enemy's society on the political, economic, military, or social level.[70] The attack on 9/11 had an impact not only on the political level, but on the other three levels as well. The stock market reacted, the society's perception of security in the US fundamentally changed, and the military was suddenly confronted with the GWOT.

The tactics used in 4GW also include tactics and techniques from earlier generations and 4GW players fight their war across the whole spectrum of political, social, economic, and military networks.[71] It will be fought worldwide through those networks and involve a mix of national, international, transnational, and sub-national actors.[72] The 4GW actor will for the most part travel light and live off the land, an effect of the increased security checks on airports, ports

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[67] Troung Chinh, "The Resistance Will Win," in *Stategy and War Coursebook* (Maxwell AFB: Air Command and Staff College, 1963), 425-26.

[68] Juan Cole, "Bin Laden's Vision Becoming Reality," (2004): n.p., on-line, Internet, 16 March 2005, available from http://www.d-n-i.net/fcs/cole_bin_laden.htm.

[69] Earl H. Tilford, Ph.D., "The War on Terror: World War IV," *ROA National Security Report* (2004): 38.

[70] Hammes, *The Sling and the Stone*,216-17.

[71] Hammes, "The Evolution of War: The Fourth Generation," 35-36.

[72] Ibid.: 36.

and frontiers. By using materiel and tools that are available in the attacked country itself, he does not need to transport his weapons.[73]

Moral, Mental, and Physical Levels of War

The moral level of war is probably one of the most important aspects in 4GW. It includes cultural standards and conduct in time of war. To fail at the moral level of war can have disastrous consequences. The Serbs realized this after shells fell on a busy marketplace in Sarajevo in August1994.[74] Two days after this event, NATO began a bombing campaign, which resulted in the Dayton accords that led to peace.[75] The North Vietnamese also targeted the moral level of war very successfully. The mass demonstrations against the war in Vietnam in both the US and Europe were proof of North Vietnamese effectiveness. In a 4GW, the party fighting against the asymmetric player must carefully avoid falling into the pit of unintentionally assisting in the recruiting of insurgents by failing on the moral level of war. Nightly raids in Iraqi homes in search of rebels and the treating of prisoners in Abu Ghraib terrified and humiliated the population.[76] As a most likely result, the Iraqi people probably have amplified the support of the insurgents.[77]

The mental level of war is in a certain way the link between the moral level and the physical level. It stands for the intellectual activity to deal with the physical level of war and for assessing the impact of the physical actions on the moral level. The aim is to out-think the

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[73] Hammes, *The Sling and the Stone*,220.
[74] Susan and Michael D. Watkins Rosegrant, "Getting to Dayton: Negotiating an End to the War in Bosnia" (Harvard University, 1996), 18. (A similar event in February 1994 caused the US to insist on a NATO intervention. The Serbs insisted that this was a Muslim bomb however, a UN investigation was inconclusive.).
[75] Ibid.,9
[76] Lind, "FMFM 1-A: Fourth Generation Warfare,"7
[77] Ibid.

enemy, to "fold the adversary back inside himself" by operating inside its observe-orient-decide-act (OODA) Loop.[78]

Probably the most loved but least important level of war is the physical level. This level gives measurable results, figures and statistics. However, as in World War II (WWII) the number of destroyed factory buildings did not reflect the net effect on the German economy, the number of killed insurgents is also not a sign for a successful counterinsurgency. If every killed 4GW opponent that is killed produces two new ones, the result is even counterproductive.
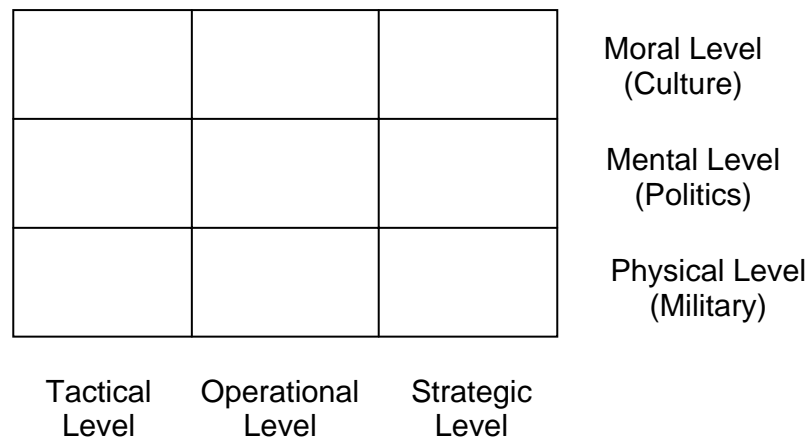
			Moral Level (Culture)
			Mental Level (Politics)
			Physical Level (Military)
Tactical Level	Operational Level	Strategic Level	

Figure 1 Levels of War[79]

To understand fully the mutual influence of the above-mentioned levels of war, one must tie the knots together. Any disharmony among those different levels of war creates friction and results in what Boyd would call "isolation."[80] Although the different levels might not lead to the same direction, they are probably in the same plane. Thus, one could see them in the figure above.

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[78] Boyd, "The Strategic Game of? and?"35-37 & 44.
[79] This figure was drawn by William S. Lind during the interview on 27 January 2005.
[80] Boyd, "The Strategic Game of? and?"36.

Two Colonels, one Concept?

Hence to fight and conquer in all your battles is not supreme excellence; supreme excellence consists in breaking the enemy's resistance without fighting.

—Sun Tzu[81]

Two United States Air Force (USAF) colonels have significantly influenced modern air war theory during the past 30 years. John Warden was a polarizing person in the Pentagon but his Instant Thunder Plan paved the path to success in operation DESERT STORM, even though the Joint Forces Air Component Commander (JFAAC), General Horner, never clearly admitted so.[82] Although he found a willing audience in the Marine Corps, John Boyd was for a long time a "forgotten child" of the USAF. Even with all the differences in personality and approach to the problem, one can find some commonalities between the theories of Warden and Boyd. Both theories proved their validity in conflicts using 2GW and 3GW techniques during the past fifteen years. The following chapters shall investigate whether both theories are also applicable in 4GW. Warden and Boyd were both seeking strategic paralysis of the enemy; however, Warden favored a form-oriented approach while Boyd concentrated more on the process-oriented approach.[83]

The Concept of Strategic Paralysis

Throughout centuries, strategists have searched for the best way to defeat an enemy. In most of the theories still read and taught today, one finds the quest for strategic paralysis. Sun

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[81] Sun Tzu, *The Art of War*, trans. Lionel Giles (InstaBook Corporation, Gainesville, FL), 17.

[82] Michael R. and General Bernard E. Trainor Gordon, *The General's War: The Inside Story of the Conflict in the Gulf* (Boston, MA: Little, Brown and Co., 1995), 465.

[83] David S. Fadok, "John Boyd and John Warden: Air Power's Quest for Strategic Paralysis" (Air University, 1995), v.

Tzu wrote of "breaking the enemy's resistance without fighting" and many other military theorist dreamed of a complete victory where the enemy's will for further resistance was broken at a minimal price.[84] Carl von Clausewitz identified three items, which are important in order to defeat a country – or as he put it – render it defenseless.[85] He said that the war is not terminated as long as the enemy's will is not broken.[86] J.F.C. Fuller suggested paralyzing the brain and the body would stop to function, while Basil H. Liddell Hart wrote that generals should think in terms of paralyzing, not killing.[87] Giulio Douhet, who concentrated mainly on the operational aspect of aerial warfare, concluded that one need to "crush the material and *moral resistance* of the enemy" in order to win while Thomas Greer quoted Billy Mitchell, who stated that there is great importance in "hitting an enemy's great nerve centers…as to paralyze them".[88] Warden's five-ring model also encompasses the notion of strategic paralysis and identifies the leadership as key element to achieve it.[89] While Warden's theory reaches out to the strategic paralysis mainly through physical destruction, Boyd concentrates heavily on the moral and mental level of warfare. He seeks strategic paralysis through moral-mental-physical isolation of the enemy in order to produce friction and paralysis and therefore collapse or change his political, economical and social behavior.[90]

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[84] Tzu, *The Art of War*,17.
[85] Clausewitz, *On War*,90. The author translated the original term used by Clausewitz "*wehrlos*" to defenseless, which he thinks is more accurate than the translation by Howard and Paret.
[86] Ibid.
[87] For Fuller see J. F. C. Fuller, *The Foundation of the Science of War* (London: Hutchinson and Company, 1925), 290. For Liddell Hart see Basil H. Liddell Hart, *Strategy*, Seventh printing, 1960 ed. (London: Faber & Faber Ltd, 1954; reprint, New York, Frederick A. Praeger Inc), 212. as cited in Fadok, "John Boyd and John Warden: Air Power's Quest for Strategic Paralysis",24.
[88] For Douhet see Giulio Douhet, *The Command of the Air*, trans. Dino Ferrari, reprinted in 1983 by the Office of Air Force History ed. (New York: Coward-McCann, 1942), 96. (emphasis added) For Mitchell quoted in Greer see Thomas H. Greer, *The Development of Air Doctrine in the Army Air Arm, 1917 - 1941*, ed. Research Studies Institute, vol. No. 89, *USAF Historical Studies* (Maxwell AFB: USAF Historical Division, 1955), 9.
[89] John A. Warden, *Air Theory for the Twenty-first Century*, ed. Barry R. & Lawrence E. Grinter Schneider, *Battlefield of the Future: 21st Century Warfare Issues* (Maxwell AFB: Air University Press, 1998), 114.
[90] Boyd, "The Strategic Game of? and?"287.

In 4GW, strategic paralysis still plays an important role. One can interpret the asymmetric player's attempt to change the minds of the policy makers as an attempt to paralyze the enemy strategically. Once he is paralyzed, he loses the will to fight. History shows many successful examples.[91] However, it proves to be much more difficult to play the game the other way. How do you strategically paralyze an enemy that is a non-state entity? Can one apply the notion of strategic paralysis to an enemy that has not a hierarchical structure but one that is networked? Some authors see the future in 4GW rather dark and as a conflict of cultures. They favor a policy of new isolationism, where the US runs an extremely restrictive immigration policy, based on religious belief and ethnic origin.[92] Others see it as a "total war on a global scale" and favor "a greater expeditionary posture" to deny safe havens and to destroy command and control (C^2) and training facilities.[93] Some favor a de-escalation model tailored more to a police officer rather than to a soldier.[94] Finally, some people promote solutions on operational and tactical levels as well as a fundamental reform of the personnel system, the training and the education.[95]

However, this research found no clearly defined evidence that contemporary authors see the strategic paralysis as a strategy to fight 4GW actors. Therefore, this essay will examine whether one can apply it or not. This paper suggests the following working definition of strategic paralysis:

> [S]trategic paralysis is a military option with physical, mental, and moral dimensions, which intends to disable rather than destroy the enemy. It seeks maximum possible political effect or benefit with minimum necessary military effort or cost. It aims at rapid decision through a "maneuver-battle" directed

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[91] Hammes, *The Sling and the Stone*,44-189.

[92] William S. Lind, "Wanted: A new strategy for the War On Terror," *The American Conservative* (2004): 12.

[93] Tilford, "The War on Terror: World War IV," 39 & 44.

[94] Lind, "FMFM 1-A: Fourth Generation Warfare,"22-25.

[95] Hammes, *The Sling and the Stone*,266., for operational and tactical solutions and p 232 -245 for the reform of the personnel system.

against an adversary's physical and mental capability to sustain and control its war effort to diminish its moral will to resist.[96]

If one recalls examples of conflicts where one side fought according to 4GW principles, he quickly sees that all these conflicts lasted very long, some even for decades.[97] This does not sound like the above working definition, which "aims at a rapid decision." Instead of ruling out the whole notion of strategic paralysis out of the 4GW model, this author will challenge only the "rapid decision" part of the working definition.

If one quickly analyzes that working definition, the overall aim is to disable the ability of the enemy to continue the fight. It might be necessary to add physical destruction, but this should not be the primary option. The fight will happen on three dimensions or on what Lind calls the "three new levels of war."[98] The main effort lays in the political, rather than the military arena and aims at the nodes of the three new levels of war.

If one wants to paralyze his enemies strategically, he must know their strategy first. According to Liddell Hart, strategy is "the art of distributing and applying military means to fulfill the ends of policy."[99] Therefore, we ought to know the strategic objective of the 4GW opponents. Those objectives are as diverse as the various groups itself. While the objective of a narco-organization is mainly to preserve and eventually expand its business, classical guerilla or terrorist organizations have a political objective, such as the liberation of the nation. This political objective is sometimes also tied to an ideology, such as the Communism.[100] Those traditional organizations still exist, as the example of the Fuerzas Armadas Revolucionarias de Colombia (FARC – Revolutionary Armed Forces of Colombia) might show. However, today

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[96] Fadok, "John Boyd and John Warden: Air Power's Quest for Strategic Paralysis",10.
[97] Hammes, *The Sling and the Stone*,191 & 221.
[98] Lind, "FMFM 1-A: Fourth Generation Warfare,"7.
[99] Liddell Hart, *Strategy*,335.
[100] Ian O. Lesser, Bruce Hoffman, John Arquilla, David F. Ronfeldt, Michele Zanini, Brian Michael, *Countering the New Terrorism* (RAND corporation, 1999), 1.

they found company in insurgent groups and terrorists that act more on religious objectives. Al

Qaeda's spokesperson Suleiman Abu Ghaith drastically expressed this, when he claimed, "the

divine rule is that the entire earth must be subject to the religion of Allah."[101]

To date this author has not found an example of strategically paralysis in order to fight a

drug organization. However, a hypothetical legalization of substances such as cocaine or opium

could probably lead to such a strategic paralysis of most of the narco-organizations through the

following crash of product prices and subsequent insignificance of profit margins.[102] On the

other hand, there are successful cases of strategic paralysis of a traditional guerilla or terror

organization. They encompass a variety of civil and military initiatives to separate the

population – and thus the support – from the insurgents. The British strategy in Malaya to

combat the Malayan Communist Party (MCP) is one example; the fight of the German

government against the Rote Armee Fraktion (RAF – Red Army Fraction) might be another

case.[103] Nevertheless, how could one strategically paralyze a fundamental religious group such

as Al Qaeda? Probably the best approach would be – as shown in the example of the Malayan

Emergency – to separate the people from the terrorists and their hard-core supporters. The

strategy should aim at providing security and livelihood for the population by using the smallest

possible footprint and showing the maximum of understanding and respect for the local culture.

This essay will stop at this superficial level and concentrate on how one could support the quest

to paralyze a 4GW opponent strategically with the theories of Warden and Boyd.[104]

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[101]Daniel & Steven Simon Benjamin, *The Age of Sacred Terror*, Paperback ed. (New York: Random House, Inc., 2002), 397.

[102] This is a hypothetical approach; the author does not suggest solving the drug problem by legalizing the drugs.

[103] For the Malayan Emergency see Jay Gordon Simpson, "Not by Bombs alone: Lessons from Malaya," *Joint Forces Quarterly*, no. Summer 1999 (1999): 91-98. For the fight against the RAF see Innenministerium Nordrhein-Westfalen, *Die Rote Armee Fraktion* [Internet] (Innenministerium Nordrhein-Westfalen, 20uu [cited 27 February 2005); available from http://www.im.nrw.de/sch/383.htm#.

[104] For more details of a possible strategy, see Lind, "FMFM 1-A: Fourth Generation Warfare,"insert of 8. "Operation David", or Hammes, *The Sling and the Stone*,chapter 15 - 17.

John Warden's Five Rings in Fourth Generation Warfare

> *An iconoclast to his critics, a visionary to admirers, Warden was passionate about strategic bombing to the point of zealotry.*

> Michael R Gordon and General Bernard E. Trainor[105]

John Warden's model of drawing the enemy's center of gravity (COG) as five concentric rings had its genesis in his theory of air power *The Air Campaign* in 1988.[106] When Saddam Hussein invaded Kuwait, Warden and his Checkmate office were already working on a war plan.[107] Warden presented his "Instant Thunder" plan to General Schwarzkopf, the Joint Forces Commander (JFC) and General Horner, the JFACC. Horner sent Warden back to Washington; however, after modifying Warden's plan, he nevertheless adopted it and today much of the success in Operation DESERT STORM is credited to Warden.[108]

John Warden has since modified his theory. He sees every organization, whether state, drug cartel or terrorist group, as a system with clearly defined attributes and therefore with identified COG.[109] He arranges these COG as five concentric rings, with the most important – the leadership – in the center and thus creates a simplified model.[110] As with Boyd's OODA-Loop, people tend to concentrate on this simplified model; however, Warden's system, as he envisioned it, is more complex and Warden used two more models to illustrate this complexity. Both models show a variety of subsystems and illustrate a dynamic system where every alteration of an element has an influence on the others.[111] According to Warden, all systems are

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[105] Gordon, *The General's War: The Inside Story of the Conflict in the Gulf*,77.
[106] Fadok, "John Boyd and John Warden: Air Power's Quest for Strategic Paralysis",24.
[107] Gordon, *The General's War: The Inside Story of the Conflict in the Gulf*,79.
[108] David R. Mets, *The Air Campaign: John Warden and the Classical Airpower Theorists*, Revised Edition ed. (Maxwell AFB: Air University Press, 1999), 64.
[109] Warden, *Air Theory for the Twenty-first Century*,106-07.
[110] John A. Warden, "The Enemy as a System," *Airpower Journal* 1995, no. Spring 1995 (1995): 47.
[111] Ibid.: 48.

fractal, interconnected, contain energy and resist change.[112] Any action towards such a system

provokes a reaction and the system tends to neutralize the change made to it.[113] Warden argues

that the best chance to win a conflict is through strategic warfare and parallel attacks on all the

levels of his five-ring model.[114] The attacker should identify the few nodes in the system that

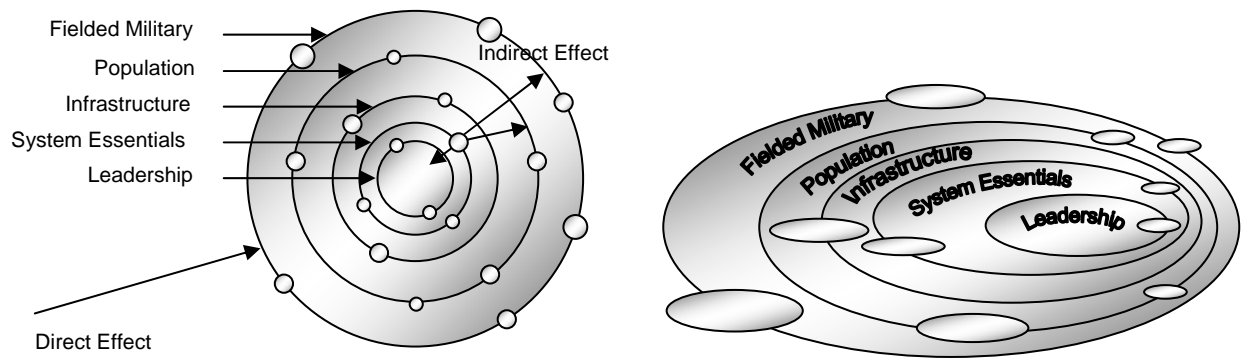contain the greatest number of links in order to maximize the effect.[115]

Figure 2 Warden's Five Ring Models[116]

After Operation DESERT STORM, Warden's theory was "en vogue" (or hip) with air

forces throughout the world. Warden's theory concentrates mainly on the physical destruction.

He starts out with the equation

$$(Physical) \times (Morale) = Outcome^{117}$$

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[112] John A. Warden, "John Warden and the Five Rings AP-540" (paper presented at the Expeditionary Air and Space Power Course, Maxwell AFB, 2004). Based on personal notes of the author.

[113] Ibid., personal notes.

[114] Warden, "The Enemy as a System," 54.

[115] Warden, "John Warden and the Five Rings AP-540". Personal notes.

[116] Warden, "The Enemy as a System," 48. The model to the left is supposed to illustrate the presence of subsystems that orbit around the center having the ability to change level or disappear. Warden uses an analogy of electrons in the atom model. The model to the right shall demonstrate that the model is dynamic and that the different rings have not always the same relationship among each other. Note that Warden labeled the term *system essentials* originally as *key production* and later as *organic essentials*.

[117] Ibid.: 43.

and ranks the physical aspect at least as important as the morale, if not more important. He claimed that in today's world "strategic entities – be they an industrial state or a guerilla organization – are heavily dependent on physical means."[118] This paper argues that a 4GW player is not very dependent on physical means and due to his ability to blend in "like a fish in the water" into the population, one cannot easily target him.

Referring to the above equation, in order to fight a 4GW opponent, one should rather target the aspect morale than the physical factor. It seems that Warden's theory offers only limited possibilities to fight a 4GW adversary. In addition, physical destruction – even with today's possibilities through highly precise ammunition and subsequent limited collateral damage – always creates a negative impact on the population and tends to escalate the situation, rather than de-escalate it. The highly networked structure of today's terrorist and insurgent groups with largely independent sub-groups makes it difficult to identify and target the leadership, which is (according to Warden) the most important part of the whole system. In addition, 4GW actors are dispersing important components of their system.[119] They try to hide them through blending them in with different entities that may affect the ability to target them successfully; weapon stores in schools and mosques and mortar firing from hospitals might suit as examples here.[120] All these shortcomings give the theory of John Warden at best a supporting role in 4GW. Its validity against a state actor in 2GW, 3GW or a combination of both remains unchallenged; however, it plays at best a minor part in 4GW.

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[118] Ibid.
[119] Richard Szafranski, *Parallel War and Hyperwar: Is Every Want a Weakness?* ed. Barry R. & Lawrence E. Grinter Schneider, *Battlefield of the Future: 21st Century Warfare Issues* (Maxwell AFB: Air University Press, 1995), 133.
[120] Ibid.

John Boyd's OODA-Loop in Fourth Generation Warfare

I, and his Corps of Marines, will miss our counselor terribly.

— General C. C. Krulak
Commandant US Marine Corps[121]

John Boyd started his process of autodidactic learning that in reverse produced air-to-air tactics, EM (energy maneuverability), aircraft design and the OODA-Loop in Korea, when he investigated the contrast of the performance of the F-86 on paper to the one in reality.[122] The OODA-Loop was part of Boyd's *Discourse on Winning and Losing*.[123] Some people see it as a "psychological and temporal ... form of maneuver warfare."[124] However, it is not easy to understand the OODA-Loop fully.[125] In its simplest form, one could describe it as if "a war fighter or commander repeatedly 'observes' the environment, 'orients' to similarities with and differences from past understanding, 'decides' what to do, and 'acts'."[126] Most people only look at the four major elements of Boyd's OODA-Loop. This perception leaves essential parts of Boyd's theory without attention. In his original writings, Boyd pointed out that the "Schwerpunkt" (center of gravity) of the loop lies in the orientation part, which itself contains several possible loops.[127] Today's supporters of the OODA-Loop generally stress the importance of speeding up the cycle until it is faster than the one of the adversary. However, Boyd saw the problem as much more complex. Those who concentrate only on speeding up the

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[121] Grant T. Hammond, *The Mind of War: John Boyd and American Security* (Washington, D.C.: Smithsonian Books, 2001), 4. General Krulak's obituary on John R. Boyd was published in *Inside the Pentagon*, 13 March 1997.

[122] Ibid.,35.

[123] John R. Boyd, "Patterns of Conflict," in *A Discourse on Winning and Losing* (Maxwell AFB, Alabama: 1986), 5.

[124] Fadok, "John Boyd and John Warden: Air Power's Quest for Strategic Paralysis",14.

[125] Robert Coram, *Boyd: The Fighter Pilot Who Changed the Art of War*, First Edition ed. (Boston, MA: Little, Brown and Company, 2002), 335.

[126] Elaine M. Grossman, "An OODA Loop Writ Large - 4GW and the Iraq War," *Insider* (2004): 2.

[127] John R. Boyd, "Organic Design for Command and Control," in *A Discourse on Winning and Losing* (Maxwell AFB, Alabama: 1987), 16.

cycle in order to "get inside the enemy's OODA-Loop" do not understand that the key to success

is not simply speed but the combination of variety/rapidity and harmony/initiative.[128] Boyd

pointed out, that – in order to defeat the enemy – one's OODA-Loop must be "more subtle, more

indistinct, more irregular, and quicker – yet appear otherwise."[129] Note especially the last part,

the deception, which is clearly in accordance with Sun Tzu.[130] In addition, the accuracy of both

the observation and the orientation is of tremendous importance.[131] In their first paper, the

fathers of 4GW underlined the characteristics of 3GW using Boyd's theory of the OODA-

Loop.[132] In 4GW, the goal is to "[collapse] the enemy internally rather than physically

destroying him."[133] Therefore the question stands: Is Boyd's OODA-Loop applicable in 4GW?

Interestingly, the United States Marine Corps (USMC) adopted Boyd's theories first. In

addition, the USMC started very early to deal with the subject of small wars in its 1940 *Small

Wars Manual* and adopted the 4GW model in its schools.[134] Boyd's theories are omnipotent in

contemporary texts of leading 4GW-authors. More and more people are convinced that the

OODA-Loop is fully applicable in a 4GW, especially in an insurgency such as in Iraq today.[135]

However, one should not limit the scope of study on the OODA-Loop only but open up to John

Boyd's theories in conjunction with his *Discourse of Winning and Losing* in general.[136]

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[128] Ibid.,8.
[129] Boyd, "Patterns of Conflict,"175.
[130] Tzu, *The Art of War*,9.
[131] Lind, "FMFM 1-A: Fourth Generation Warfare,"21.
[132] Lind, "The Changing Face of War: Into the Fourth Generation," 23. The term *fathers* refers to all the authors of the first article on 4GW.
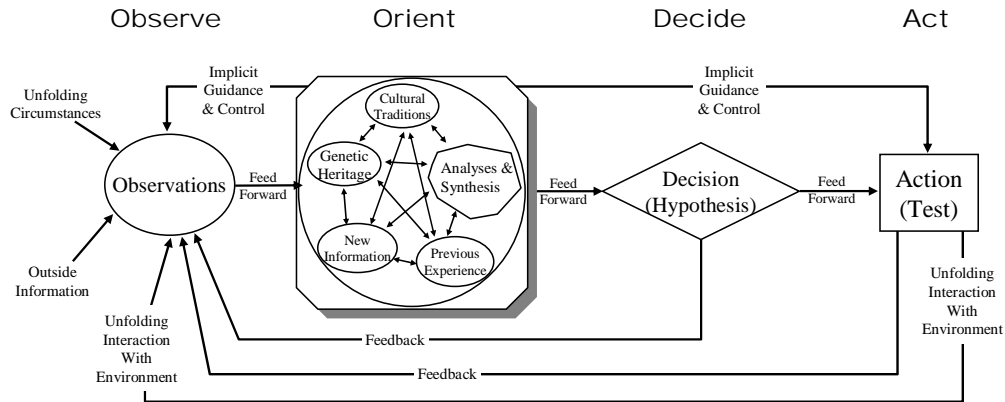[133] Ibid.
[134] United States Marine Corps, "Small Wars Manual," ed. U.S. Department of Defense (USMC, 1940), section 1-1, page 1.
[135] Wilson, *Fourth Generation Warfare & OODA Loop: Implications of The Iraqi Insurgency* ([cited]., slide 52.
[136] John Boyd's *Discourse on Winning and Losing* is a collection of manuscripts containing 321 slides, divided in *Patterns of Conflict*, *Organic Design for Command and Control*, *The Strategic Game of ? and ?* and *Destruction and Creation*. The collection is available at AU Library, Call Nr. M-U 43947.

Boyd's OODA "Loop"

Sketch

Note how orientation shapes observation, shapes decision, shapes action, and in turn is shaped by the feedback and other phenomena coming into our sensing or observing window.

Also note how the entire "loop" (not just orientation) is an ongoing many-sided implicit cross-referencing process of projection, empathy, correlation, and rejection.

From "The Essence of Winning and Losing," John R. Boyd, January 1996.

Defense and the National Interest, http://www.d-n-i.net, 2001

Figure 3 Boyd's OODA-Loop[137]

According to Sun Tzu, one of the five constant factors in war is the "Dao," the moral law or unity of purpose, which makes the people follow their leadership.[138] Mao Zedong also relied on this moral level when he declared that the guerilla could only succeed when it gains the sympathy and assistance of the population.[139] John Boyd defined the three categories of conflict as attrition warfare, maneuver warfare and moral conflict.[140] He then equaled attrition with the physical level, maneuver with the mental level and moral with the moral level of war and synthesized a strategy to "penetrate [the] adversary's moral-mental-physical being...in order to

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[137] Chet Richards, "Boyd's OODA Loop," ed. Powerpoint Presentation (2001), n.p., on-line, Internet, 16 March 2005, available from http://www.d-n-i.net/fcs/ppt/boyds_ooda_loop.ppt.

[138] Tzu, *The Art of War*,6; see also Paul Kan, *History of Sun Tzu (SW 527)* [Powerpoint Presentation] (ACSC, 2004 [cited 15 October 2004]., slide 31 for the translation of "Dao".

[139] Zedong, *Guerilla Warfare*,3.

[140] Boyd, "Patterns of Conflict,"111.

destroy internal harmony, produce paralysis, and collapse adversary's will to resist."[141] He

seemed to deem the moral conflict more important since he described the moral conflict in eight

pages compared to two for attrition conflict and three for maneuver conflict.[142] Boyd's method

to produce paralysis and collapse of the enemy's will to fight is getting inside the adversary's

OODA-Loop.[143]

　　　If one synthesizes now the importance of the moral level for warfare in general and for

guerilla, insurgency type warfare in special and the significance of the moral level for Boyd's

theories and combine them, one can see that there are many connections. Therefore this author

claims – in full recognition that 4GW should not be reduced to guerilla warfare and insurgency

only – that the theories of John Boyd, especially the OODA-Loop are fully applicable to 4GW.

Within the OODA-Loop it is the orient part in particular, which plays an important role. The

authors of a presentation analyzing 4GW and the implication of the OODA-Loop on the Iraq

conflict came to the same conclusion when they said, "Orientation is the fulcrum of Boyd's

OODA Loop. It shapes the way we interact with the environment – hence the way we observe it,

the way we decide, the way we act".[144]

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[141] Ibid.,133.
[142] Ibid.,112-25.
[143] Ibid.,175.
[144] Wilson, *Fourth Generation Warfare & OODA Loop: Implications of The Iraqi Insurgency* ([cited). slide 4.

Cultural Awareness

Respect their culture and achievements, show them we bear them no harm, and help them adjust to an unfolding world...

—John R. Boyd[145]

One might ask why he encounters a paragraph about cultural awareness in a paper about Warden's and Boyd's theories and 4GW. This author thinks that when one talks about the moral level of war and the orientation part of the OODA-Loop one should address the aspect of cultural awareness. If one wants to fight a 4GW adversary, he must understand him. One has to understand the way the adversary thinks. He must know what is important to his opponent, where he draws his spirit and his morale and how he inspires his supporters. The paradigm of knowing oneself and one's enemy is omnipresent among time. Whether one reads Sun Tzu or modern documents such as *Joint Publication, 1 Joint Warfare of the Armed Forces of the United States*, he always finds the quest of knowledge of the enemy among the fundamental principals of warfare.[146]

In this author's opinion, cultural awareness is not only the bare knowledge about the foreign culture and the local customs, although this is very important too. Attending lectures about foreign societies, their religion and their culture provides only a theoretical background. The US forces must show the real cultural awareness in the field. This means not to separate and isolate the fielded forces but to seek the contact to the local population. Perception is an extremely important aspect in the domain of cultural awareness. How does the local populace perceive the US forces; do they view them as partners in a fight against a common enemy or as

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[145] Boyd, "The Strategic Game of? and?"57.
[146] for Sun Tzu see Tzu, *The Art of War*,21. For JP 1 see Chairman of the Joint Chiefs of Staff, "Joint Warfare of the Armed Forces of the United States JP 1," ed. Department of Defense (2000), III-12.

intruders? The author also thinks that one should tie cultural awareness very strongly to mutual

trust and respect. Trust and respect are hard to gain but easy to lose. To fight a 4GW enemy,

there is an absolute need of human intelligence (HUMINT) from the local population.[147]

However, the indigenous population will only be willing to provide HUMINT if it can trust the

US troops and if those treat it with respect. As soon as one fights a 4GW in a coalition, there

will be another facet of cultural awareness to consider. US troops need to grant the same trust

and respect to their coalition partners, especially when it comes to sharing intelligence.

However, as long as the United States quickly declares information as a matter of national

security and denies this knowledge to her coalition partners, it will be difficult to establish

mutual trust and respect. This author thinks that 4GW is no longer a matter of national security

but a matter of global security. There is a lot of discussion about cultural awareness in the US

forces today. However, coalition partners and the local population in a theater of operation,

where the fight has shifted to the principles of 4GW, have not seen too many results so far.

Conclusion

> *We could use [Boyd] again now. I wish he was around now. I'd love to turn him*
> *loose on our current defense establishment and see what he would come up with.*
> *We are still oriented toward the past.*
>
> —Richard B. Cheney
> Vice President of the United States[148]

Today, 4GW is just a model, it is not an official term used by the US Department of

defense and one will not find it in the *Joint Publication 1-0,2 Department of Defense Dictionary*

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[147] Thomas M Hayden, "The Road to success in Iraq Starts with Fallujah" (paper presented at the MCIA Conventon, Reno, NV, 20nn)., cited in Wilson, *Fourth Generation Warfare & OODA Loop: Implications of The Iraqi Insurgency* ([cited)., slide 45.
[148] Cheney, Richard B. cited in Coram, *Boyd: The Fighter Pilot Who Changed the Art of War*,447.

of Military and Associated Terms. Nevertheless, 4GW is a reality and many present day

conflicts are fought according to the principles of 4GW. Whether it is today's terrorists, the

insurgents in Iraq or the guerilleros of the FARC, they are all non-state actors fighting a war that

cannot be won by military means alone. Today's armed forces must familiarize themselves with

the characteristics of 4GW. The Western society has already learned the tactics and techniques

of 4GW actors, many members of its population and soldiers learned them the hard way.

However, it is more important to assess and counter the strategy of the 4GW players and their

objectives. One must understand that 4GW takes place on more levels and on different ones than

on the ordinary military levels of strategy, operations and tactics. One must realize that he

should fight and defeat the 4GW opponents not only physically but also mentally and most of all,

morally.

This author scrutinized the theories of John Warden and John Boyd, both important air

power theorists of the 20th century, both with a theory that goes beyond the mere application of

bombs to the target. Each of them is seeking to paralyze the enemy on the strategic level and this

author believes that this is exactly what one ought to do with a 4GW opponent. However, he

thinks that Warden's theory, looking at the enemy as a system, arranging that system – in his

theory in five concentric rings – and attacking them in parallel concentrates too much on the

physical aspect of warfare and does not value enough the mental and the moral facet of 4GW.

Additionally, it does not take into account the strategy of the 4GW actors. They do not

concentrate their efforts on the battlefield but on the enemy's population and its will to fight.

This author therefore thinks that Warden's theory is of limited use in 4GW, although it has

proven its validity in wars between state actors.

John Boyd's theory is expanding warfare beyond the mere physical aspect and treats it in a more holistic manner. In a certain way, this integral view of warfare also honors the aspect of the cultural understanding, which is important to "win the hearts and minds" of the local population and to deprive the 4GW players of their support. For a long time, John Boyd seemed to be the repudiated child of the Air Force seeking asylum in the Marine Corps. This is not surprising because the US Marine Corps had to confront 4GW before someone even defined the term. The 1940 *Small Wars Manual* states that in 85 of the past 100 years the USMC was involved in small wars. The USMC had to fight many of those small wars according to the principles of 4GW.[149] It is also interesting that the same manual describes the value of HUMINT from the local inhabitants and talks about cultural awareness.[150] One can even find the usefulness of horse-mounted forces there, a picture still seen in today's 4GW operations such as OEF.[151] It is therefore no wonder that Boyd's theories fell on fertile soil in the USMC and acted as a primer for the evolution of the 4GW model.

This author thinks that John Boyd's theory of the OODA-Loop – especially when looked at it in detail – is an extremely valuable theory to apply to 4GW. However, one should look beyond the OODA-Loop to the whole collection of Boyd's theories. He will find many aspects contemporary authors deem to be important to fight a 4GW opponent. Therefore, this author takes for granted that one might not always find five rings in 4GW but he will certainly find a loop!

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[149] United States Marine Corps, "Small Wars Manual,"section 1-2, page 2.
[150] Ibid., for HUMINT see section 2-15 p 24 and for cultural awareness see section 1-10, p 18 and 1-11, p 19.
[151] Ibid.,section 3-25 page 17.

Glossary

1GW	First Generation Warfare
2GW	Second Generation Warfare
3GW	Third Generation Warfare
4GW	Fourth Generation Warfare
ACSC	Air Command and Staff College
AU	Air University
C^2	Command and control
CBRNE	Chemical, biological, radiological, nuclear or high explosive
CEO	Chief Executive Officer
COG	Center of gravity
DoD	Department of Defense
DoS	Department of State
FARC	Fuerzas Armadas Revolucionarias de Colombia (Revolutionary Armed Forces of Colombia)
GWOT	Global War On Terrorism
HUMINT	Human intelligence
INA	Immigration and Nationality Act
IO	Information Operations
JFAAC	Joint Forces Air Component Commander
JFC	Joint Forces Commander
LIC	Low-intensity conflict
MCP	Malayan Communist Party
NATO	North Atlantic Treaty Organization
NGO	Non-governmental organizations
OEF	Operation ENDURING FREEDOM
OIF	Operation IRAQI FREEDOM

OODA	Observe-Orient-Decide-Act
RAF	Rote Armee Fraktion (Red Army Fraction)
RPG	Rocket-propelled grenade
UK	United Kingdom
US	United States
USA	United States of America
USAF	United States Air Force
USC or U.S.C.	United States Code
USMC	United States Marine Corps
WMD	Weapons of mass destruction

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